Acti 9

the efficiency you deserve

Catalogue | 01/2017

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Life Is On Schneider Electric

Contents

Principle of catalogue numbers

iID, iC60, Vigi iC60, Reflex iC60, switches

Range	Family	Code
Acti 9 (A9)	**iID**	**R**
	Vigi iC60	**V**
	iC60	**F**
	iK60	**K**
	Auxiliaries and accessories	**A**
	Switches	**S**
	Reflex iC60	**C**

Internal code

Poles	Code
0	**0**
1P	**1**
2P	**2**
3P	**3**
4P	**4**
1N	**5**
1P+N	**6**
3P+N	**7**

Rating (A)	Code
0	**00**
0.5	**70**
0.75	**71**
1	**01**
1.6	**72**
2	**02**
2.5	**73**
3	**03**
4	**04**
6	**06**
6.3	**76**
8	**08**
10	**10**
12.5	**82**
13	**13**
16	**16**
20	**20**
25	**25**
32	**32**
40	**40**
50	**50**
63	**63**
80	**80**
100	**91**
125	**92**

Comb busbar and comb busbar accessories

Range	Family	Code
Acti 9 (A9)	**Comb busbar**	**X**

Type		Type of installation	
Comb busbar			
Fork teeth	**F**	Horizontal	**H**
Pin teeth	**P**		
Auxiliarisable	**A**		
Accessories			
End-piece	**E**	Double terminals	**D**
Tooth cover	**T**	Single terminal	**M**
Connector	**C**		

Number of poles	
1P	**1**
2P	**2**
3P	**3**
4P	**4**
4P balanced, with neutral	**5**
3P balanced for single-poles	**6**

Dimensioning	
Comb busbar	**Number of 18 mm modules (approximately)**
Accessories	**Number of pieces per cat. no.**

Choice of circuit protective devices

■ Circuit breakers can:
□ break a faulty electrical circuit (short-circuit, overload, insulation fault), to prevent fires,
□ protect control devices,
□ increase the service life of the installation, thanks to its ability to limit the short-circuit current (see module CA908025),
□ in IT and TN systems, they ensure personal protection against electrocution in the event of indirect contacts.
■ The choice of circuit breakers must be optimised to provide absolute protection while ensuring continuity of service.
■ Although circuit breakers are sometimes used as control units, it is recommended to install separate control devices which are more suitable for frequent switching operations (switch, contactor, impulse relay).

DB123788

Protection of electrical connections against short circuits and overloads

DB123789

Protection of loads against overloads

DB123790

Protection of control devices

DB123792

Protection for people against indirect contacts in IT and TN earthing systems

Choice of protective circuit breakers

This depends on several criteria:
■ prospective short-circuit current
■ max. voltage rating
■ planned amperage for the circuit to be protected
■ nature and cross section of cables
■ ambient temperature (possible derating)
■ the network and neutral system, which determine the number of poles of the protective circuit breaker installed on their power supply circuit and the tripping curve
■ coordination with the other electrical devices (protection, discrimination, cascading).

Choice of breaking capacity

■ The breaking capacity must be greater than or equal to the prospective short-circuit current (Isc) upstream of the circuit-breaker (Isc depends on the length, type of conductor and cross section of the cable and the power of the source).
■ However, in the event of use in combination with an upstream circuit-breaker limiting the current, this breaking capacity can possibly be reduced (cascading, see module **557E4200**).

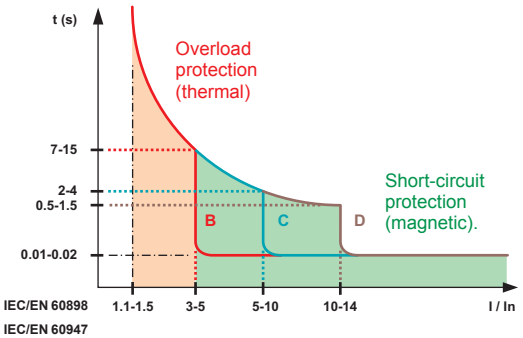
Choice of rating

■ The rating (In) is chosen above all to protect the electrical connections:
□ for cables: it is chosen according to the cross section and type of conductor,
□ for Canalis prefabricated busbar trunking: it must be simply less than or equal to the rating of the busbar trunking.
■ The rating should be greater than the nominal current of the loads.

Choice of tripping curve

The tripping curve makes the protection more or less sensitive to:
■ the inrush current at power up
■ the overload current.

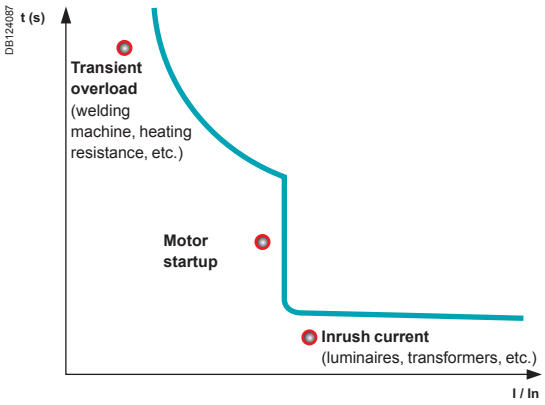
E103695

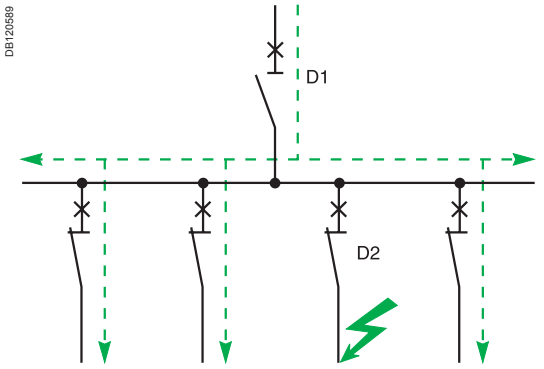


Tripping thresholds (x In)		
Curves	**IEC /EN 60898**	**IEC/EN 60947-2**
B	Between 3 In and 5 In	4 ±20 %
C	Between 5 In and 10 In	8 ±20 %
D or K	Between 10 In and 14 In	12 ±20 %
MA	-	12 ±20 %
Z	-	3 ±20 %

■ To prevent nuisance tripping, it may be advisable to choose a less sensitive curve, e.g. change from B to C (tripping curves, see module **CA908024**).

Choice of circuit protective devices (cont.)





Circuit disconnection

Continuity of service

■ Nuisance tripping can be generated by:
□ the inrush current at circuit closure,
□ the overload current, and sometimes the harmonic current flowing through the neutral of three-phase circuits (1),
□ motor startup currents.

Solutions

■ **Choose a circuit breaker with a less sensitive curve:** change from B curve to C curve or from C curve to D curve (2).
■ **Reduce the number of loads per circuit.**
■ **Energize the circuits in succession**, using time delay auxiliaries on the control devices.
■ **Under no circumstances may the circuit breaker rating be increased beyond the maximum constraints permitted by the cable as the electrical connections will no longer be protected.**
■ **Ensure discrimination of the protective devices**
(see modules **557E4300**).
Discrimination is the coordination of automatic breaking devices in such a way that a fault occurring at any point on the network is eliminated by the circuit breaker located immediately upstream of the fault, and by it alone.

Total discrimination
For all values of the fault, from overload to non-resistive short circuit, distribution is fully discriminating if D2 opens and if D1 remains closed.

Partial discrimination
Discrimination is partial if the above condition is not complied with up to full short-circuit current, but only up to a lower value. This value is called the discrimination limit.
In the event of a fault exceeding this value, circuit breakers D1 and D2 open.

(1) In the case of three-phase circuits, third-order harmonic currents and harmonic currents that are multiples of three are generated by loads (discharge lamps with electronic ballast, etc.). The neutral cable must be sized to prevent it from overheating. The current flowing through the neutral conductor may become greater than the current of each phase and cause nuisance tripping.
(2) In the case of installations with very long cables in a TN or IT system, it may be necessary to add an earth leakage protection device to protect human life..

Disconnection

The purpose of disconnection is to separate and isolate a circuit or a device from the rest of the electrical installation in order to ensure the safety of personnel having to work on the electrical installation for maintenance or repair.
■ The circuit breaking must be omnipolar, i.e. the live conductors, including neutral (3), must be cut off (depending on country regulations).
■ It must be lockable or padlockable in "open" position in order to prevent any unintentional reclosing, at least in industrial environments.
■ It must be in compliance with a standard ensuring its suitability for isolation.

(3) With the exception of the PEN conductor which should never be cut off.

Circuit breaker panorama

Selection guide

Circuit breakers			
Type			***i* DPN**
			
Standard			IEC/EN 60898-1
Quality label			Country approval pictogram
Number of poles			1P+N, 3P+N
Add-on residual current devices (Vigi)			■
Auxiliaries for remote tripping and indication			■
Electrical characteristics			
Curves			B, C
Ratings (A)	In		1 to 40
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)	230/400
		DC	–
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)	–
		DC	–
Insulation voltage (V AC)	Ui		440
Rated impulse withstand voltage (kV)	Uimp		4
Limitation class 40 A (EN 60898)			3
Breaking capacity			
IEC/EN 60898 (A)	Icn	240/415 V - 230/400 V	4500
AC-Breaking capacity		**Ue (50/60 Hz)**	**1P+N, 3P+N**
Ratings (A)	In		1 to 40
IEC 60947-2 (kA)	Icu	12...60 V	–
		12...133 V	–
		100...133 V	–
		220...240 V	**6**
		380...415 V	–
		440 V	–
	Ics		75 % of Icu
DC-Breaking capacity		**Ue DC**	
IEC 60947-2 (kA)	Icu	12...60 V (1P)	–
		≤ 72 V (1P)	–
		≤ 125 V (2P)	–
		≤ 180 V (3P)	–
		≤ 250 V (4P)	–
	Ics		–
Other characteristics			
Suitable for industrial isolation according to IEC/EN 60947-2			–
Reference temperature IEC/EN 60947-2			–
Fault tripping indication			–
Positive contact indication			■
Fast closing			■
Degree of protection	IP	Device only	IP20
		Device in modular enclosure	IP40 Insulation class II
For more detail, see module			**CA901012**
Accessories			**CA907010**
Auxiliaries			**CA907008 and CA907010**
Add-on residual current devices (Vigi)			**CA902013**

Circuit breaker panorama (cont.)

	i DPN N	
		
	IEC/EN 60898-1	
	Country approval pictogram	
	1P+N, 3P, 3P+N	
	■	
	■	
	B, C, D	
	1 to 40	
AC (50/60 Hz)	230/400	
DC	–	
AC (50/60 Hz)	–	
DC	–	
	440	
	4	
	3	
240/415 V - 230/400 V	6000	
	1P+N	**3P, 3P+N**
	1 to 40	
12...60 V	–	–
12...133 V	–	–
100...133 V	–	–
220...240 V	**10**	**15**
380...415 V	–	**10**
440 V	–	–
	75 % of Icu	75 % of Icu
12...60 V (1P)	–	
⩽ 72 V (1P)	–	
⩽ 125 V (2P)	–	
⩽ 180 V (3P)	–	
⩽ 250 V (4P)	–	
	–	
	–	
	–	
	–	
	■	
	■	
	IP20	
	IP40 Insulation class II	
	CA901012	
	CA907010	
	CA907008 and CA907010	
	CA902013	

Circuit breaker panorama (cont.)

Selection guide

Circuit breakers

Type			iK60N		iC60N			
								
Standard			IEC/EN 60898-1		IEC/EN 60947-2, 60898-1			
Quality label			Country approval pictogram		Country approval pictogram			
Number of poles			1P, 1P+N	2, 3, 4P	1P, 1P+N		2, 3, 4P	
Add-on residual current devices (Vigi)			–		■			
Auxiliaries for remote tripping and indication			–		■			
Electrical characteristics								
Curves			B, C		B, C, D			
Ratings (A)	In		1 to 63		0.5 to 63			
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)	230/400		240/415, 440			
		DC	–		250			
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)	–		12			
		DC	–		12			
Insulation voltage (V AC)	Ui		400		500			
Rated impulse withstand voltage (kV)	Uimp		4		6			
Limitation class 40 A (EN 60898)			3		3			
Breaking capacity								
IEC/EN 60898 (A)	Icn	240/415 V - 230/400 V	6000	6000	6000		6000	
AC-Breaking capacity		**Ue (50/60 Hz)**	**1P, 1P+N**	**2, 3, 4P**	**1P, 1P+N**		**2, 3, 4P**	
Ratings (A)	In		1 to 63		0.5 to 4 A	6 to 63 A	0.5 to 4 A	6 to 63 A
IEC 60947-2 (kA)	Icu	12...60 V	–	–	**50**	**36**	–	–
		12...133 V	–	–	–	–	**50**	**36**
		100...133 V	–	–	**50**	**20**	–	–
		220...240 V	–	–	**50**	**10**	**50**	**20**
		380...415 V	–	–	–	–	**50**	**10**
		440 V	–	–	–	–	**25**	**6**
	Ics		–		100 % of Icu	75 % of Icu	100 % of Icu	75 % of Icu
DC-Breaking capacity		**Ue DC**						
IEC 60947-2 (kA)	Icu	12...60 V (1P)	–		**15**			
		≤ 72 V (1P)	–		**10**			
		≤ 125 V (2P)	–		**10**			
		≤ 180 V (3P)	–		**10**			
		≤ 250 V (4P)	–		**10**			
	Ics		–		100 % of Icu			
Other characteristics								
Suitable for industrial isolation according to IEC/EN 60947-2			–		■			
Reference temperature IEC/EN 60947-2			–		50°C			
Fault tripping indication			–		Visi-trip window			
Positive contact indication			–		■			
Fast closing			–		■			
Degree of protection	IP	Device only	IP20		IP20			
		Device in modular enclosure	IP40 Insulation class II		IP40 Insulation class II			
For more detail, see module			**CA901006 and CA901007**		**CA901002**			
Accessories			**–**		**CA907000 and CA907001**			
Auxiliaries			**–**		**CA907000 and CA907002**			
Add-on residual current devices (Vigi)			**–**		**CA902005**			

Circuit breaker panorama (cont.)

	iC60H				iC60L							
												
	IEC/EN 60947-2, 60898-1				IEC/EN 60947-2, 60898-1							
	Country approval pictogram				Country approval pictogram							
	1P, 1P+N		2, 3, 4P		1P				2, 3, 4P			
	■				■							
	■				■							
	B, C, D				B, C, K, Z							
	0.5 to 63				0.5 to 63							
AC (50/60 Hz)	240/415, 440				240/415, 440							
DC	250				250							
AC (50/60 Hz)	12				12							
DC	12				12							
	500				500							
	6				6							
	3				–							
240/415 V - 230/400 V	10000		10000		15000				15000			
	1P, 1P+N		**2, 3, 4P**		**1P**				**2, 3, 4P**			
	0.5 to 4 A	6 to 63 A	0.5 to 4 A	6 to 63 A	0.5 to 4 A	6 to 25 A	32/40 A	50/63 A	0.5 to 4 A	6 to 25 A	32/40 A	50/63 A
12...60 V	**70**	**42**	–	–	**100**	**70**	**70**	**70**	–	–	–	–
12...133 V	–	–	**70**	**42**	–	–	–	–	**100**	**70**	**70**	**70**
100...133 V	**70**	**30**	–	–	**100**	**50**	**36**	**30**	–	–	–	–
220...240 V	**70**	**15**	**70**	**30**	**100**	**25**	**20**	**15**	**100**	**50**	**36**	**30**
380...415 V	–	–	**70**	**15**	–	–	–	–	**100**	**25**	**20**	**15**
440 V	–	–	**50**	**10**	–	–	–	–	**70**	**20**	**15**	**10**
	100 % of Icu	50 % of Icu	100 % of Icu	50 % of Icu	100 % of Icu	50 % of Icu (1)	50 % of Icu	50 % of Icu	50 % of Icu	50 % of Icu (1)	50 % of Icu	50 % of Icu
12...60 V (1P)	**20**				**25**							
≤ 72 V (1P)	**15**				**20**							
≤ 125 V (2P)	**15**				**20**							
≤ 180 V (3P)	**15**				**20**							
≤ 250 V (4P)	**15**				**20**							
	100 % of Icu				100 % of Icu							
	■				■							
	50°C				50°C							
	Visi-trip window				Visi-trip window							
	■				■							
	■				■							
	IP20				IP20							
	IP40 Insulation class II				IP40 Insulation class II							
	CA901003				**CA901004**							
	CA907000 and CA907001				**CA907000 and CA907001**							
	CA907000 and CA907002				**CA907000 and CA907002**							
	CA902005				**CA902005**							

(1) 100 % of Icu for ratings 6 to 25 A under Ue 100 to 133 V AC Ph/Ph and Ue 12 to 60 V AC Ph/N.

Circuit breaker panorama (cont.)

Selection guide (cont.)

Circuit breakers						
Type			**C120N**		**C120H**	
						
Standard			IEC/EN 60898-1		IEC/EN 60898-1	
Quality label			Country approval pictogram		Country approval pictogram	
Number of poles			1P	2, 3, 4P	1P	2, 3, 4P
Add-on residual current devices (Vigi)			■		■	
Auxiliaries for remote tripping and indication			■		■	
Electrical characteristics						
Curves			B, C, D		B, C, D	
Ratings (A)	In		63 to 125		63 to 125	
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)	240/415, 440		240/415, 440	
		DC	125 per pole		125 per pole	
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)	12		12	
		DC	12		12	
Insulation voltage (V AC)	Ui		500		500	
Rated impulse withstand voltage (kV)	Uimp		6		6	
Breaking capacity						
IEC/EN 60898 (A)	Icn	230/400 V	10000	10000	15000	15000
AC-Breaking capacity		**Ue (50/60 Hz)**	**1P**	**2, 3, 4P**	**1P**	**2, 3, 4P**
Ratings (A)	In		63 to 125		63 to 125	
IEC 60947-2 (kA)	Icu	110...130 V	–	–	–	–
		12...130 V	**20**	–	**30**	–
		220...240 V	**10**	**20**	**15**	**30**
		380...415 V	**3** (1)	**10**	**4.5** (1)	**15**
		440 V	–	**6**	–	**10**
		500 V	–	–	–	–
	Ics		75 % of Icu		50 % of Icu	
DC-Breaking capacity		**Ue DC**				
IEC 60947-2 (kA)	Icu	12...125 V (1P)	**15**		**20**	
		≤ 144 V (1P)	**10**		**15**	
		≤ 250 V (2P)	**10**		**15**	
		≤ 375 V (3P)	**10**		**15**	
		≤ 500 V (4P)	**10**		**15**	
	Ics		100 % of Icu		100 % of Icu	
Other characteristics						
Suitable for industrial isolation according to IEC/EN 60947-2			■		■	
Reference temperature IEC/EN 60947-2			50°C		50°C	
Fault tripping indication			–		–	
Positive contact indication			■		■	
Fast closing			■		■	
Degree of protection	IP	Device only	IP20		IP20	
		Device in modular enclosure	IP40		IP40	
For more detail, see module			**CA901015**		**CA901016**	
Accessories			**CA907012 and CA907013**		**CA907012 and CA907013**	
Auxiliaries			**CA907008 and CA907013**		**CA907008 and CA907013**	
Earth leakage module (Vigi)			**CA902016**		**CA902016**	

(1) Breaking capacity under 1 pole with IT isolated neutral system (case of double fault).

Circuit breaker panorama (cont.)

	NG125a	NG125N		NG125H		NG125L	
							
	IEC/EN 60947-2	IEC/EN 60947-2		IEC/EN 60947-2		IEC/EN 60947-2	
	Country approval pictogram	Country approval pictogram		Country approval pictogram		Country approval pictogram	
	3, 4P	1P	2, 3P, 3P+N, 4P	1P	2, 3, 4P	1P	2, 3, 4P
	■	■		■		■	
	■	■		■		■	
	C	B, C, D		C		B, C, D	
	80 to 125	10 to 125		10 to 80		10 to 80	
AC (50/60 Hz)	240/415, 500	240/415, 500		240/415, 500		240/415, 500	
DC	125 per pole	125 per pole		125 per pole		125 per pole	
AC (50/60 Hz)	12	12		12		12	
DC	12	12		12		12	
	690	690		690		690	
	8	8		8		8	
230/400 V	–	–	–	–	–	–	–
	3, 4P	**1P**	**2, 3P, 3P+N, 4P**	**1P**	**2, 3, 4P**	**1P**	**2, 3, 4P**
	80 to 125	10 to 125		10 to 80		10 to 80	
110...130 V	–	**50**	–	**70**	–	**100**	–
12...130 V	–	–	–	–	–	–	–
220...240 V	–	**25**	**50**	**36**	**70**	**50**	**100**
380...415 V	**16**	**6** (1)	**25**	**9** (1)	**36**	**12.5** (1)	**50**
440 V	–	–	**20**	–	**30**	–	**40**
500 V	**8**	–	**10**	–	**12**	–	**15**
	75 % of Icu	75 % of Icu		75 % of Icu		75 % of Icu	
12...125 V (1P)	–	**25**		**36**		**50**	
⩽ 144 V (1P)	–	**20**		**25**		**36**	
⩽ 250 V (2P)	–	**20**		**25**		**36**	
⩽ 375 V (3P)	**20**	**20**		**25**		**36**	
⩽ 500 V (4P)	**20**	**20**		**25**		**36**	
	100 % of Icu	100 % of Icu		100 % of Icu		100 % of Icu	
	■	■		■		■	
	40°C	40°C		40°C		40°C	
	■ Toggle position ■ Red mechanical indicator	■ Toggle position ■ Red mechanical indicator		■ Toggle position ■ Red mechanical indicator		■ Toggle position ■ Red mechanical indicator	
	■	■		■		■	
	■	■		■		■	
	IP20	IP20		IP20		IP20	
	IP40	IP40		IP40		IP40	
	CM901027	**CM901028**		**CM901029**		**CM901030**	
	CM907004 and CM907006	**CM907004 and CM907006**		**CM907004 and CM907006**		**CM907004 and CM907006**	
	CM907004 and CM907005	**CM907004 and CM907005**		**CM907004 and CM907005**		**CM907004 and CM907005**	
	CM902008	**CM902008**		**CM902008**		**CM902008**	

(1) Breaking capacity under 1 pole with IT isolated neutral system (case of double fault).

Circuit breaker panorama (cont.)

Selection guide (cont.)

Circuit breakers				
Type			**iC60a**	
				
Standard			IEC/EN 60947-2, 60898-1	
Quality label			Country approval pictogram	
Number of poles			1P	2, 3, 4P
Add-on residual current devices (Vigi)			■	
Auxiliaries for remote tripping and indication			■	
Electrical characteristics				
Curves			C	
Ratings (A)	In		1 to 63	
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)	240/415	
		DC	–	
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)	–	
		DC	–	
Insulation voltage (V AC)	Ui		500	
Rated impulse withstand voltage (kV)	Uimp		6	
Limitation class 40 A (EN 60898)			3	
Breaking capacity				
IEC/EN 60898 (A)	Icn	240/415 V - 230/400 V	4500	
AC-Breaking capacity		**Ue (50/60 Hz)**	**1P**	**2, 3, 4P**
Ratings (A)	In		1 to 63	
IEC 60947-2 (kA)	Icu	12...60 V	–	
		12...133 V	–	
		100...133 V	–	
		220...240 V	**6**	**10**
		380...415 V	–	**6**
		440 V	–	
	Ics		100 % of Icu	
DC-Breaking capacity		**Ue DC**		
IEC 60947-2 (kA)	Icu	12...48 V (1P)	–	
		≤ 72 V (1P)	–	
		≤ 125 V (2P)	–	
		≤ 180 V (3P)	–	
		≤ 250 V (4P)	–	
	Ics		–	
Other characteristics				
Suitable for industrial isolation according to IEC/EN 60947-2			■	
Reference temperature IEC/EN 60947-2			50°C	
Fault tripping indication			Visi-trip window	
Positive contact indication			■	
Fast closing			■	
Degree of protection	IP	Device only	IP20	
		Device in modular enclosure	IP40 Insulation class II	
For more detail, see module			**CA901010**	
Accessories			**CA907000 and CA907001**	
Auxiliaries			**CA907000 and CA907002**	
Add-on residual current devices (Vigi)			**CA902005**	

Circuit breaker panorama (cont.)

Selection guide (cont.)

Instantaneous circuit breakers (ICB)					
Type			**iC60LMA**		**NG125LMA**
					
Standard			IEC/EN 60947-2		IEC/EN 60947-2
Quality label			Country approval pictogram		Country approval pictogram
Number of poles			2, 3P		2, 3P
Add-on residual current devices (Vigi)			■		■
Auxiliaries for remote tripping and indication			■		■
Electrical characteristics					
Curves			MA (Ii = 12 In ± 20 %)		MA (Ii = 12 In ± 20 %)
Ratings (A)	In		1.6 to 40		4 to 80
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)	440		500
		DC	–		–
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)	12		12
		DC	–		–
Insulation voltage (V AC)	Ui		500		690
Rated impulse withstand voltage (kV)	Uimp		6		8
Breaking capacity					
IEC/EN 60898 (A)	Icn	230/400 V	–		–
AC-Breaking capacity		**Ue (50/60 Hz)**	**2, 3P**		**2, 3P**
Ratings (A)	In		1.6 to 16 A	25 to 40 A	4 to 80
IEC 60947-2 (kA)	Icu	12...60 V	–	–	–
		12...133 V	–	–	–
		100...133 V	–	–	–
		110...130 V	–	–	–
		130 V	–	–	–
		220...240 V	**40**	**30**	**100**
		230/400 V	–	–	–
		380...415 V	**20**	**15**	**50**
		400/415 V	–	–	–
		440 V	**15**	**10**	**40**
		500 V	–	–	**15**
	Ics		50 % of Icu	50 % of Icu	75 % of Icu
Other characteristics					
Suitable for industrial isolation according to IEC/EN 60947-2			■		■
Reference temperature IEC/EN 60947-2			50°C		40°C
Fault tripping indication			Visi-trip window		■ Toggle position ■ Red mechanical indicator
Positive contact indication			■		■
Fast closing			■		■
Degree of protection	IP	Device only	IP20		IP20
		Device in modular enclosure	IP40 Insulation class II		IP40
For more detail, see module			**CA901005**		**CM901031**
Accessories			**CA907000 and CA907001**		**CM907004 and CM907006**
Auxiliaries			**CA907000 and CA907002**		**CM907004 and CM907005**
Add-on residual current devices (Vigi)			**CA902005**		**CM902008**

Circuit breaker panorama (cont.)

Selection guide (cont.)

P25M circuit breakers

Type			P25M								
											
Standard			IEC 60947-2 and IEC 60947-4-1								
Quality label			CEBEC, DEMCO, NEMKO, SEMKO, FI								
Number of poles			3P								
Add-on residual current devices (Vigi)			–								
Auxiliaries for remote tripping and indication			■								
Electrical characteristics											
Magnetic tripping			12 In (± 20 %)								
Ratings (A)	In		0.16 to 25 (63 A with limiter block)								
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)	690								
		DC	–								
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)	230								
		DC	–								
Insulation voltage (V AC)	Ui		690								
Rated impulse withstand voltage (kV)	Uimp		6								
Breaking capacity											
AC-Breaking capacity		**Ue (50/60 Hz)**	**3P**								
Ratings (A)	In		0.16 to 1.6	2.5	4	6.3	10	14	18	23	25
IEC 60947-2 (kA)	Icu	230...240 V	**Unlimited**							**50**	**50**
	Ics		–							100 % of Icu	
	Icu	400...415 V	**Unlimited**					**15**	**15**	**15**	**15**
	Ics		–					50 % of Icu		40 % of Icu	
	Icu	440 V	**Unlimited**			**50**	**15**	**8**	**8**	**6**	**6**
	Ics		–			100 % of Icu		50 % of Icu			
	Icu	500 V	**Unlimited**			**50**	**10**	**6**	**6**	**4**	**4**
	Ics		–			100 % of Icu		75 % of Icu			
	Icu	690 V	**Unlimited**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
	Ics		–	75 % of Icu							
Other characteristics											
Suitable for industrial isolation according to IEC/EN 60947-2			■								
Fault tripping indication			Toggle position								
Positive contact indication			–								
Fast closing			–								
Degree of protection	IP	Device only	IP20								
		Device in modular enclosure	IP40								
For more detail, see module			**CM901026**								
Accessories			**CM901026**								
Auxiliaries			**CM901026**								
Add-on residual current devices (Vigi)			**–**								

Circuit breaker panorama (cont.)

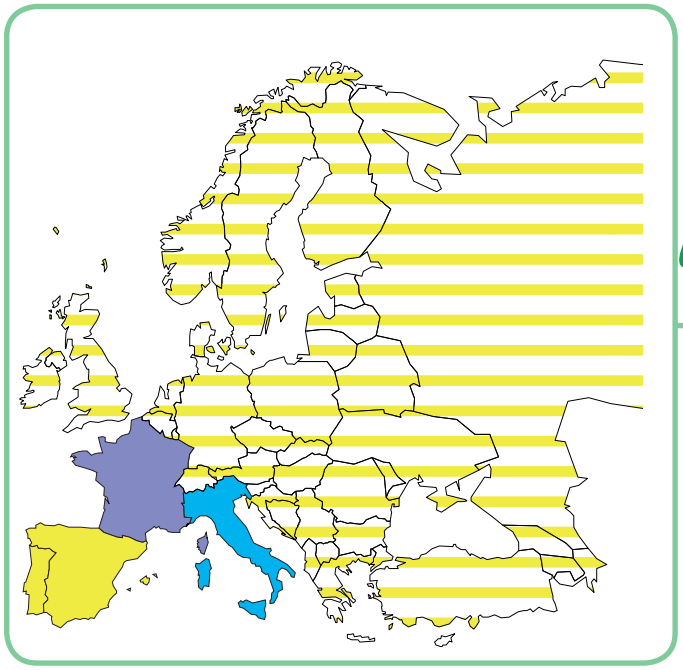
Selection guide (cont.)

Circuit breakers						
Type					**xC60**	
						
Standard					IEC/EN 60947-2, 60898-1	
Quality label					Country approval pictogram	
Number of poles					1P	2, 3, 4P
Add-on residual current devices (Vigi)					■	
Auxiliaries for remote tripping and indication					■	
Electrical characteristics						
Curves					B, C, D	
Ratings (A)	In				B curve: 6 to 63 - C curve: 0.5 to 63 - D curve: 1 to 63	
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)			240/415	
		DC			–	
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)			–	
		DC			–	
Insulation voltage (V AC)	Ui				500	
Rated impulse withstand voltage (kV)	Uimp				6	
Limitation class up to 40 A (EN 60898)					–	
Breaking capacity						
AC-Breaking capacity		**Ue (50/60 Hz)**			**1P**	**2, 3, 4P**
Ratings (A)	In				B curve: 6 to 63 - C curve: 0.5 to 63 - D curve: 1 to 63	
IEC 60947-2 (kA)	Icu	12...133 V			–	
		220...240 V	≤ 40 A	Curves B, C, D	**15**	–
			50-63 A	Curves B, C	**10**	–
			50-63 A	Curve D	**6**	–
		380...415 V	≤ 40 A	Curves B, C, D	–	**15**
			50-63 A	Curves B, C	–	**10**
			50-63 A	Curve D	–	**6**
		440 V			–	
	Ics		≤ 40 A	Curves B, C, D	50 % Icu	
			50-63 A	Curves B, C	75 % Icu	
			50-63 A	Curve D	100 % Icu	
IEC/EN 60898 (A)	Icn	240/415 V - 230/400 V			10,000	
DC-Breaking capacity		**Ue DC**				
IEC 60947-2 (kA)	Icu	12...48 V (1P)			**15**	
		60 V (1P)			**6**	
		100...125 V	(2P in series)		**6**	
			(3P in series)		**15**	
		220...250 V	(4P in series)		**6**	
	Ics				100 % Icu	
Other characteristics						
Suitable for industrial isolation according to IEC/EN 60947-2					■	
Reference temperature IEC/EN 60947-2					50°C	
Fault tripping indication					■	
Positive contact indication					■	
Fast closing					■	
Degree of protection	IP	Device only			IP20	
		Device in modular enclosure			IP40 Insulation class II	
For more detail, see module					**CA901029**	
Accessories					**CA907000 and CA907001**	
Auxiliaries					**CA907000 and CA907002**	
Add-on residual current devices (Vigi)					**CA902029**	

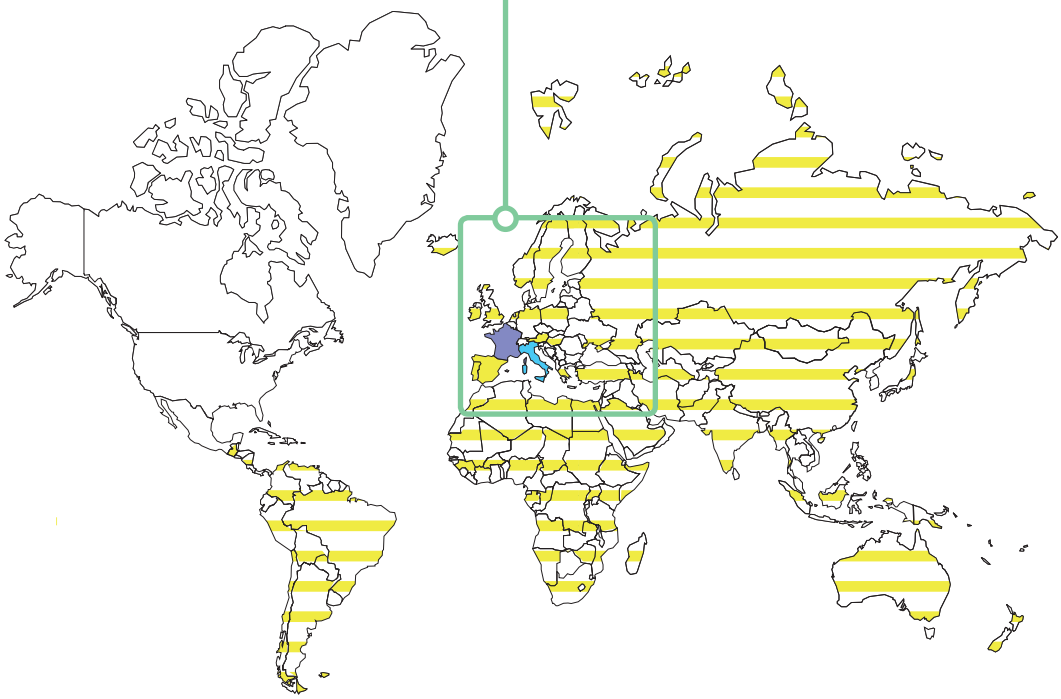
Circuit breakers
Clario, Prodis, Librio
Contents

The Schneider Electric circuit breaker range comprises various offers (Clario, Prodis, Librio) so as to be as competitive as possible in each country, taking into account the specific features of each market:
- installation customs
- price
- approval by local organizations.

Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.



i DPN circuit breakers
Clario

DB123854

Country approval pictogram

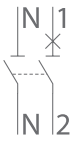
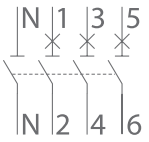
IEC/EN 60898-1

■ *i* DPN are circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for isolation according to IEC/EN 609898-1 standard.

PB107139-32

DB406091

Catalogue numbers

i DPN circuit breakers				
	4500			
Type	**1P+N**		**3P+N**	
	DB406477 		DB406479 	
Auxiliaries	**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**	
Vigi	**Module CA902013**		**Module CA902013**	
Rating (In)	**B curve**	**C curve**	**B curve**	**C curve**
1 A	-	**A9N21542**	-	-
2 A	-	**A9N21543**	-	-
3 A	-	**A9N21544**	-	-
6 A	**A9N21535**	**A9N21545**	A9N17489*	A9N17525*
10 A	**A9N21536**	**A9N21546**	A9N17490*	A9N17526*
13 A	**A9N21723**	**A9N21724**	**A9N21731**	**A9N21732**
16 A	**A9N21537**	**A9N21547**	A9N17491*	A9N17527*
20 A	**A9N21538**	**A9N21548**	A9N17492*	A9N17528*
25 A	**A9N21539**	**A9N21549**	A9N17493*	A9N17529*
32 A	**A9N21540**	**A9N21550**	A9N17494	A9N17530*
40 A	**A9N21541**	**A9N21551**	A9N17495*	A9N17531*
Width in 9-mm modules	2		6	
Accessories	**Module CA907010**			

(*) Librio catalogue number, IMQ approval

i DPN F circuit breakers
Clario (cont.)

DB123400

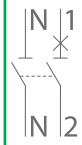
Country approval pictogram

IEC/EN 60947-2
IEC/EN 60898-1

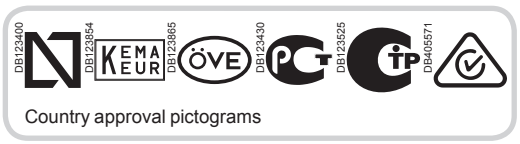
■ *i* DPN F are circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for isolation according to IEC/EN 609898-1 standard.

PB107140-32

Catalogue numbers

i DPN F circuit breakers	6000
Type	**1P+N**
	DB406477 
Auxiliaries	**Modules CA907008 and CA907010**
Vigi	**Module CA902013**
Rating (In)	**C curve**
1 A	**A9N21638**
2 A	**A9N21641**
3 A	**A9N21642**
6 A	**A9N21643**
10 A	**A9N21644**
16 A	**A9N21645**
20 A	**A9N21646**
25 A	**A9N21647**
32 A	**A9N21648**
40 A	**A9N21649**
Width in 9-mm modules	2
Accessories	**Module CA907010**

i DPN N circuit breakers
Clario (cont.)


Country approval pictograms

IEC/EN 60898-1
IEC/EN 60947-2 for 1P+N C curve products

- *i* DPN N are circuit breakers which combine the following functions:
  - circuit protection against short-circuit currents,
  - circuit protection against overload currents,
  - suitable for isolation according to IEC/EN 609898-1 standard.

Offer selection see page 14

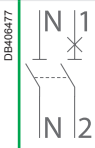
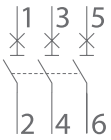
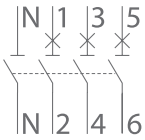
Clario


PB107141-32

PB107142-32

PB107143-32

Catalogue numbers

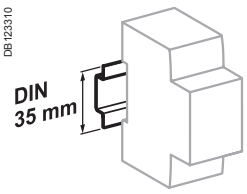
i DPN N circuit breakers								
	6000							
Type	**1P+N**			**3P**		**3P+N**		
	 DB406477			 DB406478		 DB406479		
Auxiliaries	**Modules CA907008 and CA907010**			**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**		
Vigi	**Module CA902013**			**Module CA902013**		**Module CA902013**		
Rating (In)	**B curve**	**C curve**	**D curve**	**C curve**	**D curve**	**B curve**	**C curve**	**D curve**
1 A	-	**A9N21552**	-	-	-	-	-	-
2 A	-	**A9N21553**	-	-	-	-	-	-
3 A	-	**A9N21554**	-	-	-	-	-	-
4 A	**A9N17515**	**A9N21722**	-	-	-	-	-	-
6 A	**A9N17516**	**A9N21555**	**A9N21565**	**A9N21575**	**A9N21585**	A9N17553*	**A9N21595**	**A9N21605**
10 A	**A9N17517**	**A9N21556**	**A9N21566**	**A9N21576**	**A9N21586**	A9N17554*	**A9N21596**	**A9N21606**
13 A	**A9N17518**	**A9N21725**	**A9N21726**	**A9N21727**	**A9N21728**	**A9N17581**	**A9N21729**	**A9N21730**
16 A	**A9N17519**	**A9N21557**	**A9N21567**	**A9N21577**	**A9N21587**	A9N17555*	**A9N21597**	**A9N21607**
20 A	**A9N17520**	**A9N21558**	**A9N21568**	**A9N21578**	**A9N21588**	A9N17556*	**A9N21598**	**A9N21608**
25 A	**A9N17521**	**A9N21559**	**A9N21569**	**A9N21579**	**A9N21589**	A9N17557*	**A9N21599**	**A9N21609**
32 A	**A9N17522**	**A9N21560**	**A9N21570**	**A9N21580**	**A9N21590**	A9N17558*	**A9N21600**	**A9N21610**
40 A	**A9N17523**	**A9N21561**	**A9N21571**	**A9N21581**	**A9N21591**	A9N17559*	**A9N21601**	**A9N21611**
Width in 9-mm modules	2			6		6		
Accessories	**Module CA907010**							

(*) Librio catalogue number, IMQ approval

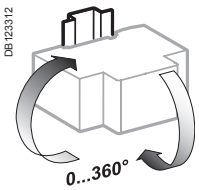
i DPN circuit breakers
Clario (cont.)

Technical data

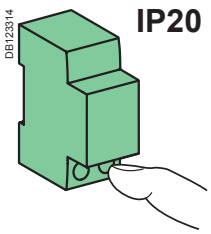
Main characteristics			*i* DPN	*i* DPN F	*i* DPN N
Insulation voltage (Ui)	Phase-to-neutral		400 V	400 V	400 V
	Phase-to-phase		440 V	-	440 V
Voltage rating (Ue)	Phase-to-neutral		230...240 V	230...240 V	230...240 V
	Phase-to-phase		400...415 V	-	400...415 V
Magnetic tripping	B curve	3 to 5 In	■	-	■
	C curve	5 to 10 In	■	■	■
	D curve	10 to 14 In	-	-	■
Operating frequency			50 Hz	50 Hz	50 Hz
According to IEC/EN 60898-1					
Limitation class			3	3	3
Rated breaking capacity (Icn)			4500 A	6000 A	6000 A
Service breaking capacity (Ics)			100 % Icn	100 % Icn	100 % Icn
Rated breaking and making capacity on a single pole (Icn1)			Icn1 = Icn	Icn1 = Icn	Icn1 = Icn
According to IEC 60947-2					
Rated impulse withstand voltage (Uimp)			-	4 kV	4 kV
Breaking capacity (Icu)			-	6 kA	10 kA
Service breaking capacity (Ics)			-	75 % Icu	75 % Icu
Pollution degree			-	3	3
Additional characteristics					
Degree of protection (IEC 60529)	Device only		IP20		
	Device in modular enclosure		IP40 Insulation class II		
Endurance (O-C)	Electrical	≤ 20 A	20000 cycles		
		≥ 25 A	10000 cycles		
	Mechanical		20000 cycles		
Operating temperature			-25°C to +70°C		
Storage temperature			-40°C to +70°C		
Tropicalization (IEC 60068-1)			Treatment 2 (relative humidity of 95 % at 55°C)		
Neutral opening and closing shifted relative to phases			No surge upon operation of the device		

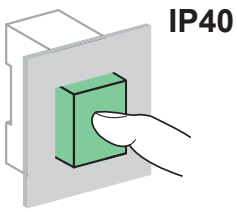


Clip on DIN rail 35 mm.

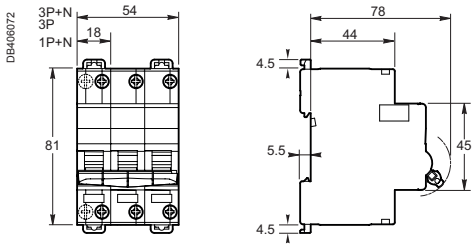


Indifferent position of installation.





Dimensions (mm)



Weight (g)

Circuit breakers	
Type	***i* DPN, *i* DPN F, *i* DPN N**
1P+N	115
3P	310
3P+N	322

DT40K circuit breakers
Prodis

DB106604
Country approval pictogram

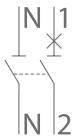
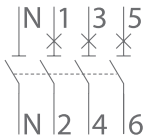
IEC/EN 60947-2
IEC/EN 60898-1

- DT40K are circuit breakers which combine the following functions:
  - circuit protection against short-circuit currents,
  - circuit protection against overload currents,
  - suitable for isolation according to IEC/EN 609898-1 standard.

PB113613-32

PB113614-32

Catalogue numbers

DT40K circuit breakers		
	4500	
Type	**1P+N**	**3P+N**
	DB406477 	DB406479 
Auxiliaries	**Without auxiliary**	**Without auxiliary**
Vigi	**Without Vigi**	**Without Vigi**
Rating (In)	**C curve**	**C curve**
2 A	**A9N21101**	-
6 A	**A9N21102**	-
10 A	**A9N21103**	**A9N21113**
16 A	**A9N21104**	**A9N21114**
20 A	**A9N21105**	**A9N21115**
25 A	**A9N21106**	**A9N21116**
32 A	**A9N21107**	**A9N21117**
40 A	**A9N21108**	**A9N21118**
Width in 9-mm modules	2	6
Accessories	**Module CA907010**	

DT40 circuit breakers
Prodis (cont.)

DB106604

Country approval pictogram

IEC/EN 60947-2
IEC/EN 60898-1

- DT40 and DT60 are circuit breakers which combine the following functions:
  - circuit protection against short-circuit currents,
  - circuit protection against overload currents,
  - suitable for isolation according to IEC/EN 609898-1 standard.

Offer selection see page 14

Prodis

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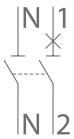
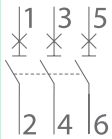
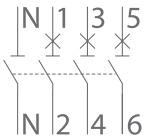
PB107170-32

PB107171-32

PB107172-32

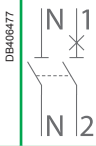
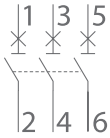
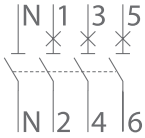
Catalogue numbers

DT40 circuit breakers

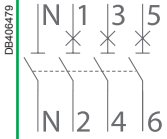
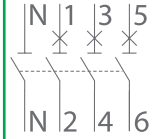
	4500					
Type	**1P+N**		**3P**		**3P+N**	
	DB406477 		DB406478 		DB406479 	
Auxiliaries	**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**	
Vigi	**Module CA902013**		**Module CA902013**		**Module CA902013**	
Rating (In)	**B curve**	**C curve**	**C curve**	**D curve**	**C curve**	**D curve**
1 A	-	**A9N21019**	-	-	-	-
2 A	-	**A9N21020**	-	-	-	-
3 A	-	**A9N21021**	-	-	-	-
4 A	-	**A9N21022**	-	-	-	-
6 A	**A9N21009**	**A9N21023**	**A9N21043**	**A9N21053**	**A9N21063**	**A9N21073**
10 A	**A9N21010**	**A9N21024**	**A9N21044**	**A9N21054**	**A9N21064**	**A9N21074**
16 A	**A9N21011**	**A9N21025**	**A9N21045**	**A9N21055**	**A9N21065**	**A9N21075**
20 A	**A9N21012**	**A9N21026**	**A9N21046**	**A9N21056**	**A9N21066**	**A9N21076**
25 A	**A9N21013**	**A9N21027**	**A9N21047**	**A9N21057**	**A9N21067**	**A9N21077**
32 A	**A9N21014**	**A9N21028**	**A9N21048**	**A9N21058**	**A9N21068**	**A9N21078**
40 A	**A9N21015**	**A9N21029**	**A9N21049**	**A9N21059**	**A9N21069**	**A9N21079**
Width in 9-mm modules	2		6		6	
Accessories	**Module CA907010**					

DT40N, DT60 circuit breakers
Prodis (cont.)

Catalogue numbers

DT40N circuit breakers						
	6000					
Type	**1P+N**		**3P**		**3P+N**	
						
Auxiliaries	**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**	
Vigi	**Module CA902013**		**Module CA902013**		**Module CA902013**	
Rating (In)	**C curve**	**D curve**	**C curve**	**D curve**	**C curve**	**D curve**
1 A	**A9N21360**	**A9N21371**	-		-	-
2 A	**A9N21361**	**A9N21372**	-		-	-
3 A	**A9N21362**	-	-		-	-
4 A	**A9N21363**	**A9N21373**	-		-	-
6 A	**A9N21364**	**A9N21374**	**A9N21384**	**A9N21394**	**A9N21404**	**A9N21414**
10 A	**A9N21365**	**A9N21375**	**A9N21385**	**A9N21395**	**A9N21405**	**A9N21415**
16 A	**A9N21366**	**A9N21376**	**A9N21386**	**A9N21396**	**A9N21406**	**A9N21416**
20 A	**A9N21367**	**A9N21377**	**A9N21387**	**A9N21397**	**A9N21407**	**A9N21417**
25 A	**A9N21368**	**A9N21378**	**A9N21388**	**A9N21398**	**A9N21408**	**A9N21418**
32 A	**A9N21369**	**A9N21379**	**A9N21389**	**A9N21399**	**A9N21409**	**A9N21419**
40 A	**A9N21370**	**A9N21380**	**A9N21390**	**A9N21400**	**A9N21410**	**A9N21420**
Width in 9-mm modules	2		6		6	
Accessories	**Module CA907010**					

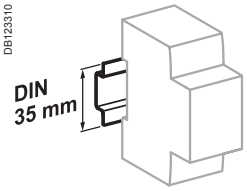
Catalogue numbers

DT60 circuit breakers		
	DT60N 6000	DT60H 10000
Type	**3P+N**	**3P+N**
		
Auxiliaries	**Modules CA907008 and CA907010**	**Modules CA907008 and CA907010**
Vigi	**Module CA902013**	**Module CA902013**
Rating (In)	**C curve**	**C curve**
40 A	**A9N21030**	**A9N21032**
63 A	**A9N21031**	-
Width in 9-mm modules	8	8
Accessories	**Module CA907010 and CA907011**	

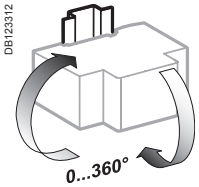
DT40, DT60 circuit breakers
Prodis (cont.)

Technical data

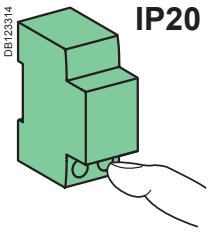
Main characteristics			DT40K	DT40	DT40N	DT60N	DT60H
Insulation voltage (Ui)	Phase-to-neutral		400 V	400 V	400 V	500 V	500 V
	Phase-to-phase		440 V	440 V	440 V	500 V	500 V
Voltage rating (Ue)	Phase-to-neutral		230...240 V	230...240 V	230...240 V	230...240 V	230...240 V
	Phase-to-phase		400...415 V	400...415 V	400...415 V	400...415 V	400...415 V
Magnetic tripping	B curve	3 to 5 In	-	■	■	-	-
	C curve	5 to 10 In	■	■	■	■	■
	D curve	10 to 14 In	-	■	■	-	-
Operating frequency			50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
According to IEC/EN 60898-1							
Limitation class			3	3	3		
Rated breaking capacity (Icn)			4500 A	4500 A	6000 A	6000 A	10000 A
Service breaking capacity (Ics)			100 % Icn	100 % Icn	100 % Icn	100 % Icn	75 % Icn
Rated breaking and making capacity on a single pole (Icn1)			Icn1 = Icn	Icn1 = Icn	Icn1 = Icn	Icn1 = Icn	Icn1 = Icn
According to IEC 60947-2							
Rated impulse withstand voltage (Uimp)			4 kV	4 kV	4 kV	6 kV	6 kV
Breaking capacity (Icu)			4.5 kA	6 kA	10 kA	10 kA	15 kA
Service breaking capacity (Ics)			75 % Icu	75 % Icu	75 % Icu	75 % Icu	50 % Icu
Pollution degree			3			3	
Additional characteristics							
Degree of protection (IEC 60529)	Device only		IP20			IP20	
	Device in modular enclosure		IP40 Insulation class II			IP40 Insulation class II	
Endurance (O-C)	Electrical	⩽ 20 A	20000 cycles			-	-
		⩾ 25 A	10000 cycles			10000 cycles	10000 cycles
	Mechanical		20000 cycles			20000 cycles	20000 cycles
Operating temperature			-25°C to +70°C			-25°C to +70°C	-25°C to +70°C
Storage temperature			-40°C to +70°C			-40°C to +70°C	-40°C to +70°C
Tropicalization (IEC 60068-1)			Treatment 2 (relative humidity of 95 % at 55°C)				
Neutral opening and closing shifted relative to phases			No surge upon operation of the device				

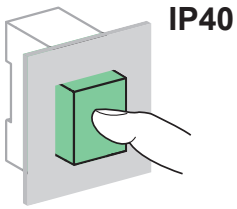


Clip on DIN rail 35 mm.

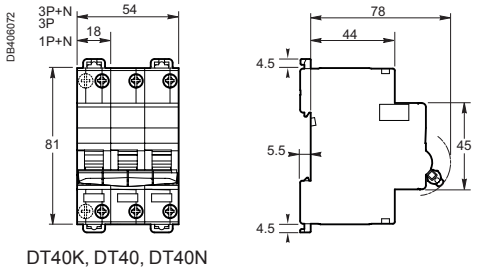


Indifferent position of installation.

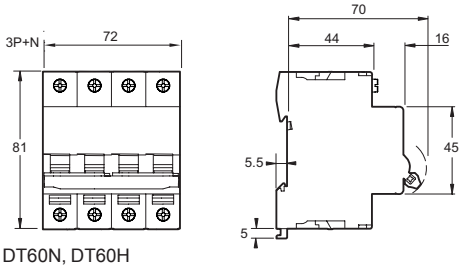




Dimensions (mm)



DT40K, DT40, DT40N



DT60N, DT60H

Weight (g)

Circuit breakers			
Type	**DT40K**	**DT40, DT40N**	**DT60N, DT60H**
1P+N	115	115	-
3P	-	310	-
3P+N	322	322	440

C40a circuit breakers
Librio

DB122858

Country approval pictogram

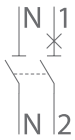
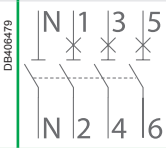
IEC/EN 60898-1

- C40a are circuit breakers which combine the following functions:
  - circuit protection against short-circuit currents,
  - circuit protection against overload currents,
  - suitable for isolation according to IEC/EN 609898-1 standard.

PB107900-32

PB107902-32

Catalogue numbers

C40a circuit breakers				
	4500			
Type	**1P+N**		**3P+N**	
	DB406477 		DB406479 	
Auxiliaries	**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**	
Vigi	**Module CA902013**		**Module CA902013**	
Rating (In)	**B curve**	**C curve**	**B curve**	**C curve**
1 A	-	A9N17503	-	-
2 A	-	A9N17504	-	-
3 A	-	A9N17505	-	-
4 A	-	A9N17506	-	-
6 A	A9N17475	A9N17507	A9N17489	A9N17525
10 A	A9N17476	A9N17508	A9N17490	A9N17526
16 A	A9N17477	A9N17509	A9N17491	A9N17527
20 A	A9N17478	A9N17510	A9N17492	A9N17528
25 A	A9N17479	A9N17511	A9N17493	A9N17529
32 A	A9N17480	A9N17512	A9N17494	A9N17530
40 A	A9N17481	A9N17513	A9N17495	A9N17531
Width in 9-mm modules	2		6	
Accessories	**Module CA907010**			

C40N circuit breakers
Librio (cont.)

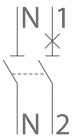
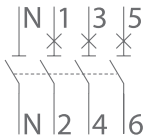
PB107901-32

PB107903-32

IEC/EN 60898-1

■ C40N are circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for isolation according to IEC/EN 609898-1 standard.

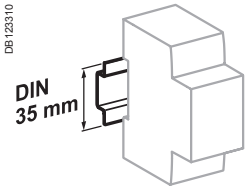
Catalogue numbers

C40N circuit breakers				
	6000			
Type	**1P+N**		**3P+N**	
	DB123389 		DB123661 	
Auxiliaries	**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**	
Vigi	**Module CA902013**		**Module CA902013**	
Rating (In)	**B curve**	**C curve**	**B curve**	**C curve**
1 A	-	**A9N17567**	-	-
2 A	-	**A9N17568**	-	-
3 A	-	**A9N17569**	-	-
4 A	-	**A9N17570**	-	-
6 A	**A9N17539**	**A9N17571**	**A9N17553**	**A9N17589**
10 A	**A9N17540**	**A9N17572**	**A9N17554**	**A9N17590**
16 A	**A9N17541**	**A9N17573**	**A9N17555**	**A9N17591**
20 A	**A9N17542**	**A9N17574**	**A9N17556**	**A9N17592**
25 A	**A9N17543**	**A9N17575**	**A9N17557**	**A9N17593**
32 A	**A9N17544**	**A9N17576**	**A9N17558**	**A9N17594**
40 A	**A9N17545**	**A9N17577**	**A9N17559**	**A9N17595**
Width in 9-mm modules	2		6	
Accessories	**Module CA907010**			

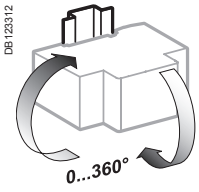
C40 circuit breakers
Librio (cont.)

Technical data

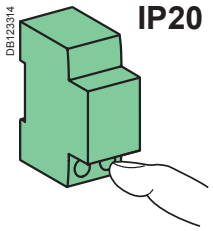
Main characteristics			C40a	C40N
Insulation voltage (Ui)	Phase-to-neutral		400 V	400 V
	Phase-to-phase		440 V	440 V
Voltage rating (Ue)	Phase-to-neutral		230 V	230 V
	Phase-to-phase		400 V	400 V
Magnetic tripping	B curve	3 to 5 In	■	■
	C curve	5 to 10 In	■	■
Operating frequency			50 Hz	50 Hz
According to IEC/EN 60898-1				
Limitation class			3	3
Rated breaking capacity (Icn)			4500 A	6000 A
Service breaking capacity (Ics)			100 % Icn	100 % Icn
Rated breaking and making capacity on a single pole (Icn1)			Icn1 = Icn	Icn1 = Icn
Additional characteristics				
Degree of protection (IEC 60529)	Device only		IP20	
	Device in modular enclosure		IP40 Insulation class II	
Endurance (O-C)	Electrical	⩽ 20 A	20000 cycles	
		⩾ 25 A	10000 cycles	
	Mechanical		20000 cycles	
Operating temperature			-25°C to +70°C	
Storage temperature			-40°C to +70°C	
Tropicalization (IEC 60068-1)			Treatment 2 (relative humidity of 95 % at 55°C)	
Neutral opening and closing shifted relative to phases			No surge upon operation of the device	

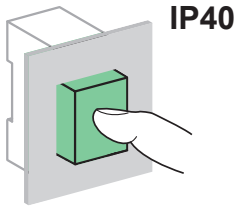


Clip on DIN rail 35 mm.

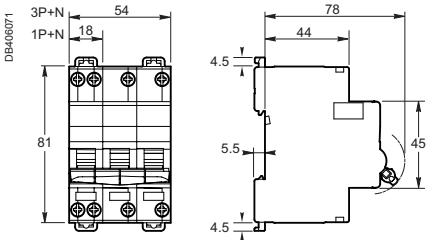


Indifferent position of installation.





Dimensions (mm)



Weight (g)

Circuit breakers	
Type	**C40a, C40N**
1P+N	115
3P+N	322

Circuit breakers
Clario, Prodis, Librio

■ Reinforced cable pull-out strength: serrated terminals

■ Automatic cable guiding in the correct position: terminals with guard

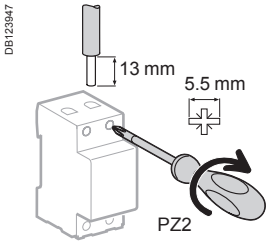
■ Assembly and disassembly with comb busbar in place by operating toggle latches at the top and bottom of the products

■ Where there is a comb tooth, the connection of cables of cross section 16 mm² remains possible

Markings
■ Area for 4 marking clips alongside the downstream terminal
■ Area for marking by 12 mm high label on the front panel

Positive contact indication
■ A green strip on the toggle guarantees opening of all the poles in safety conditions (padlocking possible) for work to be carried out on live parts

Connection



Rating	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
	DB122945	DB122946	
DT40, *i* DPN, C40	2 N.m	0.75 to 16 mm²	0.33 to 10 mm²
DT60	3.5 N.m	0.5 to 35 mm²	0.5 to 25 mm²

■ Connection by comb busbar or cables (as per EN 50027).

iC60a circuit breakers (curve C)

Country approval pictograms

IEC/EN 60947-2
IEC/EN 60898-1

■ iC60a circuit breakers are multi-standard circuit breakers which combine the following functions:
- □ circuit protection against short-circuit currents,
- □ circuit protection against overload currents,
- □ suitable for industrial isolation according to IEC/EN 60947-2, standard.
- □ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz				
Breaking capacity (Icu) according to IEC/EN 60947-2				**Service breaking capacity (Ics)**
		Voltage (Ue)		
Ph/Ph (2P, 3P, 4P)		**220 to 240 V**	**380 to 415 V**	
Ph/N (1P)			**220 to 240 V**	
Rating (In)	1 to 63 A	10 kA	6 kA	100 % of Icu
Breaking capacity (Icn) according to IEC/EN 60898-1				
		Voltage (Ue)		
Ph/Ph		**400 V**		
Ph/N		**230 V**		
Rating (In)	1 to 63 A	4500 A		

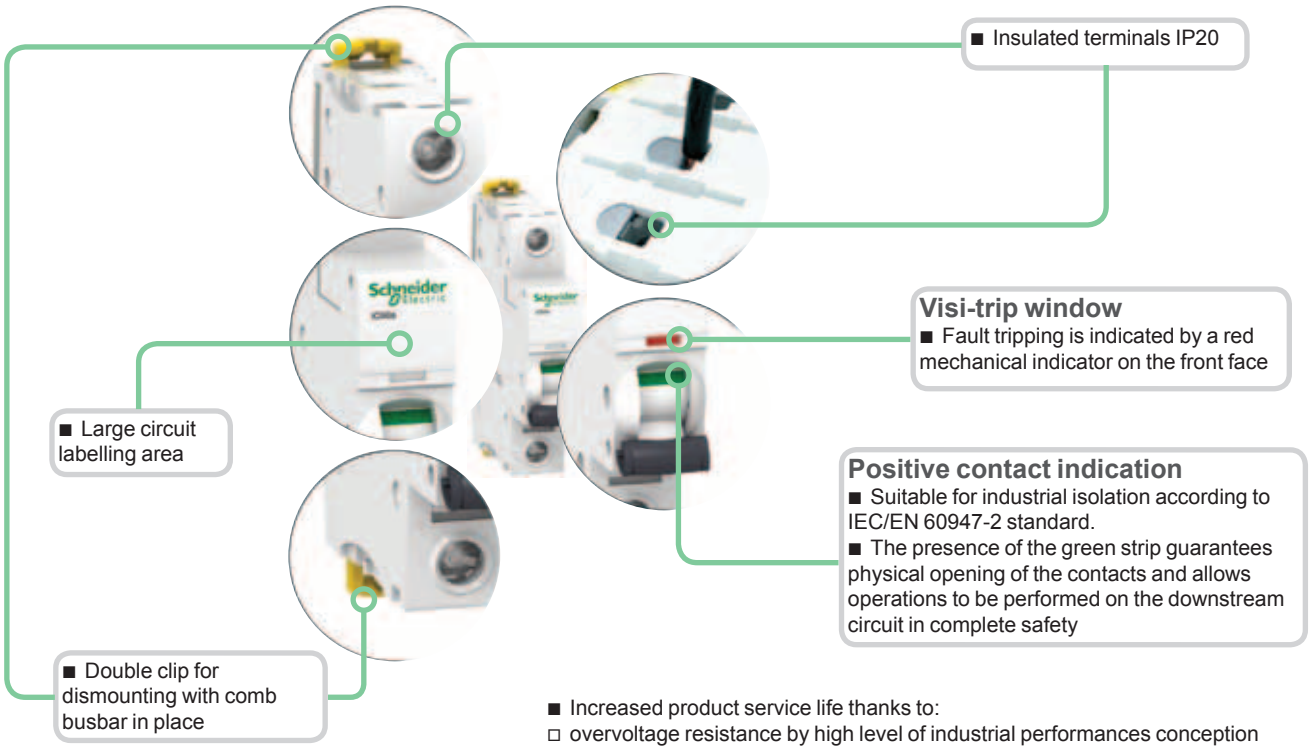
Catalogue numbers

iC60a circuit breaker			
Type		**1P**	**2P**
			
Auxiliaries		**Remote tripping and indication, module CA907000 and CA907002**	**Remote tripping and indication, module CA907000 and CA907002**
Vigi iC60		**Vigi iC60 add-on residual current device, module CA902005**	**Vigi iC60 add-on residual current device, module CA902005**
Rating (In)	**Quality label** (1)	**Curve**	**Curve**
		C	**C**
1 A		**A9F64101**	**A9F64201**
2 A		**A9F64102**	**A9F64202**
3 A		**A9F64103**	**A9F64203**
4 A		**A9F64104**	**A9F64204**
6 A		**A9F64106**	**A9F64206**
10 A		**A9F64110**	**A9F64210**
13 A		**A9F64113**	**A9F64213**
16 A		**A9F64116**	**A9F64216**
20 A		**A9F64120**	**A9F64220**
25 A		**A9F64125**	**A9F64225**
32 A		**A9F64132**	**A9F64232**
40 A		**A9F64140**	**A9F64240**
50 A		**A9F64150**	**A9F64250**
63 A		**A9F64163**	**A9F64263**
Width in 9-mm modules		2	4
Accessories		**Module CA907000 and CA907001**	**Module CA907000 and CA907001**

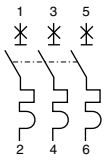
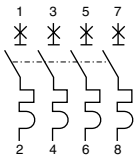
(1) Information to be provided by the country.

iC60a circuit breakers (curve C) (cont.)

PB104433-40



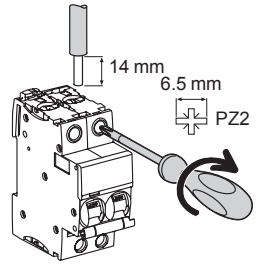
■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

	3P	4P
		
	Remote tripping and indication, module CA907000 and CA907002	**Remote tripping and indication, module CA907000 and CA907002**
	Vigi iC60 add-on residual current device, module CA902005	**Vigi iC60 add-on residual current device, module CA902005**
	Curve	**Curve**
	C	**C**
	A9F64301	**A9F64401**
	A9F64302	**A9F64402**
	A9F64303	**A9F64403**
	A9F64304	**A9F64404**
	A9F64306	**A9F64406**
	A9F64310	**A9F64410**
	A9F64313	**A9F64413**
	A9F64316	**A9F64416**
	A9F64320	**A9F64420**
	A9F64325	**A9F64425**
	A9F64332	**A9F64432**
	A9F64340	**A9F64440**
	A9F64350	**A9F64450**
	A9F64363	**A9F64463**
	6	8
	Module CA907000 and CA907001	**Module CA907000 and CA907001**

iC60a circuit breakers (curve C) (cont.)

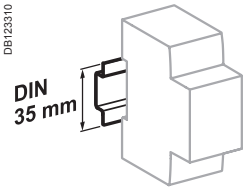
Connection

DB123060



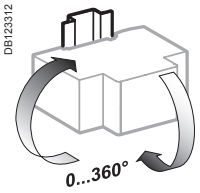
Rating	Tightening torque	Without accessory: Copper cables		With accessories: 50 mm² Al terminal	Screw-on connection for ring terminal	Multi-cables terminal	
		Rigid	Flexible or with ferrule			Rigid cables	Flexible cables
		DB122945 / DB122946	DB122935	DB118789 Al	DB118787 Ø		
1 to 25 A	2 N.m	1 to 25 mm²	1 to 16 mm²	-	Ø 5 mm	-	-
32 to 63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²		3 x 16 mm²	3 x 10 mm²

DB123310



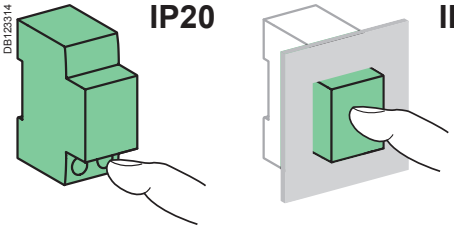
Clip on DIN rail 35 mm.

DB123312



Indifferent position of installation.

DB123314



Technical data

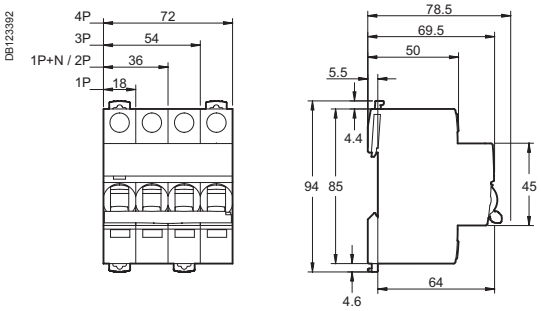
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		500 V AC
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV
Thermal tripping	Reference temperature	50 °C
	Temperature derating	See module CA908007
Magnetic tripping	C curve	8 In ± 20 %
Utilization category		A
According to IEC/EN 60898-1		
Limitation class		3
Rated making and breaking capacity of an individual pole (Icn1)		Icn1 = Icn
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Overvoltage category (IEC 60364)		IV
Operating temperature		-35°C to +70°C
Storage temperature		-40°C to +85°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)

iC60a circuit breakers (curve C) (cont.)

Weight (g)

Circuit-breaker	
Type	**iC60a**
1P	125
2P	250
3P	375
4P	500

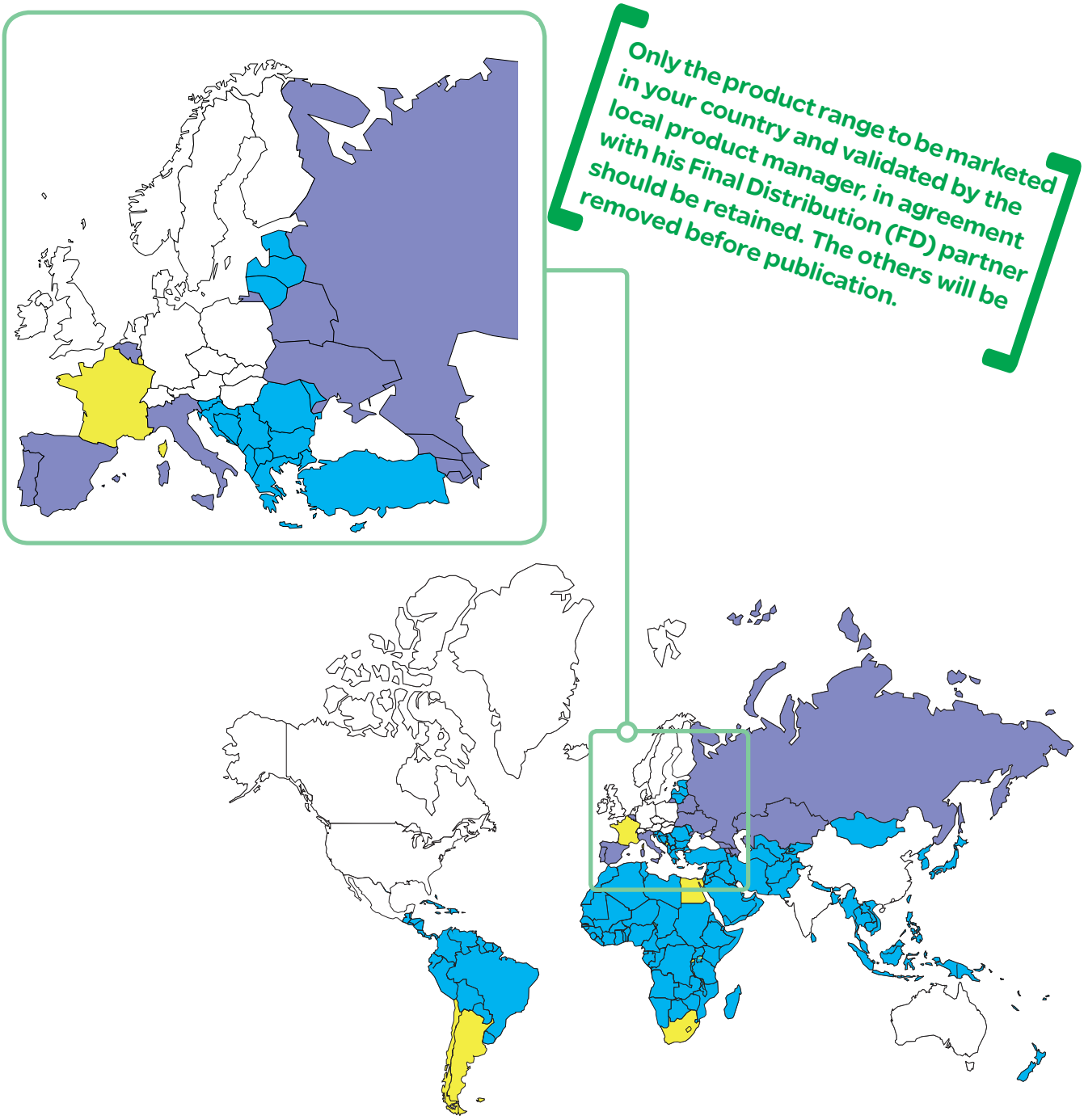
Dimensions (mm)



iC60N
Contents

Schneider Electric's range of circuit breakers consists of different products (A, B, C) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

Variants



iC60N circuit breakers (curve B, C, D)

DB106604 DB123398 DB404546 DB123807

Country approval pictograms


PB104437-40


PB104450-40

IEC/EN 60947-2
IEC/EN 60898-1

■ iC60N circuit breakers are multi-standard circuit breakers which combine the following functions:
- □ circuit protection against short-circuit currents,
- □ circuit protection against overload currents,
- □ suitable for industrial isolation according to IEC/EN 60947-2, standard.
- □ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Ph/Ph (2P, 3P, 4P)		12 to 133 V	220 to 240 V	380 to 415 V	440 V	
Ph/N (1P, 1P+N)		12 to 60 V	100 to 133 V	220 to 240 V	-	
Rating (In)	0.5 to 4 A	50 kA	50 kA	50 kA	25 kA	100 % of Icu
	6 to 63 A	36 kA	20 kA	10 kA	6 kA	75 % of Icu

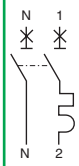
Breaking capacity (Icn) according to IEC/EN 60898-1		
		Voltage (Ue)
Ph/Ph		400 V
Ph/N		230 V
Rating (In)	0.5 to 63 A	6000 A

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Between +/-		12 to 60 V	≤ 72 V	≤ 125 V	≤ 180 V	≤ 250 V
Number of poles		1P		2P	3P	4P
Rating (In)	0.5 to 63 A	15 kA	10 kA	10 kA	10 kA	10 kA	100 % of Icu

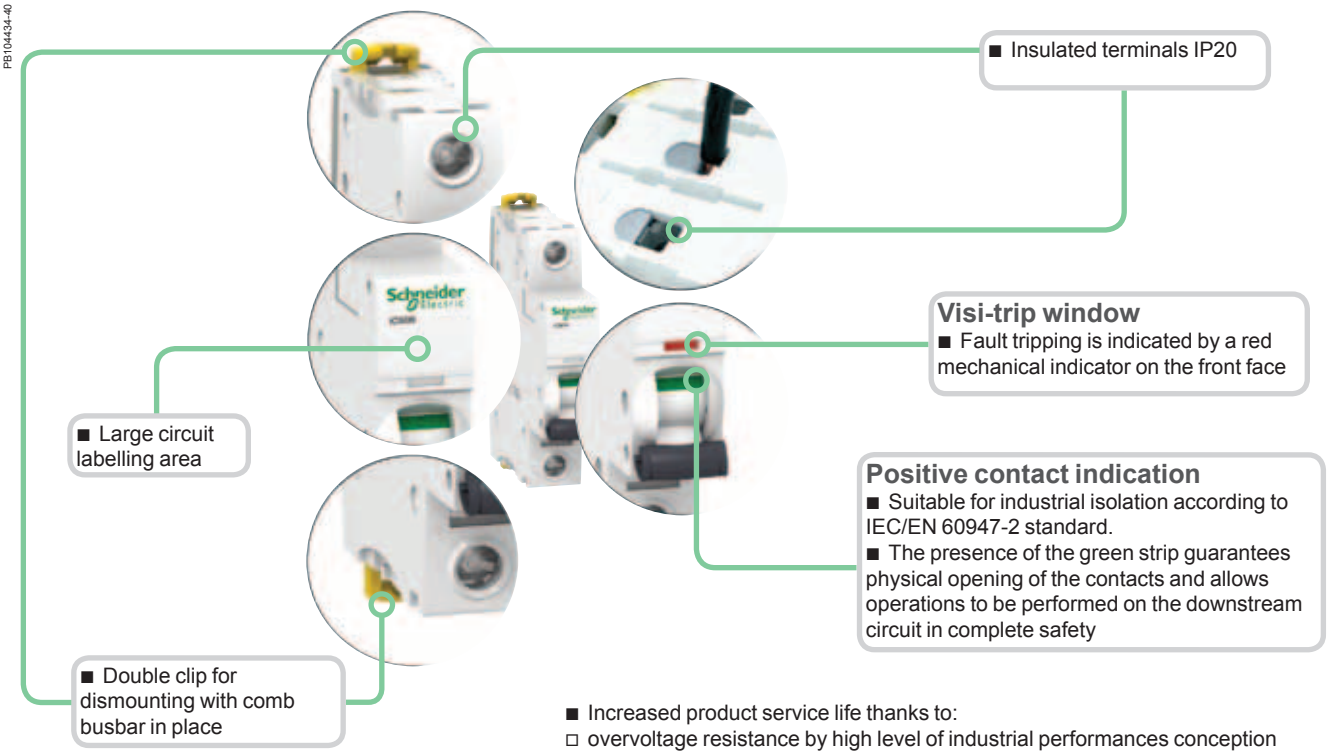
Catalogue numbers

iC60N circuit breaker

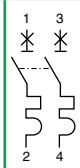
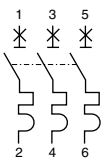
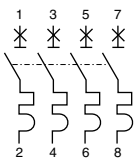
Type	1P			1P+N		
	E45092 			DB123389 		
Auxiliaries	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
Vigi iC60	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
Rating (In)	Curve			Curve		
	B	C	D(1)	B	C	D(1)
0.5 A(1)	A9F73170	A9F74170	A9F75170	A9F73670	A9F74670	A9F75670
1 A(1)	A9F73101	A9F74101	A9F75101	A9F73601	A9F74601	A9F75601
2 A(1)	A9F73102	A9F74102	A9F75102	A9F73602	A9F74602	A9F75602
3 A(1)	A9F73103	A9F74103	A9F75103	A9F73603	A9F74603	A9F75603
4 A(1)	A9F73104	A9F74104	A9F75104	A9F73604	A9F74604	A9F75604
6 A	A9F76106	A9F77106	A9F75106	A9F76606	A9F77606	A9F75606
10 A	A9F76110	A9F77110	A9F75110	A9F76610	A9F77610	A9F75610
13 A(1)	A9F73113	A9F74113	A9F75113	A9F73613	A9F74613	A9F75613
16 A	A9F76116	A9F77116	A9F75116	A9F76616	A9F77616	A9F75616
20 A	A9F76120	A9F77120	A9F75120	A9F76620	A9F77620	A9F75620
25 A	A9F76125	A9F77125	A9F75125	A9F76625	A9F77625	A9F75625
32 A	A9F76132	A9F77132	A9F75132	A9F76632	A9F77632	A9F75632
40 A	A9F76140	A9F77140	A9F75140	A9F76640	A9F77640	A9F75640
50 A	A9F76150	A9F77150	A9F75150	A9F76650	A9F77650	A9F75650
63 A	A9F76163	A9F77163	A9F75163	A9F76663	A9F77663	A9F75663
Width in 9-mm modules	2			4		
Accessories	Module CA907000 and CA907001			Module CA907000 and CA907001		

(1) VDE approved only.

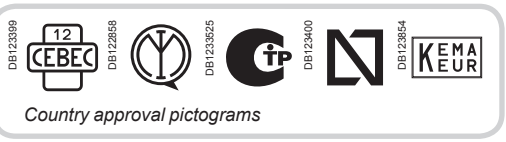
iC60N circuit breakers (curve B, C, D) (cont.)



■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

	2P			3P			4P		
	E45094 			E45095 			E45097 		
	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
	Curve			Curve			Curve		
	B	C	D(1)	B	C	D(1)	B	C	D(1)
	A9F73270	A9F74270	A9F75270	A9F73370	A9F74370	A9F75370	A9F73470	A9F74470	A9F75470
	A9F73201	A9F74201	A9F75201	A9F73301	A9F74301	A9F75301	A9F73401	A9F74401	A9F75401
	A9F73202	A9F74202	A9F75202	A9F73302	A9F74302	A9F75302	A9F73402	A9F74402	A9F75402
	A9F73203	A9F74203	A9F75203	A9F73303	A9F74303	A9F75303	A9F73403	A9F74403	A9F75403
	A9F73204	A9F74204	A9F75204	A9F73304	A9F74304	A9F75304	A9F73404	A9F74404	A9F75404
	A9F76206	A9F77206	A9F75206	A9F76306	A9F77306	A9F75306	A9F76406	A9F77406	A9F75406
	A9F76210	A9F77210	A9F75210	A9F76310	A9F77310	A9F75310	A9F76410	A9F77410	A9F75410
	A9F73213	A9F74213	A9F75213	A9F73313	A9F74313	A9F75313	A9F73413	A9F74413	A9F75413
	A9F76216	A9F77216	A9F75216	A9F76316	A9F77316	A9F75316	A9F76416	A9F77416	A9F75416
	A9F76220	A9F77220	A9F75220	A9F76320	A9F77320	A9F75320	A9F76420	A9F77420	A9F75420
	A9F76225	A9F77225	A9F75225	A9F76325	A9F77325	A9F75325	A9F76425	A9F77425	A9F75425
	A9F76232	A9F77232	A9F75232	A9F76332	A9F77332	A9F75332	A9F76432	A9F77432	A9F75432
	A9F76240	A9F77240	A9F75240	A9F76340	A9F77340	A9F75340	A9F76440	A9F77440	A9F75440
	A9F76250	A9F77250	A9F75250	A9F76350	A9F77350	A9F75350	A9F76450	A9F77450	A9F75450
	A9F76263	A9F77263	A9F75263	A9F76363	A9F77363	A9F75363	A9F76463	A9F77463	A9F75463
	4			6			8		
	Module CA907000 and CA907001			Module CA907000 and CA907001			Module CA907000 and CA907001		

iC60N circuit breakers (curve B, C, D)



Country approval pictograms

IEC/EN 60947-2
IEC/EN 60898-1

■ iC60N circuit breakers are multi-standard circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for industrial isolation according to IEC/EN 60947-2, standard.
□ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Ph/Ph (2P, 3P, 4P)		12 to 133 V	220 to 240 V	380 to 415 V	440 V	
Ph/N (1P, 1P+N)		12 to 60 V	100 to 133 V	220 to 240 V	-	
Rating (In)	0.5 to 4 A	50 kA	50 kA	50 kA	25 kA	100 % of Icu
	6 to 63 A	36 kA	20 kA	10 kA	6 kA	75 % of Icu

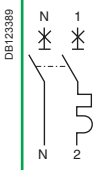
Breaking capacity (Icn) according to IEC/EN 60898-1		
		Voltage (Ue)
Ph/Ph		400 V
Ph/N		230 V
Rating (In)	0.5 to 63 A	6000 A

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2							Service breaking capacity (Ics)
		Voltage (Ue)					
Between +/-		12 to 60 V	≤ 72 V	≤ 125 V	≤ 180 V	≤ 250 V	
Number of poles		1P		2P	3P	4P	
Rating (In)	0.5 to 63 A	15 kA	10 kA	10 kA	10 kA	10 kA	100 % of Icu

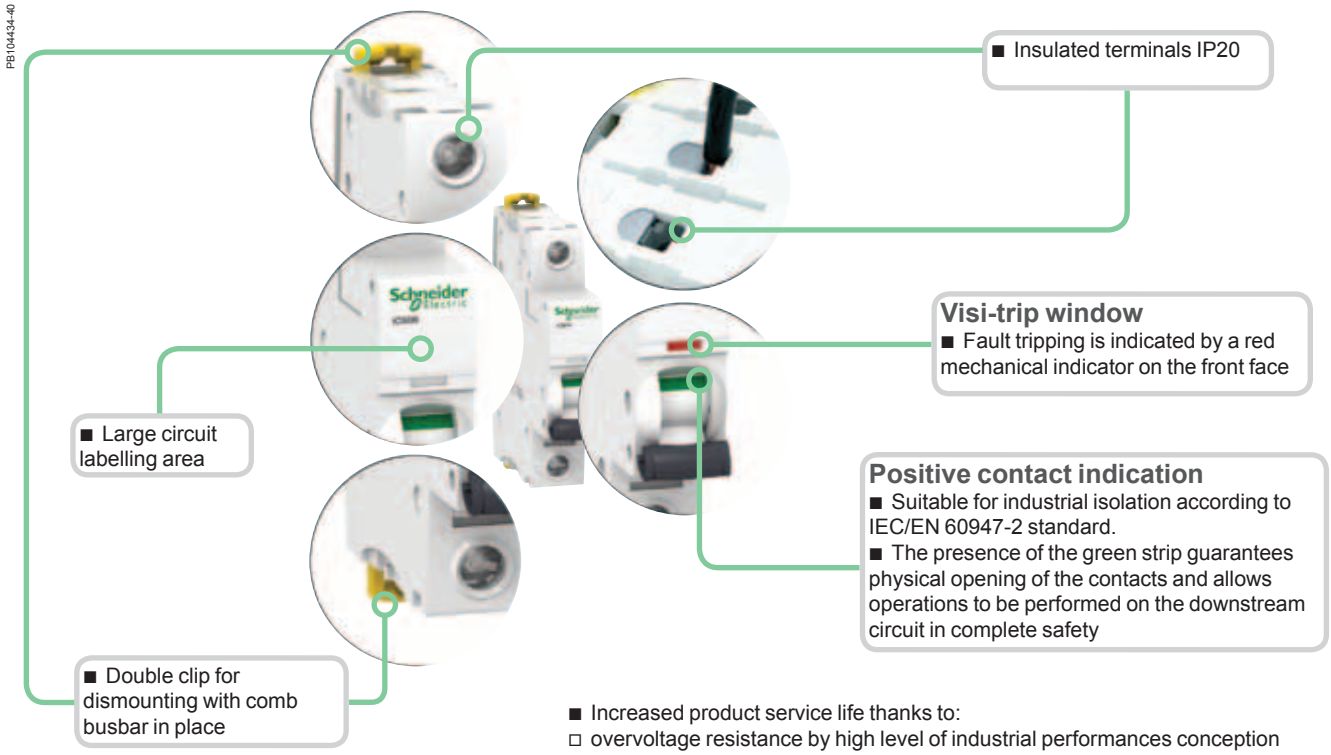
Catalogue numbers

iC60N circuit breaker

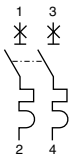
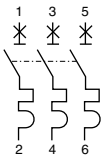
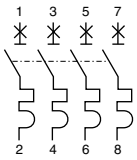
Type	1P			1P+N		
						
Auxiliaries	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
Vigi iC60	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
Rating (In)	Curve			Curve		
	B	C	D(1)	B	C	D(1)
0.5 A(1)	A9F73170	A9F74170	A9F75170	A9F73670	A9F74670	A9F75670
1 A(1)	A9F73101	A9F74101	A9F75101	A9F73601	A9F74601	A9F75601
2 A(1)	A9F73102	A9F74102	A9F75102	A9F73602	A9F74602	A9F75602
3 A(1)	A9F73103	A9F74103	A9F75103	A9F73603	A9F74603	A9F75603
4 A(1)	A9F73104	A9F74104	A9F75104	A9F73604	A9F74604	A9F75604
6 A	A9F78106	A9F79106	A9F75106	A9F78606	A9F79606	A9F75606
10 A	A9F78110	A9F79110	A9F75110	A9F78610	A9F79610	A9F75610
13 A(1)	A9F73113	A9F74113	A9F75113	A9F73613	A9F74613	A9F75613
16 A	A9F78116	A9F79116	A9F75116	A9F78616	A9F79616	A9F75616
20 A	A9F78120	A9F79120	A9F75120	A9F78620	A9F79620	A9F75620
25 A	A9F78125	A9F79125	A9F75125	A9F78625	A9F79625	A9F75625
32 A	A9F78132	A9F79132	A9F75132	A9F78632	A9F79632	A9F75632
40 A	A9F78140	A9F79140	A9F75140	A9F78640	A9F79640	A9F75640
50 A	A9F78150	A9F79150	A9F75150	A9F78650	A9F79650	A9F75650
63 A	A9F78163	A9F79163	A9F75163	A9F78663	A9F79663	A9F75663
Width in 9-mm modules	2			4		
Accessories	Module CA907000 and CA907001			Module CA907000 and CA907001		

(1) VDE approved only.

iC60N circuit breakers (curve B, C, D) (cont.)



■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

	2P			3P			4P		
									
	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
	Curve			Curve			Curve		
	B	C	D(1)	B	C	D(1)	B	C	D(1)
	A9F73270	A9F74270	A9F75270	A9F73370	A9F74370	A9F75370	A9F73470	A9F74470	A9F75470
	A9F73201	A9F74201	A9F75201	A9F73301	A9F74301	A9F75301	A9F73401	A9F74401	A9F75401
	A9F73202	A9F74202	A9F75202	A9F73302	A9F74302	A9F75302	A9F73402	A9F74402	A9F75402
	A9F73203	A9F74203	A9F75203	A9F73303	A9F74303	A9F75303	A9F73403	A9F74403	A9F75403
	A9F73204	A9F74204	A9F75204	A9F73304	A9F74304	A9F75304	A9F73404	A9F74404	A9F75404
	A9F78206	A9F79206	A9F75206	A9F78306	A9F79306	A9F75306	A9F78406	A9F79406	A9F75406
	A9F78210	A9F79210	A9F75210	A9F78310	A9F79310	A9F75310	A9F78410	A9F79410	A9F75410
	A9F73213	A9F74213	A9F75213	A9F73313	A9F74313	A9F75313	A9F73413	A9F74413	A9F75413
	A9F78216	A9F79216	A9F75216	A9F78316	A9F79316	A9F75316	A9F78416	A9F79416	A9F75416
	A9F78220	A9F79220	A9F75220	A9F78320	A9F79320	A9F75320	A9F78420	A9F79420	A9F75420
	A9F78225	A9F79225	A9F75225	A9F78325	A9F79325	A9F75325	A9F78425	A9F79425	A9F75425
	A9F78232	A9F79232	A9F75232	A9F78332	A9F79332	A9F75332	A9F78432	A9F79432	A9F75432
	A9F78240	A9F79240	A9F75240	A9F78340	A9F79340	A9F75340	A9F78440	A9F79440	A9F75440
	A9F78250	A9F79250	A9F75250	A9F78350	A9F79350	A9F75350	A9F78450	A9F79450	A9F75450
	A9F78263	A9F79263	A9F75263	A9F78363	A9F79363	A9F75363	A9F78463	A9F79463	A9F75463
	4			6			8		
	Module CA907000 and CA907001			Module CA907000 and CA907001			Module CA907000 and CA907001		

iC60N circuit breakers (curve B, C, D)

DB116619

Country approval pictograms

PB104437-40

PB104450-40

IEC/EN 60947-2
IEC/EN 60898-1

■ iC60N circuit breakers are multi-standard circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for industrial isolation according to IEC/EN 60947-2, standard.
□ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Ph/Ph (2P, 3P, 4P)		12 to 133 V	220 to 240 V	380 to 415 V	440 V	
Ph/N (1P, 1P+N)		12 to 60 V	100 to 133 V	220 to 240 V	-	
Rating (In)	0.5 to 4 A	50 kA	50 kA	50 kA	25 kA	100 % of Icu
	6 to 63 A	36 kA	20 kA	10 kA	6 kA	75 % of Icu

Breaking capacity (Icn) according to IEC/EN 60898-1		
		Voltage (Ue)
Ph/Ph		400 V
Ph/N		230 V
Rating (In)	0.5 to 63 A	6000 A

Direct current (DC)

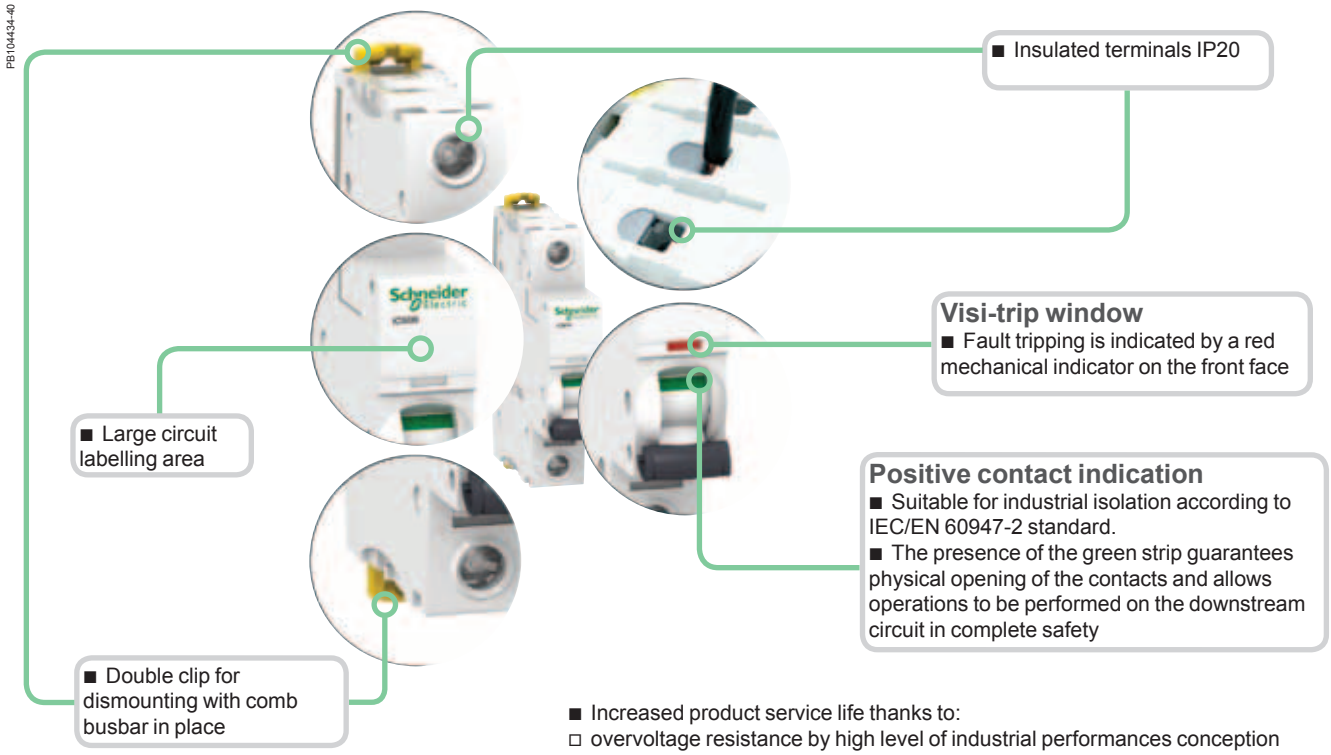
Breaking capacity (Icu) according to IEC/EN 60947-2							Service breaking capacity (Ics)
		Voltage (Ue)					
Between +/-		12 to 60 V	≤ 72 V	≤ 125 V	≤ 180 V	≤ 250 V	
Number of poles		1P		2P	3P	4P	
Rating (In)	0.5 to 63 A	15 kA	10 kA	10 kA	10 kA	10 kA	100 % of Icu

Catalogue numbers

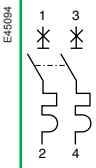
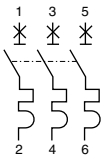
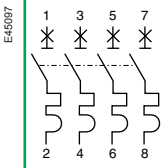
iC60N circuit breaker

Type	1P			1P+N		
	E45092 			DB123389 		
Auxiliaries	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
Vigi iC60	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
Rating (In)	Curve			Curve		
	B	C	D	B	C	D
0.5 A	A9F73170	A9F74170	A9F75170	A9F73670	A9F74670	A9F75670
1 A	A9F73101	A9F74101	A9F75101	A9F73601	A9F74601	A9F75601
2 A	A9F73102	A9F74102	A9F75102	A9F73602	A9F74602	A9F75602
3 A	A9F73103	A9F74103	A9F75103	A9F73603	A9F74603	A9F75603
4 A	A9F73104	A9F74104	A9F75104	A9F73604	A9F74604	A9F75604
6 A	A9F73106	A9F74106	A9F75106	A9F73606	A9F74606	A9F75606
10 A	A9F73110	A9F74110	A9F75110	A9F73610	A9F74610	A9F75610
13 A	A9F73113	A9F74113	A9F75113	A9F73613	A9F74613	A9F75613
16 A	A9F73116	A9F74116	A9F75116	A9F73616	A9F74616	A9F75616
20 A	A9F73120	A9F74120	A9F75120	A9F73620	A9F74620	A9F75620
25 A	A9F73125	A9F74125	A9F75125	A9F73625	A9F74625	A9F75625
32 A	A9F73132	A9F74132	A9F75132	A9F73632	A9F74632	A9F75632
40 A	A9F73140	A9F74140	A9F75140	A9F73640	A9F74640	A9F75640
50 A	A9F73150	A9F74150	A9F75150	A9F73650	A9F74650	A9F75650
63 A	A9F73163	A9F74163	A9F75163	A9F73663	A9F74663	A9F75663
Width in 9-mm modules	2			4		
Accessories	Module CA907000 and CA907001			Module CA907000 and CA907001		

iC60N circuit breakers (curve B, C, D) (cont.)

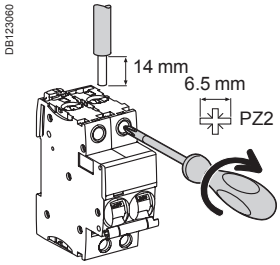


■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

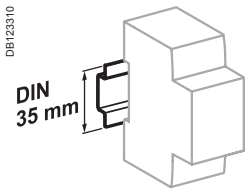
	2P			3P			4P		
									
	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
	Curve			Curve			Curve		
	B	C	D	B	C	D	B	C	D
	A9F73270	A9F74270	A9F75270	A9F73370	A9F74370	A9F75370	A9F73470	A9F74470	A9F75470
	A9F73201	A9F74201	A9F75201	A9F73301	A9F74301	A9F75301	A9F73401	A9F74401	A9F75401
	A9F73202	A9F74202	A9F75202	A9F73302	A9F74302	A9F75302	A9F73402	A9F74402	A9F75402
	A9F73203	A9F74203	A9F75203	A9F73303	A9F74303	A9F75303	A9F73403	A9F74403	A9F75403
	A9F73204	A9F74204	A9F75204	A9F73304	A9F74304	A9F75304	A9F73404	A9F74404	A9F75404
	A9F73206	A9F74206	A9F75206	A9F73306	A9F74306	A9F75306	A9F73406	A9F74406	A9F75406
	A9F73210	A9F74210	A9F75210	A9F73310	A9F74310	A9F75310	A9F73410	A9F74410	A9F75410
	A9F73213	A9F74213	A9F75213	A9F73313	A9F74313	A9F75313	A9F73413	A9F74413	A9F75413
	A9F73216	A9F74216	A9F75216	A9F73316	A9F74316	A9F75316	A9F73416	A9F74416	A9F75416
	A9F73220	A9F74220	A9F75220	A9F73320	A9F74320	A9F75320	A9F73420	A9F74420	A9F75420
	A9F73225	A9F74225	A9F75225	A9F73325	A9F74325	A9F75325	A9F73425	A9F74425	A9F75425
	A9F73232	A9F74232	A9F75232	A9F73332	A9F74332	A9F75332	A9F73432	A9F74432	A9F75432
	A9F73240	A9F74240	A9F75240	A9F73340	A9F74340	A9F75340	A9F73440	A9F74440	A9F75440
	A9F73250	A9F74250	A9F75250	A9F73350	A9F74350	A9F75350	A9F73450	A9F74450	A9F75450
	A9F73263	A9F74263	A9F75263	A9F73363	A9F74363	A9F75363	A9F73463	A9F74463	A9F75463
	4			6			8		
	Module CA907000 and CA907001			Module CA907000 and CA907001			Module CA907000 and CA907001		

iC60N circuit breakers (curve B, C, D) (cont.)

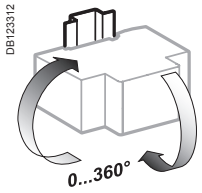
Connection



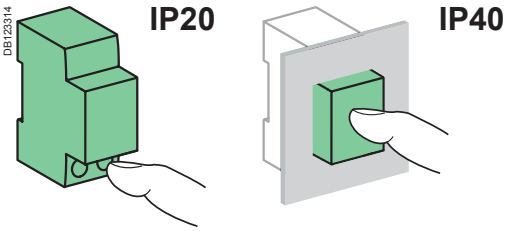
Rating	Tightening torque	Without accessory: Copper cables – Rigid	Without accessory: Copper cables – Flexible or with ferrule	With accessories: 50 mm² Al terminal	With accessories: Screw-on connection for ring terminal	With accessories: Multi-cables terminal – Rigid cables	With accessories: Multi-cables terminal – Flexible cables
		DB122945	DB122946	DB122935 Al	DB118789 Ø	DB118787	
0.5 to 25 A	2 N.m	1 to 25 mm²	1 to 16 mm²	-	Ø 5 mm	-	-
32 to 63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²		3 x 16 mm²	3 x 10 mm²



Clip on DIN rail 35 mm.



Indifferent position of installation.



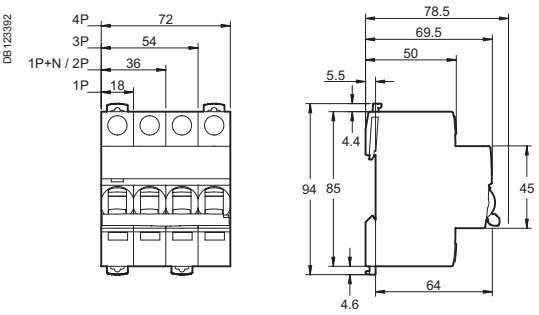
Technical data

Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		500 V AC
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV
Thermal tripping	Reference temperature	50 °C
	Temperature derating	See module CA908007
Magnetic tripping	B curve	4 In ± 20 %
	C curve	8 In ± 20 %
	D curve	12 In ± 20 %
Utilization category		A
According to IEC/EN 60898-1		
Limitation class		3
Rated making and breaking capacity of an individual pole (Icn1)		Icn1 = Icn
Additional characteristics		
Breaking capacity under 1 pole with IT 380-415 V isolated neutral system (case of double fault)	40 A	4 kA
	50/63 A	3 kA
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Overvoltage category (IEC 60364)		IV
Operating temperature		-35°C to +70°C
Storage temperature		-40°C to +85°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)

Weight (g)

Circuit-breaker	
Type	**iC60N**
1P	125
2P	250
3P	375
4P	500

Dimensions (mm)



iC60N double terminals circuit breakers (curve B, C, D)

DB106619 DB123865 DB123854

Country approval pictograms

PB107401-40 PB107405-40


PB107407-40 PB107409-40


IEC/EN 60947-2
IEC/EN 60898-1

■ iC60N double tunnel terminals circuit breakers are multi-standard circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for industrial isolation according to IEC/EN 60947-2, standard.
□ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Ph/Ph (2P, 3P, 3P+N, 4P)		12 to 133 V	220 to 240 V	380 to 415 V	440 V	
Ph/N (1P, 1P+N)		12 to 60 V	100 to 133 V	220 to 240 V	-	
Rating (In)	0.5 to 4 A	50 kA	50 kA	50 kA	25 kA	100 % of Icu
	6 to 63 A	36 kA	20 kA	10 kA	6 kA	75 % of Icu

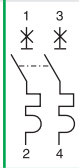
Breaking capacity (Icn) according to IEC/EN 60898-1		
		Voltage (Ue)
Ph/Ph		400 V
Ph/N		230 V
Rating (In)	0.5 to 63 A	6000 A

Direct current (DC)

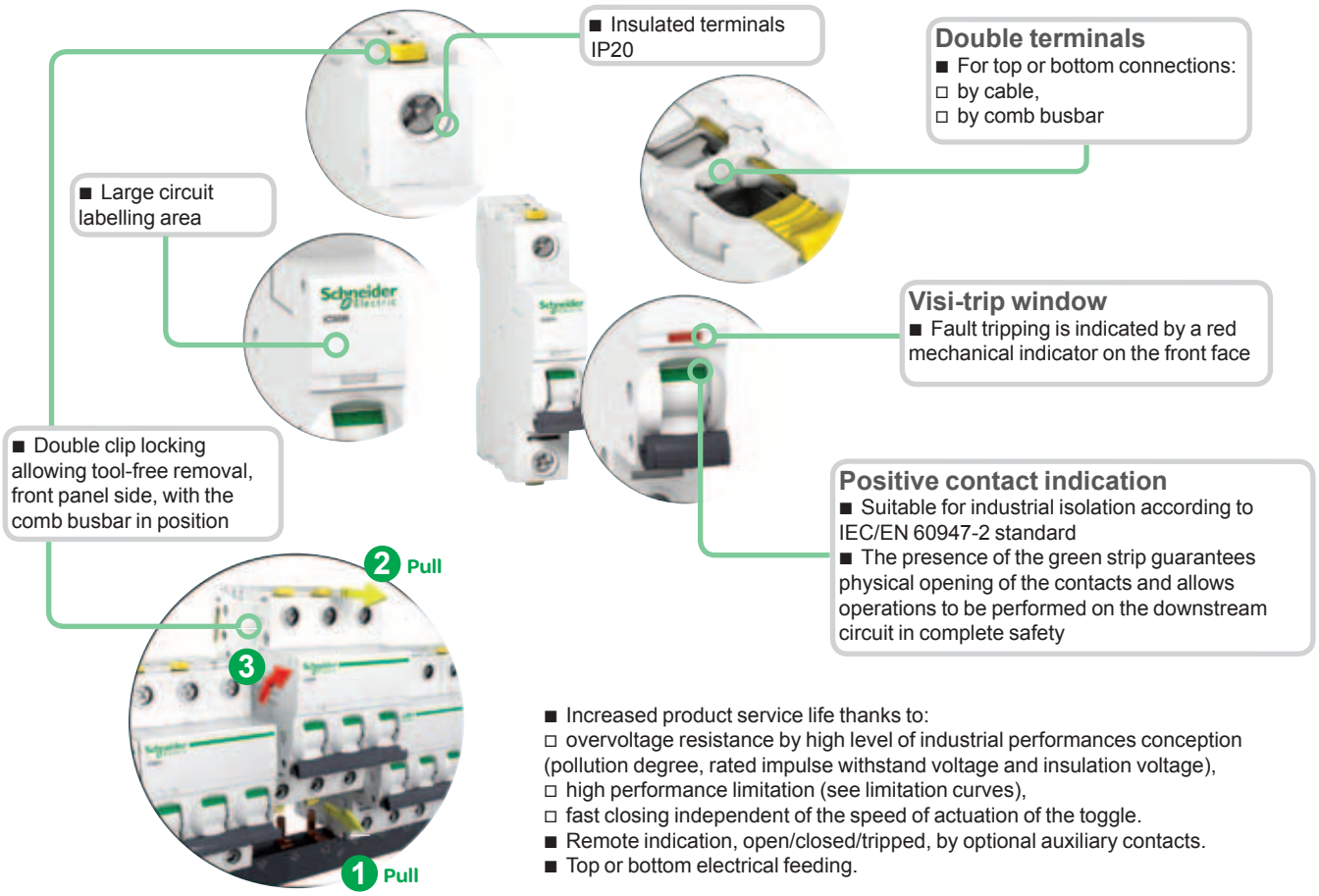
Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Between +/-		12 to 60 V	⩽ 72 V	⩽ 125 V	⩽ 180 V	⩽ 250 V
Number of poles		1P		2P	3P	4P
Rating (In)	1 to 63 A	15 kA	10 kA	10 kA	10 kA	10 kA	100 % of Icu

Catalogue numbers

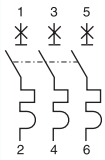
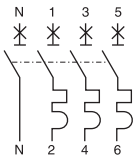
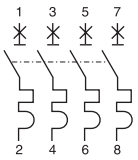
iC60N double terminals circuit breaker

Type	1P			1P+N			2P		
									
Auxiliaries	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
Vigi iC60	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
Rating (In)	Curve			Curve			Curve		
	B	C	D	B	C	D	B	C	D
0.5 A	-	A9F04170	A9F05170	-	A9F04670		-	A9F04270	A9F05270
1 A	A9F03101	A9F04101	A9F05101	-	A9F04601		-	A9F04201	A9F05201
2 A	A9F03102	A9F04102	A9F05102	-	A9F04602		A9F03202	A9F04202	A9F05202
3 A	-	A9F04103	A9F05103	-	A9F04603		-	A9F04203	A9F05203
4 A	A9F03104	A9F04104	A9F05104	-	A9F04604		A9F03204	A9F04204	A9F05204
6 A	A9F03106	A9F04106	A9F05106	A9F03606	A9F04606		A9F03206	A9F04206	A9F05206
10 A	A9F03110	A9F04110	A9F05110	A9F03610	A9F04610		A9F03210	A9F04210	A9F05210
13 A	A9F03113	A9F04113	A9F05113	A9F03613	A9F04613		A9F03213	A9F04213	A9F05213
16 A	A9F03116	A9F04116	A9F05116	A9F03616	A9F04616		A9F03216	A9F04216	A9F05216
20 A	A9F03120	A9F04120	A9F05120	A9F03620	A9F04620		A9F03220	A9F04220	A9F05220
25 A	A9F03125	A9F04125	A9F05125	A9F03625	A9F04625		A9F03225	A9F04225	A9F05225
32 A	A9F03132	A9F04132	A9F05132	A9F03632	A9F04632		A9F03232	A9F04232	A9F05232
40 A	A9F03140	A9F04140	A9F05140	A9F03640	A9F04640		A9F03240	A9F04240	A9F05240
50 A	A9F03150	A9F04150	A9F05150	A9F03650	A9F04650		A9F03250	A9F04250	A9F05250
63 A	A9F03163	A9F04163	A9F05163	A9F03663	A9F04663		A9F03263	A9F04263	A9F05263
Width in 9-mm modules	2			4			4		
Accessories	Modules CA907000 and CA907001			Modules CA907000 and CA907001			Modules CA907000 and CA907001		

iC60N double terminals circuit breakers (curve B, C, D) (cont.)



■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

	3P			3P+N			4P		
									
	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
	Curve			Curve			Curve		
	B	C	D	B	C		B	C	D
	-	A9F04370	A9F05370	-	A9F04770		-	A9F04470	A9F05470
	-	A9F04301	A9F05301	-	A9F04701		-	A9F04401	A9F05401
	A9F03302	A9F04302	A9F05302	-	A9F04702		-	A9F04402	A9F05402
	-	A9F04303	A9F05303	-	A9F04703		-	A9F04403	A9F05403
	-	A9F04304	A9F05304	-	A9F04704		-	A9F04404	A9F05404
	A9F03306	A9F04306	A9F05306	A9F03706	A9F04706		A9F03406	A9F04406	A9F05406
	A9F03310	A9F04310	A9F05310	A9F03710	A9F04710		A9F03410	A9F04410	A9F05410
	A9F03313	A9F04313	A9F05313	A9F03713	A9F04713		A9F03413	A9F04413	A9F05413
	A9F03316	A9F04316	A9F05316	A9F03716	A9F04716		A9F03416	A9F04416	A9F05416
	A9F03320	A9F04320	A9F05320	A9F03720	A9F04720		A9F03420	A9F04420	A9F05420
	A9F03325	A9F04325	A9F05325	A9F03725	A9F04725		A9F03425	A9F04425	A9F05425
	A9F03332	A9F04332	A9F05332	A9F03732	A9F04732		A9F03432	A9F04432	A9F05432
	A9F03340	A9F04340	A9F05340	A9F03740	A9F04740		A9F03440	A9F04440	A9F05440
	A9F03350	A9F04350	A9F05350	A9F03750	A9F04750		A9F03450	A9F04450	A9F05450
	A9F03363	A9F04363	A9F05363	A9F03763	A9F04763		A9F03463	A9F04463	A9F05463
	6			8			8		
	Modules CA907000 and CA907001			Modules CA907000 and CA907001			Modules CA907000 and CA907001		

iC60N double terminals circuit breakers (curve B, C, D) (cont.)

Connection between double terminal circuit breakers

With comb busbar at the back/cables at the front

Without comb busbar at the back/cables at the front

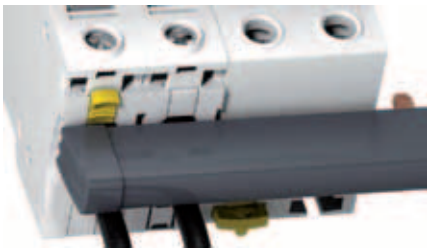
DB404815

	Back		Front	
Rating	Tightening torque	Comb busbar	Copper cables	
		Thickness of the teeth	Rigid	Flexible or with ferrule
		DB122945	DB122946	
0.5 to 25 A	2 N.m	1.5 mm	1 to 25 mm²	1 to 16 mm²
32 to 63 A	3.5 N.m	1.5 mm	1 to 25 mm²	1 to 25 mm²

Between double terminal circuit breakers and single-terminal circuit breakers

Cables at the back/comb busbar at the front

DB404817

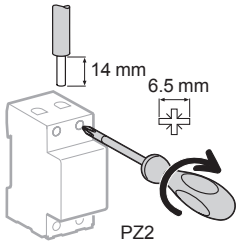


	Back			Front
Rating	Tightening torque	Copper cables		Comb busbar
		Rigid	Flexible or with ferrule	Thickness of the teeth
	DB122945		DB122946	
0.5 to 25 A	2 N.m	1 to 16 mm²	1 to 10 mm²	1.5 mm
32 to 63 A	3.5 N.m	1 to 16 mm²	1 to 10 mm²	1.5 mm

■ Connection by comb busbar or by cable (according to EN 50027).

Connection

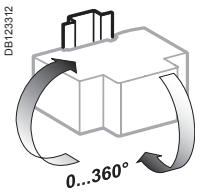
DB123947



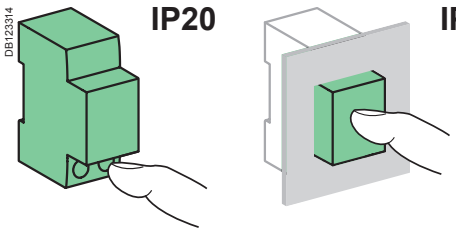
With accessories

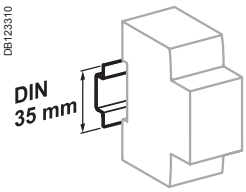
Rating	50 mm² Al terminal	Screw-on connection for ring terminal	Multi-cables terminal	
			Rigid cables	Flexible cables
	DB122935 Al	DB118789 Ø	DB118787	
0.5 to 25 A	-	Ø 5 mm	-	-
32 to 63 A	50 mm²		3 x 16 mm²	3 x 10 mm²

iC60N double terminals circuit breakers (curve B, C, D) (cont.)



Indifferent position of installation.



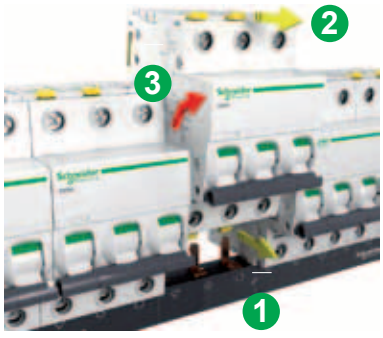
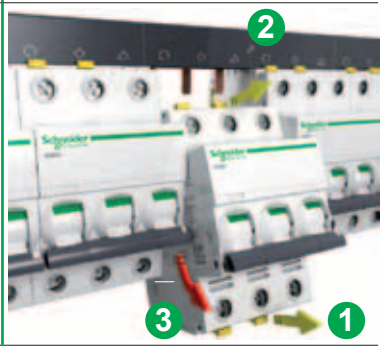


Clip on DIN rail 35 mm.

Technical data

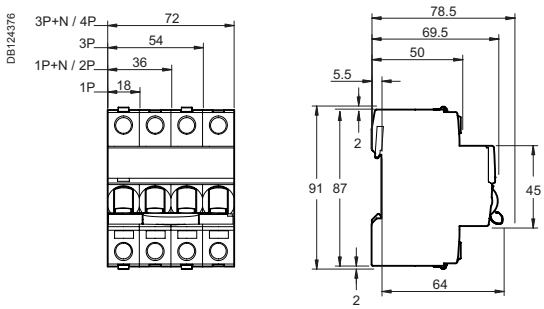
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		500 V AC
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV
Thermal tripping	Reference temperature	50°C
	Temperature derating	See module CA908007
Magnetic tripping	B curve	4 In ± 20 %
	C curve	8 In ± 20 %
	D curve	12 In ± 20 %
Utilization category		A
According to IEC/EN 60898-1		
Limitation class		3
Rated making and breaking capacity of an individual pole (Icn1)		Icn1 = Icn
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Overvoltage category (IEC 60364)		IV
Operating temperature		-35°C to +70°C
Storage temperature		-40°C to +85°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)

Disassembly double terminals iC60 circuit breaker with the comb busbar in position

Comb busbar downstream	Comb busbar upstream
	

1- Pull lower "clip locking"
2- Pull upper "clip locking"
3- Remove the circuit breaker

Dimensions (mm)



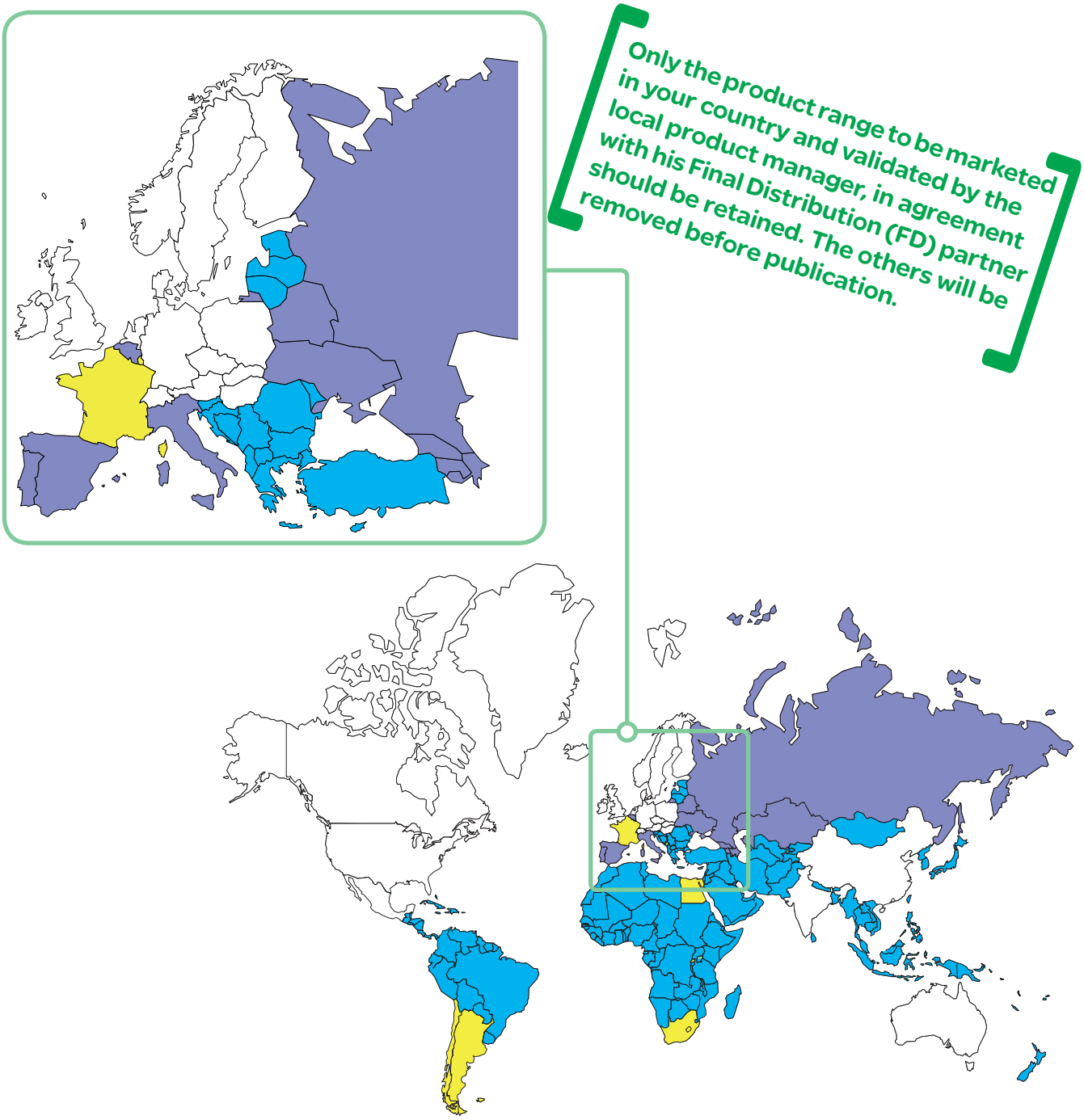
Weight (g)

Circuit-breaker	
Type	**iC60N**
1P	125
2P (1P+N)	250
3P	375
4P (3P+N)	500

iC60H
Contents

Schneider Electric's range of circuit breakers consists of different products (A, B, C) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

iC60H circuit breakers (curve B, C, D)

DB106604 DB123398 DB404546 DB123807

Country approval pictograms


PB104441-40


PB104451-40

IEC/EN 60947-2
IEC/EN 60898-1

■ iC60H circuit breakers are multi-standard circuit breakers which combine the following functions:
- □ circuit protection against short-circuit currents,
- □ circuit protection against overload currents,
- □ suitable for industrial isolation according to IEC/EN 60947-2, standard.
- □ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Ph/Ph (2P, 3P, 4P)		12 to 133 V	220 to 240 V	380 to 415 V	440 V	
Ph/N (1P, 1P+N)		12 to 60 V	100 to 133 V	220 to 240 V	-	
Rating (In)	0.5 to 4 A	70 kA	70 kA	70 kA	50 kA	100 % of Icu
	6 to 63 A	42 kA	30 kA	15 kA	10 kA	50 % of Icu

Breaking capacity (Icn) according to IEC/EN 60898-1		
		Voltage (Ue)
Ph/Ph		400 V
Ph/N		230 V
Rating (In)	0.5 to 63 A	10000 A

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Between +/-		12 to 60 V	⩽ 72 V	⩽ 125 V	⩽ 180 V	⩽ 250 V
Number of poles		1P		2P	3P	4P
Rating (In)	0.5 to 63 A	20 kA	15 kA	15 kA	15 kA	15 kA	100 % of Icu

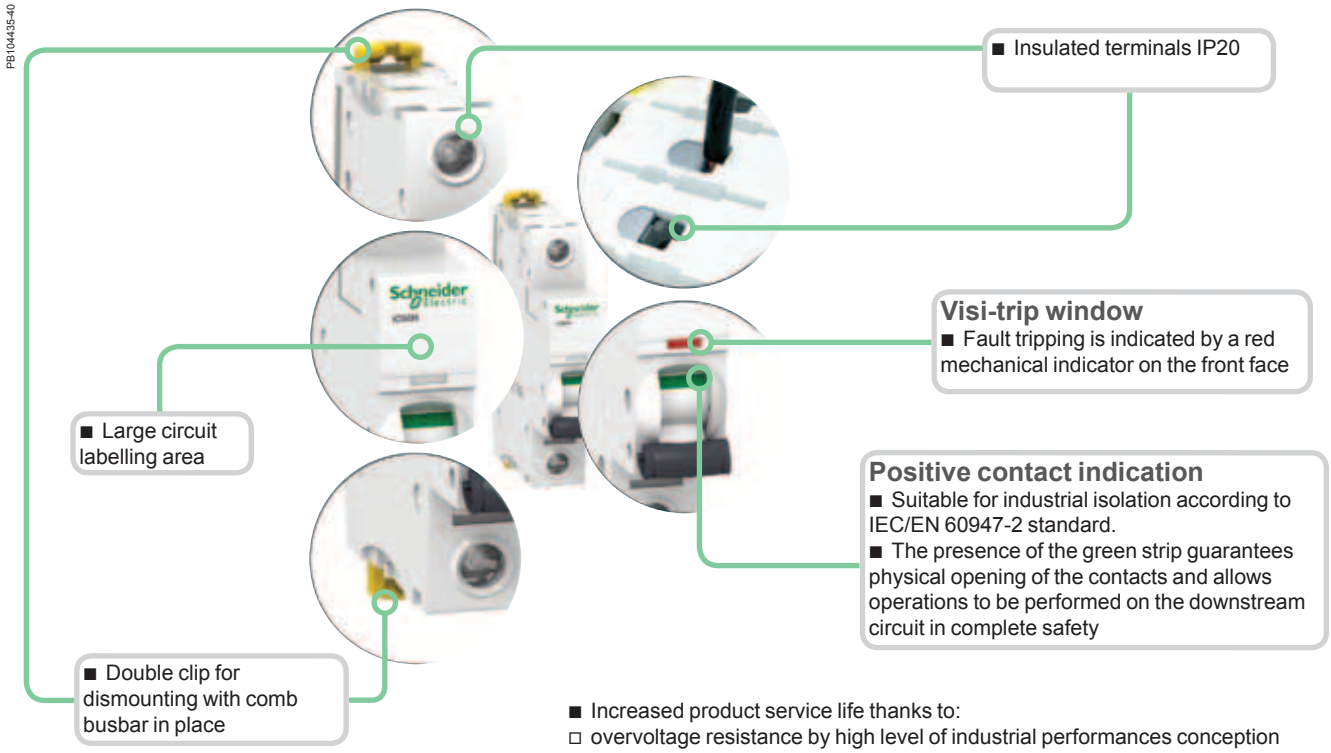
Catalogue numbers

iC60H circuit breaker

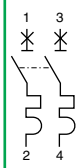
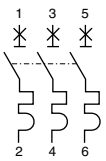
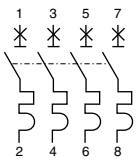
Type	1P			1P+N		
	E45092 			DB123389 		
Auxiliaries	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
Vigi iC60	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
Rating (In)	Curve			Curve		
	B	C	D(1)	B	C	D(1)
0.5 A(1)	A9F83170	A9F84170	A9F85170	A9F83670	A9F84670	A9F85670
1 A(1)	A9F83101	A9F84101	A9F85101	A9F83601	A9F84601	A9F85601
2 A(1)	A9F83102	A9F84102	A9F85102	A9F83602	A9F84602	A9F85602
3 A(1)	A9F83103	A9F84103	A9F85103	A9F83603	A9F84603	A9F85603
4 A(1)	A9F83104	A9F84104	A9F85104	A9F83604	A9F84604	A9F85604
6 A	A9F86106	A9F87106	A9F85106	A9F86606	A9F87606	A9F85606
10 A	A9F86110	A9F87110	A9F85110	A9F86610	A9F87610	A9F85610
13 A(1)	A9F83113	A9F84113	A9F85113	A9F83613	A9F84613	A9F85613
16 A	A9F86116	A9F87116	A9F85116	A9F86616	A9F87616	A9F85616
20 A	A9F86120	A9F87120	A9F85120	A9F86620	A9F87620	A9F85620
25 A	A9F86125	A9F87125	A9F85125	A9F86625	A9F87625	A9F85625
32 A	A9F86132	A9F87132	A9F85132	A9F86632	A9F87632	A9F85632
40 A	A9F86140	A9F87140	A9F85140	A9F86640	A9F87640	A9F85640
50 A	A9F86150	A9F87150	A9F85150	A9F86650	A9F87650	A9F85650
63 A	A9F86163	A9F87163	A9F85163	A9F86663	A9F87663	A9F85663
Width in 9-mm modules	2			4		
Accessories	Module CA907000 and CA907001			Module CA907000 and CA907001		

(1) VDE approved only.

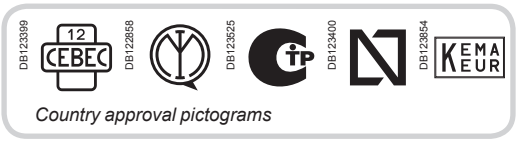
iC60H circuit breakers (curve B, C, D) (cont.)



■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

	2P			3P			4P		
									
	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
	Curve			Curve			Curve		
	B	C	D(1)	B	C	D(1)	B	C	D(1)
	A9F83270	A9F84270	A9F85270	A9F83370	A9F84370	A9F85370	A9F83470	A9F84470	A9F85470
	A9F83201	A9F84201	A9F85201	A9F83301	A9F84301	A9F85301	A9F83401	A9F84401	A9F85401
	A9F83202	A9F84202	A9F85202	A9F83302	A9F84302	A9F85302	A9F83402	A9F84402	A9F85402
	A9F83203	A9F84203	A9F85203	A9F83303	A9F84303	A9F85303	A9F83403	A9F84403	A9F85403
	A9F83204	A9F84204	A9F85204	A9F83304	A9F84304	A9F85304	A9F83404	A9F84404	A9F85404
	A9F86206	A9F87206	A9F85206	A9F86306	A9F87306	A9F85306	A9F86406	A9F87406	A9F85406
	A9F86210	A9F87210	A9F85210	A9F86310	A9F87310	A9F85310	A9F86410	A9F87410	A9F85410
	A9F83213	A9F84213	A9F85213	A9F83313	A9F84313	A9F85313	A9F83413	A9F84413	A9F85413
	A9F86216	A9F87216	A9F85216	A9F86316	A9F87316	A9F85316	A9F86416	A9F87416	A9F85416
	A9F86220	A9F87220	A9F85220	A9F86320	A9F87320	A9F85320	A9F86420	A9F87420	A9F85420
	A9F86225	A9F87225	A9F85225	A9F86325	A9F87325	A9F85325	A9F86425	A9F87425	A9F85425
	A9F86232	A9F87232	A9F85232	A9F86332	A9F87332	A9F85332	A9F86432	A9F87432	A9F85432
	A9F86240	A9F87240	A9F85240	A9F86340	A9F87340	A9F85340	A9F86440	A9F87440	A9F85440
	A9F86250	A9F87250	A9F85250	A9F86350	A9F87350	A9F85350	A9F86450	A9F87450	A9F85450
	A9F86263	A9F87263	A9F85263	A9F86363	A9F87363	A9F85363	A9F86463	A9F87463	A9F85463
	4			6			8		
	Module CA907000 and CA907001			Module CA907000 and CA907001			Module CA907000 and CA907001		

iC60H circuit breakers (curve B, C, D)



Country approval pictograms


PB104441-40


PB104451-40

IEC/EN 60947-2
IEC/EN 60898-1

■ iC60H circuit breakers are multi-standard circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for industrial isolation according to IEC/EN 60947-2, standard.
□ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Ph/Ph (2P, 3P, 4P)		12 to 133 V	220 to 240 V	380 to 415 V	440 V	
Ph/N (1P, 1P+N)		12 to 60 V	100 to 133 V	220 to 240 V	-	
Rating (In)	0.5 to 4 A	70 kA	70 kA	70 kA	50 kA	100 % of Icu
	6 to 63 A	42 kA	30 kA	15 kA	10 kA	50 % of Icu

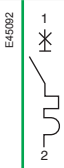
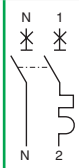
Breaking capacity (Icn) according to IEC/EN 60898-1		
		Voltage (Ue)
Ph/Ph		400 V
Ph/N		230 V
Rating (In)	0.5 to 63 A	10000 A

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Between +/-		12 to 60 V	⩽ 72 V	⩽ 125 V	⩽ 180 V	⩽ 250 V
Number of poles		1P		2P	3P	4P
Rating (In)	0.5 to 63 A	20 kA	15 kA	15 kA	15 kA	15 kA	100 % of Icu

Catalogue numbers

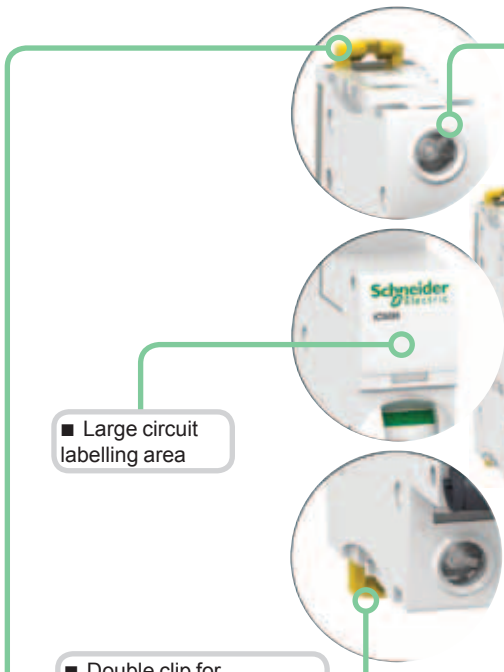
iC60H circuit breaker

Type	1P			1P+N		
	 E45092			 DB123389		
Auxiliaries	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
Vigi iC60	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
Rating (In)	Curve			Curve		
	B	C	D(1)	B	C	D(1)
0.5 A(1)	A9F83170	A9F84170	A9F85170	A9F83670	A9F84670	A9F85670
1 A(1)	A9F83101	A9F84101	A9F85101	A9F83601	A9F84601	A9F85601
2 A(1)	A9F83102	A9F84102	A9F85102	A9F83602	A9F84602	A9F85602
3 A(1)	A9F83103	A9F84103	A9F85103	A9F83603	A9F84603	A9F85603
4 A(1)	A9F83104	A9F84104	A9F85104	A9F83604	A9F84604	A9F85604
6 A	A9F88106	A9F89106	A9F85106	A9F88606	A9F89606	A9F85606
10 A	A9F88110	A9F89110	A9F85110	A9F88610	A9F89610	A9F85610
13 A(1)	A9F83113	A9F84113	A9F85113	A9F83613	A9F84613	A9F85613
16 A	A9F88116	A9F89116	A9F85116	A9F88616	A9F89616	A9F85616
20 A	A9F88120	A9F89120	A9F85120	A9F88620	A9F89620	A9F85620
25 A	A9F88125	A9F89125	A9F85125	A9F88625	A9F89625	A9F85625
32 A	A9F88132	A9F89132	A9F85132	A9F88632	A9F89632	A9F85632
40 A	A9F88140	A9F89140	A9F85140	A9F88640	A9F89640	A9F85640
50 A	A9F88150	A9F89150	A9F85150	A9F88650	A9F89650	A9F85650
63 A	A9F88163	A9F89163	A9F85163	A9F88663	A9F89663	A9F85663
Width in 9-mm modules	2			4		
Accessories	Module CA907000 and CA907001			Module CA907000 and CA907001		

(1) VDE approved only.

iC60H circuit breakers (curve B, C, D) (cont.)

PB104435-40



■ Insulated terminals IP20

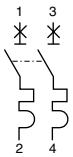
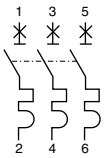
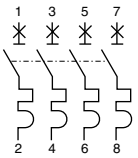
Visi-trip window
■ Fault tripping is indicated by a red mechanical indicator on the front face

■ Large circuit labelling area

Positive contact indication
■ Suitable for industrial isolation according to IEC/EN 60947-2 standard.
■ The presence of the green strip guarantees physical opening of the contacts and allows operations to be performed on the downstream circuit in complete safety

■ Double clip for dismounting with comb busbar in place

■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

	2P			3P			4P		
	E45094 			E45095 			E45097 		
	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
	Curve			Curve			Curve		
	B	C	D(1)	B	C	D(1)	B	C	D(1)
	A9F83270	A9F84270	A9F85270	A9F83370	A9F84370	A9F85370	A9F83470	A9F84470	A9F85470
	A9F83201	A9F84201	A9F85201	A9F83301	A9F84301	A9F85301	A9F83401	A9F84401	A9F85401
	A9F83202	A9F84202	A9F85202	A9F83302	A9F84302	A9F85302	A9F83402	A9F84402	A9F85402
	A9F83203	A9F84203	A9F85203	A9F83303	A9F84303	A9F85303	A9F83403	A9F84403	A9F85403
	A9F83204	A9F84204	A9F85204	A9F83304	A9F84304	A9F85304	A9F83404	A9F84404	A9F85404
	A9F88206	A9F89206	A9F85206	A9F88306	A9F89306	A9F85306	A9F88406	A9F89406	A9F85406
	A9F88210	A9F89210	A9F85210	A9F88310	A9F89310	A9F85310	A9F88410	A9F89410	A9F85410
	A9F83213	A9F84213	A9F85213	A9F83313	A9F84313	A9F85313	A9F83413	A9F84413	A9F85413
	A9F88216	A9F89216	A9F85216	A9F88316	A9F89316	A9F85316	A9F88416	A9F89416	A9F85416
	A9F88220	A9F89220	A9F85220	A9F88320	A9F89320	A9F85320	A9F88420	A9F89420	A9F85420
	A9F88225	A9F89225	A9F85225	A9F88325	A9F89325	A9F85325	A9F88425	A9F89425	A9F85425
	A9F88232	A9F89232	A9F85232	A9F88332	A9F89332	A9F85332	A9F88432	A9F89432	A9F85432
	A9F88240	A9F89240	A9F85240	A9F88340	A9F89340	A9F85340	A9F88440	A9F89440	A9F85440
	A9F88250	A9F89250	A9F85250	A9F88350	A9F89350	A9F85350	A9F88450	A9F89450	A9F85450
	A9F88263	A9F89263	A9F85263	A9F88363	A9F89363	A9F85363	A9F88463	A9F89463	A9F85463
	4			6			8		
	Module CA907000 and CA907001			Module CA907000 and CA907001			Module CA907000 and CA907001		

iC60H circuit breakers (curve B, C, D)

DB116619

Country approval pictograms


PB104441-40


PB104451-40

IEC/EN 60947-2
IEC/EN 60898-1

■ iC60H circuit breakers are multi-standard circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for industrial isolation according to IEC/EN 60947-2, standard.
□ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Ph/Ph (2P, 3P, 4P)		12 to 133 V	220 to 240 V	380 to 415 V	440 V	
Ph/N (1P, 1P+N)		12 to 60 V	100 to 133 V	220 to 240 V	-	
Rating (In)	0.5 to 4 A	70 kA	70 kA	70 kA	50 kA	100 % of Icu
	6 to 63A	42 kA	30 kA	15 kA	10 kA	50 % of Icu

Breaking capacity (Icn) according to IEC/EN 60898-1		
		Voltage (Ue)
Ph/Ph		400 V
Ph/N		230 V
Rating (In)	0.5 to 63 A	10000 A

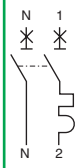
Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Between +/-		12 to 60 V	⩽ 72 V	⩽ 125 V	⩽ 180 V	⩽ 250 V
Number of poles		1P		2P	3P	4P
Rating (In)	0.5 to 63 A	20 kA	15 kA	15 kA	15 kA	15 kA	100 % of Icu

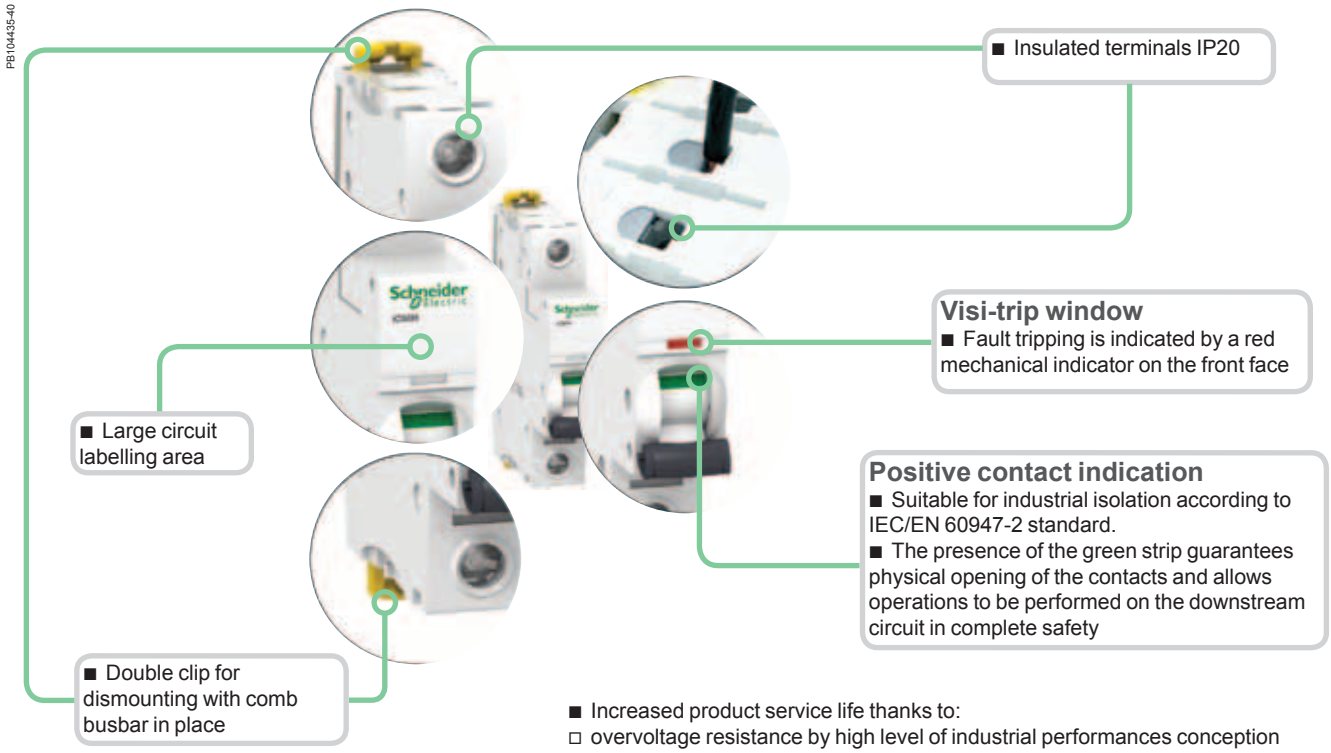
Offer selection see page 47

Catalogue numbers

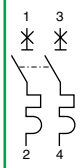
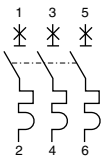
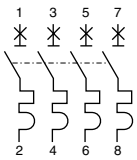
iC60H circuit breaker

Type	1P			1P+N		
	E45092 			DB123389 		
Auxiliaries	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
Vigi iC60	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
Rating (In)	Curve			Curve		
	B	C	D	B	C	D
0.5 A	A9F83170	A9F84170	A9F85170	A9F83670	A9F84670	A9F85670
1 A	A9F83101	A9F84101	A9F85101	A9F83601	A9F84601	A9F85601
2 A	A9F83102	A9F84102	A9F85102	A9F83602	A9F84602	A9F85602
3 A	A9F83103	A9F84103	A9F85103	A9F83603	A9F84603	A9F85603
4 A	A9F83104	A9F84104	A9F85104	A9F83604	A9F84604	A9F85604
6 A	A9F83106	A9F84106	A9F85106	A9F83606	A9F84606	A9F85606
10 A	A9F83110	A9F84110	A9F85110	A9F83610	A9F84610	A9F85610
13 A	A9F83113	A9F84113	A9F85113	A9F83613	A9F84613	A9F85613
16 A	A9F83116	A9F84116	A9F85116	A9F83616	A9F84616	A9F85616
20 A	A9F83120	A9F84120	A9F85120	A9F83620	A9F84620	A9F85620
25 A	A9F83125	A9F84125	A9F85125	A9F83625	A9F84625	A9F85625
32 A	A9F83132	A9F84132	A9F85132	A9F83632	A9F84632	A9F85632
40 A	A9F83140	A9F84140	A9F85140	A9F83640	A9F84640	A9F85640
50 A	A9F83150	A9F84150	A9F85150	A9F83650	A9F84650	A9F85650
63 A	A9F83163	A9F84163	A9F85163	A9F83663	A9F84663	A9F85663
Width in 9-mm modules	2			4		
Accessories	Module CA907000 and CA907001			Module CA907000 and CA907001		

iC60H circuit breakers (curve B, C, D) (cont.)

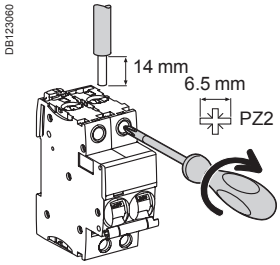


■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

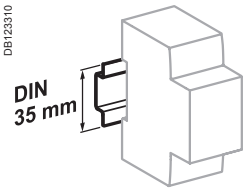
	2P			3P			4P		
									
	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
	Curve			Curve			Curve		
	B	C	D	B	C	D	B	C	D
	A9F83270	A9F84270	A9F85270	A9F83370	A9F84370	A9F85370	A9F83470	A9F84470	A9F85470
	A9F83201	A9F84201	A9F85201	A9F83301	A9F84301	A9F85301	A9F83401	A9F84401	A9F85401
	A9F83202	A9F84202	A9F85202	A9F83302	A9F84302	A9F85302	A9F83402	A9F84402	A9F85402
	A9F83203	A9F84203	A9F85203	A9F83303	A9F84303	A9F85303	A9F83403	A9F84403	A9F85403
	A9F83204	A9F84204	A9F85204	A9F83304	A9F84304	A9F85304	A9F83404	A9F84404	A9F85404
	A9F83206	A9F84206	A9F85206	A9F83306	A9F84306	A9F85306	A9F83406	A9F84406	A9F85406
	A9F83210	A9F84210	A9F85210	A9F83310	A9F84310	A9F85310	A9F83410	A9F84410	A9F85410
	A9F83213	A9F84213	A9F85213	A9F83313	A9F84313	A9F85313	A9F83413	A9F84413	A9F85413
	A9F83216	A9F84216	A9F85216	A9F83316	A9F84316	A9F85316	A9F83416	A9F84416	A9F85416
	A9F83220	A9F84220	A9F85220	A9F83320	A9F84320	A9F85320	A9F83420	A9F84420	A9F85420
	A9F83225	A9F84225	A9F85225	A9F83325	A9F84325	A9F85325	A9F83425	A9F84425	A9F85425
	A9F83232	A9F84232	A9F85232	A9F83332	A9F84332	A9F85332	A9F83432	A9F84432	A9F85432
	A9F83240	A9F84240	A9F85240	A9F83340	A9F84340	A9F85340	A9F83440	A9F84440	A9F85440
	A9F83250	A9F84250	A9F85250	A9F83350	A9F84350	A9F85350	A9F83450	A9F84450	A9F85450
	A9F83263	A9F84263	A9F85263	A9F83363	A9F84363	A9F85363	A9F83463	A9F84463	A9F85463
	4			6			8		
	Module CA907000 and CA907001			Module CA907000 and CA907001			Module CA907000 and CA907001		

iC60H circuit breakers (curve B, C, D) (cont.)

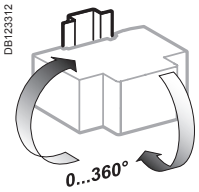
Connection



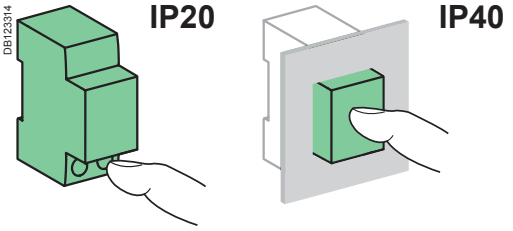
Rating	Tightening torque	Without accessory: Copper cables – Rigid	Without accessory: Copper cables – Flexible or with ferrule	With accessories: 50 mm² Al terminal	With accessories: Screw-on connection for ring terminal	With accessories: Multi-cables terminal – Rigid cables	With accessories: Multi-cables terminal – Flexible cables
		DB122945	DB122946	DB122935 Al	DB118789 Ø	DB118787	
0.5 to 25 A	2 N.m	1 to 25 mm²	1 to 16 mm²	-	Ø 5 mm	-	-
32 to 63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²		3 x 16 mm²	3 x 10 mm²



Clip on DIN rail 35 mm.



Indifferent position of installation.



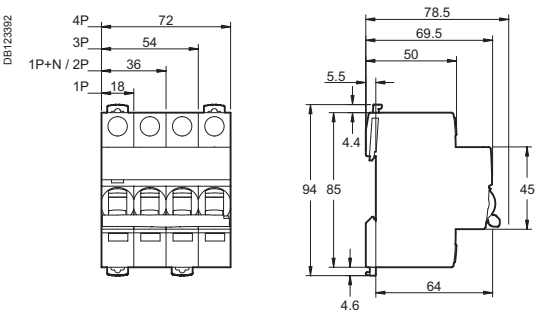
Technical data

Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		500 V AC
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV
Thermal tripping	Reference temperature	50 °C
	Temperature derating	See module CA908007
Magnetic tripping	B curve	4 In ± 20 %
	C curve	8 In ± 20 %
	D curve	12 In ± 20 %
Utilization category		A
According to IEC/EN 60898-1		
Limitation class		3
Rated making and breaking capacity of an individual pole (Icn1)		Icn1 = Icn
Additional characteristics		
Breaking capacity under 1 pole with IT 380-415 V isolated neutral system (case of double fault)	40 A	4 kA
	50/63 A	3 kA
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Overvoltage category (IEC 60364)		IV
Operating temperature		-35°C to +70°C
Storage temperature		-40°C to +85°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)

Weight (g)

Circuit-breaker	
Type	**iC60H**
1P	125
2P	250
3P	375
4P	500

Dimensions (mm)



iC60H double terminals circuit breakers (curve B, C, D)

DB106619 DB123865 DB123854

Country approval pictograms

PB107402-40 PB107406-40

PB107408-40 PB107410-40

IEC/EN 60947-2
IEC/EN 60898-1

■ iC60H double tunnel terminals circuit breakers are multi-standard circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for industrial isolation according to IEC/EN 60947-2, standard.
□ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Ph/Ph (2P, 3P, 4P)		12 to 133 V	220 to 240 V	380 to 415 V	440 V	
Ph/N (1P, 1P+N)		12 to 60 V	100 to 133 V	220 to 240 V	-	
Rating (In)	0.5 to 4 A	70 kA	70 kA	70 kA	50 kA	100 % of Icu
	6 to 40 A	42 kA	30 kA	15 kA	10 kA	50 % of Icu
	50/63 A	42 kA	30 kA	15 kA	10 kA	50 % of Icu

Breaking capacity (Icn) according to IEC/EN 60898-1		
		Voltage (Ue)
Ph/Ph		400 V
Ph/N		230 V
Rating (In)	0.5 to 63 A	10000 A

Direct current (DC)

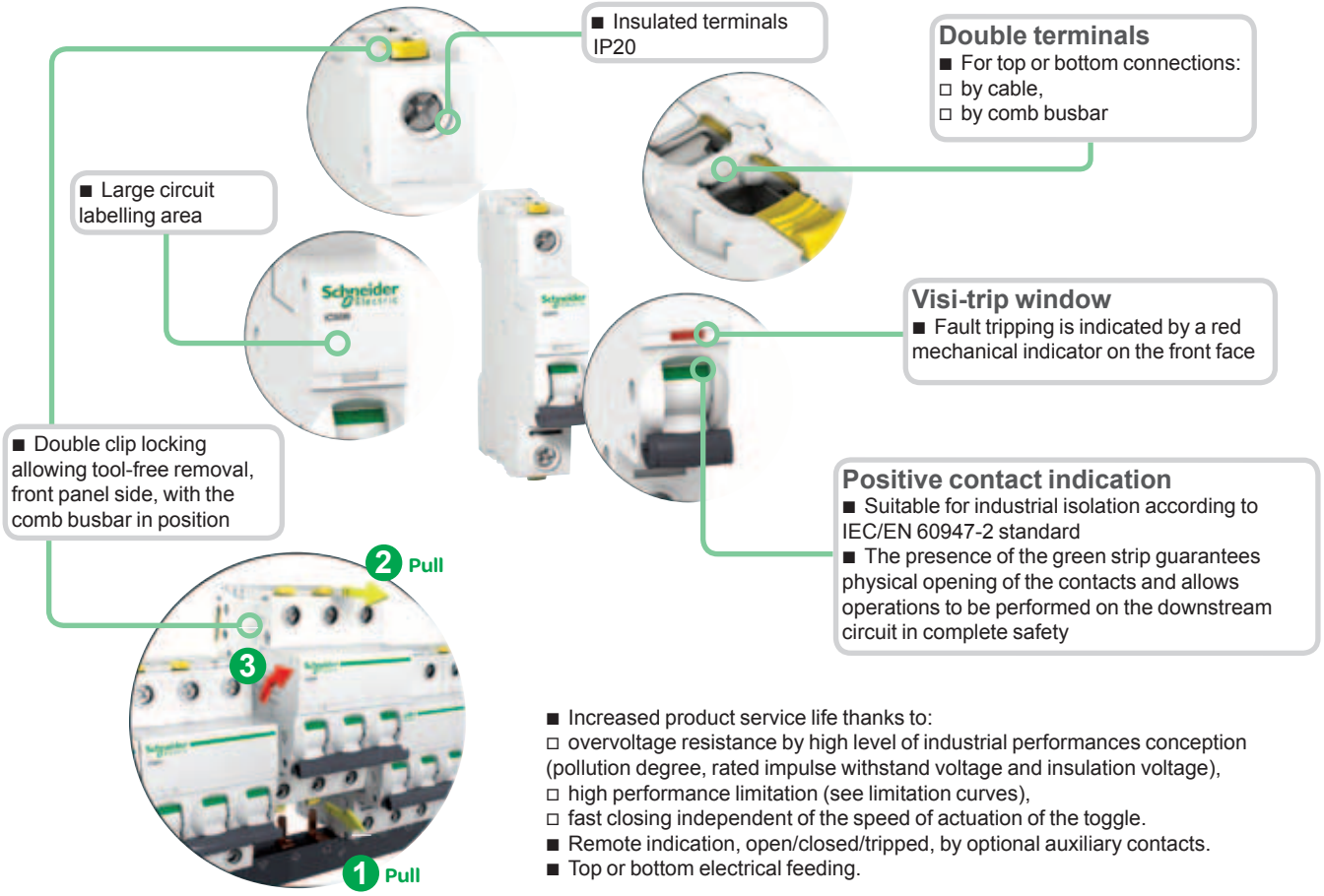
Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Between +/-		12 to 60 V	⩽ 72 V	⩽ 125 V	⩽ 180 V	⩽ 250 V	
Number of poles		1P		2P	3P	4P	
Rating (In)	1 to 63 A	20 kA	15 kA	15 kA	15 kA	15 kA	100 % of Icu

Catalogue numbers

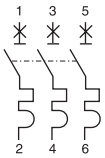
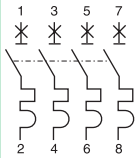
iC60H double terminals circuit breaker

Type	1P			1P+N			2P		
									
Auxiliaries	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
Vigi iC60	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
Rating (In)	Curve			Curve			Curve		
	B	C	D	B	C	D	B	C	D
0.5 A	-	A9F07170	A9F08170	-	A9F07670		-	A9F07270	A9F08270
1 A	-	A9F07101	A9F08101	-	A9F07601		-	A9F07201	A9F08201
2 A	-	A9F07102	A9F08102	-	A9F07602		-	A9F07202	A9F08202
3 A	-	A9F07103	A9F08103	-	A9F07603		-	A9F07203	A9F08203
4 A	-	A9F07104	A9F08104	-	A9F07604		-	A9F07204	A9F08204
6 A	A9F06106	A9F07106	A9F08106	A9F06606	A9F07606		A9F06206	A9F07206	A9F08206
10 A	A9F06110	A9F07110	A9F08110	A9F06610	A9F07610		A9F06210	A9F07210	A9F08210
13 A	A9F06113	A9F07113	A9F08113	A9F06613	A9F07613		A9F06213	A9F07213	A9F08213
16 A	A9F06116	A9F07116	A9F08116	A9F06616	A9F07616		A9F06216	A9F07216	A9F08216
20 A	A9F06120	A9F07120	A9F08120	A9F06620	A9F07620		A9F06220	A9F07220	A9F08220
25 A	A9F06125	A9F07125	A9F08125	A9F06625	A9F07625		A9F06225	A9F07225	A9F08225
32 A	A9F06132	A9F07132	A9F08132	A9F06632	A9F07632		A9F06232	A9F07232	A9F08232
40 A	A9F06140	A9F07140	A9F08140	A9F06640	A9F07640		A9F06240	A9F07240	A9F08240
50 A	A9F06150	A9F07150	A9F08150	A9F06650	A9F07650		A9F06250	A9F07250	A9F08250
63 A	A9F06163	A9F07163	A9F08163	A9F06663	A9F07663		A9F06263	A9F07263	A9F08263
Width in 9-mm modules	2			4			4		
Accessories	Modules CA907000 and CA907001			Modules CA907000 and CA907001			Modules CA907000 and CA907001		

iC60H double terminals circuit breakers (curve B, C, D) (cont.)



■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

	3P			4P		
						
	Remote tripping and indication, module CA907000 and CA907002			Remote tripping and indication, module CA907000 and CA907002		
	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
	Curve			Curve		
	B	C	D	B	C	D
	-	A9F07370	A9F08370	-	A9F07470	A9F08470
	-	A9F07301	A9F08301	-	A9F07401	A9F08401
	-	A9F07302	A9F08302	-	A9F07402	A9F08402
	-	A9F07303	A9F08303	-	A9F07403	A9F08403
	-	A9F07304	A9F08304	-	A9F07404	A9F08404
	A9F06306	A9F07306	A9F08306	A9F06406	A9F07406	A9F08406
	A9F06310	A9F07310	A9F08310	A9F06410	A9F07410	A9F08410
	A9F06313	A9F07313	A9F08313	A9F06413	A9F07413	A9F08413
	A9F06316	A9F07316	A9F08316	A9F06416	A9F07416	A9F08416
	A9F06320	A9F07320	A9F08320	A9F06420	A9F07420	A9F08420
	A9F06325	A9F07325	A9F08325	A9F06425	A9F07425	A9F08425
	A9F06332	A9F07332	A9F08332	A9F06432	A9F07432	A9F08432
	A9F06340	A9F07340	A9F08340	A9F06440	A9F07440	A9F08440
	A9F06350	A9F07350	A9F08350	A9F06450	A9F07450	A9F08450
	A9F06363	A9F07363	A9F08363	A9F06463	A9F07463	A9F08463
	6			8		
	Modules CA907000 and CA907001			Modules CA907000 and CA907001		

iC60H double terminals circuit breakers (curve B, C, D) (cont.)

Connection between double terminal circuit breakers

With comb busbar at the back/cables at the front

Without comb busbar at the back/cables at the front

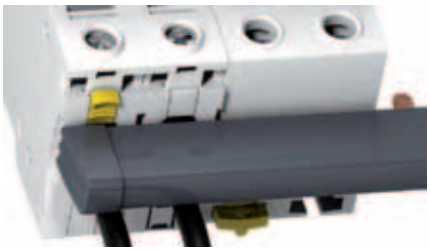
DB404815

	Back		Front	
Rating	Tightening torque	Comb busbar	Copper cables	
		Thickness of the teeth	Rigid	Flexible or with ferrule
		DB122945	DB122946	
0.5 to 25 A	2 N.m	1.5 mm	1 to 25 mm²	1 to 16 mm²
32 to 63 A	3.5 N.m	1.5 mm	1 to 25 mm²	1 to 25 mm²

Between double terminal circuit breakers and single-terminal circuit breakers

Cables at the back/comb busbar at the front

DB404817

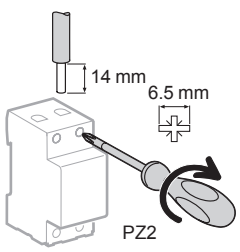


	Back		Front
Rating	Tightening torque	Copper cables	Thickness of the teeth
		Rigid / Flexible or with ferrule	
	DB122945	DB122946	
0.5 to 25 A	2 N.m	1 to 16 mm²	1 to 10 mm²	1.5 mm
32 to 63 A	3.5 N.m	1 to 16 mm²	1 to 10 mm²	1.5 mm

■ Connection by comb busbar or by cable (according to EN 50027).

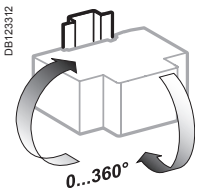
Connection

DB123947

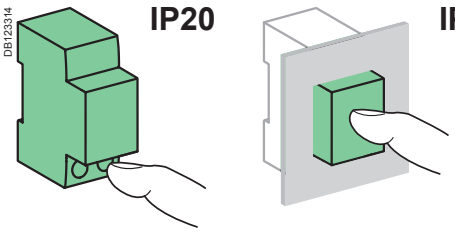


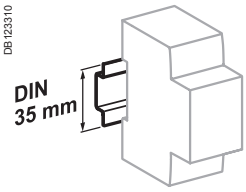
	With accessories			
Rating	50 mm² Al terminal	Screw-on connection for ring terminal	Multi-cables terminal	
			Rigid cables	Flexible cables
	DB122935 Al	DB118789 Ø	DB118787	
0.5 to 25 A	-	Ø 5 mm	-	-
32 to 63 A	50 mm²		3 x 16 mm²	3 x 10 mm²

iC60H double terminals circuit breakers (curve B, C, D) (cont.)



Indifferent position of installation.



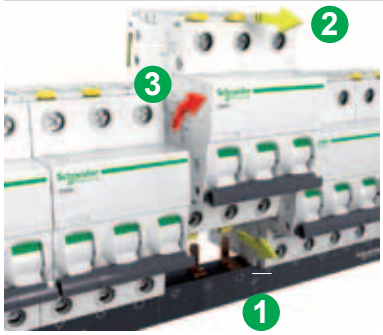
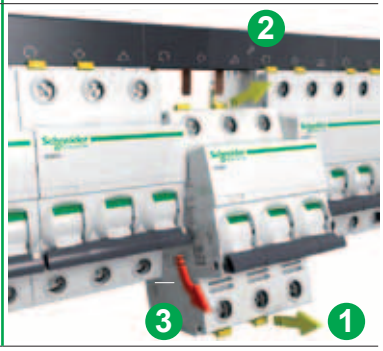


Clip on DIN rail 35 mm.

Technical data

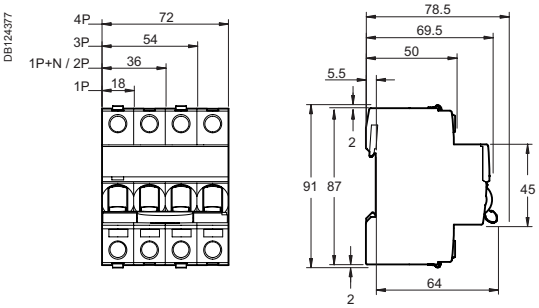
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		500 V AC
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV
Thermal tripping	Reference temperature	50°C
	Temperature derating	See module CA908007
Magnetic tripping	B curve	4 In ± 20 %
	C curve	8 In ± 20 %
	D curve	12 In ± 20 %
Utilization category		A
According to IEC/EN 60898-1		
Limitation class		3
Rated making and breaking capacity of an individual pole (Icn1)		Icn1 = Icn
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Overvoltage category (IEC 60364)		IV
Operating temperature		-35°C to +70°C
Storage temperature		-40°C to +85°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)

Disassembly double terminals iC60 circuit breaker with the comb busbar in position

Comb busbar downstream	Comb busbar upstream
	

1- Pull lower "clip locking"
2- Pull upper "clip locking"
3- Remove the circuit breaker

Dimensions (mm)



Weight (g)

Circuit-breaker	
Type	**iC60H**
1P	125
2P (1P+N)	250
3P	375
4P	500

iC60L circuit breakers (curve B, C, K, Z)

DB116619 DB123525 DB122858

Country approval pictograms

PB104442-40

PB104452-40

IEC/EN 60947-2
IEC/EN 60898-1 up to 40 A

■ iC60L circuit breakers are multi-standard circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitable for industrial isolation according to IEC/EN 60947-2, standard.
□ fault tripping indication by a red mechanical indicator in circuit breaker front face.

Alternating current (AC) 50/60 Hz

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Ph/Ph (2P, 3P, 4P)		12 to 133 V	220 to 240 V	380 to 415 V	440 V	
Ph/N (1P)		12 to 60 V	100 to 133 V	220 to 240 V	-	
Rating (In)	0.5 to 4 A	100 kA	100 kA	100 kA	70 kA	100 % of Icu
	6 to 25 A	70 kA	50 kA	25 kA	20 kA	50 % of Icu (1)
	32 / 40 A	70 kA	36 kA	20 kA	15 kA	50 % of Icu
	50 / 63 A	70 kA	30 kA	15 kA	10 kA	50 % of Icu

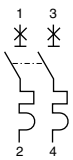
Breaking capacity (Icn) according to IEC/EN 60898-1		
		Voltage (Ue)
Ph/Ph		400 V
Ph/N		230 V
Rating (In)	0.5 to 40 A	15000 A

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Between +/-		12 to 60 V	≤ 72 V	≤ 125 V	≤ 180 V	≤ 250 V
Number of poles		1P		2P	3P	4P
Rating (In)	0.5 to 63 A	25 kA	20 kA	20 kA	20 kA	20 kA	100 % of Icu

Catalogue numbers

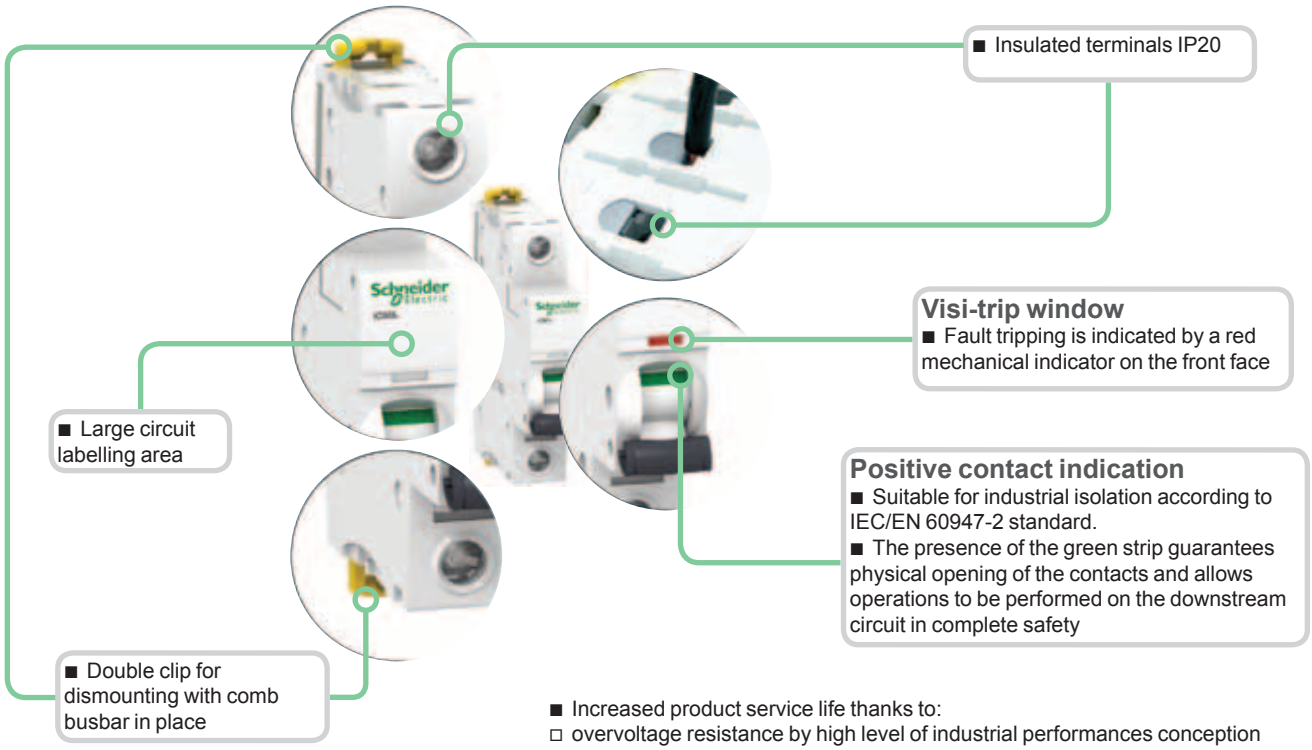
iC60L circuit breaker

Type		1P				2P			
		E45092 				E45094 			
Auxiliaries		Remote tripping and indication, module CA907000 and CA907002				Remote tripping and indication, module CA907000 and CA907002			
Vigi iC60		Vigi iC60 add-on residual current device, module CA902005				Vigi iC60 add-on residual current device, module CA902005			
Rating (In)	Quality label (2)	Curve				Curve			
		B	C	K	Z	B	C	K	Z
0.5 A		A9F93170	A9F94170	A9F95170	A9F92170	A9F93270	A9F94270	A9F95270	A9F92270
1 A		A9F93101	A9F94101	A9F95101	A9F92101	A9F93201	A9F94201	A9F95201	A9F92201
1.6 A		-	-	A9F95172	A9F92172	-	-	A9F95272	A9F92272
2 A		A9F93102	A9F94102	A9F95102	A9F92102	A9F93202	A9F94202	A9F95202	A9F92202
3 A		A9F93103	A9F94103	A9F95103	A9F92103	A9F93203	A9F94203	A9F95203	A9F92203
4 A		A9F93104	A9F94104	A9F95104	A9F92104	A9F93204	A9F94204	A9F95204	A9F92204
6 A		A9F93106	A9F94106	A9F95106	A9F92106	A9F93206	A9F94206	A9F95206	A9F92206
10 A		A9F93110	A9F94110	A9F95110	A9F92110	A9F93210	A9F94210	A9F95210	A9F92210
16 A		A9F93116	A9F94116	A9F95116	A9F92116	A9F93216	A9F94216	A9F95216	A9F92216
20 A		A9F93120	A9F94120	A9F95120	A9F92120	A9F93220	A9F94220	A9F95220	A9F92220
25 A		A9F93125	A9F94125	A9F95125	A9F92125	A9F93225	A9F94225	A9F95225	A9F92225
32 A		A9F93132	A9F94132	A9F95132	A9F92132	A9F93232	A9F94232	A9F95232	A9F92232
40 A		A9F93140	A9F94140	A9F95140	A9F92140	A9F93240	A9F94240	A9F95240	A9F92240
50 A		A9F93150	A9F94150	A9F95150(3)	A9F92150	A9F93250	A9F94250	A9F95250	A9F92250
63 A		A9F93163	A9F94163	A9F95163(3)	A9F92163	A9F93263	A9F94263	A9F95263	A9F92263
Width in 9-mm modules		2				4			
Accessories		Module CA907000 and CA907001				Module CA907000 and CA907001			

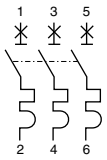
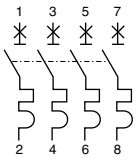
(1) 100 % of Icu for ratings 6 to 25 A under Ue 100 to 133 V AC Ph/Ph and Ue 12 to 60 V AC Ph/N.
(2) Information to be provided by the country.
(3) Without approval.

iC60L circuit breakers (curve B, C, K, Z) (cont.)

PB104436-40



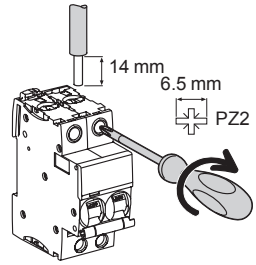
■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

	3P				4P			
								
	Remote tripping and indication, module CA907000 and CA907002				Remote tripping and indication, module CA907000 and CA907002			
	Vigi iC60 add-on residual current device, module CA902005				Vigi iC60 add-on residual current device, module CA902005			
	Curve				Curve			
	B	C	K	Z	B	C	K	Z
	A9F93370	A9F94370	A9F95370	A9F92370	A9F93470	A9F94470	A9F95470	A9F92470
	A9F93301	A9F94301	A9F95301	A9F92301	A9F93401	A9F94401	A9F95401	A9F92401
	-	-	A9F95372	A9F92372	-	-	A9F95472	A9F92472
	A9F93302	A9F94302	A9F95302	A9F92302	A9F93402	A9F94402	A9F95402	A9F92402
	A9F93303	A9F94303	A9F95303	A9F92303	A9F93403	A9F94403	A9F95403	A9F92403
	A9F93304	A9F94304	A9F95304	A9F92304	A9F93404	A9F94404	A9F95404	A9F92404
	A9F93306	A9F94306	A9F95306	A9F92306	A9F93406	A9F94406	A9F95406	A9F92406
	A9F93310	A9F94310	A9F95310	A9F92310	A9F93410	A9F94410	A9F95410	A9F92410
	A9F93316	A9F94316	A9F95316	A9F92316	A9F93416	A9F94416	A9F95416	A9F92416
	A9F93320	A9F94320	A9F95320	A9F92320	A9F93420	A9F94420	A9F95420	A9F92420
	A9F93325	A9F94325	A9F95325	A9F92325	A9F93425	A9F94425	A9F95425	A9F92425
	A9F93332	A9F94332	A9F95332	A9F92332	A9F93432	A9F94432	A9F95432	A9F92432
	A9F93340	A9F94340	A9F95340	A9F92340	A9F93440	A9F94440	A9F95440	A9F92440
	A9F93350	A9F94350	A9F95350	A9F92350	A9F93450	A9F94450	A9F95450	A9F92450
	A9F93363	A9F94363	A9F95363	A9F92363	A9F93463	A9F94463	A9F95463	A9F92463
	4				6			
	Module CA907000 and CA907001				Module CA907000 and CA907001			

iC60L circuit breakers (curve B, C, K, Z) (cont.)

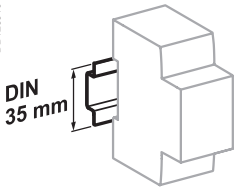
Connection

DB123060



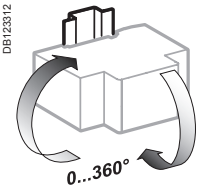
Rating	Tightening torque	Without accessory: Copper cables – Rigid	Without accessory: Copper cables – Flexible or with ferrule	With accessories: 50 mm² Al terminal	With accessories: Screw-on connection for ring terminal	With accessories: Multi-cables terminal – Rigid cables	With accessories: Multi-cables terminal – Flexible cables
		DB122945	DB122946	DB122935 Al	DB118789 Ø	DB118787	
0.5 to 25 A	2 N.m	1 to 25 mm²	1 to 16 mm²	-	Ø 5 mm	-	-
32 to 63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²		3 x 16 mm²	3 x 10 mm²

DB123310



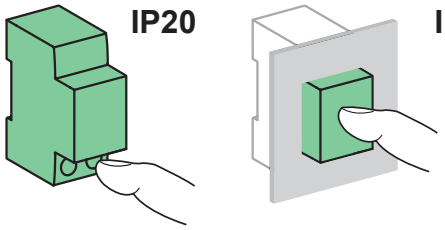
Clip on DIN rail 35 mm.

DB123312



Indifferent position of installation.

DB123314



Technical data

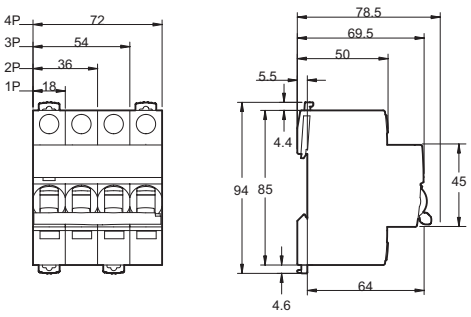
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		500 V AC
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV
Thermal tripping	Reference temperature	50 °C
	Temperature derating	See module CA908007
Magnetic tripping	B curve	4 In ± 20 %
	C curve	8 In ± 20 %
	K curve	12 In ± 20 %
	Z curve	3 In ± 20 %
Utilization category		A
According to IEC/EN 60898-1		
Rated making and breaking capacity of an individual pole (Icn1)		Icn1 = Icn
Additional characteristics		
Breaking capacity under 1 pole with IT 380-415 V isolated neutral system (case of double fault)	40 A	4 kA
	50/63 A	3 kA
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Overvoltage category (IEC 60364)		IV
Operating temperature		-35°C to +70°C
Storage temperature		-40°C to +85°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)

Weight (g)

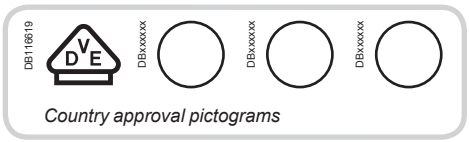
Circuit-breaker	
Type	**iC60L**
1P	125
2P	250
3P	375
4P	500

Dimensions (mm)

DB123586



iK60N circuit breakers (curve B)



Country approval pictograms

IEC/EN 60898-1

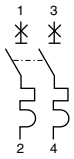
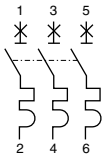
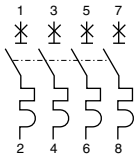

PB104459-40


PB104463-40

- iK60N circuit breakers are circuit breakers which combine the following functions:
  - circuit protection against short-circuit currents,
  - circuit protection against overload currents,
  - disconnection, opening and closing.

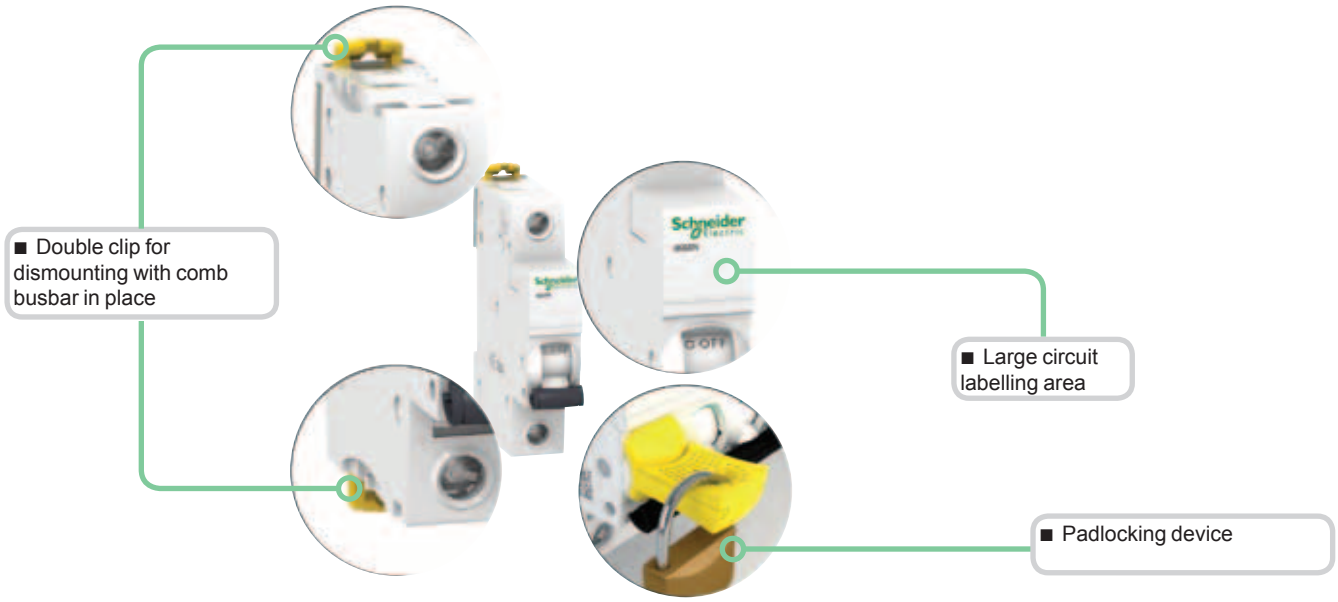
iK60N circuit breaker 50/60 Hz		
Breaking capacity in short circuit (Icn) as per IEC/EN 60898-1		**Service breaking capacity (Ics)**
Ph/Ph	**400 V**	100 % of Icn
Ph/N	**230 V**	
Rating (In) 1 to 63 A	6000 A	

Catalogue numbers

iK60N circuit breaker					
Type	**1P**	**1P+N**	**2P**	**3P**	**4P**
	 E45092	 DB123389	 E45094	 E45095	 E45097
Auxiliaries	**Without auxiliaries**	**Without auxiliaries**	**Without auxiliaries**	**Without auxiliaries**	**Without auxiliaries**
Vigi iC60	**Without Vigi iC60**	**Without Vigi iC60**	**Without Vigi iC60**	**Without Vigi iC60**	**Without Vigi iC60**
Rating (In)	**Curve B**	**Curve B**	**Curve B**	**Curve B**	**Curve B**
1 A	**A9K23101**	**A9K23601**	**A9K23201**	**-**	**-**
2 A	**A9K23102**	**A9K23602**	**A9K23202**	**-**	**-**
3 A	**A9K23103**	**A9K23603**	**A9K23203**	**-**	**-**
4 A	**A9K23104**	**A9K23604**	**A9K23204**	**-**	**-**
6 A	**A9K23106**	**A9K23606**	**A9K23206**	**A9K23306**	**A9K23406**
10 A	**A9K23110**	**A9K23610**	**A9K23210**	**A9K23310**	**A9K23410**
16 A	**A9K23116**	**A9K23616**	**A9K23216**	**A9K23316**	**A9K23416**
20 A	**A9K23120**	**A9K23620**	**A9K23220**	**A9K23320**	**A9K23420**
25 A	**A9K23125**	**A9K23625**	**A9K23225**	**A9K23325**	**A9K23425**
32 A	**A9K23132**	**A9K23632**	**A9K23232**	**A9K23332**	**A9K23432**
40 A	**A9K23140**	**A9K23640**	**A9K23240**	**A9K23340**	**A9K23440**
50 A	**A9K23150**	**A9K23650**	**A9K23250**	**A9K23350**	**A9K23450**
63 A	**A9K23163**	**A9K23663**	**A9K23263**	**A9K23363**	**A9K23463**
Operating frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Width in 9-mm modules	2	4	4	6	8
Accessories	**Padlocking device cat. no. A9A26970**				

iK60N circuit breakers (curve B) (cont.)

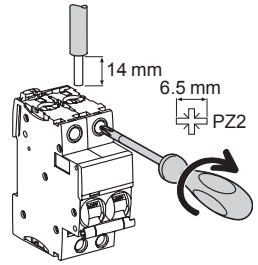
PB104434-40



■ Top or bottom electrical feeding.

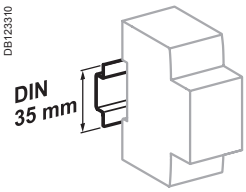
Connection

DB123060

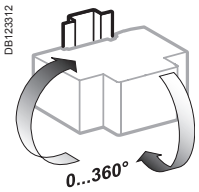


Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
		DB122945	DB122946	
B curve	1 to 25 A	2 N.m	1 to 25 mm²	1 to 16 mm²
	32 to 63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²

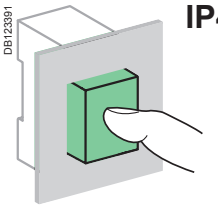
iK60N circuit breakers (curve B) (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



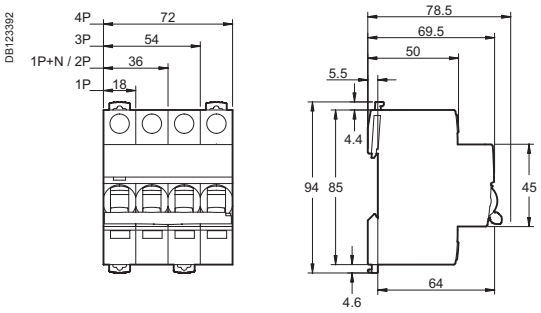
Technical data

Main characteristics		
According to IEC/EN 60898-1		
Insulation voltage (Ui)		440 V AC
Pollution degree		2
Rated impulse withstand voltage (Uimp)		4 kV
Thermal tripping	Reference temperature	30°C
	Temperature derating	See module CA908007
Magnetic tripping	B curve	3 to 5 In
Limitation class		3
Rated making and breaking capacity of an individual pole (Icn1)		Icn1 = Icn
Additional characteristics		
Degree of protection (IEC 60529)	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Overvoltage category (IEC 60364)		III
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +85°C

Weight (g)

Circuit-breaker	
Type	**iK60N**
1P	100
2P	200
3P	300
4P	400

Dimensions (mm)

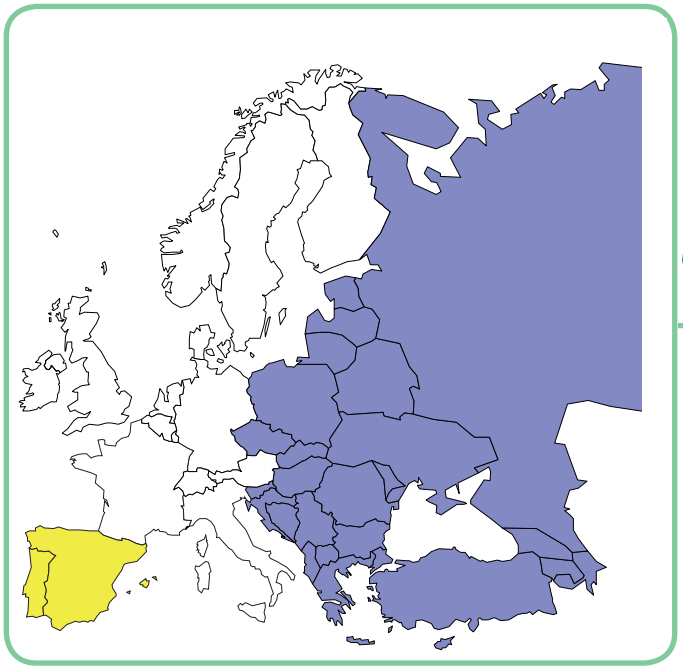


iK60N (curve C)
Contents

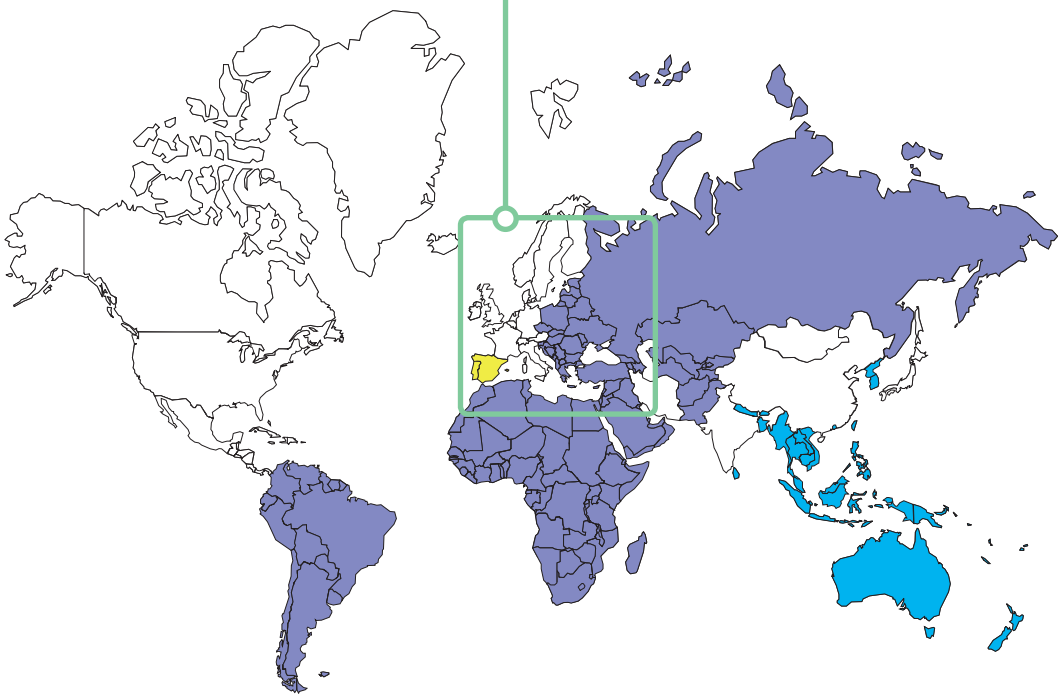
Offers
This page must be removed before publishing

Schneider Electric's range of circuit breakers consists of different products (A, B, C) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.



iK60N circuit breakers (curve C)

DB123400 DB123807

Country approval pictograms

IEC/EN 60898-1

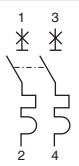
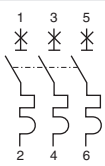
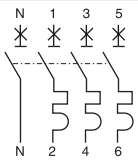
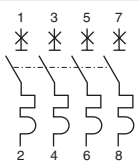
PB104459-40

- iK60N circuit breakers are circuit breakers which combine the following functions:
  - circuit protection against short-circuit currents,
  - circuit protection against overload currents,
  - disconnection, opening and closing.

iK60N circuit breaker 50/60 Hz		
Breaking capacity in short circuit (Icn) as per IEC/EN 60898-1		**Service breaking capacity (Ics)**
Ph/Ph	**400 V**	100 % of Icn
Ph/N	**230 V**	
Rating (In) 1 to 63 A	6000 A	

Catalogue numbers

iK60N circuit breakers

Type	1P	1P+N	2P	3P	3P+N	4P
	E45092 	DB123299 	E45094 	E45095 	DB124123 	E45097 
Auxiliaries	**Without auxiliaries**					
Vigi iC60	**Without Vigi iC60**					
Rating (In)	**Curve C**	**Curve C**	**Curve C**	**Curve C**	**Curve C**	**Curve C**
1 A(1)	**A9K24101**	**A9K24601**	**A9K24201**	-	-	-
2 A(1)	**A9K24102**	**A9K24602**	**A9K24202**	-	-	-
3 A(1)	**A9K24103**	**A9K24603**	**A9K24203**	-	-	-
4 A(1)	**A9K24104**	**A9K24604**	**A9K24204**	-	-	-
6 A	**A9K17106**	**A9K17606**	**A9K17206**	**A9K17306**	**A9K24706**	**A9K17406**
10 A	**A9K17110**	**A9K17610**	**A9K17210**	**A9K17310**	**A9K24710**	**A9K17410**
16 A	**A9K17116**	**A9K17616**	**A9K17216**	**A9K17316**	**A9K24716**	**A9K17416**
20 A	**A9K17120**	**A9K17620**	**A9K17220**	**A9K17320**	**A9K24720**	**A9K17420**
25 A	**A9K17125**	**A9K17625**	**A9K17225**	**A9K17325**	**A9K24725**	**A9K17425**
32 A	**A9K17132**	**A9K17632**	**A9K17232**	**A9K17332**	**A9K24732**	**A9K17432**
40 A(1)	**A9K24140**	**A9K24640**	**A9K24240**	**A9K24340**	**A9K24740**	**A9K24440**
50 A(1)	**A9K24150**	**A9K24650**	**A9K24250**	**A9K24350**	**A9K24750**	**A9K24450**
63 A(1)	**A9K24163**	**A9K24663**	**A9K24263**	**A9K24363**	**A9K24763**	**A9K24463**
Operating frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Width in 9-mm modules	2	4	4	6	8	8
Accessories	**Padlocking device cat. no. A9A26970**					

(1) VDE and RT approved, excepted 3P+N products.

iK60N circuit breakers (curve C) (cont.)

DB116619 DB123430 DB123399

Country approval pictograms

IEC/EN 60898-1

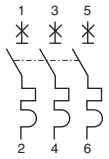
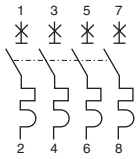
PB104459-40 PB104463-40

- iK60N circuit breakers are circuit breakers which combine the following functions:
  - circuit protection against short-circuit currents,
  - circuit protection against overload currents,
  - disconnection, opening and closing.

iK60N circuit breaker 50/60 Hz		
Breaking capacity in short circuit (Icn) as per IEC/EN 60898-1		**Service breaking capacity (Ics)**
Ph/Ph	**400 V**	100 % of Icn
Ph/N	**230 V**	
Rating (In) 1 to 63 A	6000 A	

Catalogue numbers

iK60N circuit breakers

Type	1P	1P+N	2P	3P	4P
	E45092 	DB123399 	E45094 	E45095 	E45097 
Auxiliaries	**Without auxiliaries**				
Vigi iC60	**Without Vigi iC60**				
Rating (In)	**Curve C**	**Curve C**	**Curve C**	**Curve C**	**Curve C**
1 A	**A9K24101**	**A9K24601**	**A9K24201**	-	-
2 A	**A9K24102**	**A9K24602**	**A9K24202**	-	-
3 A	**A9K24103**	**A9K24603**	**A9K24203**	-	-
4 A	**A9K24104**	**A9K24604**	**A9K24204**	-	-
6 A	**A9K24106**	**A9K24606**	**A9K24206**	**A9K24306**	**A9K24406**
10 A	**A9K24110**	**A9K24610**	**A9K24210**	**A9K24310**	**A9K24410**
13 A	**A9K24113**	**A9K24613**	**A9K24213**	**A9K24313**	**A9K24413**
16 A	**A9K24116**	**A9K24616**	**A9K24216**	**A9K24316**	**A9K24416**
20 A	**A9K24120**	**A9K24620**	**A9K24220**	**A9K24320**	**A9K24420**
25 A	**A9K24125**	**A9K24625**	**A9K24225**	**A9K24325**	**A9K24425**
32 A	**A9K24132**	**A9K24632**	**A9K24232**	**A9K24332**	**A9K24432**
40 A	**A9K24140**	**A9K24640**	**A9K24240**	**A9K24340**	**A9K24440**
50 A	**A9K24150**	**A9K24650**	**A9K24250**	**A9K24350**	**A9K24450**
63 A	**A9K24163**	**A9K24663**	**A9K24263**	**A9K24363**	**A9K24463**
Operating frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Width in 9-mm modules	2	4	4	6	8
Accessories	**Padlocking device cat. no. A9A26970**				

iK60N circuit breakers (curve C) (cont.)

DB406121

Country approval pictogram

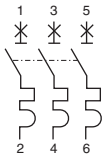
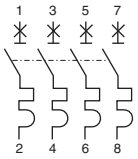
IEC/EN 60898-1

PB104459-40

- iK60N circuit breakers are circuit breakers which combine the following functions:
  - circuit protection against short-circuit currents,
  - circuit protection against overload currents,
  - disconnection, opening and closing.

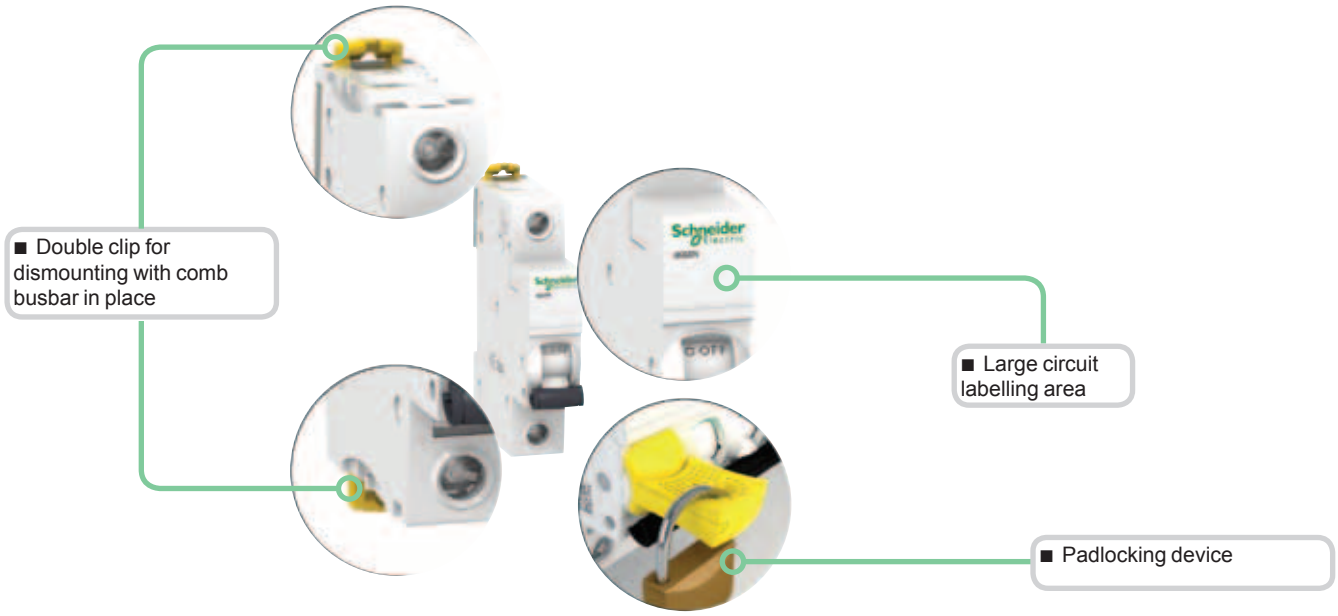
iK60N circuit breaker 50/60 Hz		
Breaking capacity in short circuit (Icn) as per IEC/EN 60898-1		**Service breaking capacity (Ics)**
Ph/Ph	**400 V**	100 % of Icn
Ph/N	**230 V**	
Rating (In) 6 to 63 A	6000 A	

Catalogue numbers

iK60N circuit breakers				
Type	**1P**	**2P**	**3P**	**4P**
	E45092 	E45094 	E45095 	E45097 
Auxiliaries	**Without auxiliaries**			
Vigi iC60	**Without Vigi iC60**			
Rating (In)	**Curve C**	**Curve C**	**Curve C**	**Curve C**
1 A	**A9K24101**	-	-	-
2 A	**A9K24102**	-	-	-
3 A	**A9K24103**	-	-	-
4 A	**A9K24104**	-	-	-
6 A	**A9K27106**	**A9K27206**	**A9K24306**	**A9K24406**
10 A	**A9K27110**	**A9K27210**	**A9K24310**	**A9K24410**
16 A	**A9K27116**	**A9K27216**	**A9K24316**	**A9K24416**
20 A	**A9K27120**	**A9K27220**	**A9K24320**	**A9K24420**
25 A	**A9K27125**	**A9K27225**	**A9K24325**	**A9K24425**
32 A	**A9K27132**	**A9K27232**	**A9K24332**	**A9K24432**
40 A	**A9K24140**	**A9K24240**	**A9K24340**	**A9K24440**
Operating frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Width in 9-mm modules	2	4	6	8
Accessories	**Padlocking device cat. no. A9A26970**			

iK60N circuit breakers (curve C) (cont.)

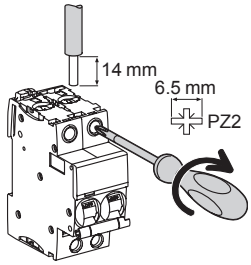
PB104434-40



■ Top or bottom electrical feeding.

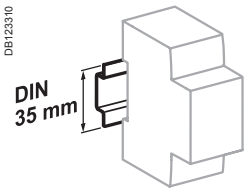
Connection

DB123060

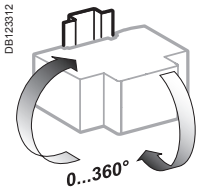


Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
		DB122945		DB122946
C curve	1 to 32 A	2 N.m	1 to 25 mm²	1 to 16 mm²
	40 to 63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²

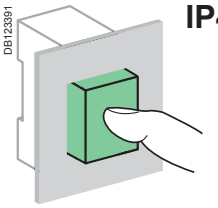
iK60N circuit breakers (curve C) (cont.)



Clip on DIN rail 35 mm.



Position d'installation indifférente.



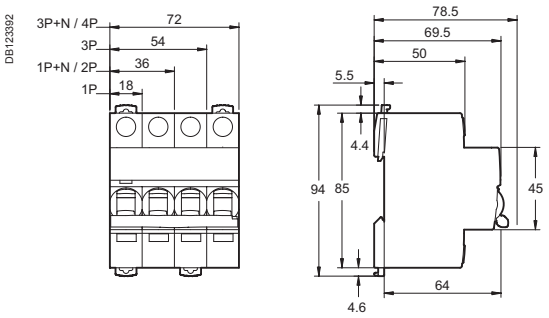
Technical data

Main characteristics		
According to IEC/EN 60898-1		
Insulation voltage (Ui)		440 V AC
Pollution degree		2
Rated impulse withstand voltage (Uimp)		4 kV
Thermal tripping	Reference temperature	30°C
	Temperature derating	See module CA908007
Magnetic tripping	C curve	5 to 10 In
Limitation class		3
Rated making and breaking capacity of an individual pole (Icn1)		Icn1 = Icn
Additional characteristics		
Degree of protection (IEC 60529)	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Overvoltage category (IEC 60364)		III
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +85°C

Weight (g)

Circuit-breaker	
Type	**iK60N**
1P	100
2P (1P+N)	200
3P	300
4P (3P+N)	400

Dimensions (mm)



K60 Biconnect circuit breakers

Offers
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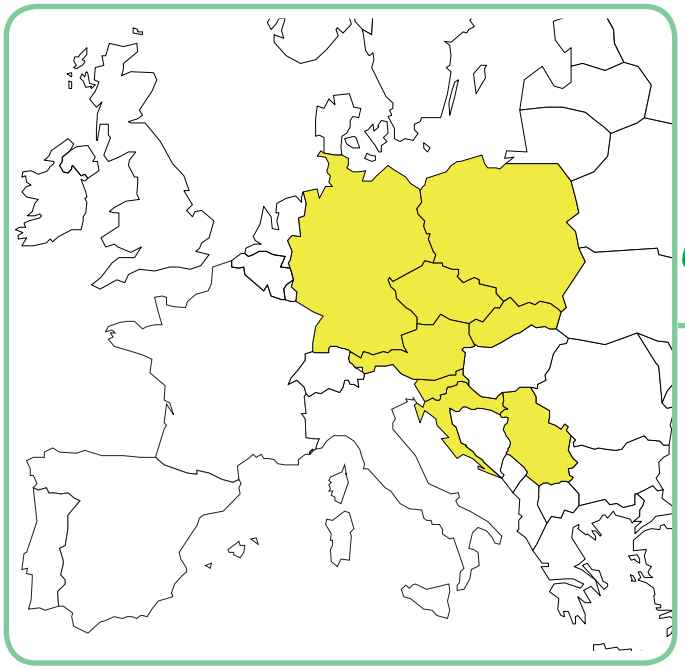
Schneider Electric's range of K60 Biconnect circuit breakers consists of different products (A, B, C) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

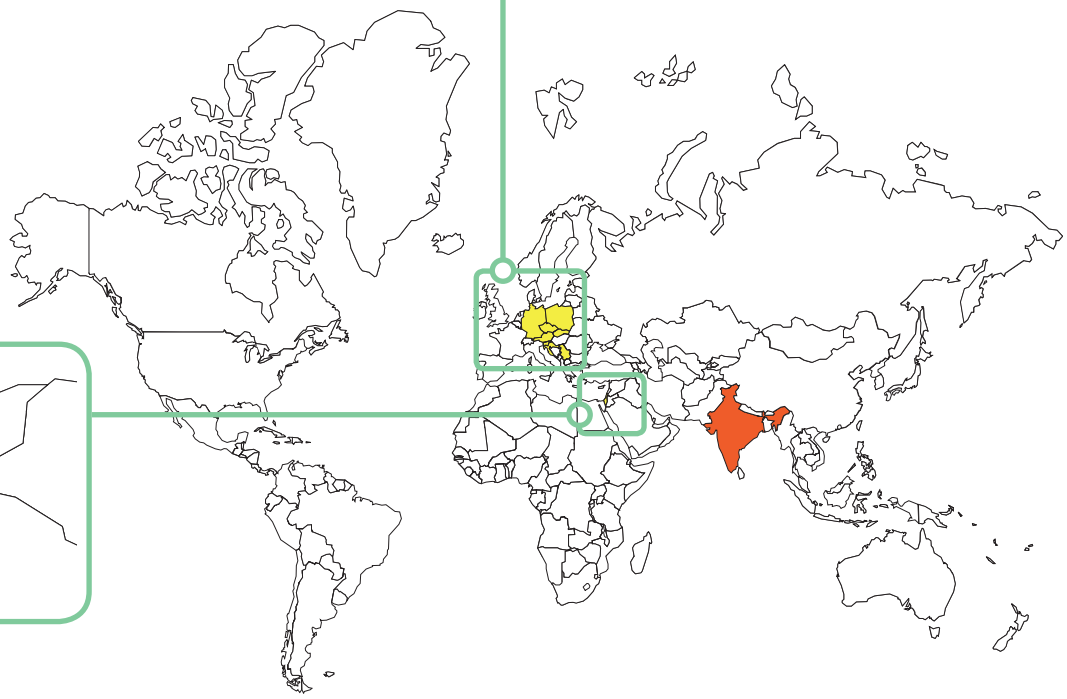
Variants

DB407236

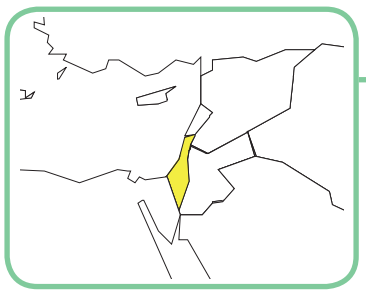


Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

DB407237



DB407240



K60N Biconnect circuit breakers

DB116619 DB123865

Country approval pictograms

IEC/EN 60898-1

PB110016-40 PB112242-40

PB111241-40 PB110017-40

■ K60N Biconnect circuit breakers are circuit breakers which combine the following functions:
- □ circuit protection against short-circuit currents,
- □ circuit protection against overload currents,
- □ disconnection, opening and closing.

K60N Biconnect circuit breaker 50/60 Hz			
Breaking capacity in short circuit (Icn) as per IEC/EN 60898-1			**Service breaking capacity (Ics)**
Ph/Ph		**400 V**	100 % of Icn
Ph/N		**230 V**	
Rating (In)	2 to 40 A	6000 A	

Offer selection see page 72

Offer A

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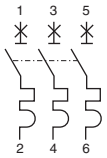
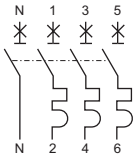
Catalogue numbers

K60N Biconnect circuit breaker							
Type	**1P**		**1P+N**		**3P**		**3P+N**
	E45092 		DB123389 		E45095 		DB122592 
Auxiliaries	**Without auxiliaries**		**Without auxiliaries**		**Without auxiliaries**		**Without auxiliaries**
Rating (In)	**Curve**		**Curve**		**Curve**		**Curve**
	B	**C**	**B**	**C**	**B**	**C**	**C**
2 A	-	**A9K02102**	-	-	-	-	-
4 A	-	**A9K02104**	-	-	-	-	-
6 A	**A9K01106**	**A9K02106**	-	-	**A9K01306**	**A9K02306**	-
10 A	**A9K01110**	**A9K02110**	-	-	**A9K01310**	**A9K02310**	-
13 A	**A9K01113**	**A9K02113**	**A9K01613**	**A9K02613**	-	**A9K02313**	**A9K02713**
16 A	**A9K01116**	**A9K02116**	**A9K01616**	**A9K02616**	**A9K01316**	**A9K02316**	**A9K02716**
20 A	**A9K01120**	**A9K02120**	-	-	**A9K01320**	**A9K02320**	-
25 A	**A9K01125**	**A9K02125**	-	-	**A9K01325**	**A9K02325**	-
32 A	**A9K01132**	**A9K02132**	-	-	**A9K01332**	**A9K02332**	-
40 A	**A9K01140**	**A9K02140**	-	-	**A9K01340**	**A9K02340**	-
Width in 9-mm modules	2	2	4	4	6	6	8
Accessories	**Padlocking device cat. no. 26970**						

K60N Biconnect circuit breakers (cont.)

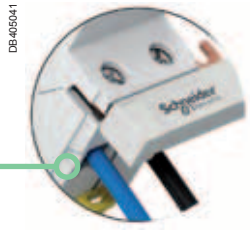
PB110016-60

■ Reinforced cable pull-out strength: serrated terminals

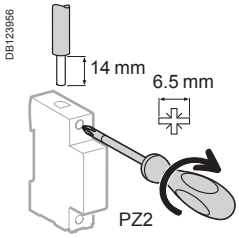
■ Fast closing independent of the speed of actuation of the toggle.

Padlocking device
■ Padlocking possible for work to be carried out on live parts

Connection
■ Downstream by Biconnect comb busbar
■ Upstream/downstream by tunnel terminals



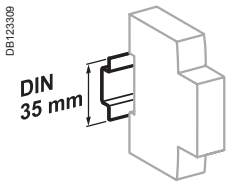
Connection



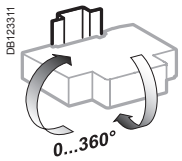
Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
			DB122945	DB122946
K60N Biconnect	2 to 25 A	2 N.m	0.5 to 25 mm²	0.5 to 16 mm²
	32 - 40 A	3.5 N.m	0.5 to 35 mm²	0.5 to 25 mm²

■ Connection by comb busbar or cables (conforms to EN 50027).

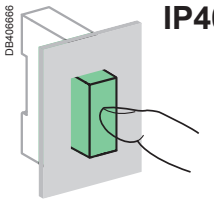
K60N Biconnect circuit breakers (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



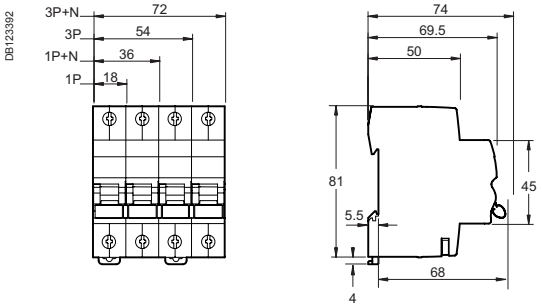
Technical data

Main characteristics			
Insulation voltage (Ui)	Phase-to-phase		440 V AC
Voltage rating (Ue)	Phase-to-neutral		230 V AC
	Phase-to-phase		400 V AC
Magnetic tripping	B curve	3 to 5 In	■
	C curve	5 to 10 In	■
According to EN 60898-1			
Limitation class			3
Rated breaking capacity (Icn)			6000 A
Service breaking capacity (Ics)			100 % Icn
Rated breaking and making capacity on a single pole (Icn1)			Icn1 = Icn
Additional characteristics			
Degree of protection (IEC 60529)	Device in modular enclosure		IP40 Insulation class II
Endurance (O-C)	Electrical	≤ 20 A	20,000 cycles
		≥ 25 A	10,000 cycles
	Mechanical		20,000 cycles
Operating temperature			-25°C to +70°C
Storage temperature			-40°C to +70°C
Tropicalization (IEC 60068-1)			Treatment 2 (relative humidity 95% at 55°C)

Weight (g)

Circuit-breaker	
Type	**K60N Biconnect**
1P	120
1P+N	240
3P	360
3P+N	480

Dimensions (mm)



K60H Biconnect circuit breakers

DB404807

Country approval pictogram

IS/IEC 60898-1
IEC/EN 60898-1

PB114836-40

PB114839-40

PB114837-40

PB114838-40

■ K60H Biconnect circuit breakers are circuit breakers which combine the following functions:
- □ circuit protection against short-circuit currents,
- □ circuit protection against overload currents,
- □ disconnection, opening and closing.

K60H Biconnect circuit breaker 50/60 Hz			
Breaking capacity in short circuit (Icn) as per IEC/EN 60898-1			**Service breaking capacity (Ics)**
Ph/Ph		**415 V**	75 % of Icn
Ph/N		**240 V**	
Rating (In)	1 to 63 A	10000 A	

Offer selection see page 72

Offer B

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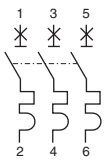
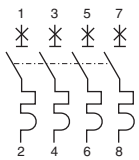
Catalogue numbers

K60H Biconnect circuit breaker

Type	1P		2P		3P	4P
	E45092 		E45094 		E45095 	E45097 
Auxiliaries	**Without auxiliaries**					
Rating (In)	**Curve**		**Curve**		**Curve**	**Curve**
	B	**C**	**B**	**C**	**C**	**C**
1 A	-	**A9KF71101**	-	**A9KF71201**	**A9KF71301**	**A9KF71401**
2 A	-	**A9KF71102**	-	**A9KF71202**	**A9KF71302**	**A9KF71402**
3 A	-	**A9KF71103**	-	**A9KF71203**	**A9KF71303**	**A9KF71403**
4 A	-	**A9KF71104**	-	**A9KF71204**	**A9KF71304**	**A9KF71404**
6 A	**A9KF21106**	**A9KF71106**	**A9KF21206**	**A9KF71206**	**A9KF71306**	**A9KF71406**
10 A	**A9KF21110**	**A9KF71110**	**A9KF21210**	**A9KF71210**	**A9KF71310**	**A9KF71410**
16 A	**A9KF21116**	**A9KF71116**	**A9KF21216**	**A9KF71216**	**A9KF71316**	**A9KF71416**
20 A	**A9KF21120**	**A9KF71120**	**A9KF21220**	**A9KF71220**	**A9KF71320**	**A9KF71420**
25 A	**A9KF21125**	**A9KF71125**	**A9KF21225**	**A9KF71225**	**A9KF71325**	**A9KF71425**
32 A	**A9KF21132**	**A9KF71132**	**A9KF21232**	**A9KF71232**	**A9KF71332**	**A9KF71432**
40 A	-	**A9KF71140**	-	**A9KF71240**	**A9KF71340**	**A9KF71440**
50 A	-	**A9KF71150**	-	**A9KF71250**	**A9KF71350**	**A9KF71450**
63 A	-	**A9KF71163**	-	**A9KF71263**	**A9KF71363**	**A9KF71463**
Width in 9-mm modules	2		4		6	8
Accessories	**Padlocking device cat. no. 26970**					

K60H Biconnect circuit breakers (cont.)

PB114837-60

■ Reinforced cable pull-out strength: serrated terminals

■ Fast closing independent of the speed of actuation of the toggle.

DB404823

05720SJ_SE-33

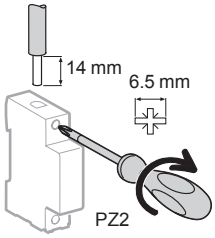
Padlocking device
■ Padlocking possible for work to be carried out on live parts

Connection
■ Downstream by Biconnect comb busbar
■ Upstream/downstream by tunnel terminals

DB405041

Connection

DB123956



Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
		DB122945	DB122946	
K60H Biconnect	1 to 25 A	2 N.m	0.5 to 25 mm²	0.5 to 16 mm²
	32 to 63 A	3.5 N.m	0.5 to 35 mm²	0.5 to 25 mm²

Offer selection see page 72

Offer B

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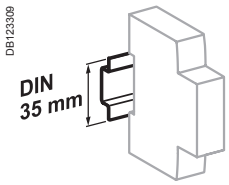
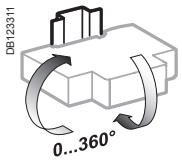
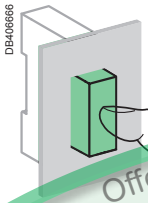
K60H Biconnect circuit breakers (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



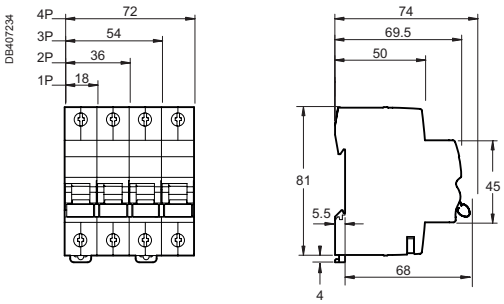
Technical data

Main characteristics			
Insulation voltage (Ui)	Phase-to-phase		500 V AC
Voltage rating (Ue)	Phase-to-neutral		240 V AC
	Phase-to-phase		415 V AC
Rated impulse withstand voltage (Uimp)			4 kV
Magnetic tripping	B curve	3 to 5 In	■
	C curve	5 to 10 In	■
According to EN 60898-1			
Limitation class			3
Rated breaking capacity (Icn)			10,000 A
Service breaking capacity (Ics)			75 % Icn
Rated breaking and making capacity on a single pole (Icn1)			Icn1 = Icn
Additional characteristics			
Degree of protection (IEC 60529)	Device in modular enclosure		IP40 Insulation class II
Degree of pollution			2
Endurance (O-C)	Electrical	⩽ 20 A	20,000 cycles
		⩾ 25 A	10,000 cycles
	Mechanical		20,000 cycles
Operating temperature			-5°C to +55°C
Storage temperature			-25°C to +85°C
Tropicalization (IEC 60068-1)			Treatment 2 (relative humidity 95% at 55°C)

Weight (g)

Circuit-breaker	
Type	**K60H Biconnect**
1P	120
2P	240
3P	360
4P	480

Dimensions (mm)



K60N Biconnect circuit breakers

Country approval pictograms

IEC/EN 60898-1

PB111241-40

■ K60N Biconnect circuit breakers are circuit breakers which combine the following functions:
- □ circuit protection against short-circuit currents,
- □ circuit protection against overload currents,
- □ disconnection, opening and closing.

K60N Biconnect circuit breaker 50/60 Hz			
Breaking capacity in short circuit (Icn) as per IEC/EN 60898-1			**Service breaking capacity (Ics)**
Ph/Ph		**400 V**	100 % of Icn
Ph/N		**230 V**	
Rating (In)	6 to 63 A	6000 A	

Offer selection see page 72

Offer C

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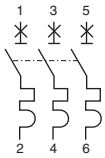
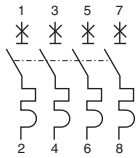
Catalogue numbers

K60N Biconnect circuit breaker								
Type	**1P**		**2P**		**3P**		**4P**	
	E45092 		E45094 		E45095 		E45097 	
Auxiliaries	**Without auxiliaries**		**Without auxiliaries**		**Without auxiliaries**		**Without auxiliaries**	
Rating (In)	**Curve**		**Curve**		**Curve**		**Curve**	
	B	**C**	**B**	**C**	**B**	**C**	**B**	**C**
6 A	**A9K01106**	**A9K02106**	**A9K01206**	**A9K02206**	**A9K01306**	**A9K02306**	**A9K01406**	**A9K02406**
10 A	**A9K01110**	**A9K02110**	**A9K01210**	**A9K02210**	**A9K01310**	**A9K02310**	**A9K01410**	**A9K02410**
16 A	**A9K01116**	**A9K02116**	**A9K01216**	**A9K02216**	**A9K01316**	**A9K02316**	**A9K01416**	**A9K02416**
20 A	**A9K01120**	**A9K02120**	**A9K01220**	**A9K02220**	**A9K01320**	**A9K02320**	**A9K01420**	**A9K02420**
32 A	**A9K01132**	**A9K02132**	**A9K01232**	**A9K02232**	**A9K01332**	**A9K02332**	**A9K01432**	**A9K02432**
40 A	**A9K01140**	**A9K02140**	**A9K01240**	**A9K02240**	**A9K01340**	**A9K02340**	**A9K01440**	**A9K02440**
50 A	**A9K01150**	**A9K02150**	**A9K01250**	**A9K02250**	**A9K01350**	**A9K02350**	**A9K01450**	**A9K02450**
63 A	**A9K01163**	**A9K02163**	**A9K01263**	**A9K02263**	**A9K01363**	**A9K02363**	**A9K01463**	**A9K02463**
Width in 9-mm modules	2		4		6		8	
Accessories	**Padlocking device cat. no. 26970**							

K60H Biconnect circuit breakers

Country approval pictograms

IEC/EN 60898-1

■ K60H Biconnect circuit breakers are circuit breakers which combine the following functions:
- □ circuit protection against short-circuit currents,
- □ circuit protection against overload currents,
- □ disconnection, opening and closing.

K60H Biconnect circuit breaker 50/60 Hz			
Breaking capacity in short circuit (Icn) as per IEC/EN 60898-1			**Service breaking capacity (Ics)**
Ph/Ph		**400 V**	75 % of Icn
Ph/N		**230 V**	
Rating (In)	6 to 63 A	10000 A	

Offer selection see page 72

Offer C

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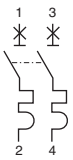
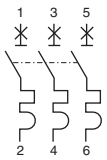
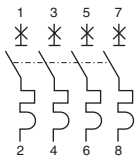
Catalogue numbers

K60H Biconnect circuit breaker

Type	1P		2P		3P		4P	
								
Auxiliaries	**Without auxiliaries**		**Without auxiliaries**		**Without auxiliaries**		**Without auxiliaries**	
Rating (In)	**Curve**		**Curve**		**Curve**		**Curve**	
	B	**C**	**B**	**C**	**B**	**C**	**B**	**C**
6 A	**A9K11106**	**A9K12106**	**A9K11206**	**A9K12206**	**A9K11306**	**A9K12306**	**A9K11406**	**A9K12406**
10 A	**A9K11110**	**A9K12110**	**A9K11210**	**A9K12210**	**A9K11310**	**A9K12310**	**A9K11410**	**A9K12410**
16 A	**A9K11116**	**A9K12116**	**A9K11216**	**A9K12216**	**A9K11316**	**A9K12316**	**A9K11416**	**A9K12416**
20 A	**A9K11120**	**A9K12120**	**A9K11220**	**A9K12220**	**A9K11320**	**A9K12320**	**A9K11420**	**A9K12420**
32 A	**A9K11132**	**A9K12132**	**A9K11232**	**A9K12232**	**A9K11332**	**A9K12332**	**A9K11432**	**A9K12432**
40 A	**A9K11140**	**A9K12140**	**A9K11240**	**A9K12240**	**A9K11340**	**A9K12340**	**A9K11440**	**A9K12440**
50 A	**A9K11150**	**A9K12150**	**A9K11250**	**A9K12250**	**A9K11350**	**A9K12350**	**A9K11450**	**A9K12450**
63 A	**A9K11163**	**A9K12163**	**A9K11263**	**A9K12263**	**A9K11363**	**A9K12363**	**A9K11463**	**A9K12463**
Width in 9-mm modules	2		4		6		8	
Accessories	**Padlocking device cat. no. 26970**							

K60 Biconnect circuit breakers (cont.)

PB114837-60

■ Reinforced cable pull-out strength: serrated terminals

■ Fast closing independent of the speed of actuation of the toggle.

DB404823

05720GJ_SE-33

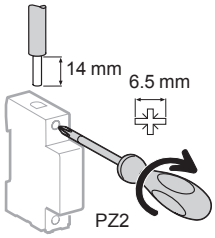
Padlocking device
■ Padlocking possible for work to be carried out on live parts

Connection
■ Downstream by Biconnect comb busbar
■ Upstream/downstream by tunnel terminals

DB407861

Connection

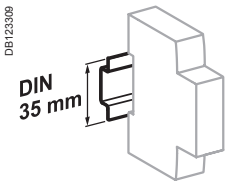
DB123956



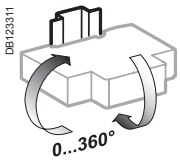
Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
			DB122945	DB122946
K60 Biconnect	6 to 20 A	2 N.m	0.5 to 25 mm²	0.5 to 16 mm²
	32 to 63 A	3.5 N.m	0.5 to 35 mm²	0.5 to 25 mm²

■ Connection by comb busbar or cables (conforms to EN 50027).

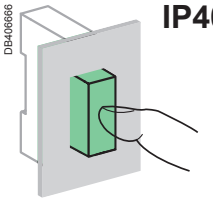
K60 Biconnect circuit breakers (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



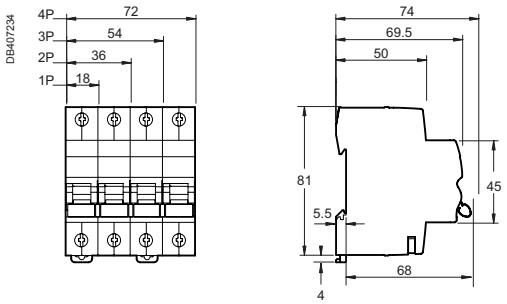
Technical data

Main characteristics			K60N	K60H
Insulation voltage (Ui)	Phase-to-phase		440 V AC	
Voltage rating (Ue)	Phase-to-neutral		230 V AC	
	Phase-to-phase		400 V AC	
Magnetic tripping	B curve	3 to 5 In	■	
	C curve	5 to 10 In	■	
According to EN 60898-1				
Limitation class			3	
Rated breaking capacity (Icn)			6000 A	10000 A
Service breaking capacity (Ics)			100 % of Icn	75 % of Icn
Rated breaking and making capacity on a single pole (Icn1)			Icn1 = Icn	
Additional characteristics				
Degree of protection (IEC 60529)	Device in modular enclosure		IP40 Insulation class II	
Endurance (O-C)	Electrical	≤ 20 A	20,000 cycles	
		≥ 32 A	10,000 cycles	
	Mechanical		20,000 cycles	
Operating temperature			-5°C to +55°C	
Storage temperature			-25°C to +85°C	
Tropicalization (IEC 60068-1)			Treatment 2 (relative humidity 95% at 55°C)	

Weight (g)

Circuit-breaker	
Type	**K60 Biconnect**
1P	120
2P	240
3P	360
4P	480

Dimensions (mm)



C120a circuit breakers (curves C, D)

DB123398

Country approval pictograms

PB107911-30

PB107915-40

PB107918-30

PB107921-30

IEC/EN 60947-2

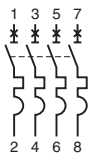
C120a circuit breakers are multistandard circuit breakers that combine the following functions:

- circuit protection against short-circuit currents,
- circuit protection against overload currents,
- suitability for isolation in the industrial sector to IEC/EN 60947-2,
- fault tripping and indication by adding auxiliaries.

Alternating current (AC) 50/60 Hz		
Breaking capacity (Icu) to IEC/EN 60947-2		Service breaking capacity (Ics)
Type	Voltage (V)	
1P, 2P, 3P, 4P	230 to 400 V	
Rating (In) 80 and 100 A	5 kA	100 % of Icu

Catalogue numbers

C120a circuit breaker

Type	1P		2P	3P		4P
						
Auxiliaries	Remote indication and tripping, module CA907008 and CA907013		Remote indication and tripping, module CA907008 and CA907013	Remote indication and tripping, module CA907008 and CA907013		Remote indication and tripping, module CA907008 and CA907013
Vigi C120	Vigi C120 add-on residual current device, module CA902016		Vigi C120 add-on residual current device, module CA902016	Vigi C120 add-on residual current device, module CA902016		Vigi C120 add-on residual current device, module CA902016
Rating (In)	Curve		Curve	Curve		Curve
	C	D	C	C	D	C
80 A	A9N60708	A9N60720	A9N60711	A9N60714	A9N60723	A9N60717
100 A	A9N60709	A9N60721	A9N60712	A9N60715	A9N60724	A9N60718
Width in 9-mm modules	3		6	9		12
Accessories	Module CA907012 and CA907013		Module CA907012 and CA907013	Module CA907012 and CA907013		Module CA907012 and CA907013

C120N circuit breakers (curves C, D)

DB123398

Country approval pictograms

PB107914-30

PB107917-40

PB107920-30

PB107923-30

IEC/EN 60947-2

C120N circuit breakers are multistandard circuit breakers that combine the following functions:

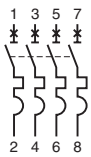
- circuit protection against short-circuit currents,
- circuit protection against overload currents,
- suitability for isolation in the industrial sector to IEC/EN 60947-2,
- fault tripping and indication by adding auxiliaries.

Alternating current (AC) 50/60 Hz			
Breaking capacity (Icu) to IEC/EN 60947-2			Service breaking capacity (Ics)
Type		Voltage (V)	
1P, 2P, 3P, 4P		230 to 400 V	
Rating (In)	80 and 100 A	10 kA	75 % of Icu

Direct current (DC)						
Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
		Voltage (Ue)				
Between +/-		12 to 125 V	≤ 144 V	≤ 250 V	≤ 375 V	≤ 500 V
Number of poles		1P		2P	3P	4P
Rating (In)	80 and 100 A	15 kA	10 kA	10 kA	10 kA	10 kA	100 % of Icu

Catalogue numbers

C120N circuit breaker

Type	1P		2P		3P		4P	
								
Auxiliaries	Remote indication and tripping, module CA907008 and CA907013		Remote indication and tripping, module CA907008 and CA907013		Remote indication and tripping, module CA907008 and CA907013		Remote indication and tripping, module CA907008 and CA907013	
Vigi C120	Vigi C120 add-on residual current device, module CA902016		Vigi C120 add-on residual current device, module CA902016		Vigi C120 add-on residual current device, module CA902016		Vigi C120 add-on residual current device, module CA902016	
Rating (In)	Curve		Curve		Curve		Curve	
	C	D	C	D	C	D	C	D
80 A	A9N60729	A9N60745	A9N60733	A9N60749	A9N60737	A9N60753	A9N60741	A9N60757
100 A	A9N60730	A9N60746	A9N60734	A9N60750	A9N60738	A9N60754	A9N60742	A9N60758
Width in 9-mm modules	3		6		9		12	
Accessories	Module CA907012 and CA907013		Module CA907012 and CA907013		Module CA907012 and CA907013		Module CA907012 and CA907013	

C120H circuit breakers (curve C)

DB123398

Country approval pictograms

PB107913-30

PB107916-30

PB107919-30

PB107922-30

IEC/EN 60947-2

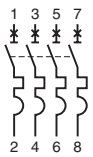
C120H circuit breakers are multistandard circuit breakers that combine the following functions:

- circuit protection against short-circuit currents,
- circuit protection against overload currents,
- suitability for isolation in the industrial sector to IEC/EN 60947-2,
- fault tripping and indication by adding auxiliaries.

Alternating current (AC) 50/60 Hz		
Breaking capacity (Icu) to IEC/EN 60947-2		Service breaking capacity (Ics)
Type	Voltage (V)	
1P	230 to 400 V	
Rating (In) 80 and 100 A	15 kA	50 % of Icu

Direct current (DC)						
Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
	Voltage (Ue)					
Between +/-	12 to 125 V	⩽ 144 V	⩽ 250 V	⩽ 375 V	⩽ 500 V	
Number of poles	1P		2P	3P	4P	
Rating (In) 80 and 100 A	20 kA	15 kA	15 kA	15 kA	15 kA	100 % of Icu

Catalogue numbers

C120H circuit breaker				
Type	1P	2P	3P	4P
				
Auxiliaries	Remote indication and tripping, module CA907008 and CA907013	Remote indication and tripping, module CA907008 and CA907013	Remote indication and tripping, module CA907008 and CA907013	Remote indication and tripping, module CA907008 and CA907013
Vigi C120	Vigi C120 add-on residual current device, module CA902016	Vigi C120 add-on residual current device, module CA902016	Vigi C120 add-on residual current device, module CA902016	Vigi C120 add-on residual current device, module CA902016
Rating (In)	Curve	Curve	Curve	Curve
	C	C	C	C
80 A	A9N60777	A9N60781	A9N60785	A9N60789
100 A	A9N60778	A9N60782	A9N60786	A9N60790
Width in 9-mm modules	3	6	9	12
Accessories	Module CA907012 and CA907013	Module CA907012 and CA907013	Module CA907012 and CA907013	Module CA907012 and CA907013

C120 circuit breakers

PB107917-40

■ Terminals insulated to IP20

■ Location for 4 clip-on terminal markers

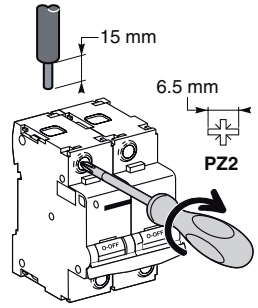
Positive contact indication
■ Suitability for isolation in the industrial sector to IEC/EN 60947-2.
■ The presence of the green strip guarantees that the contacts open physically and allows work to be carried out safely on the downstream circuit.

■ Longer product service life thanks to:
□ good overvoltage withstand capacity: products designed to offer a high industrial performance level (degree of pollution, rated impulse withstand voltage and insulation voltage).
□ high limitation performances (see limitation curves).
□ fast closure independent of toggle operating speed.
■ Remote indication of the open/closed/tripped state by auxiliary contacts (optional).
■ Power supply from above or below.

C120 circuit breakers (cont.)

Connection

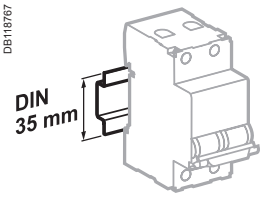
DB126143



Rating	Tightening torque	Without access. Copper cables: Rigid/ semi-rigid	Without access. Copper cables: Flexible or with ferrule	With accessories: 50 mm² Al Terminal	With accessories: Screw-on connection for ring terminal (1)	With accessories: Multi-cable terminal: Rigid cables	With accessories: Multi-cable terminal: Flexible cables
		DB122945  DB122946	 DB122935	Al DB118789	Ø DB118787		
80 and 100 A	3.5 N.m	1.5 to 50 mm²	1.5 to 35 mm²	16 to 50 mm²	Ø 5 mm	3 x 16 mm²	3 x 10 mm²

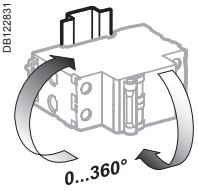
(1) For lugs up to 63 A, front or rear access.

DB118767



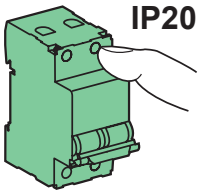
Clips onto 35 mm DIN rail.

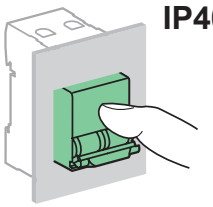
DB122831



Any installation position.

DB122932





Technical data

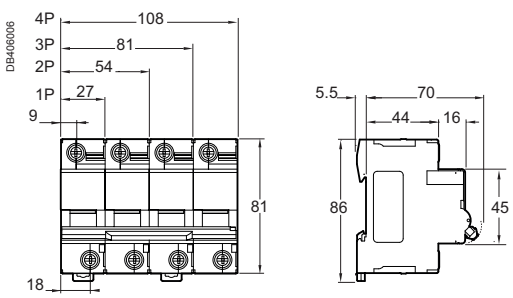
Main characteristics		
To IEC/EN 60947-2		
Insulation voltage (Ui)		500 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		6 kV
Thermal tripping	Reference temperature	50°C
Magnetic tripping	Curve C	8 In ± 20 %
	Curve D	12 In ± 20 %
Limitation class		3
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in a modular enclosure	IP40
Endurance (O-C)	Electrical	5000 cycles (O-C)
	Mechanical	20000 cycles
Operating temperature		-30°C to +70°C
Storage temperature		-40°C to +80°C
Tropicalisation (IEC 60068-1)		Treatment 2 (relative humidity 95 % at 55°C)

Weight (g)

Circuit breaker	
Type	**C120**
1P	205
2P	410
3P	615
4P	820

Dimensions (mm)

DB406006



C120N circuit breakers (curves B, C, D)

DB406142 DB123525

Country approval pictograms

PB107914-30

PB107917-40

PB107920-30

PB107923-30

IEC/EN 60898-1

C120N circuit breakers are multistandard circuit breakers that combine the following functions:
- circuit protection against short-circuit currents,
- circuit protection against overload currents,
- suitability for isolation in the industrial sector to IEC/EN 60947-2,
- fault tripping and indication by adding auxiliaries.

Alternating current (AC) 50/60 Hz						
Breaking capacity (Icu) to IEC/EN 60947-2						**Service breaking capacity (Ics)**
Type		**Voltage (V)**				
1P		**12 to 130 V**	**220 to 240 V**	**380 to 415 V**	**440 V**	
Rating (In)	63 to 125 A	20 kA	10 kA	3 kA (1)	-	75 % of Icu
2P/3P/4P		**12 to 130 V**	**220 to 240 V**	**380 to 415 V**	**440 V**	
	63 to 125 A	-	20 kA	10 kA	6 kA	75 % of Icu
Breaking capacity (Icn) to IEC/EN 60898-1						
Type		**Voltage (V)**				
1P, 2P, 3P, 4P		**230 to 400 V**				
Rating (In)	63 to 125 A	10000 A				75 % of Icn

(1) One-pole breaking capacity in IT isolated neutral system (double fault).

Direct current (DC)						
Breaking capacity (Icu) according to IEC/EN 60947-2						**Service breaking capacity (Ics)**
	Voltage (Ue)					
Between +/-	**12 to 125 V**	**≤ 144 V**	**≤ 250 V**	**≤ 375 V**	**≤ 500 V**	
Number of poles	**1P**		**2P**	**3P**	**4P**	
Rating (In) 63 to 125 A	15 kA	10 kA	10 kA	10 kA	10 kA	100 % of Icu

Catalogue numbers

C120N circuit breaker

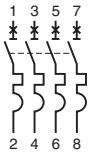
Type	**1P**			**2P**		
						
Auxiliaries	**Remote indication and tripping, module CA907008 and CA907013**			**Remote indication and tripping, module CA907008 and CA907013**		
Vigi C120	**Vigi C120 add-on residual current device, module CA902016**			**Vigi C120 add-on residual current device, module CA902016**		
Rating (In)	**Curve**			**Curve**		
	B	**C**	**D**	**B**	**C**	**D**
63 A	**A9N18340**	**A9N18356**	**A9N18378**	**A9N18344**	**A9N18360**	**A9N18382**
80 A	**A9N18341**	**A9N18357**	**A9N18379**	**A9N18345**	**A9N18361**	**A9N18383**
100 A	**A9N18342**	**A9N18358**	**A9N18380**	**A9N18346**	**A9N18362**	**A9N18384**
125 A	**A9N18343**	**A9N18359**	**A9N18381**	**A9N18347**	**A9N18363**	**A9N18385**
Width in 9-mm modules	3			6		
Accessories	**Module CA907012 and CA907013**			**Module CA907012 and CA907013**		

(1) Country France only

C120N circuit breakers (curves B, C, D) (cont.)

PB107917-40

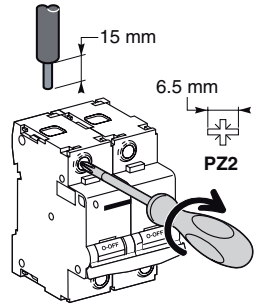
■ Longer product service life thanks to:
□ good overvoltage withstand capacity: products designed to offer a high industrial performance level (degree of pollution, rated impulse withstand voltage and insulation voltage).
□ high limitation performances (see limitation curves).
□ fast closure independent of toggle operating speed.
■ Remote indication of the open/closed/tripped state by auxiliary contacts (optional).
■ Power supply from above or below.

	3P			4P		
						
	Remote indication and tripping, module CA907008 and CA907013			**Remote indication and tripping, module CA907008 and CA907013**		
	Vigi C120 add-on residual current device, module CA902016			**Vigi C120 add-on residual current device, module CA902016**		
	Curve			**Curve**		
	B	**C**	**D**	**B**	**C**	**D**
	A9N18348	**A9N18364**	**A9N18386**	**A9N18352**	**A9N18371**	**A9N18390**
	A9N18349	**A9N18365**	**A9N18387**	**A9N18353**	**A9N18372** **A9N18373(1)**	**A9N18391**
	A9N18350	**A9N18367**	**A9N18388**	**A9N18354**	**A9N18374** **A9N18375(1)**	**A9N18392**
	A9N18351	**A9N18369**	**A9N18389**	**A9N18355**	**A9N18376** **A9N18377(1)**	**A9N18393**
	9			12		
	Module CA907012 and CA907013			**Module CA907012 and CA907013**		

C120N circuit breakers (curves B, C, D) (cont.)

Connection

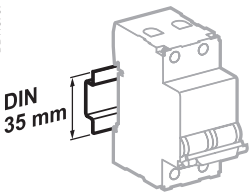
DB126143



Rating	Tightening torque	Without access. Copper cables: Rigid/ semi-rigid	Without access. Copper cables: Flexible or with ferrule	With accessories: 50 mm² Al Terminal	With accessories: Screw-on connection for ring terminal(1)	With accessories: Multi-cable terminal: Rigid cables	With accessories: Multi-cable terminal: Flexible cables
		DB122945	DB122946	DB122935	DB118789	DB118787	
63 to 125 A	3.5 N.m	1.5 to 50 mm²	1.5 to 35 mm²	16 to 50 mm²	Ø 5 mm	3 x 16 mm²	3 x 10 mm²

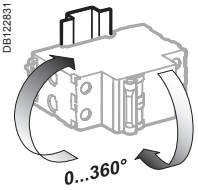
(1) For lugs up to 63 A, front or rear access.

DB118767



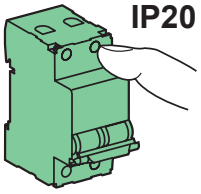
Clips onto 35 mm DIN rail.

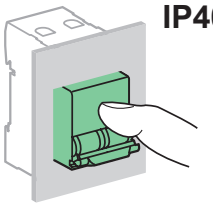
DB122831



Any installation position.

DB122932





Technical data

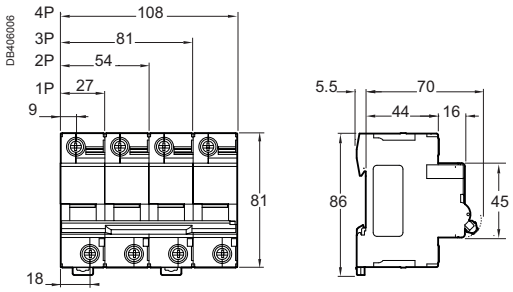
Main characteristics			
To IEC/EN 60947-2			
Insulation voltage (Ui)			500 V AC
Degree of pollution			3
Rated impulse withstand voltage (Uimp)			6 kV
Thermal tripping	Reference temperature		50°C
To IEC/EN 60898-1			
Magnetic tripping	Curve B		3 and 5 In
	Curve C		5 and 10 In
	Curve D		10 and 14 In
Limitation class			3
Additional characteristics			
Degree of protection (IEC 60529)	Device only		IP20
	Device in a modular enclosure		IP40
Endurance (O-C)	Electrical	63 A	10000 cycles (O-C)
		80...125 A	5000 cycles (O-C)
	Mechanical		20000 cycles
Operating temperature			-30°C to +70°C
Storage temperature			-40°C to +80°C
Tropicalisation (IEC 60068-1)			Treatment 2 (relative humidity 95 % at 55°C)

Weight (g)

Circuit breaker	
Type	**C120N**
1P	205
2P	410
3P	615
4P	820

Dimensions (mm)

DB406006



C120H circuit breakers (curves B, C, D)

DB406142 DB123525
Country approval pictograms

PB107913-30

PB107916-30

PB107919-30

PB107922-30

IEC/EN 60898-1

C120H circuit breakers are multistandard circuit breakers that combine the following functions:
- circuit protection against short-circuit currents
- circuit protection against overload currents
- suitability for isolation in the industrial sector to IEC/EN 60947-2
- fault tripping and indication by adding auxiliaries.

Alternating current (AC) 50/60 Hz						
Breaking capacity (Icu) to IEC/EN 60947-2						**Service breaking capacity (Ics)**
Type		**Voltage (V)**				
1P		**12 to 130 V**	**220 to 240 V**	**380 to 415 V**	**440 V**	
Rating (In)	63 to 125 A	30 kA	15 kA	4,5 kA (1)	-	50 % of Icu
2P, 3P, 4P		**12 to 130 V**	**220 to 240 V**	**380 to 415 V**	**440 V**	
	63 to 125 A	-	30 kA	15 kA	10 kA	50 % of Icu
Breaking capacity (Icn) to IEC/EN 60898-1						
Type		**Voltage (V)**				
1P, 2P, 3P, 4P		**230 to 400 V**				
Rating (In)	63 to 125 A	15000 A				50 % of Icn

(1) One-pole breaking capacity in IT isolated neutral system (double fault).

Direct current (DC)						
Breaking capacity (Icu) according to IEC/EN 60947-2						**Service breaking capacity (Ics)**
	Voltage (Ue)					
Between +/-	**12 to 125 V**	**≤ 144 V**	**≤ 250 V**	**≤ 375 V**	**≤ 500 V**	
Number of poles	**1P**		**2P**	**3P**	**4P**	
Rating (In) 63 to 125 A	20 kA	15 kA	15 kA	15 kA	15 kA	100 % of Icu

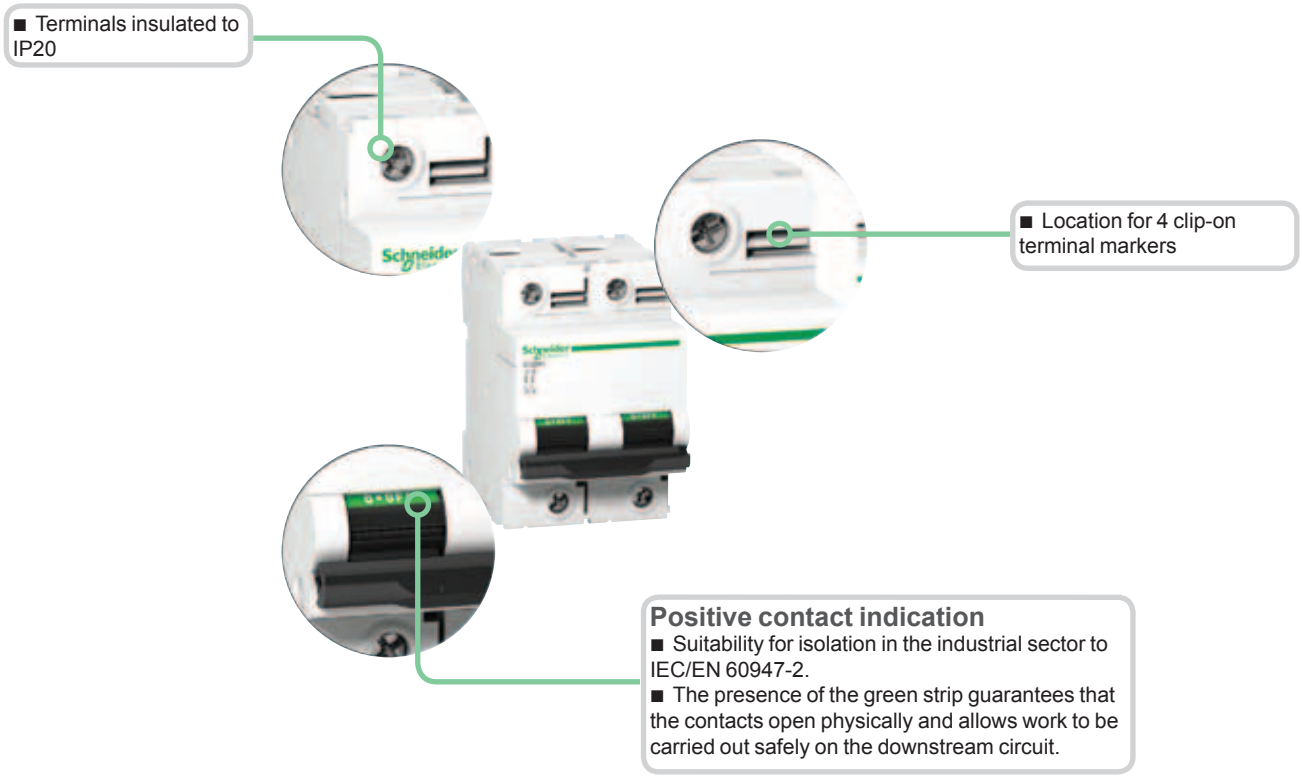
Catalogue numbers

C120H circuit breaker

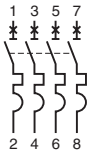
Type	**1P**			**2P**		
						
Auxiliaries	**Remote indication and tripping, module CA907008 and CA907013**			**Remote indication and tripping, module CA907008 and CA907013**		
Vigi C120	**Vigi C120 add-on residual current device, module CA902016**			**Vigi C120 add-on residual current device, module CA902016**		
Rating (In)	**Curve**			**Curve**		
	B	**C**	**D**	**B**	**C**	**D**
63 A	**A9N18401**	**A9N18445**	**A9N18489**	**A9N18412**	**A9N18456**	**A9N18500**
80 A	**A9N18402**	**A9N18446**	**A9N18490**	**A9N18413**	**A9N18457**	**A9N18501**
100 A	**A9N18403**	**A9N18447**	**A9N18491**	**A9N18414**	**A9N18458**	**A9N18502**
125 A	**A9N18404**	**A9N18448**	**A9N18492**	**A9N18415**	**A9N18459**	**A9N18503**
Width in 9 mm modules	3			6		
Accessories	**Module CA907012 and CA907013**			**Module CA907012 and CA907013**		

C120H circuit breakers (curves B, C, D) (cont.)

PB107916-40



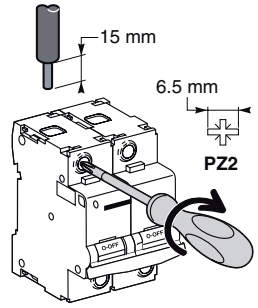
■ Longer product service life thanks to:
□ good overvoltage withstand capacity: products designed to provide a high industrial performance level (degree of pollution, rated impulse withstand voltage and insulation voltage).
□ high limitation performances (see limitation curves).
□ fast closure independent of toggle operating speed.
■ Remote indication of the open/closed/tripped state by auxiliary contacts (optional).
■ Power supply from above or below.

	3P			4P		
						
	Remote indication and tripping, module CA907008 and CA907013			**Remote indication and tripping, module CA907008 and CA907013**		
	Vigi C120 add-on residual current device, module CA902016			**Vigi C120 add-on residual current device, module CA902016**		
	Curve			**Curve**		
	B	**C**	**D**	**B**	**C**	**D**
	A9N18423	**A9N18467**	**A9N18511**	**A9N18434**	**A9N18478**	**A9N18522**
	A9N18424	**A9N18468**	**A9N18512**	**A9N18435**	**A9N18479**	**A9N18523**
	A9N18425	**A9N18469**	**A9N18513**	**A9N18436**	**A9N18480**	**A9N18524**
	A9N18426	**A9N18470**	**A9N18514**	**A9N18437**	**A9N18481**	**A9N18525**
	9			12		
	Module CA907012 and CA907013			**Module CA907012 and CA907013**		

C120H circuit breakers (curves B, C, D) (cont.)

Connection

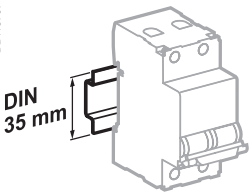
DB126143



Rating	Tightening torque	Without access. Copper cables Rigid	Without access. Copper cables Flexible or with ferrule	With accessories 50 mm² Al term.	With accessories Screw-on connection for ring terminal (1)	With accessories Multi-cable terminal Rigid cables	With accessories Multi-cable terminal Flexible cables
		DB122945 	DB122946 	DB122935  Al	DB118789  Ø	DB118787 	
63 to 125 A	3.5 N.m	1.5 to 50 mm²	1.5 to 35 mm²	16 to 50 mm²	Ø 5 mm	3 x 16 mm²	3 x 10 mm²

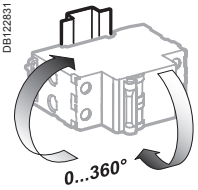
(1) For lugs up to 63 A, front or rear accessories.

DB118767



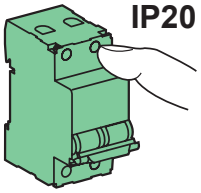
Clips onto 35 mm DIN rail.

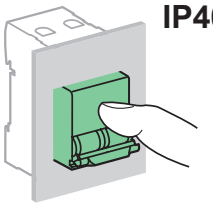
DB122831



Any installation position.

DB122932





Technical data

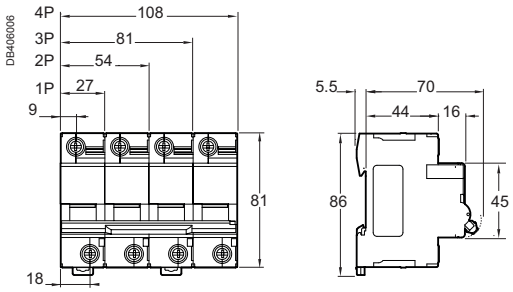
Main characteristics			
To IEC/EN 60947-2			
Insulation voltage (Ui)			500 V AC
Degree of pollution			3
Rated impulse withstand voltage (Uimp)			6 kV
Thermal tripping	Reference temperature		50°C
To IEC/EN 60898-1			
Magnetic tripping	Curve B		3 and 5 In
	Curve C		5 and 10 In
	Curve D		10 and 14 In
Limitation class			3
Additional characteristics			
Degree of protection (IEC 60529)	Device only		IP20
	Device in a modular enclosure		IP40 (IPXXD)
Endurance (O-C)	Electrical	63 A	10000 cycles (O-C)
		80...125 A	5000 cycles (O-C)
	Mechanical		20000 cycles
Operating temperature			-30°C to +70°C
Storage temperature			-40°C to +80°C
Tropicalisation (IEC 60068-1)			Treatment 2 (relative humidity 95% at 55°C)

Weight (g)

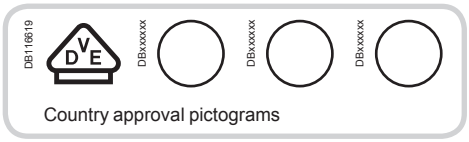
Circuit breaker	
Type	**C120H**
1P	205
2P	410
3P	615
4P	820

Dimensions (mm)

DB406006



NG125a circuit breakers (curve C)



Country approval pictograms

IEC/EN 60947-2

■ NG125a circuit breakers are circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitability for isolation in the industrial sector to IEC/EN 60947-2,
□ tripping upon fault is indicated by a red mechanical state indicator light on the front face of the circuit breaker.

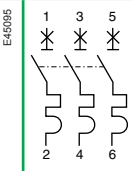
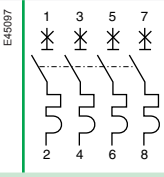
NG125a 3P

NG125a 4P

Alternating current (AC) 50/60 Hz			
Breaking capacity (Icu) to IEC/EN 60947-2	Voltage (Ue)		Service breaking capacity (Ics)
Ph/Ph (3P, 4P)	380 to 415 V	500 V	
Rating (In) 80 to 125 A	16 kA	8 kA	75 % of Icu

Direct current (DC)			
Breaking capacity (Icu) to IEC/EN 60947-2	Voltage (Ue)		Service breaking capacity (Ics)
	⩽ 375 V	⩽ 500 V	
Number of poles	3P	4P	
Rating (In) 80 to 125 A	20 kA	20 kA	100 % of Icu

Catalogue numbers

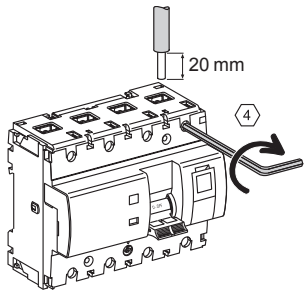
NG125a circuit breaker			
Type		3P	4P
			
Auxiliaries		Remote indication and tripping, module CM907004 and CM907005	
Vigi NG125		Vigi NG125 add-on residual current device, module CM902008	
Rating (In)	Quality label (1)	Curve C	Curve C
80 A		18603	18607
100 A		18604	18608
125 A		18605	18609
Width in 9 mm modules		9	12
Accessories		Module CM907004 and CM907006	

(1) Information to be supplied by the country concerned.

NG125a circuit breakers (curve C) (cont.)

Connection

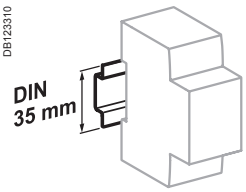
DB122589



Rating	Tightening torque	Without accessories: Copper cables		With accessories: 70 mm² Al terminal	Screw-on connection for ring terminal	Small ring terminal	Multi-cable terminal	
		Rigid	Flexible or with ferrule	Rigid single cables			Rigid cables	Flexible cables
	DB122945	DB122946	DB123410	DB123488	DB118789	DB118787		
80 to 125 A	6 N.m	16 to 70 mm²	10 to 50 mm²	25 to 70 mm²	2 x 35 mm² 1 x 50 mm²	1 x 70 mm²	3 x 16 mm²	3 x 10 mm²

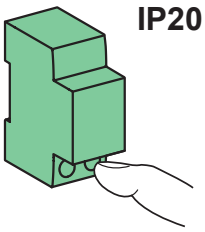
■ Upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.

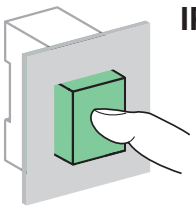
DB123310



Clips on to 35 mm DIN rail.

DB123314





Technical data

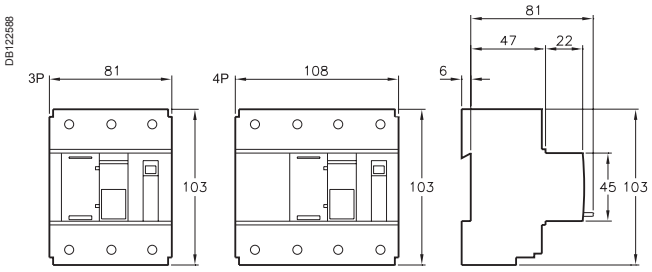
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		690 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		8 kV
Thermal tripping	Reference temperature	40°C
Magnetic tripping (Ii)	Curve C	8 In ± 20 %
Utilization category		A
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40
Endurance (O-C)	Electrical	5000 cycles
	Mechanical	20,000 cycles
Operating temperature		-30°C to +70°C
Storage temperature		-40°C to +70°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)

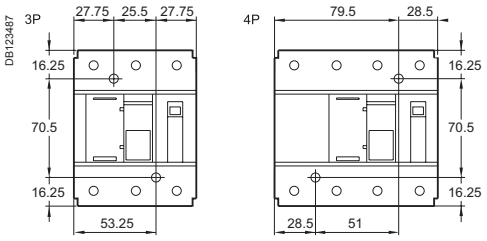
NG125a circuit breakers (curve C) (cont.)

Weight (g)

Circuit breaker	
Type	**NG125a**
3P	720
4P	960

Dimensions (mm)





Spacing for mounting on panel

NG125a circuit breakers (curve C) (cont.)

■ Voltage taps:
□ auxiliaries power supply
□ measurement
□ emergency stop
□ remote reporting

■ Cable strength:
□ ribbed cage
□ terminal depth
□ tightening by Allen hex key

■ Integrated padlocking device

056914N_SE-90

■ Test button to check satisfactory operation of the tripping mechanism

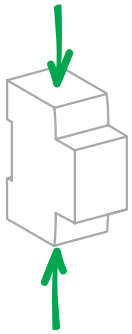
■ Pull-out strenght:
□ metallic lock

■ Central manual control, 3 positions:
□ ON
□ tripped on fault
□ open

■ Impact and vibration resistance:
□ high-strength enclosure
□ IK 05

■ Circuit breaker tripped indicator

■ Electric power supply through the top or bottom



DB123493

■ Positive contact indication:
□ suitability for isolation in the industrial sector to IEC/EN 60947-2
□ she presence of the green strip guarantees that the contacts open physically and allows work to be carried out safely on the downstream circuit

■ Longer product service life due to:
□ good overvoltage withstand capacity,
□ high limitation performances,
□ fast closure independent of the speed of actuation of the toggle.

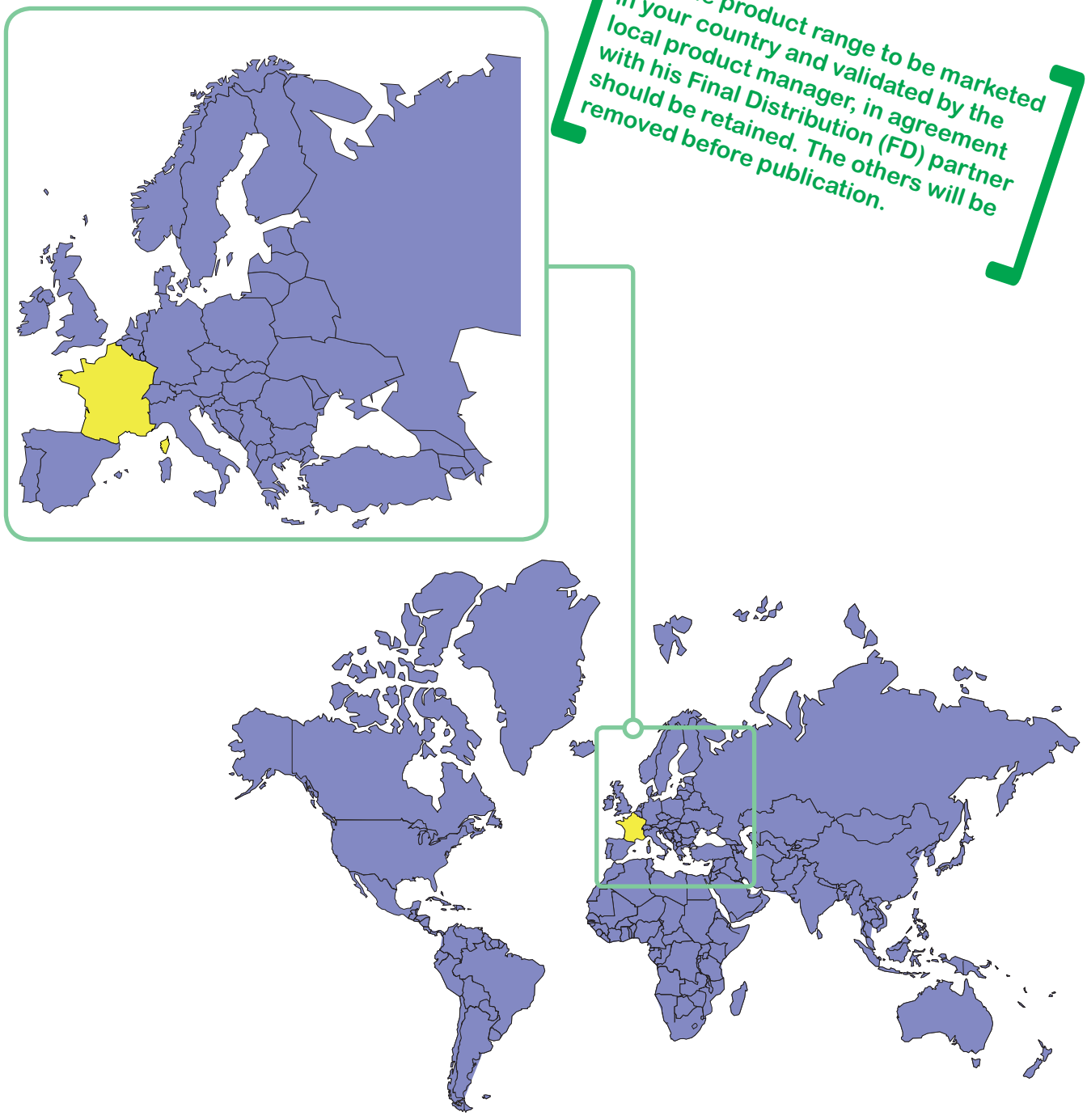
NG125N
Table of contents

Offers
This page should be removed before publication

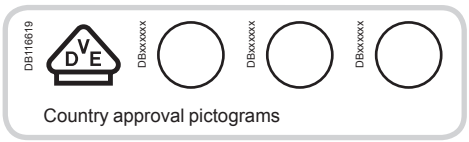
The Schneider Electric circuit breaker range comprises various offers (A, B) so as to be as competitive as possible in each country, taking into account the specific features of each market:
- Installation customs
- Price
- Approval by local organizations.

Variants

Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.



NG125N circuit breakers (curves B, C, D)



Country approval pictograms

IEC/EN 60947-2

■ NG125N circuit breakers are circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitability for isolation in the industrial sector to IEC/EN 60947-2,
□ tripping upon fault is indicated by a red mechanical state indicator light on the front face of the circuit breaker.

056900_SE-30

NG125N 1P

056902_SE-30

NG125N 2P

056903_SE-30

NG125N 3P

056335_SE-30

NG125N 4P

Alternating current (AC) 50/60 Hz

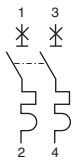
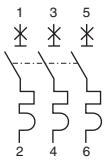
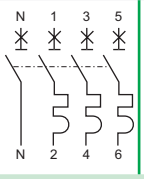
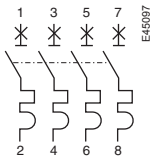
Breaking capacity (Icu) to IEC/EN 60947-2	Voltage (Ue)							Service breaking capacity (Ics)
Ph/Ph (2P, 3P, 3P+N, 4P)	-	-	220 to 240 V	-	380 to 415 V	440 V	500 V	
Ph/N (1P)	110 to 130 V	220 to 240 V	-	380 to 415 V	-	-	-	
Rating (In) 10 to 125 A	50 kA	25 kA	50 kA	6 kA(2)	25 kA	20 kA	10 kA	75 % of Icu

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2	Voltage (Ue)					Service breaking capacity (Ics)
	12 to 125 V	≤ 144 V	≤ 250 V	≤ 375 V	≤ 500 V	
Number of poles	1P		2P	3P	4P	
Rating (In) 10 to 125 A	25 kA	20 kA	20 kA	20 kA	20 kA	100 % of Icu

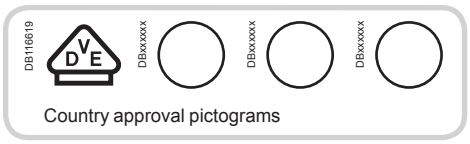
Catalogue numbers

NG125N circuit breaker

Type		1P	2P	3P			3P+N	4P		
		E45092 	E45094 	E45095 			DB122592 	E45097 		
Auxiliaries		Remote indication and tripping, module CM907004 and CM907005								
Vigi NG125		Vigi NG125 add-on residual current device, module CM902008								
Rating (In)	Quality label (1)	Curve C	Curve C	Curve B	Curve C	Curve D	Curve C	Curve B	Curve C	Curve D
10 A		18610	18621	-	18632	-	-	-	18649	-
16 A		18611	18622	-	18633	-	-	-	18650	-
20 A		18612	18623	-	18634	-	-	-	18651	-
25 A		18613	18624	-	18635	-	-	-	18652	-
32 A		18614	18625	-	18636	-	-	-	18653	-
40 A		18615	18626	-	18637	-	-	-	18654	-
50 A		18616	18627	-	18638	-	-	-	18655	-
63 A		18617	18628	-	18639	-	-	-	18656	-
80 A		18618	18629	18663	18641	18669	18646	18666	18657	18672
100 A		-	-	18664	18643	18670	18647	18667	18659	18673
125 A		-	-	18665	18645	18671	18648	18668	18661	18674
Width in 9 mm modules		3	6	9			12	12		
Accessories		Module CM907004 and CM907006								

(1) Information to be supplied by the country concerned.
(2) Breaking capacity under 1 pole in IT isolated neutral system (case of a double fault).

NG125N circuit breakers (curves B, C, D) (cont.)



Country approval pictograms

IEC/EN 60947-2

■ NG125N circuit breakers are circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ suitability for isolation in the industrial sector to IEC/EN 60947-2,
□ tripping upon fault is indicated by a red mechanical state indicator light on the front face of the circuit breaker.

NG125N 1P

NG125N 2P

NG125N 3P

NG125N 4P

Alternating current (AC) 50/60 Hz

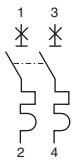
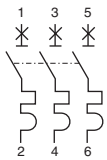
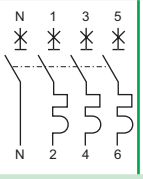
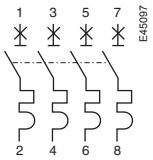
Breaking capacity (Icu) to IEC/EN 60947-2		Voltage (Ue)						Service breaking capacity (Ics)
Ph/Ph (2P, 3P, 3P+N, 4P)		-	-	220 to 240 V	-	380 to 415 V	440 V	500 V	
Ph/N (1P)		110 to 130 V	220 to 240 V	-	380 to 415 V	-	-	-	
Rating (In)	10 to 125 A	50 kA	25 kA	50 kA	6 kA(2)	25 kA	20 kA	10 kA	75 % of Icu

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2		Voltage (Ue)					Service breaking capacity (Ics)
		12 to 125 V	≤ 144 V	≤ 250 V	≤ 375 V	≤ 500 V	
Number of poles		1P		2P	3P	4P	
Rating (In)	10 to 125 A	25 kA	20 kA	20 kA	20 kA	20 kA	100 % of Icu

Catalogue numbers

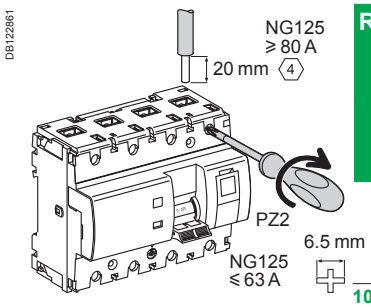
NG125N circuit breaker

Type		1P	2P	3P			3P+N	4P		
										
Auxiliaries		Remote indication and tripping, module CM907004 and CM907005								
Vigi NG125		Vigi NG125 add-on residual current device, module CM902008								
Rating (In)	Quality label (1)	Curve C	Curve C	Curve B	Curve C	Curve D	Curve C	Curve B	Curve C	Curve D
10 A		18610	18621	-	18632	-	-	-	18649	-
16 A		18611	18622	-	18633	-	-	-	18650	-
20 A		18612	18623	-	18634	-	-	-	18651	-
25 A		18613	18624	-	18635	-	-	-	18652	-
32 A		18614	18625	-	18636	-	-	-	18653	-
40 A		18615	18626	-	18637	-	-	-	18654	-
50 A		18616	18627	-	18638	-	-	-	18655	-
63 A		18617	18628	-	18639	-	-	-	18656	-
80 A		18618	18629	18663	18640	18669	18646	18666	18658	18672
100 A		-	-	18664	18642	18670	18647	18667	18660	18673
125 A		-	-	18665	18644	18671	18648	18668	18662	18674
Width in 9 mm modules		3	6	9			12	12		
Accessories		Module CM907004 and CM907006								

(1) Information to be supplied by the country concerned.
(2) Breaking capacity under 1 pole in IT isolated neutral system (case of a double fault).

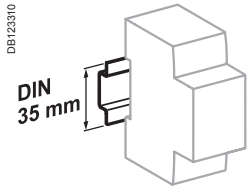
NG125N circuit breakers (curves B, C, D) (cont.)

Connection

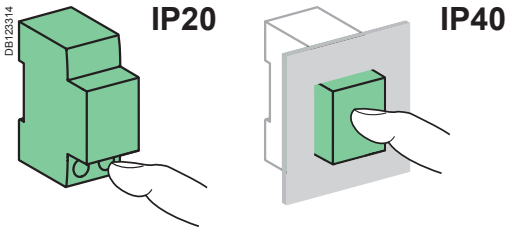


Rating		Tightening torque	Without accessories: Copper cables – Rigid	Without accessories: Copper cables – Flexible or with ferrule	With accessories: 70 mm² Al terminal – Rigid single cables	With accessories: Screw-on connection for ring terminal	With accessories: Small ring terminal	With accessories: Multi-cable terminal – Rigid cables	With accessories: Multi-cable terminal – Flexible cables
			DB122945	DB122946	DB123410	DB123488	DB118789	DB118787	
	10 to 63 A	3.5 N.m	1.5 to 50 mm²	1.5 to 35 mm²	-	-	-	3 x 16 mm²	3 x 10 mm²
1P, 2P	**80 to 125 A**	6 N.m	16 to 70 mm²	10 to 50 mm²	-	2 x 35 mm² 1 x 50 mm²	1 x 70 mm²		
3P, 3P+N, 4P	**80 to 125 A**				25 to 70 mm²				

■ On 3P, 3P+N and 4P ≥ 80 A: upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.



Clips on to 35 mm DIN rail.



Technical data

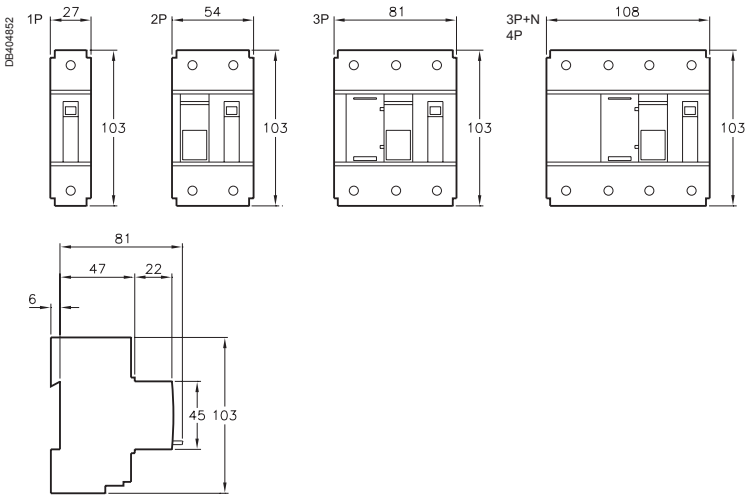
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		690 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		8 kV
Thermal tripping	Reference temperature	40°C
Magnetic tripping (Ii)	Curve B	4 In ± 20 %
	Curve C	8 In ± 20 %
	Curve D	12 In ± 20 %
Utilization category		A
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40
Endurance (O-C)	Electrical	≤ 63 A: 10,000 cycles
		≥ 63 A: 5000 cycles
	Mechanical	20,000 cycles
Operating temperature		-30°C to +70°C
Storage temperature		-40°C to +70°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)

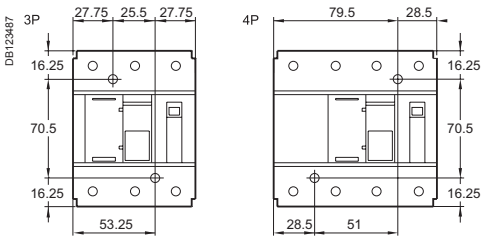
NG125N circuit breakers (curves B, C, D) (cont.)

Weight (g)

Circuit breaker	
Type	**NG125N**
1P	240
2P	480
3P	720
3P+N	960
4P	960

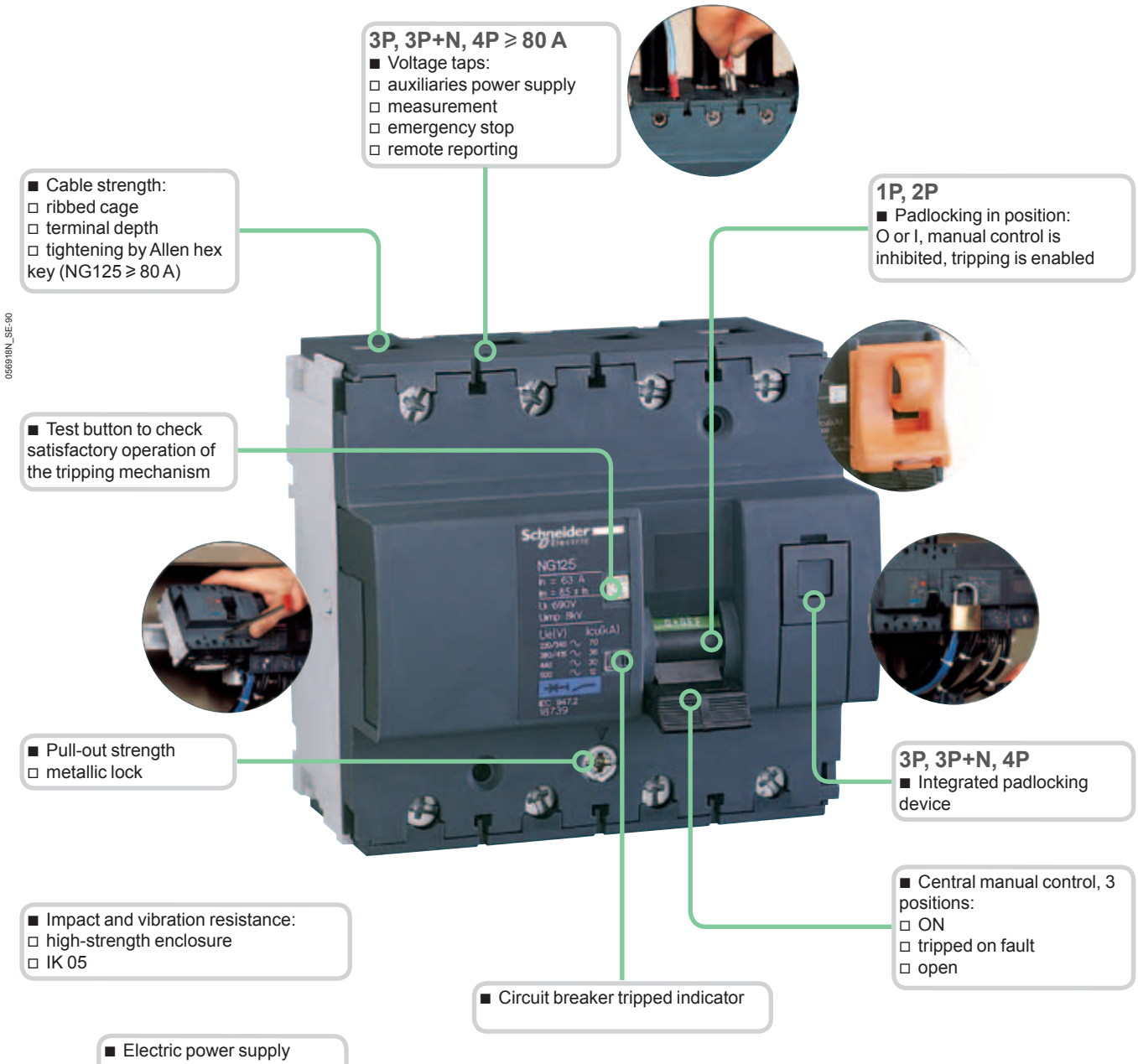
Dimensions (mm)



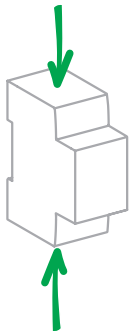


Spacing for mounting on panel

NG125N circuit breakers (curves B, C, D) (cont.)



■ Electric power supply through the top or bottom

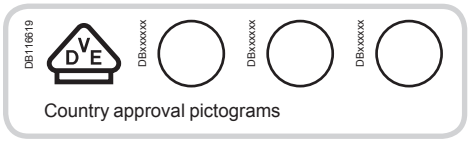


DB123493

■ Positive contact indication:
□ suitability for isolation in the industrial sector to IEC/EN 60947-2
□ the presence of the green strip guarantees that the contacts open physically and allows work to be carried out safely on the downstream circuit

■ Longer product service life due to:
□ good overvoltage withstand capacity,
□ high limitation performances,
□ fast closure independent of the speed of actuation of the toggle.

NG125H circuit breakers (curve C)



Country approval pictograms

IEC/EN 60947-2

■ NG125H circuit breakers are circuit breakers which combine the following functions:
□ circuit protection against short circuit currents,
□ circuit protection against overload currents,
□ suitability for isolation in the industrial sector to IEC/EN 60947-2,
□ tripping upon fault is indicated by a red mechanical state indicator light on the front face of the circuit breaker.

NG125H 1P

NG125H 2P

NG125H 3P

NG125H 4P

Alternating current (AC) 50/60 Hz

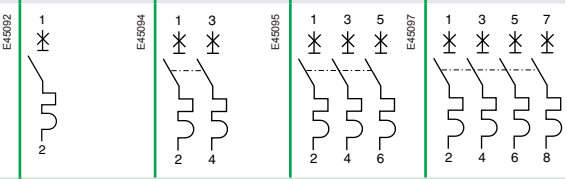
Breaking capacity (Icu) to IEC/EN 60947-2								Service breaking capacity (Ics)
	Voltage (Ue)							
Ph/Ph (2P, 3P, 4P)	-	-	220 to 240 V	-	380 to 415 V	440 V	500 V	
Ph/N (1P)	110 to 130 V	220 to 240 V	-	380 to 415 V	-	-	-	
Rating (In) 10 to 80 A	70 kA	36 kA	70 kA	9 kA(2)	36 kA	30 kA	12 kA	75 % of Icu

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
	Voltage (Ue)					
	12 to 125 V	≤ 144 V	≤ 250 V	≤ 375 V	≤ 500 V	
Number of poles	1P		2P	3P	4P	
Rating (In) 10 to 80 A	36 kA	25 kA	25 kA	25 kA	25 kA	100 % of Icu

Catalogue numbers

NG125H circuit breaker

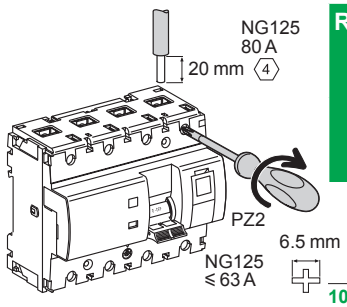
Type		1P	2P	3P	4P
					
Auxiliaries		Remote indication and tripping, module CM907004 and CM907005			
Vigi NG125		Vigi NG125 add-on residual current device, module CM902008			
Rating (In)	Quality label (1)	Curve C	Curve C	Curve C	Curve C
10 A		18705	18714	18723	18732
16 A		18706	18715	18724	18733
20 A		18707	18716	18725	18734
25 A		18708	18717	18726	18735
32 A		18709	18718	18727	18736
40 A		18710	18719	18728	18737
50 A		18711	18720	18729	18738
63 A		18712	18721	18730	18739
80 A		18713	18722	18731	18740
Width in 9 mm modules		3	6	9	12
Accessories		Module CM907004 and CM907006			

(1) Information to be supplied by the country concerned.
(2) Breaking capacity under 1 pole in IT isolated neutral system (case of a double fault).

NG125H circuit breakers (curve C) (cont.)

Connection

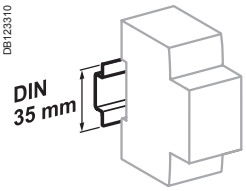
DB122861



Rating		Tightening torque	Without accessories: Copper cables		With accessories: 70 mm² Al terminal	Screw-on connection for ring terminal	Small ring terminal	Multi-cable terminal	
			Rigid	Flexible or with ferrule	Rigid single cables			Rigid cables	Flexible cables
		DB122945	DB122946	DB123410	DB123488	DB118789	DB118787		
10 to 63 A		3.5 N.m	1.5 to 50 mm²	1.5 to 35 mm²	-	-	-	3 x 16 mm²	3 x 10 mm²
1P, 2P	80 A	6 N.m	16 to 70 mm²	10 to 50 mm²	-	2 x 35 mm² 1 x 50 mm²	1 x 70 mm²		
3P, 4P	80 A				25 to 70 mm²				

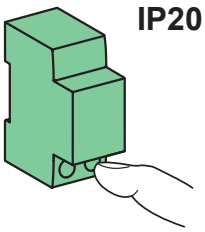
■ On 3P and 4P 80 A: upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.

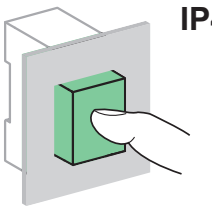
DB123310



Clips on to 35 mm DIN rail.

DB123314





Technical data

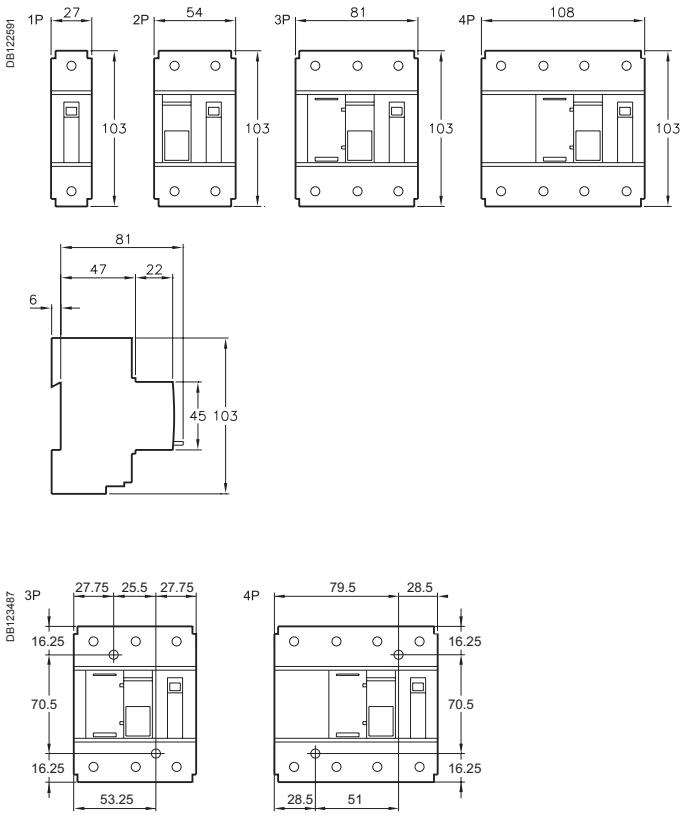
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		690 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		8 kV
Thermal tripping	Reference temperature	40°C
Magnetic tripping (Ii)	Curve C	8 In ± 20 %
Utilization category		A
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	≤ 63 A: 10,000 cycles
		≥ 63 A: 5000 cycles
	Mechanical	20,000 cycles
Operating temperature		-30°C to +70°C
Storage temperature		-40°C to +70°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)

NG125H circuit breakers (curve C) (cont.)

Weight (g)

Circuit breaker	
Type	**NG125H**
1P	240
2P	480
3P	720
4P	960

Dimensions (mm)



Spacing for mounting on panel

NG125H circuit breakers (curve C) (cont.)

3P, 4P 80 A
■ Voltage taps:
□ auxiliaries power supply
□ measurement
□ emergency stop
□ remote reporting

■ Cable strength:
□ ribbed cage
□ terminal depth
□ tightening by Allen hex key (NG125 80 A)

1P, 2P
■ Padlocking in position: O or I, manual control is inhibited, tripping is enabled

■ Test button to check satisfactory operation of the tripping mechanism

■ Pull-out strenght:
□ metallic lock

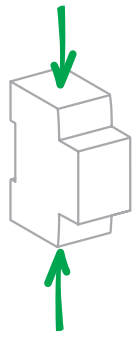
3P, 4P
■ Integrated padlocking device

■ Central manual control, 3 positions:
□ ON
□ tripped on fault
□ open

■ Impact and vibration resistance:
□ high-strength enclosure
□ IK 05

■ Circuit breaker tripped indicator

■ Electric power supply through the top or bottom



■ Positive contact indication:
□ suitability for isolation in the industrial sector to IEC/EN 60947-2
□ she presence of the green strip guarantees that the contacts open physically and allows work to be carried out safely on the downstream circuit

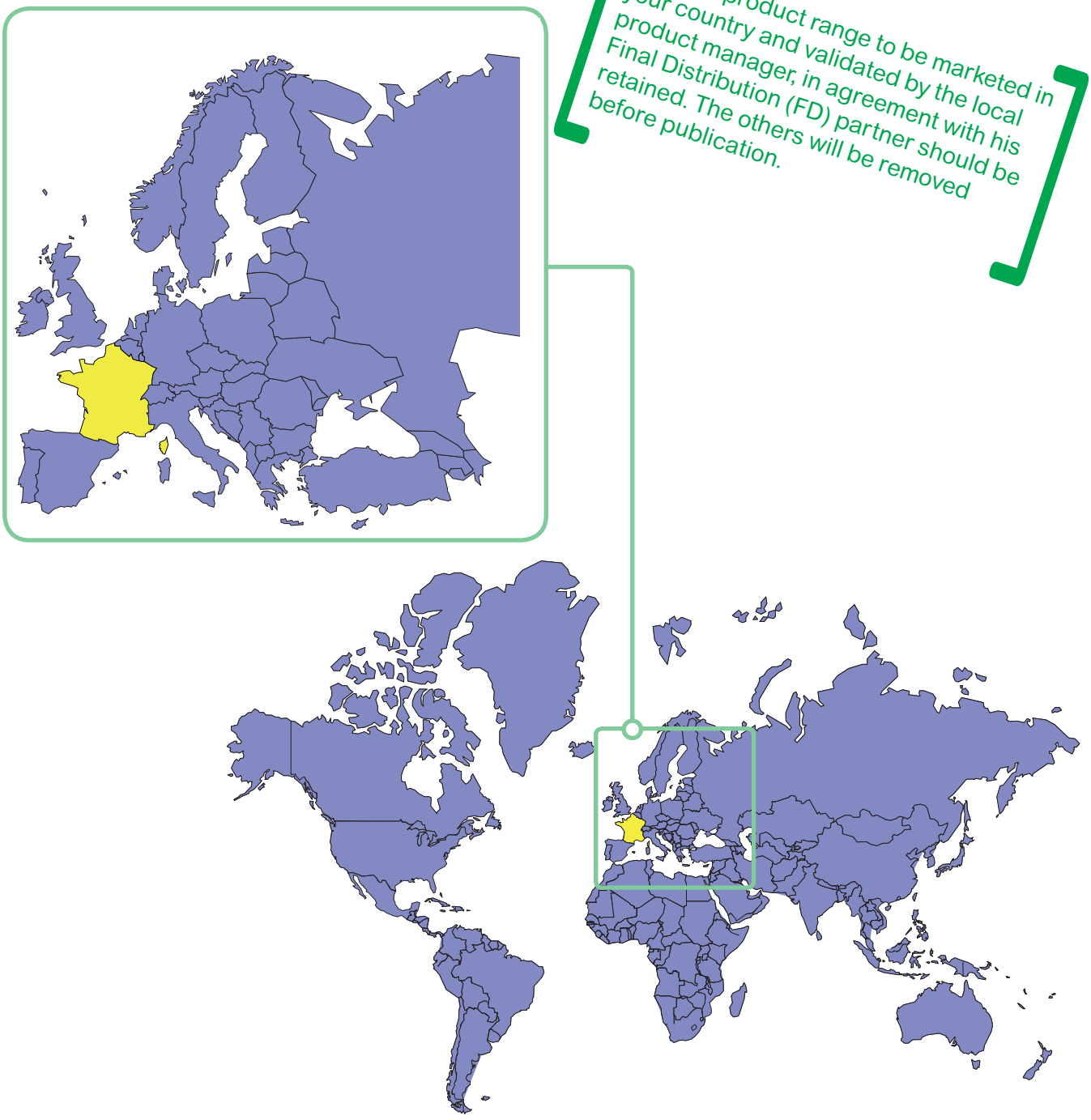
■ Longer product service life due to:
□ good overvoltage withstand capacity,
□ high limitation performances,
□ fast closure independent of the speed of actuation of the toggle.

NG125L
Table of contents

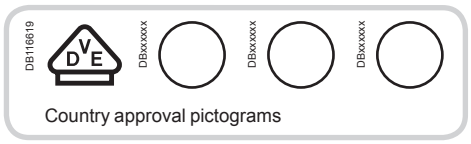
The Schneider Electric circuit breaker range comprises various offers (A, B) so as to be as competitive as possible in each country, taking into account the specific features of each market:
- Installation customs
- Price
- Approval by local organizations.

Variants

Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.



NG125L circuit breakers (curves B, C, D) (cont.)



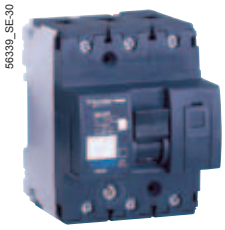
Country approval pictograms

IEC/EN 60947-2

■ NG125L circuit breakers are circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents;
□ circuit protection against overload currents;
□ suitability for isolation in the industrial sector to IEC/EN 60947-2;
□ tripping upon fault is indicated by a red mechanical state indicator light on the front face of the circuit breaker.

NG125L 1P

NG125L 2P



NG125L 3P

NG125L 4P

Alternating current (AC) 50/60 Hz

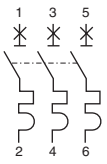
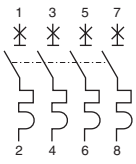
Breaking capacity (Icu) to IEC/EN 60947-2								Service breaking capacity (Ics)
	Voltage (Ue)							
Ph/Ph (2P, 3P, 4P)	-	-	220 to 240 V	-	380 to 415 V	440 V	500 V	
Ph/N (1P)	110 to 130 V	220 to 240 V	-	380 to 415 V	-	-	-	
Rating (In) 10 to 80 A	100 kA	50 kA	100 kA	12.5 kA(2)	50 kA	40 kA	15 kA	75 % of Icu

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
	Voltage (Ue)					
	12 to 125 V	≤ 144 V	≤ 250 V	≤ 375 V	≤ 500 V	
Number of poles	1P		2P	3P	4P	
Rating (In) 10 to 80 A	50 kA	36 kA	36 kA	36 kA	36 kA	100 % of Icu

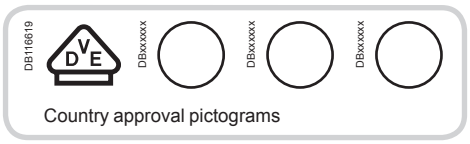
Catalogue numbers

NG125L circuit breaker

Type		1P			2P			3P			4P		
													
Auxiliaries		Remote indication and tripping, module CM907004 and CM907005											
Vigi NG125		Vigi NG125 add-on residual current device, module CM902008											
Rating (In)	Quality label (1)	Curve			Curve			Curve			Curve		
		B	C	D	B	C	D	B	C	D	B	C	D
10 A		18741	18777	18830	18750	18788	18839	18759	18799	18848	18768	18821	18857
16 A		18742	18778	18831	18751	18789	18840	18760	18800	18849	18769	18822	18858
20 A		18743	18779	18832	18752	18790	18841	18761	18801	18850	18770	18823	18859
25 A		18744	18780	18833	18753	18791	18842	18762	18802	18851	18771	18824	18860
32 A		18745	18781	18834	18754	18792	18843	18763	18803	18852	18772	18825	18861
40 A		18746	18782	18835	18755	18793	18844	18764	18804	18853	18773	18826	18862
50 A		18747	18783	18836	18756	18794	18845	18765	18805	18854	18774	18827	18863
63 A		18748	18784	18837	18757	18795	18846	18766	18806	18855	18775	18828	18864
80 A		18749	18785	18838	18758	18796	18847	18767	18807	18856	18776	18829	18865
Width in 9 mm modules		3			6			9			12		
Accessories		Module CM907004 and CM907006											

(1) Information to be supplied by the country concerned.
(2) Breaking capacity under 1 pole in IT isolated neutral system (case of a double fault).

NG125L circuit breakers (curves B, C, D)



Country approval pictograms

NG125L 1P

NG125L 2P

NG125L 3P

NG125L 4P

IEC/EN 60947-2

■ NG125L circuit breakers are circuit breakers which combine the following functions:
□ circuit protection against short-circuit currents;
□ circuit protection against overload currents;
□ suitability for isolation in the industrial sector to IEC/EN 60947-2;
□ tripping upon fault is indicated by a red mechanical state indicator light on the front face of the circuit breaker.

Alternating current (AC) 50/60 Hz

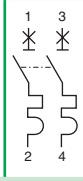
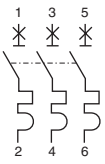
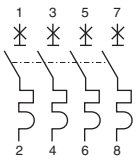
Breaking capacity (Icu) to IEC/EN 60947-2								Service breaking capacity (Ics)
	Voltage (Ue)							
Ph/Ph (2P, 3P, 4P)	-	-	220 to 240 V	-	380 to 415 V	440 V	500 V	
Ph/N (1P)	110 to 130 V	220 to 240 V	-	380 to 415 V	-	-	-	
Rating (In) 10 to 80 A	100 kA	50 kA	100 kA	12.5 kA(2)	50 kA	40 kA	15 kA	75 % of Icu

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2						Service breaking capacity (Ics)
	Voltage (Ue)					
	12 to 125 V	⩽ 144 V	⩽ 250 V	⩽ 375 V	⩽ 500 V	
Number of poles	1P		2P	3P	4P	
Rating (In) 10 to 80 A	50 kA	36 kA	36 kA	36 kA	36 kA	100 % of Icu

Catalogue numbers

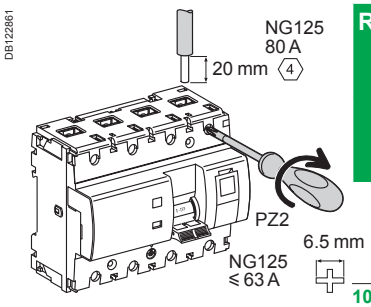
NG125L circuit breaker

Type		1P			2P			3P			4P		
													
Auxiliaries		Remote indication and tripping, module CM907004 and CM907005											
Vigi NG125		Vigi NG125 add-on residual current device, module CM902008											
Rating (In)	Quality label (1)	Curve			Curve			Curve			Curve		
		B	C	D	B	C	D	B	C	D	B	C	D
10 A		18741	18777	18830	18750	18788	18839	18759	18799	18848	18768	18810	18857
16 A		18742	18778	18831	18751	18789	18840	18760	18800	18849	18769	18811	18858
20 A		18743	18779	18832	18752	18790	18841	18761	18801	18850	18770	18812	18859
25 A		18744	18780	18833	18753	18791	18842	18762	18802	18851	18771	18813	18860
32 A		18745	18781	18834	18754	18792	18843	18763	18803	18852	18772	18814	18861
40 A		18746	18782	18835	18755	18793	18844	18764	18804	18853	18773	18815	18862
50 A		18747	18783	18836	18756	18794	18845	18765	18805	18854	18774	18816	18863
63 A		18748	18784	18837	18757	18795	18846	18766	18806	18855	18775	18817	18864
80 A		18749	18785	18838	18758	18796	18847	18767	18807	18856	18776	18818	18865
Width in 9 mm modules		3			6			9			12		
Accessories		Module CM907004 and CM907006											

(1) Information to be supplied by the country concerned.
(2) Breaking capacity under 1 pole in IT isolated neutral system (case of a double fault).

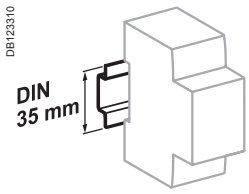
NG125L circuit breakers (curves B, C, D) (cont.)

Connection

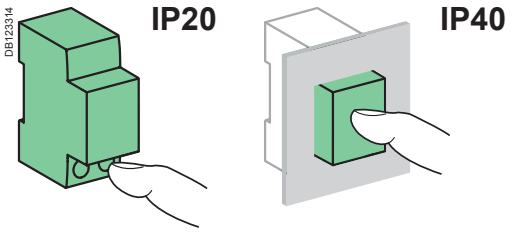


Rating		Tightening torque	Without accessories: Copper cables, Rigid	Without accessories: Copper cables, Flexible or with ferrule	With accessories: 70 mm² Al terminal, Rigid single cables	With accessories: Screw-on connection for ring terminal	With accessories: Small ring terminal	With accessories: Multi-cable terminal, Rigid cables	With accessories: Multi-cable terminal, Flexible cables
		DB122945	DB122946	DB123410	DB123488	DB118789	DB118787		
10 to 63 A		3.5 N.m	1.5 to 50 mm²	1.5 to 35 mm²	-	-	-	3 x 16 mm²	3 x 10 mm²
1P, 2P	80 A	6 N.m	16 to 70 mm²	10 to 50 mm²	-	2 x 35 mm² 1 x 50 mm²	1 x 70 mm²		
3P, 4P	80 A				25 to 70 mm²				

■ On 3P and 4P 80 A: upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.



Clips on to 35 mm DIN rail.



Technical data

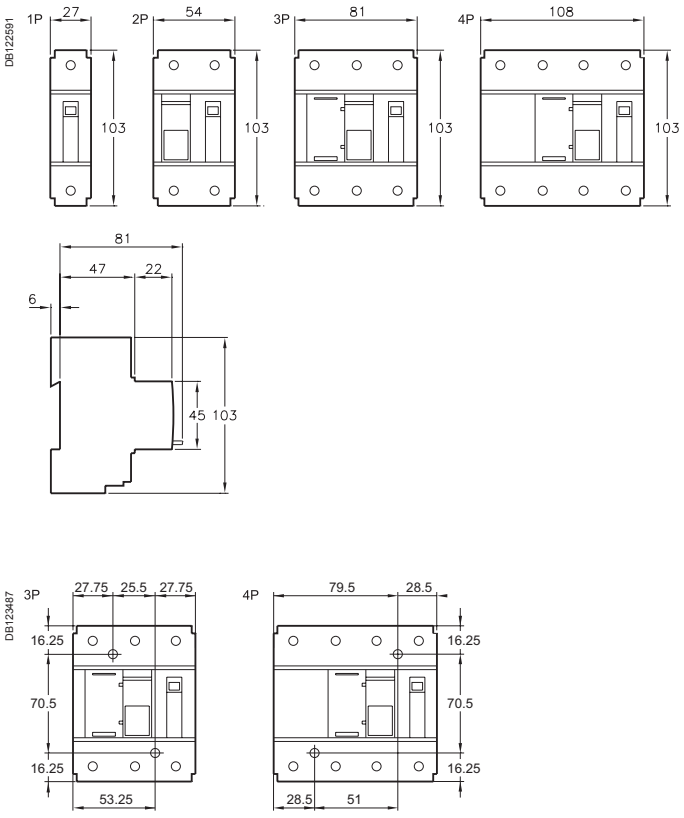
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		690 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		8 kV
Thermal tripping	Reference temperature	40°C
Magnetic tripping (Ii)	Curve B	4 In ± 20 %
	Curve C	8 In ± 20 %
	Curve D	12 In ± 20 %
Utilization category		A
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40
Endurance (O-C)	Electrical	≤ 63 A: 10,000 cycles
		≥ 63 A: 5000 cycles
	Mechanical	20,000 cycles
Operating temperature		-30°C to +70°C
Storage temperature		-40°C to +70°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)

NG125L circuit breakers (curves B, C, D) (cont.)

Weight (g)

Circuit breaker	
Type	**NG125L**
1P	240
2P	480
3P	720
4P	960

Dimensions (mm)



Spacing for mounting on panel

NG125L circuit breakers (curves B, C, D) (cont.)

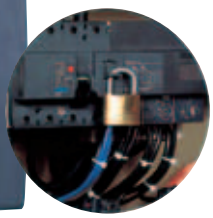
3P, 4P 80 A
■ Voltage taps:
□ auxiliaries power supply
□ measurement
□ emergency stop
□ remote reporting

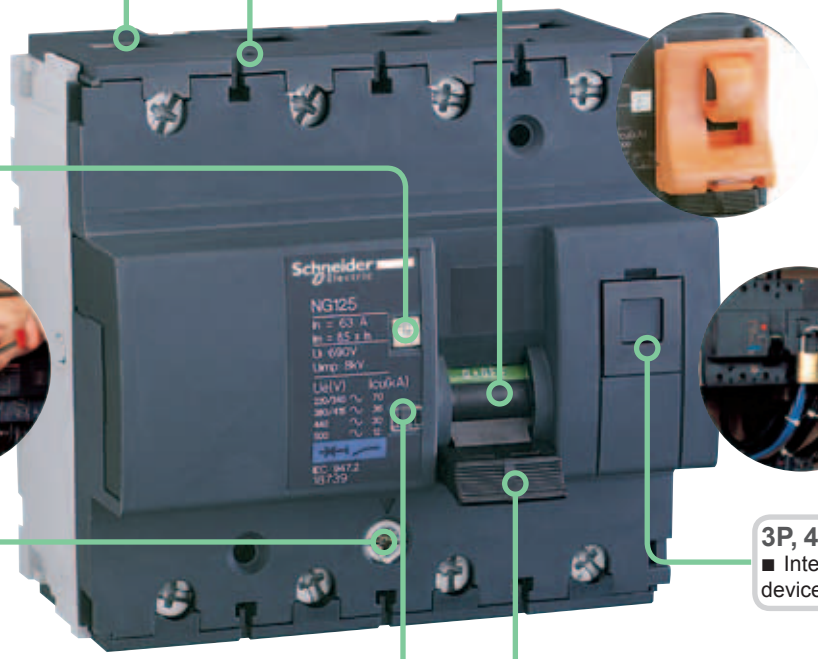
■ Cable strength:
□ ribbed cage
□ terminal depth
□ tightening by Allen hex key (NG125 80 A)

1P, 2P
■ Padlocking in position: O or I, manual control is inhibited, tripping is enabled

056918N_SE-90

■ Test button to check satisfactory operation of the tripping mechanism





■ Pull-out strength
□ metallic lock

3P, 4P
■ Integrated padlocking device

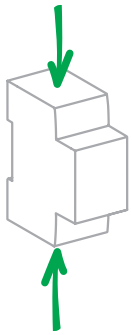
■ Central manual control, 3 positions:
□ ON
□ tripped on fault
□ open

■ Impact and vibration resistance:
□ high-strength enclosure
□ IK 05

■ Circuit breaker tripped indicator

DB123493

■ Electric power supply through the top or bottom



■ Positive contact indication:
□ suitability for isolation in the industrial sector to IEC/EN 60947-2
□ the presence of the green strip guarantees that the contacts open physically and allows work to be carried out safely on the downstream circuit

■ Longer product service life due to:
□ good overvoltage withstand capacity,
□ high limitation performances,
□ fast closure independent of the speed of actuation of the toggle.

C60H-DC
C curve

DB123430 DB123525 DB405571

Country approval pictograms

IEC 60947-2

PB107193-34.eps

PB107194-34.eps

The C60H-DC supplementary protectors are used in direct current circuits (Industrial control and automations, transport, renewable energy...).
They combine the following functions of circuit protection against short-circuit and overload currents, control and isolation.

CE

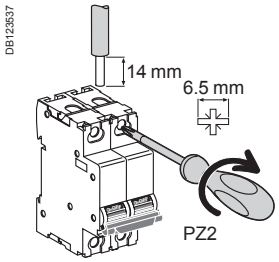
Direct current (DC)						
Breaking capacity (Icu) according to IEC 60947-2 Type						Rated service breaking capacity (Ics)
1P	**110 V**	**220 V**	**250 V**	**440 V**	**500 V**	
Rating (In) 0.5 to 63 A	20 kA	10 kA	6 kA	-	-	75 % Icu
2P (in series)	**110 V**	**220 V**	**250 V**	**440 V**	**500 V**	
0.5 to 63 A	-	20 kA	20 kA	10 kA	6 kA	75 % Icu

Catalogue numbers

C60H-DC			
Type	**1P**	**2P**	
	DB116588 Supply from above or below, observing the polarity	DB124110 Supply from above	DB124111 Supply from below
Auxiliaries	**Remote signalisation and tripping, module CA907008**		
Rating (In)	**Curve C**	**Curve C**	
0.5 A	**A9N61500**	**A9N61520**	
1 A	**A9N61501**	**A9N61521**	
2 A	**A9N61502**	**A9N61522**	
3 A	**A9N61503**	**A9N61523**	
4 A	**A9N61504**	**A9N61524**	
5 A	**A9N61505**	**A9N61525**	
6 A	**A9N61506**	**A9N61526**	
10 A	**A9N61508**	**A9N61528**	
13 A	**A9N61509**	**A9N61529**	
15 A	**A9N61510**	**A9N61530**	
16 A	**A9N61511**	**A9N61531**	
20 A	**A9N61512**	**A9N61532**	
25 A	**A9N61513**	**A9N61533**	
30 A	**A9N61514**	**A9N61534**	
32 A	**A9N61515**	**A9N61535**	
40 A	**A9N61517**	**A9N61537**	
50 A	**A9N61518**	**A9N61538**	
63 A	**A9N61519**	**A9N61539**	
Number of modules of 9 mm	2	4	
Accessories	**Modules CA907013 and CA907012**		

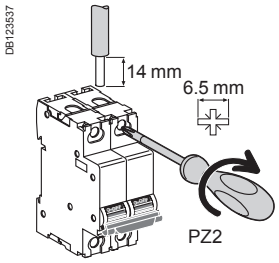
C60H-DC (cont.)
C curve

Connection

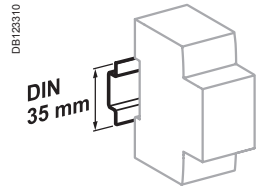


Rating	Tightening torque	Without accessory: Copper cables – Rigid / Stranded	Without accessory: Copper cables – Flexible or with ferrule	With accessories: 50 mm² Al terminal	With accessories: Screw-on connection for ring terminal	With accessories: Multi-cables terminal – Rigid cables	With accessories: Multi-cables terminal – Flexible cables
		DB122945	DB122946	DB122935 Al	DB118789 Ø	DB118787	
≤ 25 A	2.5 N.m	1 to 25 mm²	1 to 16 mm²	-	Ø 5 mm	-	-
> 25 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²		3 x 16 mm²	3 x 10 mm²

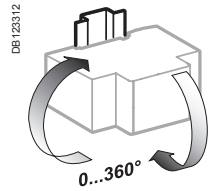
Multi-cables connection



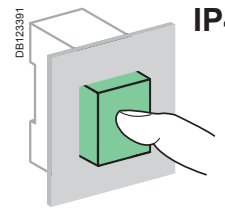
Rating	Tightening torque	Without accessory: 2 Copper cables – Rigid / Stranded	Without accessory: 2 Copper cables – Flexible or with ferrule	3 Multi-cables / Different wires – Flexible / Stranded	3 Multi-cables / Different wires – Flexible / Stranded / Rigid
		DB122945	DB122946	DB118787	
≤ 25 A	2.5 N.m	2 x 1 mm² to 2 x 10 mm²		3 x 1 mm²	2 x 2.5 mm² + 1 x 1.5 mm²
> 25 A	3.5 N.m	2 x 1 mm² to 2 x 16 mm²		3 x 4 mm²	2 x 10 mm² + 1 x 6 mm²



Clip on DIN rail 35 mm.



Indifferent position of installation.



Technical data

- Tripping curves: C curve - Overcurrent protection for any type of application.
- Positive break indication - the green strip indicates that all the poles are open and allows work to be carried out on the downstream circuit in complete safety.
- Suitable for isolation as defined in IEC 60947-2.
- Increase in the service life of the product: thanks to fast closure independent of the speed of action on the handle.
- Current limitation in the event of a fault: fast opening of the contacts prevents the loads from being destroyed in the event of a short-circuit.

Main characteristics		
According to IEC 60947-2		
Insulation voltage (Ui)		500 V DC
Rated voltage (Un)	1P	250 V DC
	2P	500 V DC
Operating voltage (Ue)	1P	24...250 V DC
	2P	24...500 V DC
Pollution degree		3
Rated impulse withstand voltage (Uimp) under frame		6 kV
Magnetic tripping (Ii)		8.5 In (± 20 %) (compatible with curve C)
Additional characteristics		
Degree of protection (IEC 60529)	Device in modular enclosure	IP40
Utilization category		A (no delay in accordance with IEC 60947-2 standards)
Endurance (O-C)	Electrical	3,000 cycles (where L/R=2 ms)
		6,000 cycles where the circuit is resistive
	Mechanical	20,000 cycles
Tropicalization (IEC 60068-2)		Treatment 2 (relative humidity 95 % at 55°C
Operating temperature		-25°C to 70°C
Storage temperature		-40°C to 85°C

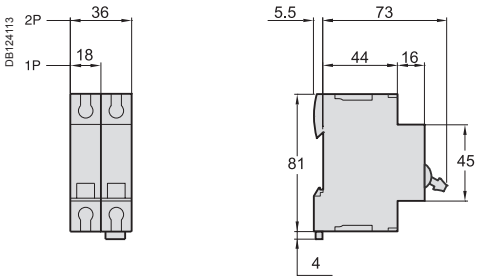
Failure to match polarity during connection may lead to a fire hazard and/or serious injury.
■ The connection polarity must be observed (marked on the front panel).
■ Use only with direct current.

C60H-DC (cont.)
C curve

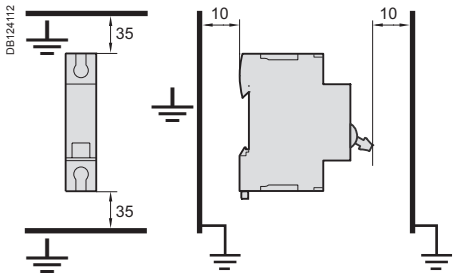
Weight (g)

Circuit-breaker	
Type	**C60H-DC**
1P	128 g
2P	256 g

Dimensions (mm)



C60H-DC



Details of minimum distance between circuit-breaker and earthed metal parts for circuit-breaker intended for use without enclosure.

C60PV-DC

PB108403-50

The C60PV-DC is a DC circuit breaker dedicated to multi string photovoltaic installations.

This circuit breaker is designed to protect the cables located between each string of photovoltaic modules and the photovoltaic inverter against overloads and short circuits (see application diagram).

Combined with a switch (of the C60NA-DC type, for example), the C60PV-DC will be installed in a string PV protection enclosure at the end of each string of photovoltaic modules.

It can be locked (by a padlocking device) in OFF position as a safety measure for removal of the PV inverter.
Since a fault current can flow in the reverse direction to the operating current, the C60PV-DC can detect and protect against any bidirectional current.

To ensure the safety of the installation, it is necessary, depending on the various types of application, to combine the C60PV-DC with:
- a residual current device at the AC end,
- a fault passage detector (insulation monitoring device) at the DC end
- an earth protection circuit breaker at the DC end (see Practical Advice CA908035).

In all cases, fast action on site will be required to clear the fault (protection not ensured in the event of a double fault).

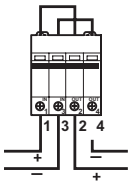
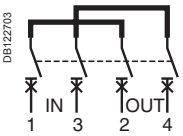
C60PV-DC is not polarity sensitive: (+) and (-) wires can inversed without any risk.

The C60PV-DC is: delivered with three inter-pole barrier to provide increased isolation distance between two adjacent connectors.

IEC / EN 60947-2

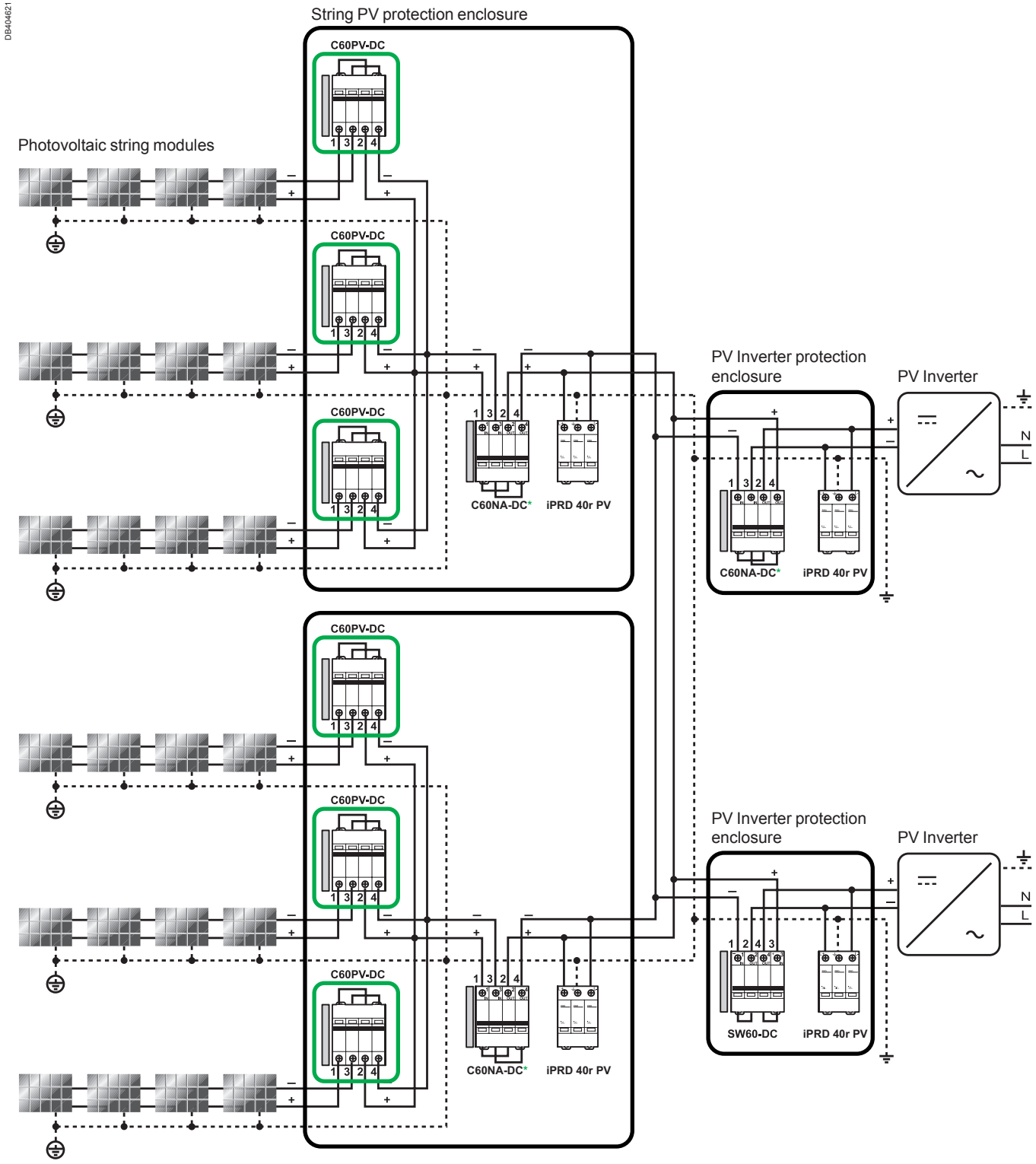
CE

DB404840

Main characteristics		
Operating voltage (Ue)	800 V DC	
Rated insulation voltage (Ui)	1,000 V DC	
Breaking capacity (Icu)	1.5 kA	
Impulse voltage (Uimp)	6 kV	
Electrical connection	By the bottom for In and Out	
Number of poles	2P	
Number of modules of 9 mm	8	
Diagrams	DB122506  DB122703 	
Standards	IEC 60947-2 EN 60947-2	
Rating (A)	Catalogue numbers	
	Curve B	Curve C
1	-	A9N61653
2	-	A9N61654
3	-	A9N61655
5	-	A9N61656
8	A9N61657	-
10	A9N61650	-
13	A9N61658	-
15	A9N61659	-
16	A9N61651	-
20	A9N61652	-
25	A9N61660	-
Auxiliaries	See modules CA907008 and CA907013	

C60PV-DC (cont.)

Application diagram



MN, MX, MNx, MNⓈ, MX+OF, OF, SD, OF+SD/OF, OF+SD24

***C60NA-DC:**
20 A/1000 V DC or
32 A/800 V DC or
50 A/700 V DC

Technical data

- Position contact indication - suitability for isolation according to IEC/EN 60947-2 standard.
- The presence of the green strip guarantees physical opening of the contacts and allows operations to be performed on the downstream circuit in complete safety.
- Increased product service life thanks to fast closing independent of the speed of actuation of the toggle.
- Pre-wired product: Input / Output on the same side.

Main characteristics

Rated service breaking capacity (Ics)		100 % of the Icu
Magnetic tripping (Ii)	Ratings 1...5 A	8.5 In (± 20 %) (compatible with curve C)
	Ratings 8...25 A	5.5 In (± 20 %) (compatible with curve B)
Endurance (O-C)	Electrical	1,500 cycles (where L/R=2 ms)
	Mechanical	20,000 cycles
Mechanical		20,000 cycles
Degree of pollution		2
Category		A (no delay in accordance with IEC / EN 60947-2 standards)
Degree of protection (IEC 60529)	Device in modular enclosure	IP40
Tropicalisation		Relative humidity: 95 % at 55°C in accordance with IEC 60068-2 and GB 14048.2 standards
Temperature	Operating	-25°C to 70 °C
	Storage	-40°C to 85°C

Additional characteristics

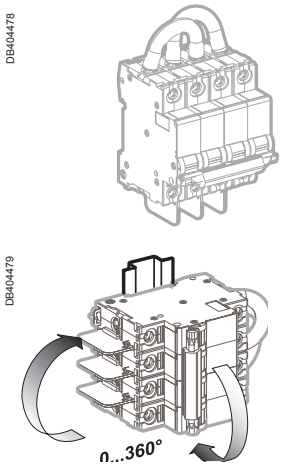
Rating (A)	Voltage drop (mV)	Impedance (mΩ)	Power loss (W)
1	9200	9200	9.2
2	5104	2552	10.2
3	2980	993.3	8.9
5	2000	400	10
8	1384	173	11.1
10	680	68	6.8
13	572	44	7.4
15	600	40	9
16	648	40.5	10.4
20	588	29.4	11.8
25	488	19.5	12.2

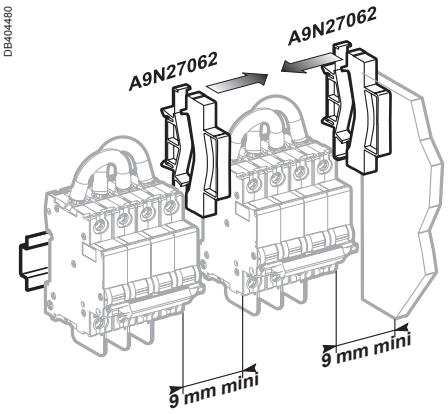
Derating table (A)

C60PV-DC	Ambient temperature (°C)																				
Rating	**-30**	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**+5**	**+10**	**+15**	**+20**	**+25**	**+30**	**+35**	**+40**	**+45**	**+50**	**+55**	**+60**	**+65**	**+70**
1 A	1.18	1.17	1.15	1.14	1.12	1.1	1.09	1.07	1.05	1.04	1.02	**1**	0.98	0.96	0.94	0.92	0.9	0.88	0.86	0.84	0.82
2 A	2.54	2.5	2.45	2.41	2.36	2.31	2.26	2.21	2.16	2.11	2.06	**2**	1.94	1.88	1.82	1.76	1.7	1.63	1.56	1.48	1.41
3 A	3.78	3.71	3.65	3.58	3.51	3.45	3.38	3.3	3.23	3.16	3.08	**3**	2.92	2.84	2.75	2.66	2.57	2.48	2.38	2.27	2.17
5 A	6	5.92	5.83	5.74	5.66	5.57	5.48	5.39	5.29	5.2	5.1	**5**	4.9	4.8	4.69	4.58	4.47	4.36	4.24	4.12	4
8 A	9.64	9.5	9.36	9.22	9.08	8.93	8.78	8.63	8.48	8.32	8.16	**8**	7.83	7.67	7.49	7.31	7.13	6.95	6.76	6.56	6.36
10 A	12.6	12.4	12.2	11.9	11.7	11.5	11.2	11	10.8	10.5	10.3	**10**	9.7	9.4	9.2	8.9	8.6	8.2	7.9	7.6	7.2
13 A	15.5	15.3	15.1	14.8	14.6	14.4	14.2	14	13.7	13.5	13.2	**13**	12.7	12.5	12.2	12	11.7	11.4	11.1	10.8	10.5
15 A	18.6	18.3	18	17.7	17.4	17.1	16.7	16.4	16.1	15.7	15.4	**15**	14.6	14.3	13.9	13.5	13.0	12.6	12.2	11.7	11.2
16 A	19.4	19.1	18.9	18.6	18.3	18.0	17.6	17.3	17.0	16.7	16.3	**16**	15.7	15.3	14.9	14.6	14.2	13.8	13.4	13.0	12.5
20 A	24.1	23.7	23.4	23.0	22.7	22.3	21.9	21.6	21.2	20.8	20.4	**20**	19.6	19.2	18.7	18.3	17.9	17.4	16.9	16.4	15.9
25 A	30.4	29.9	29.5	29.0	28.5	28.1	27.6	27.1	26.6	26.1	25.5	**25**	24.5	23.9	23.3	22.7	22.1	21.5	20.9	20.2	19.6

Technical data (cont.)

Moreover it is recommended to use:
- a terminal Screw Shield snaps onto the front of the C60PV-DC protective devices to provide greater insulation of the terminal screws
- a spacer clips 9 mm in each side to provide isolation.



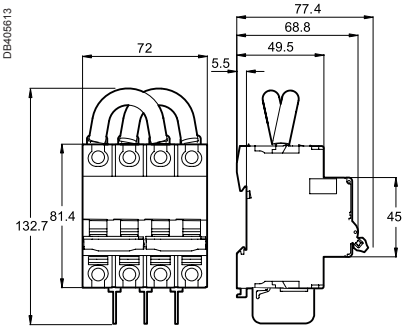


⚠ **Required to have a 9 mm space isolation in each side"**

Weight (g)

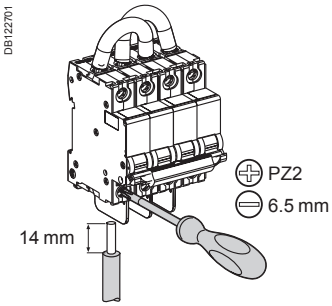
Circuit breaker	
Type	**C60PV-DC**
	545

Dimensions (mm)



C60PV-DC ⩽ 25 A

Connection



		Without accessory		With accessories	
Rating	**Tightening torque**	**Copper cables UL 486A file no. #E216919**		**50 mm² Cu/Al Terminal**	**Ring tongue terminal screw connection**
		Rigids	**Flexibles with ferrule**		
		DB112804	DB112805	DB118755	DB118756
⩽ 25 A	2.5 N.m	1 to 25 mm²	1 to 16 mm²	50 mm²	Ø 5 mm

C60NA-DC

PB108404-60

The C60NA-DC is a direct current switch-disconnector dedicated to disconnection of the string of photovoltaic modules and the PV inverter.

It is designed to isolate the string of photovoltaic modules and the inverter from the rest of the photovoltaic installation for maintenance operations in complete safety.

Combined with a circuit breaker (of the C60PV-DC type, for example), the C60NA-DC will be installed in a string PV protection enclosure close to the strings of photovoltaic modules. It can also be installed near the PV inverter.

It can be locked (by a padlocking device) in OFF position to ensure safety during maintenance operations.
Since a fault current can flow in the reverse direction to the normal operating current, the C60NA-DC can switch a multi-directional current.

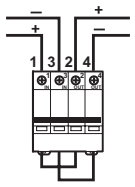
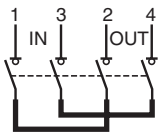
C60NA-DC is not polarity sensitive: (+) and (-) wires can inversed without any risk.

The C60NA-DC is delivered with three inter-pole barrier to provide increased isolation distance between two adjacent connectors.

IEC / EN 60947-3

CE

DB404841

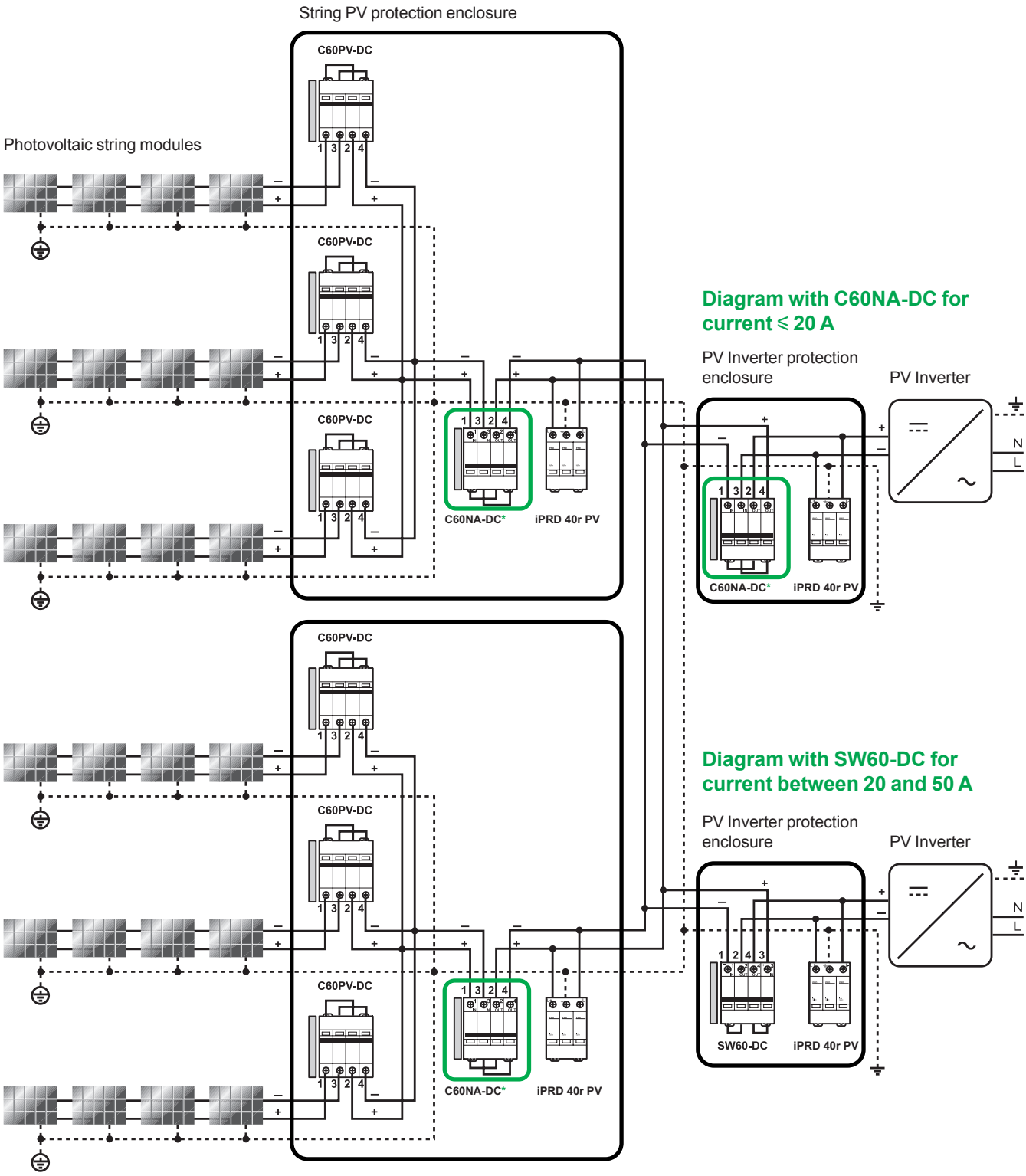
Main characteristics	
Operating voltage (Ue)	20 A: 1000 V CC
	32 A: 800 V CC
	50 A: 700 V CC
Rated insulation voltage (Ui)	1,000 V DC
Rated operational current (Ie)	50 A
Impulse voltage (Uimp)	6 kV
Permissible rated short-time withstand current (Icw)	600 A
Rated short-circuit closing current (Icm)	1 kA
Electrical connection	By the top for In and Out
Number of poles	2P
Number of modules of 9 mm	8
Diagrams	DB122506  DB122704 
Standards	IEC 60947-3 EN 60947-3
Catalogue number	**A9N61690**
Auxiliaries	See modules CA907008 and CA907013

Additional characteristics			
Rating (A)	**Voltage drop (mV)**	**Impedance (mΩ)**	**Power loss (W)**
20 A	100	5.02	2
32 A	151	5.02	5.14
50 A	251	5.02	12.55

C60NA-DC (cont.)

Application diagram

DB404622



MN, MX, MNx, MNⓈ, MX+OF, OF, SD, OF+SD/OF, OF+SD24

***C60NA-DC:**
20 A/1000 V DC or
32 A/800 V DC or
50 A/700 V DC

C60NA-DC (cont.)

Technical data

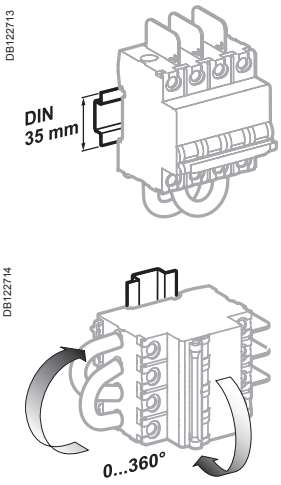
- Position contact indication - suitability for isolation according to IEC/EN 60947-3 standard.
- The presence of the green strip guarantees physical opening of the contacts and allows operations to be performed on the downstream circuit in complete safety.
- Increased product service life thanks to fast closing independent of the speed of actuation of the toggle.
- Pre-wired product: Input / Output on the same side.

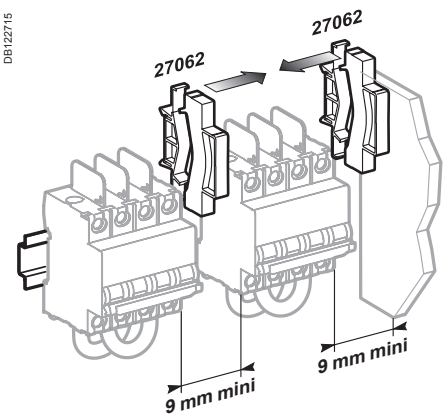
Endurance (O-C)	Electrical	300 cycles
	Mechanical	20,000 cycles
Degree of pollution		2
Category		DC21B
Degree of protection (IEC 60529)	Device in modular enclosure	IP40
Tropicalisation		Relative humidity: 95 % at 55°C in accordance with IEC 60068-2 and GB 14048.2 standards
Temperature	Operating	-25°C to 70°C
	Storage	-40°C to 85°C

Derating table (A)

C60NA-DC	Ambient temperature (°C)											
Rating	**+5**	**+10**	**+15**	**+20**	**+25**	**+30**	**+35**	**+40**	**+45**	**+50**	**+60**	**+70**
50 A	63	61	60	58	56	54	52	**50**	48	46	41	35

Moreover it is recommended to use:
- a terminal Screw Shield snaps onto the front of the C60NA-DC protective devices to provide greater insulation of the terminal screws
- a Spacer clips 9 mm in each side to provide isolation.





⚠ **Required to have a 9 mm space isolation in each side"**

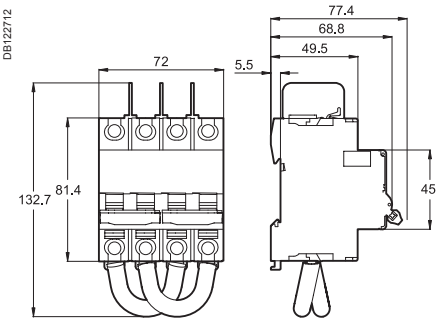
C60NA-DC (cont.)

Technical data (cont.)

Weight (g)

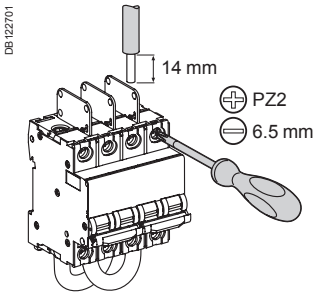
Switch disconnector	
Type	**C60NA-DC**
	530

Dimensions (mm)



C60NA-DC

Connection



		Without accessory		With accessories			
Rating	**Tightening torque**	**Copper cables UL 486A file no. #E216919**		**50 mm² Cu/Al Terminal**	**Screw on connection for ring terminal**	**Multi-cables terminal**	
		Rigids	**Flexibles with ferrule**			**Rigid cables**	**Flexible cables**
		DB112804 DB112805	DB118755	DB118756	DB118757		
50 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²	Ø 5 mm	3 x 16 mm²	3 x 10 mm²

Switch SW60-DC

PB108406-60

The SW60-DC is a direct current switch-disconnector dedicated to disconnection of the string of photovoltaic modules and the PV inverter.

It is designed to isolate the inverter from the rest of the photovoltaic installation for maintenance operations in complete safety.

Combined with a circuit breaker (of the C60PV-DC type, for example) and a switch (of the C60NA-DC type, for example), the SW60-DC will be installed in the string PV protection enclosure close to the PV inverter (see application diagram).

It can be locked (by a padlocking device) in OFF position to ensure safety when removing the PV inverter.

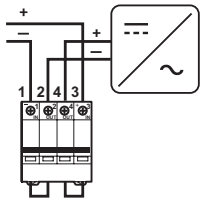
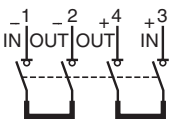
SW60-DC is polarity sensitive: (+) and (-) has to be respected for connection.

The SW60-DC is: delivered with three inter-pole barrier to provide increased isolation distance between two adjacent connectors.

IEC / EN 60947-3

CE

DB404842

General technical data	
Operating voltage (Ue)	1000 V DC
Rated insulation voltage (Ui)	1000 V DC
Rated operational current (Ie)	50 A
Impulse voltage (Uimp)	6 kV
Permissible rated short-time withstand current (Icw)	600 A
Rated short-circuit closing current (Icm)	1 kA
Electrical connection	By the top for In and Out
Number of poles	2P
Number of modules of 9 mm	8
Diagrams	DB122699  DB122700 
Standards	IEC 60947-3 EN 60947-3
Catalogue number	**A9N61699**

Switch SW60-DC (cont.)

Applications

DB404639

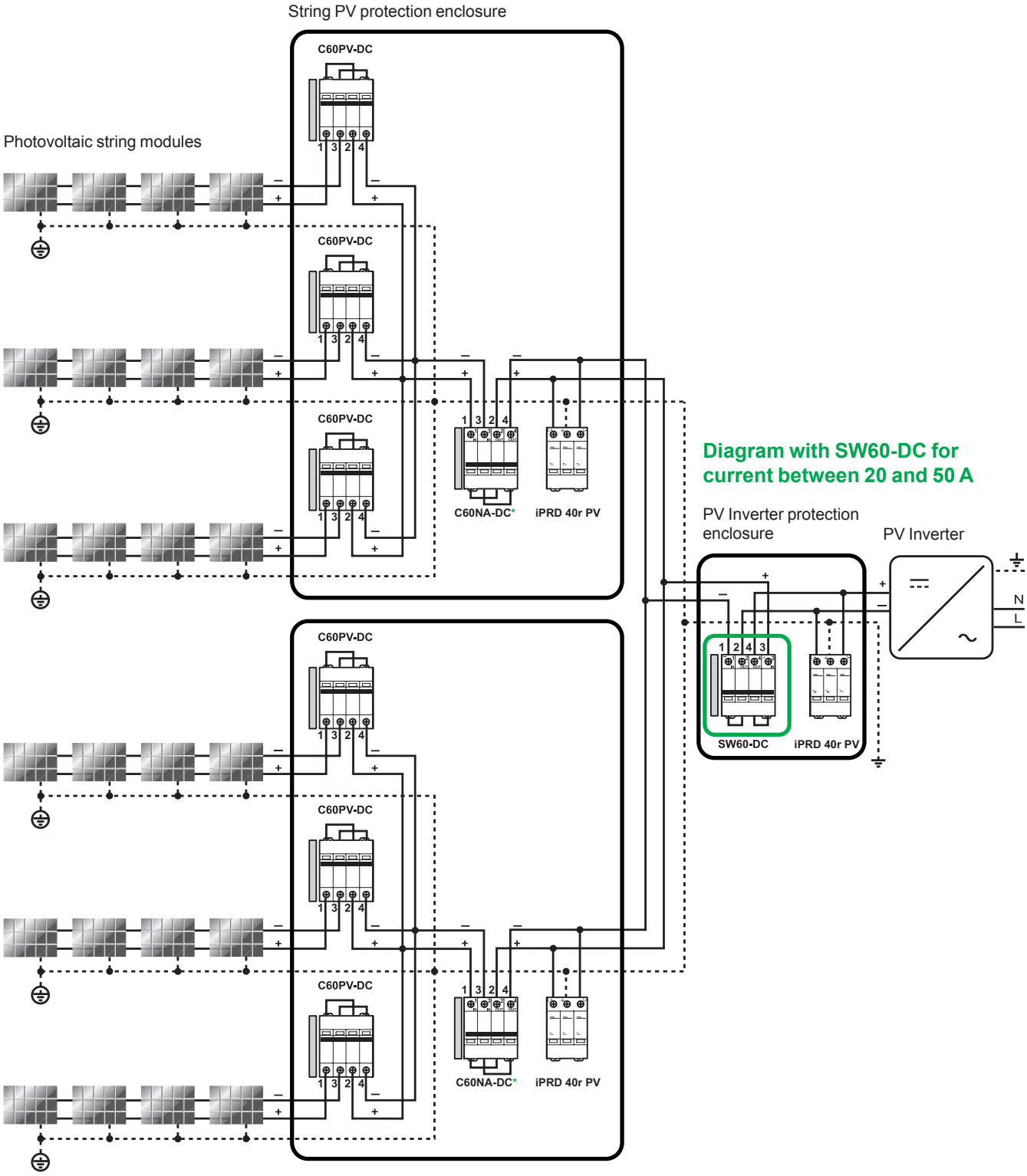


Diagram with SW60-DC for current between 20 and 50 A

MN, MX, MNx, MN[S], MX+OF, OF, SD, OF+SD/OF, OF+SD24

***C60NA-DC:**
20 A/1000 V DC or
32 A/800 V DC or
50 A/700 V DC

Switch SW60-DC (cont.)

Technical data

- Position contact indication - suitability for isolation according to IEC/EN 60947-3 standard.
- The presence of the green strip guarantees physical opening of the contacts and allows operations to be performed on the downstream circuit in complete safety.
- Increased product service life thanks to fast closing independent of the speed of actuation of the toggle.
- Pre-wired product: Input / Output on the same side.

Main characteristics

Endurance (O-C)	Electrical	1,500 cycles
	Mechanical	20,000 cycles
Degree of pollution		2
Category		DC21A
Degree of protection (IEC 60529)	Device in modular enclosure	IP40
Tropicalisation		Relative humidity: 95 % at 55°C in accordance with IEC 60068-2 and GB 14048.2 standards
Temperature	Operating	-25°C to 70°C
	Storage	-40°C to 85°C
	Rating adjustment	40°C

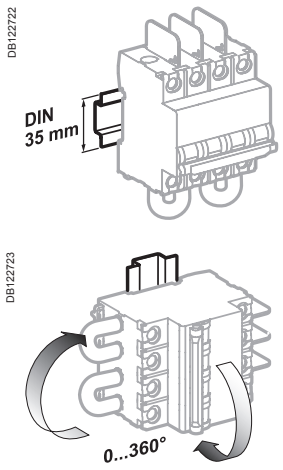
Additional characteristics

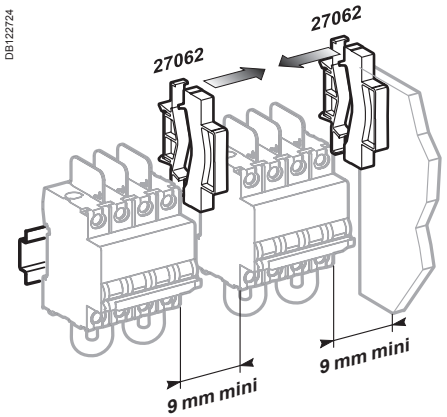
Rating (A)	Voltage drop (mV)	Impedance (mΩ)	Power loss (W)
50 A	251	5.02	12.54

Derating table (A)

SW60PV-DC	Ambient temperature (°C)											
Rating	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+60	+70
50 A	63	61	60	58	56	54	52	50	48	46	41	35

Moreover it is recommended to use:
- a terminal Screw Shield snaps onto the front of the SW60-DC protective devices to provide greater insulation of the terminal screws.
- a Spacer clips 9 mm in each side to provide isolation.





⚠ **9 mm spacers must be used on both sides of the device to create a local ventilation space around the product.**

⚠ **Failure to match polarity during connection may lead to a fire hazard and/or serious injury.**
The connection polarity must be observed (marked on the front panel).
Use only with direct current.

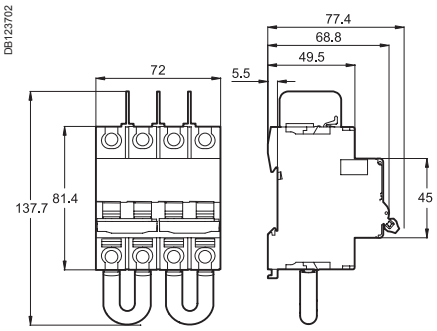
Switch SW60-DC (cont.)

Technical data (cont.)

Weight (g)

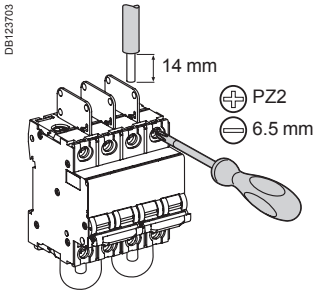
Switch disconnector	
Type	**SW60-DC**
	530

Dimensions (mm)



SW60-DC

Connection



		Without accessory		With accessories			
Rating	**Tightening torque**	**Copper cables UL 486A file no. #E216919**		**50 mm² Cu/Al Terminal**	**screw on connection for ring terminal**	**Multi-cables terminal**	
		Rigids	**Flexibles with ferrule**			**Rigid cables**	**Flexible cables**
		DB112804 DB112805	DB118755	DB118756	DB118757		
50 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²	Ø 5 mm	3 x 16 mm²	3 x 10 mm²

C120NA-DC

CE

Country approval pictograms

IEC / EN 60947-3

PB113148-50

The C120NA-DC is a direct current switch-disconnector dedicated to disconnection of the string of photovoltaic modules and the PV inverter.

It is designed to isolate the string of photovoltaic modules and the inverter from the rest of the photovoltaic installation for maintenance operations in complete safety.

The C120NA-DC will be installed in a string PV protection enclosure close to the strings of photovoltaic modules. It can also be installed near the PV inverter.

It can be locked (by a padlocking device) in OFF position to ensure safety during maintenance operations.
Since a fault current can flow in the reverse direction to the normal operating current, the C120NA-DC can switch a multi-directional current.

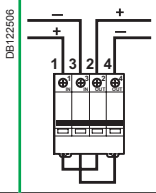
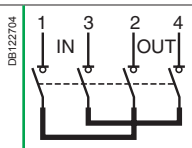
Isolation distance
- The C120NA-DC is delivered with three inter-pole barrier to provide increased isolation distance between two adjacent connectors

Connection
- The C120NA-DC is not polarity sensitive: (+) and (-) wires can inversed without any risk.

Prewired
- The cables crosssection is suitable
- The tightening torque is mastered

C120NA-DC (cont.)

Main characteristics

Operating voltage (Ue)	1000 V DC
Rated insulation voltage (Ui)	1000 V DC
Rated operational current (Ie)	100 A
Impulse voltage (Uimp)	6 kV
Permissible rated short-time withstand current (Icw)	1.5 kA / 500 ms
Rated short-circuit closing current (Icm)	1 kA
Electrical connection	By the top for In and Out
Number of poles	2P
Number of modules of 9 mm	12
Diagrams	 
Standards	IEC 60947-3 EN 60947-3
Catalogue number	**A9N61701**
Auxiliaries	See modules CA907008 and CA907013

Additional technical data

- Position contact indication - suitability for isolation according to IEC/EN 60947-3 standard.
- The presence of the green strip guarantees physical opening of the contacts and allows operations to be performed on the downstream circuit in complete safety.
- Increased product service life thanks to fast closing independent of the speed of actuation of the toggle.
- Prewired product: Input / Output on the same side.

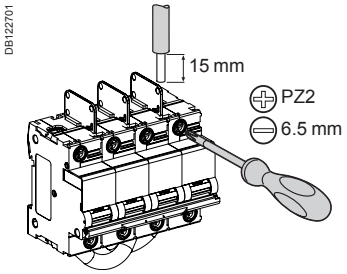
Endurance (O-C)	Electrical	300 cycles
	Mechanical	20,000 cycles
Degree of pollution		2
Category		DC21B
Tropicalisation		Relative humidity: 95 % at 55°C in accordance with IEC 60068-2 and GB 14048.2 standards
Temperature	Operating	-25°C to 70 °C
	Storage	-40°C to 85°C

Derating table (A)

C120NA-DC	Ambient temperature (°C)											
Rating	**+5**	**+10**	**+15**	**+20**	**+25**	**+30**	**+35**	**+40**	**+45**	**+50**	**+60**	**+70**
100 A	113	111	110	108	106	104	102	**100**	98	96	91	85

C120NA-DC (cont.)

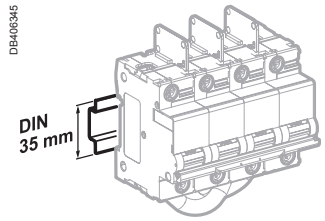
Upstream connection



	Without accessory		With accessories			
Tightening torque	Copper cables		50 mm² Cu/Al Terminal	Screw on connection for ring terminal	Multi-cables terminal	
	Rigids	Flexibles with ferrule			Rigid cables	Flexible cables
	DB112845	DB112846	DB118755	DB118756	DB118757	
3.5 N.m	35 to 50 mm²	25 to 35 mm²	50 mm²	Ø 5 mm	3 x 16 mm²	3 x 10 mm²

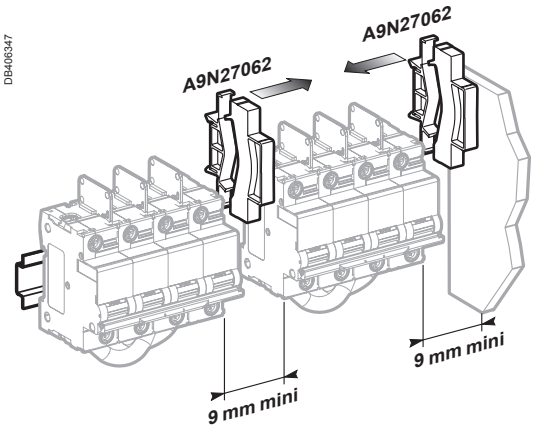
Downstream connection

Prewired delivered product: **Do not remove**



Moreover it is recommended to use:

- a terminal Screw Shield snaps onto the front of the C120NA-DC protective devices to provide greater insulation of the terminal screws
- a Spacer clips 9 mm in each side to provide isolation.

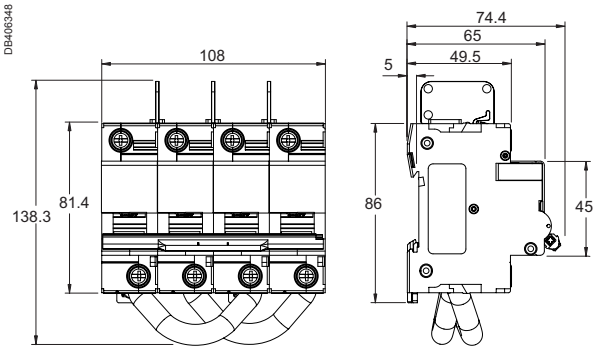


⚠ **Required: to have a 9 mm space isolation in each side"**

Weight (g)

Switch disconnector	
Type	C120NA-DC
	910

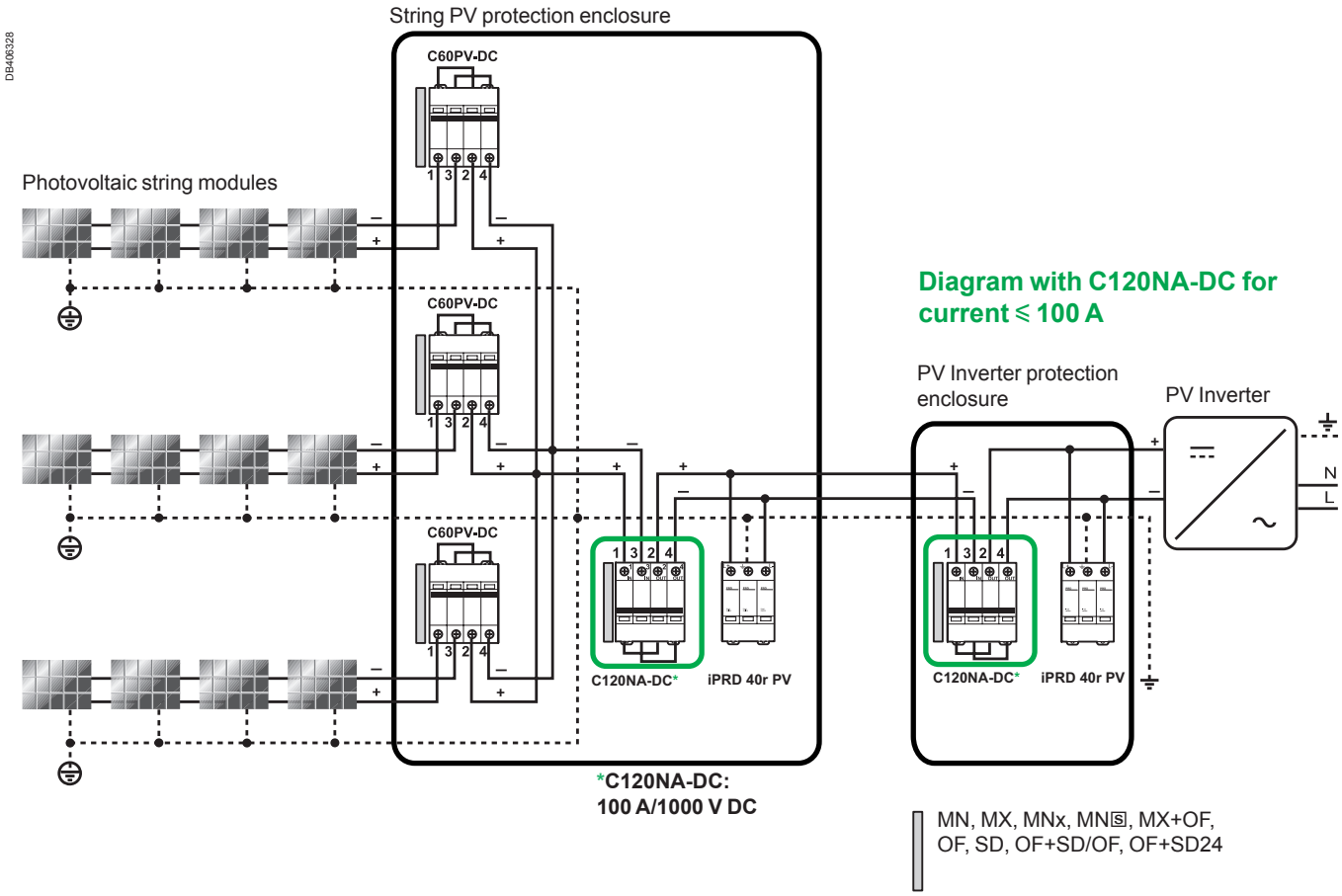
Dimensions (mm)



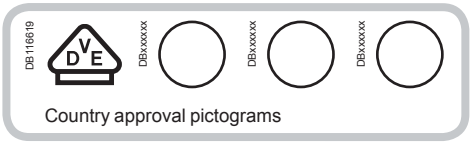
C120NA-DC

C120NA-DC (cont.)

Application diagram



P25M



Country approval pictograms

IEC 60947-2 and IEC 60947-4-1 (in combination)

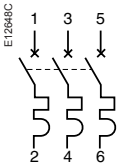
They protect single-phase or three-phase motors with manual local control.
This protection includes:
- isolation
- manual or remote control
- short-circuit protection (magnetic)
- overload protection (thermal).

Breaking capacity to IEC 60947-2

Rating (A)	Voltage (V) 230...240 Icu kA	Ics %	400...415 Icu kA	Ics %	440 Icu kA	Ics %	500 Icu kA	Ics %	690 Icu kA	Ics %
0.16 to 1.6	Unlimited									
2.5									3	75
4									3	75
6.3					50	100	50	100	3	75
10					15	100	10	100	3	75
14			15	50	8	50	6	75	3	75
18			15	50	8	50	6	75	3	75
23	50	100	15	40	6	50	4	75	3	75
25	50	100	15	40	6	50	4	75	3	75

The limiting unit increases the breaking capacity up to 100 kA at 415 V.

Catalogue numbers

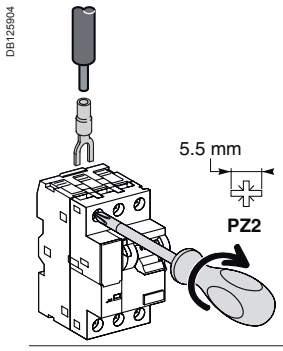
Motor characteristics							P25M circuit breaker				
Type	Standardised power (kW) of three-phase 50/60 Hz motors in category AC3 Voltage (V AC) 230	400	415	440	500	690	Rating In (A)	Setting	Power loss by the 3 poles (W)	Cat. no.	Width in 9 mm modules
3P											
	-	-	-	-	-	-	0.16	0.1-0.16	5.4	**21100**	5
	-	-	-	-	-	-	0.25	0.16-0.25	5.2	**21101**	5
	-	-	-	-	-	-	0.40	0.25-0.40	5.3	**21102**	5
	-	-	-	-	-	0.37	0.63	0.40-0.63	5.5	**21103**	5
	-	-	-	0.37	0.37	0.55	1.0	0.63-1	5.9	**21104**	5
	-	0.37	-	0.55	0.75	1.1	1.6	1-1.6	5.9	**21105**	5
	0.37	0.75	1.1	1.1	1.1	1.5	2.5	1.6-2.5	5.9	**21106**	5
	0.75	1.5	1.5	1.5	2.2	3	4.0	2.5-4	6.5	**21107**	5
	1.1	2.2	2.2	3	3.7	4	6.3	4-6.3	5.0	**21108**	5
	2.2	4	4	4	5;5	7.5	10	6-10	6.9	**21109**	5
	3	5.5	5.5	7.5	9	11	14	9-14	7.4	**21110**	5
	4	7.5	9	9	10	15	18	13-18	6.4	**21111**	5
	5.5	9	11	11	11	18.5	23	17-23	7.5	**21112**	5
	5.5	11	11	11	15	22	25	20-25	7.4	**21113**	5

Limiting unit

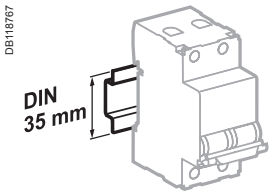
Type	Rating In (A)	Cat. no.	Width in 9 mm modules
3P			
	63	**21115**	5

P25M

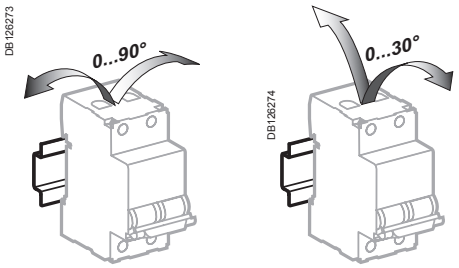
Connection

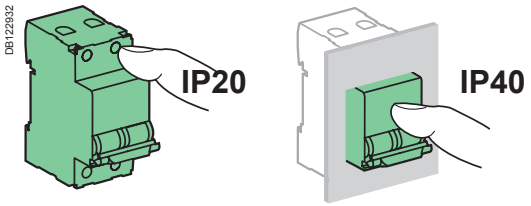


P25M			Limiting unit
Tightening torque	Terminal clamps	With insulated connector	Tunnel terminals
	Rigid Cu / Flexible Cu	Flexible Cu	Flexible or rigid Cu
1.7 N.m.	2 x 1 ... 6 mm²	2 x 1.5 ... 6 mm²	1 x 25 mm² or 2 x 10 mm²



Mounted on 35 mm DIN rail.





Technical data

Electrical characteristics

Operating voltage (Ue)		690 V AC
Insulation voltage (Ui)		690 V
Rated impulse withstand voltage (Uimp)		6 kV
Endurance (O-C)	Electrical AC3	100,000 cycles
Thermal trip unit		Sensitive to missing phase
	Settings	Factory < settings range
		Simultaneously on the front face
		On current drawn in nominal operation
	Ratings (In)	0.16 to 25 A adjustable
	Temperature compensation	-20°C to +40 °C in an enclosure
Magnetic trip unit		12 x the In rating (±20 %)

Other characteristics

Padlocking device on the front face

Tropicalisation	Treatment 2 (relative humidity 95 % at 55 °C)
Operating temperature	-20 ...+60 °C
Storage temperature	-40 ...+80 °C

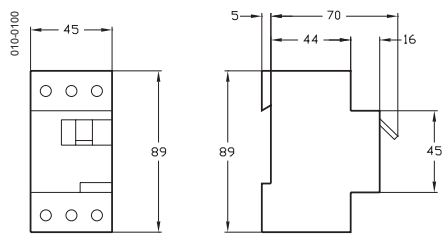
Rated operating current (Ie) of auxiliary contacts under the rated operating voltage (Ue)

Operating voltage (Ue)		Operating current			
		Position contact		fault tripping contact	
(V AC)	(V DC)	AC 15 (A AC)	DC 13 (A DC)	AC 14 (A AC)	DC 13 (A DC)
415	220	2.2	0.5	-	-
240	110	3.3	1.3	-	-
130	60	4.5	3	0.5	0.15
48	48	6	5	1	0.3
24	24	-	6	1.5	1

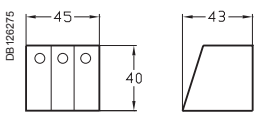
Weight (g)

P25M	260
Limiting unit	130

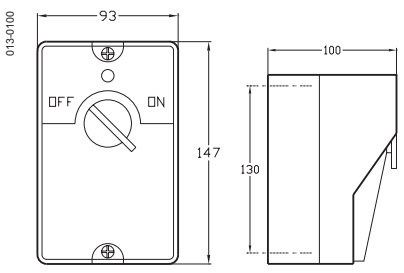
Dimensions (mm)



Circuit breaker



Limiting unit only



Insulating enclosure

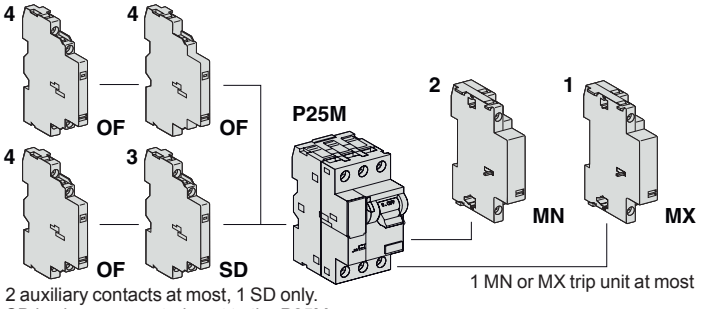
P25M
Electrical auxiliaries

Connection

Cables

	Rigid	Flexible	Flexible with ferrule
			
Mini	1 x 1 to 2.5 mm²	1 x 0.75 to 2.5 mm²	1 x 0.75 to 1.5 mm²
Maxi	2 x 1 to 2.5 mm²	2 x 0.75 to 2.5 mm²	2 x 0.75 to 1.5 mm²
Tightening torque		1.4 N.m	

The electrical auxiliaries allow remote tripping or position or fault indication of the PM25 circuit breakers.

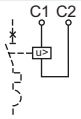
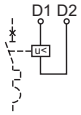


2 auxiliary contacts at most, 1 SD only.
SD is always mounted next to the P25M.

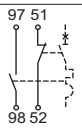
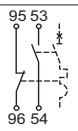
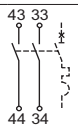
1 MN or MX trip unit at most

Catalogue numbers

Trip units

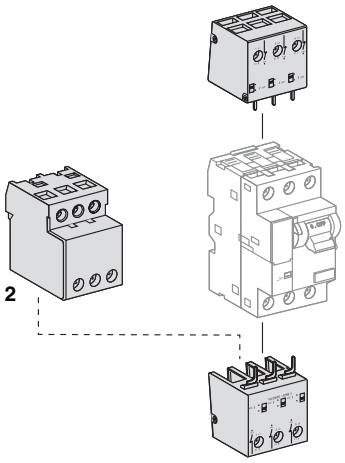
	Type	Control voltage (V AC)	Width in 9 mm modules	Cat. no.
1 MX shunt release				
■ Emergency stoppage by normally open push button ■ Causes tripping of the associated device when powered		220...240	2	**21127**
		380...415	2	**21128**
2 MN undervoltage release				
■ Emergency stoppage by normally closed push button ■ Ensures the safety of power supply circuits for several machines by preventing untimely restarting ■ Causes tripping of the circuit breaker with which it is associated when its input voltage decreases (between 70% and 35% of Un) ■ Prevents closing of the device until its input voltage has been restored		220...240	2	**21129**
		380...415	2	**21130**

Auxiliary contacts

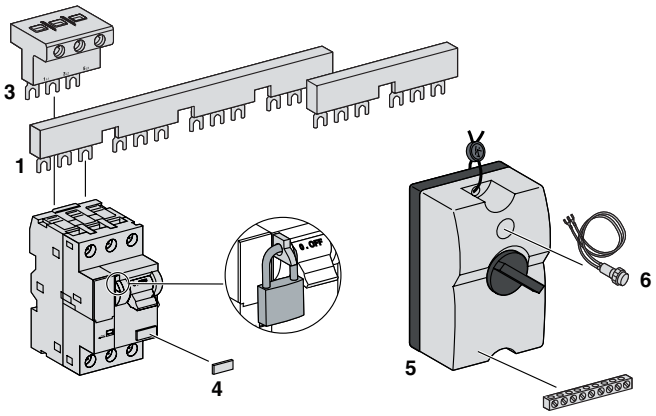
	Type	Width in 9 mm modules	Cat. no.
3 Position and fault tripping indication contacts			
F + SD.F		1	**21118**
O + SD.F		1	**21119**
F + SD.O		1	**21120**
O + SD.O		1	**21121**
4 Position contacts			
O + F		1	**21117**
F + F		1	**21116**

"O ": normally closed contact
" F ": normally open contact
SD: contact indicating the position of the associated device in the event of an electrical fault
SD.F: to indicate a closed contact fault
SD.O: to indicate an open contact fault

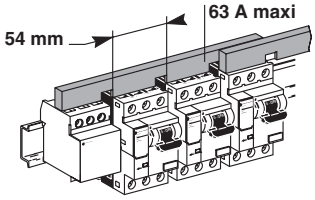
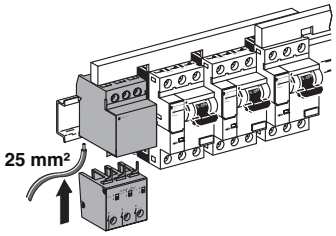
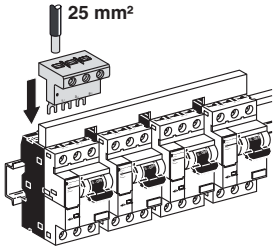
P25M
Accessories



Accessories make it easier to integrate the circuit breakers and extend their use.



Catalogue numbers

	Type	Cat. no.
1 Comb busbars		
	2 P25M feeders	**GV2G254**
	4 P25M feeders	**GV2G454**
	Protection end-piece	**GV2G10**
2 Downstream terminal block		
		**GV2G05+LA9E07**
	GV2G05: Downstream terminal block LA9E07: Cover for downstream terminal block	
3 Insulated connector		
		**GV2G09**
4 Clip-on terminal markers		
	see module CM907003E	
5 Insulating enclosure		
Individual installation of a P25M circuit breaker with an auxiliary contact block and trip unit. Double insulation ⧈ and sealed to IP55. L = 93, H = 147, P = 100 (mm)		**21133**
6 Neon indicator light		
230-240 V AC	Green	**GV2SN23**
	Red	**GV2SN24**
400-415 V AC	Green	**GV2SN33**
	Red	**GV2SN34**

P25M
Practical advice

Choice of motor supply cable cross-section

■ The motor starting current and permissible voltage drop must be taken into account when choosing the cross-section.
■ The cable must accept a current at least equal, when used continuously, to the sum of In + Id/3 where:
v In: rated current,
v Id: starting current (4 to 8 In), depending on the motors.

Voltage drop

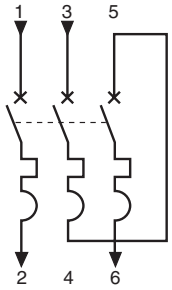
■ The voltage drop permitted between the source and the motor concerned is 5% for public distribution networks and 8 % for subscriber or transformer substations.
■ If the torque of the machine to be driven is low at startup, simply check the voltage drop for the rated current of the motor.
■ If the startup torque is high (grain crushers, goods lift, etc.), check the voltage drop for the starting current.

Protection of the motor supply line

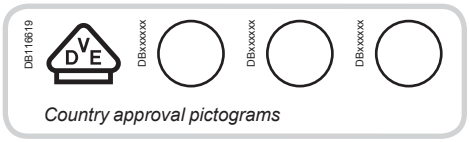
■ All circuits and motors must be protected against overloads and short-circuits.

Connecting the circuit breaker for use with a single-phase motor

■ Two circuit breaker poles must be connected in series.



iC60L circuit breakers instantaneous circuit breakers (ICB) (curve MA)



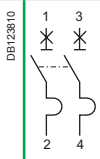
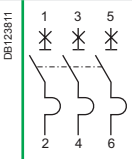
Country approval pictograms

IEC/EN 60947-2

- iC60L curve MA circuit breakers combine the following functions:
  - circuit protection against short-circuit currents,
  - suitability for industrial isolation according to IEC/EN 60947-2, standard,
  - fault tripping indication by a red mechanical indicator in circuit breaker front face,
  - to be associated with overload protection for motor.

Alternating current (AC) 50/60 Hz					
Breaking capacity (Icu) according to IEC/EN 60947-2					Service breaking capacity (Ics)
		Voltage (Ue)			
Ph/Ph (2P, 3P)		220 to 240 V	380 to 415 V	440 V	
Rating (In)	1.6 to 16 A	40 kA	20 kA	15 kA	50 % of Icu
	25 à 40 A	30 kA	15 kA	10 kA	50 % of Icu

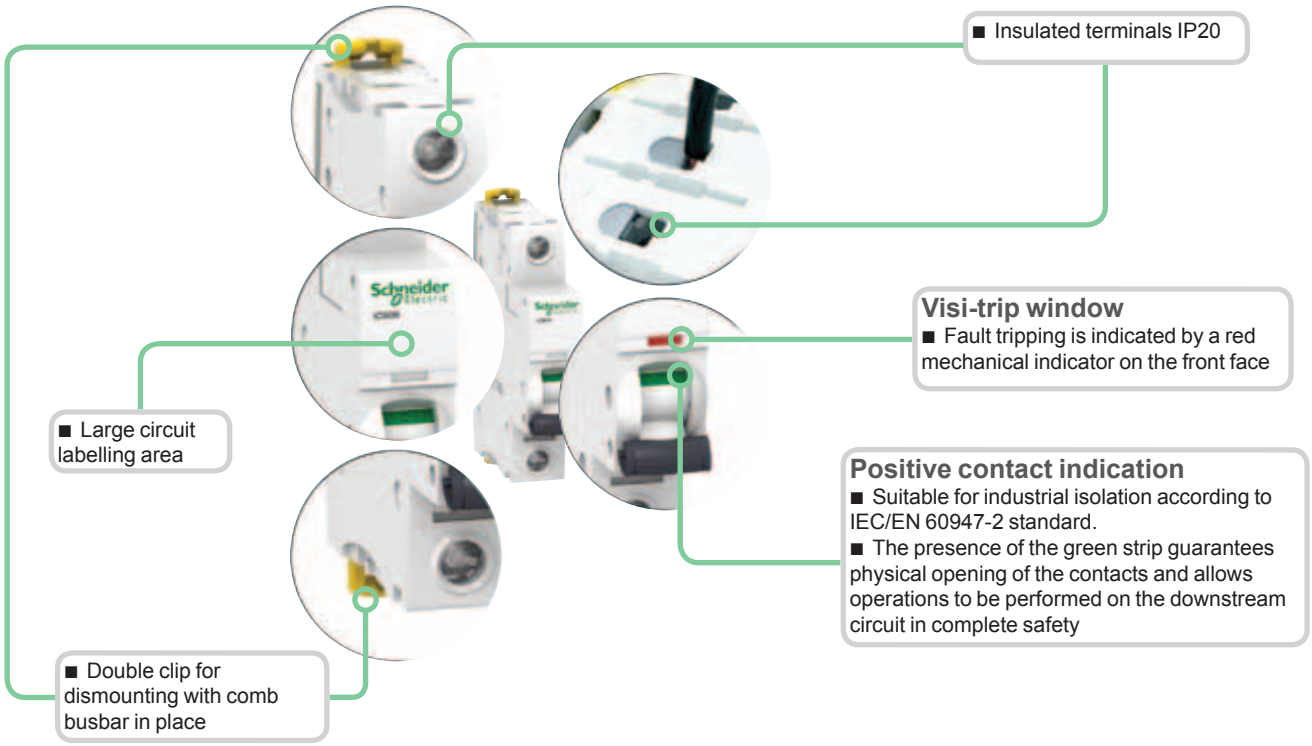
Catalogue numbers

iC60L instantaneous trip circuit breaker			
Type		2P	3P
			
Auxiliaries		Remote tripping and indication, module CA907000 and CA907002	Remote tripping and indication, module CA907000 and CA907002
Vigi iC60		Vigi iC60 add-on residual current device, module CA902005	Vigi iC60 add-on residual current device, module CA902005
Rating (In)	Quality label (1)	Curve MA	Curve MA
1.6 A		A9F90272	A9F90372
2.5 A		A9F90273	A9F90373
4 A		A9F90204	A9F90304
6.3 A		A9F90276	A9F90376
10 A		A9F90210	A9F90310
12.5 A		A9F90282	A9F90382
16 A		A9F90216	A9F90316
25 A		A9F90225	A9F90325
40 A		A9F90240	A9F90340
Width in 9-mm modules		4	6
Accessories		Module CA907000 and CA907001	Module CA907000 and CA907001

(1) Information to be provided by the country.

iC60L circuit breakers instantaneous circuit breakers (ICB) (curve MA) (cont.)

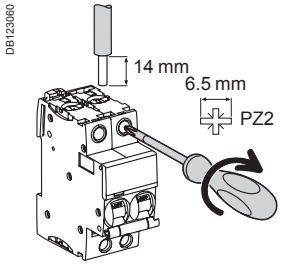
PB104434-40



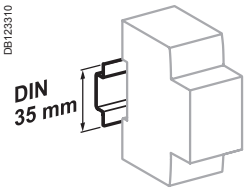
■ Increased product service life thanks to:
□ overvoltage resistance by high level of industrial performances conception (pollution degree, rated impulse withstand voltage and insulation voltage),
□ high performance limitation (see limitation curves),
□ fast closing independent of the speed of actuation of the toggle.
■ Remote indication, open/closed/tripped, by optional auxiliary contacts.
■ Top or bottom electrical feeding.

iC60L circuit breakers instantaneous circuit breakers (ICB) (curve MA) (cont.)

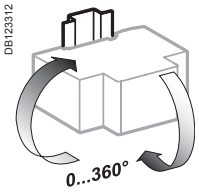
Connection



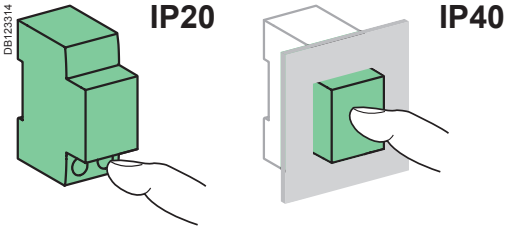
Rating	Tightening torque	Without accessory: Copper cables – Rigid	Without accessory: Copper cables – Flexible or with ferrule	With accessories: 50 mm² Al terminal	With accessories: Screw-on connection for ring terminal	With accessories: Multi-cables terminal – Rigid cables	With accessories: Multi-cables terminal – Flexible cables
		DB122945	DB122946 DB122935	Al DB118789	Ø DB118787		
1.6 to 16 A	2 N.m	1 to 25 mm²	1 to 16 mm²	-	Ø 5 mm	-	-
25 to 40 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²		3 x 16 mm²	3 x 10 mm²



Clip on DIN rail 35 mm.



Indifferent position of installation.



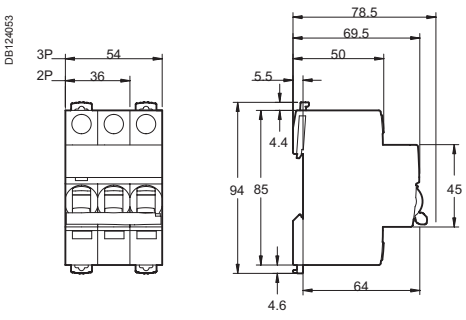
Technical data

Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		500 V AC
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV
Thermal tripping	Reference temperature	50 °C
	Temperature derating	See module CA908007
Magnetic tripping	MA curve	12 In ± 20 %
Utilization category		A
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Overvoltage category (IEC 60364)		IV
Operating temperature		-35°C to +70°C
Storage temperature		-40°C to +85°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)

Weight (g)

Circuit-breaker	
Type	**iC60L**
2P	250
3P	375

Dimensions (mm)



NG125LMA circuit breakers (curve MA)

DB116619

Country approval pictogram

IEC/EN 60947-2

- NG125LMA circuit breakers combine the following functions:
  - circuit protection against short-circuit currents,
  - suitability for industrial isolation according to IEC/EN 60947-2, standard,
  - fault tripping indication by a red mechanical indicator in circuit breaker front face,
  - they must be associated with overload protection for motor.

056924_SE-30

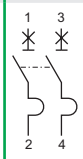
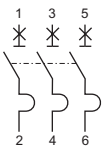
NG125LMA 2P

056939_SE-30

NG125LMA 3P

Alternating current (AC) 50/60 Hz					
Breaking capacity (Icu) to IEC/EN 60947-2					Service breaking capacity (Ics)
	Voltage (Ue)				
Ph/Ph (2P, 3P)	220 to 240 V	380 to 415 V	440 V	500 V	
Rating (In) 4 to 80 A (trip units)	100 kA	50 kA	40 kA	15 kA	75 % of Icu

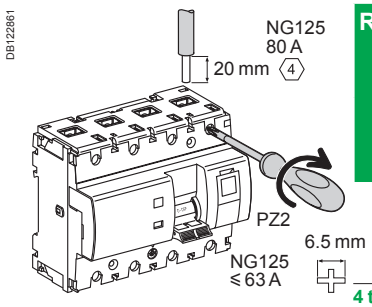
Catalogue numbers

NG125LMA circuit breaker				
Type			**2P**	**3P**
			DB123810 	DB123811 
Auxiliaries			**Remote indication and tripping, module CM907004 and CM907005**	
Vigi NG125			**Vigi NG125 add-on residual current device, module CM902008**	
Rating (In)	**Quality label** (1)	**Magn. I (A)**	**Curve MA**	**Curve MA**
4 A		50	**18868**	**18879**
6.3 A		75	**18869**	**18880**
10 A		120	**18870**	**18881**
12.5 A		150	**18871**	**18882**
16 A		190	**18872**	**18883**
25 A		300	**18873**	**18884**
40 A		480	**18874**	**18885**
63 A		750	**18875**	**18886**
80 A		960	**18876**	**18887**
Width in 9 mm modules			6	9
Accessories			**Module CM907004 and CM907006**	

(1) Information to be supplied by the country concerned.

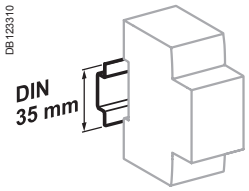
NG125LMA circuit breakers (curve MA) (cont.)

Connection

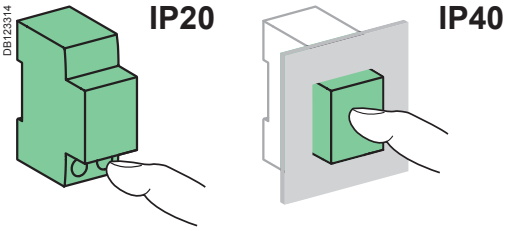


Rating		Tightening torque	Without accessories: Copper cables		With accessories: 70 mm² Al terminal	Screw-on connection for ring terminal	Small ring terminal	Multi-cable terminal	
			Rigid	Flexible or with ferrule	Rigid single cables			Rigid cables	Flexible cables
		DB122945	DB122946	DB123410	DB123488	DB118789	DB118787		
4 to 63 A		3.5 N.m	1.5 to 50 mm²	1.5 to 35 mm²	-	-	-	3 x 16 mm²	3 x 10 mm²
2P	80 A	6 N.m	16 to 70 mm²	10 to 50 mm²	-	2 x 35 mm² 1 x 50 mm²	1 x 70 mm²		
3P	80 A				25 to 70 mm²				

■ On 3P 80 A: upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.



Clips on to 35 mm DIN rail.



Technical data

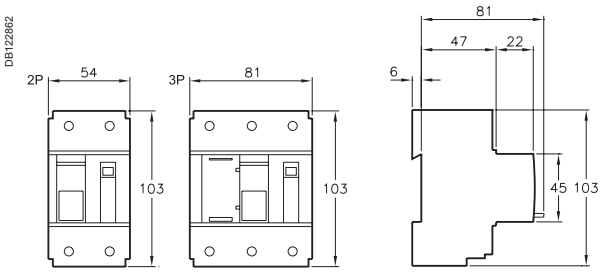
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		690 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		8 kV
Thermal tripping	Reference temperature	40°C
Magnetic tripping (Ii)	MA curve	12 In ± 20 %
Utilization category		A
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Operating temperature		-30°C to +70°C
Storage temperature		-40°C to +70°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)

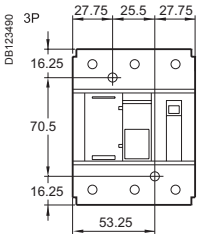
NG125LMA circuit breakers (curve MA) (cont.)

Weight (g)

Circuit breaker	
Type	**NG125LMA**
2P	480
3P	720

Dimensions (mm)





Spacing for mounting on panel

NG125LMA circuit breakers (curve MA) (cont.)

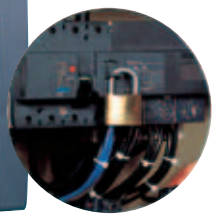
3P 80 A
■ Voltage taps:
□ auxiliaries power supply
□ measurement
□ emergency stop
□ remote reporting

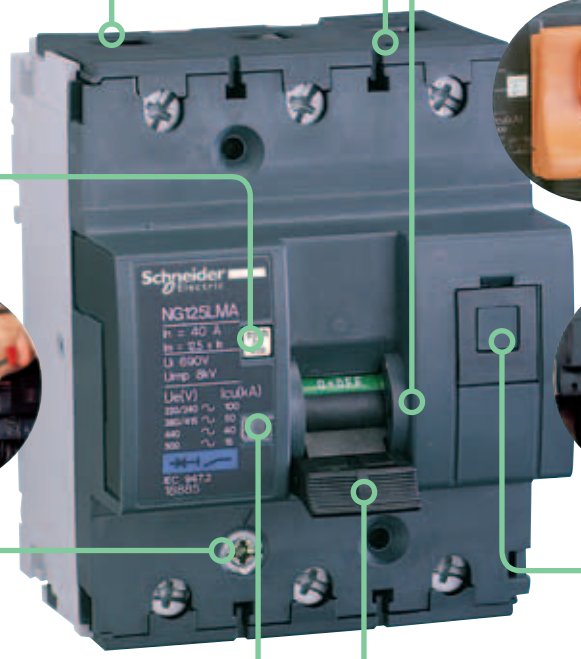
■ Cable strength:
□ ribbed cage
□ terminal depth
□ tightening by Allen hex key (NG125 80 A)

■ Padlocking in position:
O or I, manual control is inhibited, tripping is enabled

056918N_SE-90

■ Test button to check satisfactory operation of the tripping mechanism





3P
■ Pull-out strength:
□ metallic lock

3P
■ Integrated padlocking device

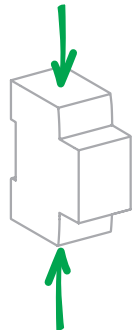
■ Impact and vibration resistance:
□ high-strength enclosure
□ IK 05

■ Central manual control, 3 positions:
□ ON
□ tripped on fault
□ open

■ Circuit breaker tripped indicator

DB123493

■ Electric power supply through the top or bottom



■ Positive contact indication:
□ suitability for isolation in the industrial sector to IEC/EN 60947-2
□ the presence of the green strip guarantees that the contacts open physically and allows work to be carried out safely on the downstream circuit

■ Longer product service life due to:
□ good overvoltage withstand capacity,
□ high limitation performances,
□ fast closure independent of the speed of actuation of the toggle.

STI isolatable fuse-carriers

PG134083A_SE

15646

053461LD-30

15668

STI	Cartridges
IEC EN 60947-3	NF C 60-200, NF C 63-210 and IEC 60269-1/2

- The STI isolatable fuse-carriers provide overload and short-circuit protection.
- They are used for industrial applications requiring a high breaking capacity.
- They perform the isolation function and must not be used as switches.
- They can be equipped with an indicator light indicating blowing of the fuse cartridge.
- Isolation of all poles is guaranteed for the 2P, 3P, and 3P+N versions during factory assembly.

The general purpose fuse (gG fuse) provides overload and short-circuit protection.
The fuse for motor application **(aM fuse)** only provides short-circuit protection.
It is used for protection of loads with a high peak current (motors, transformer primaries, etc.).

Accessories

Comb busbar
- Used to quickly bridge several STI of the same kind.

Busbar connectors
- Used to supply the busbar.
- For 25 mm² cable.

230 V neon indicator light
- Indicates fuse blowing (off in normal operation and lit red after fuse blowing).
- 400 V maxi.

Padlocking device
- Locks the toggle in the "open" or "closed" position. Used with an 8 mm max. diameter padlock (not supplied).

Clip-on markers (C60 type)
- Used to identify:
  - ☐ either on the front face of the device
  - ☐ or on the downstream terminals.

Catalogue numbers

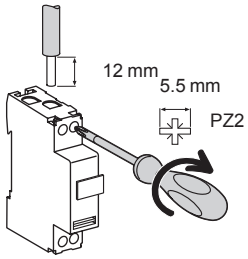
Fuse cartridge (Type F)							STI fuse holder				
Type							Network type				
	Rating	Voltage rating (Ue)	Short-circuit current (Isc)								
			aM	gG	aM	gG	1P	1P+N (1)	2P	3P	3P+N (1)
PB102098-20							DB112797 1 2	DB112798 N 1 2	DB112799 1 3 2 4	DB112800 1 3 5 2 4 6	DB110801 N 1 3 5 2 4 6
8.5 x 31.5	2 A	400 V AC	20 kA	20 kA	DF2BA0200	DF2BN0200	15635	15645	15650	15655	15657
	4 A	400 V AC	20 kA	20 kA	DF2BA0400	DF2BN0400	2 modules of 9 mm	2 modules of 9 mm	4 modules of 9 mm	6 modules of 9 mm	6 modules of 9 mm
	6 A	400 V AC	20 kA	20 kA	DF2BA0600	DF2BN0600					
	8 A	400 V AC	20 kA	20 kA	DF2BA0800	DF2BN0800					
	10 A	400 V AC	20 kA	20 kA	DF2BA1000	DF2BN1000					
10.3 x 38	2 A	500 V AC	120 kA	120 kA	DF2CA02	DF2CN02	15636	15646	15651	15656	15658
	4 A	500 V AC	120 kA	120 kA	DF2CA04	DF2CN04	2 modules of 9 mm	2 modules of 9 mm	4 modules of 9 mm	6 modules of 9 mm	6 modules of 9 mm
	6 A	500 V AC	120 kA	120 kA	DF2CA06	DF2CN06					
	10 A	500 V AC	120 kA	120 kA	DF2CA10	DF2CN10					
	16 A	500 V AC	120 kA	120 kA	DF2CA16	DF2CN16					
	20 A	500 V AC	120 kA	120 kA	DF2CA20	DF2CN20					
	25 A	400 V AC	120 kA	120 kA	DF2CA25	DF2CN25					
							Operating frequency : 50/60 Hz				

(1) The neutral pole comes equipped with a locked tube.

STI isolatable fuse-carriers (cont.)

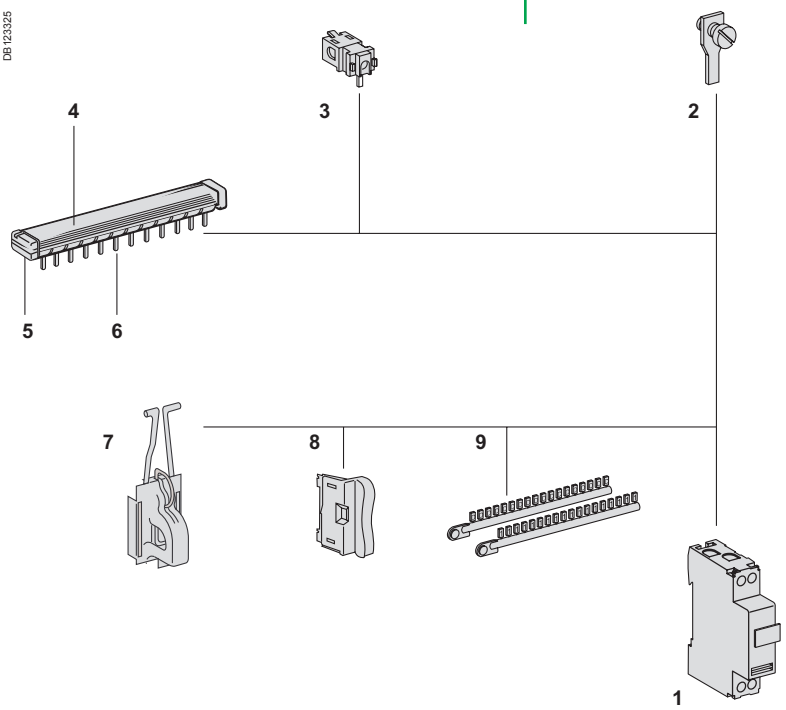
Connection

DB123241



Type	Rating	Tightening torque	Without accessory: Copper cables – Rigid	Without accessory: Copper cables – Flexible or with ferrule	With accessories: Screw-on connection for ring terminal
			DB122945	DB122946	DB118789
STI	All	2 N.m	0.75 to 10 mm²	0.33 to 6 mm²	Ø 5 mm

DB123325

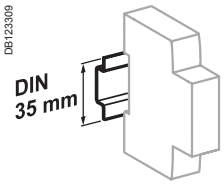


2	Screw-on connection for ring terminal			**27053**
3	Insulated connectors		(set of 4)	**14885**
4	Comb busbar	24 pas	1P	**14881**
		26 pas	1P+N	**14880**
		24 pas	2P	**14882**
		24 pas	3P	**14883**
		24 pas	4P	**14884**
5	Flange for comb busbars (set of 40)		For 1P, 2P	**14886**
			For 3P, 4P	**14887**
6	Teeth shield		(set of 40)	**14888**

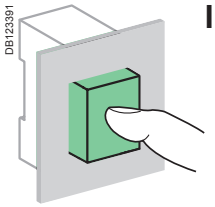
Mounting accessories

7	Padlocking device		**15669**
8	Neon indicator light	1 piece blister	**15668**
9	Clip-on terminal markers	See module	**CA907001**

STI isolatable fuse-carriers (cont.)



Clip on DIN rail 35 mm.



IP40

Technical data

Main characteristics	
Insulation voltage (Ui)	500 V
Pollution degree	3

Additional characteristics	
Degree of protection Device in modular enclosure	IP40 Insulation class II
Operating temperature	-20°C to +60°C
Storage temperature	-40°C to +80°C
Isolation with positive contact indication by tilting the fuse-carrier	Captive fuse-carrier
	Additional housing is provided for a spare fuse
Cartridge blowing signalling (option)	By indicator light ON after blowing

To be equiped with aM or gG (gL - gI) type fuse cartridge without striker, with or without fuse blowing indicator

Maximum dissipated power per pole of STI isolatable fuse-carriers

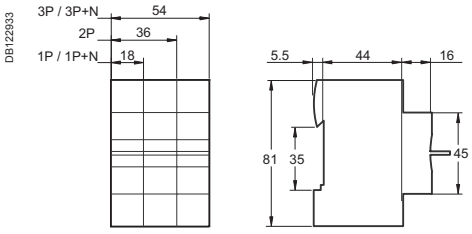
Fuse cartridge type		Ith	Pmax
8.5 x 31 mm	aM	10 A	2.5 W
	gG	20 A	2.5 W
10.3 x 38 mm	aM	16 A	3 W
	gG	25 A	3 W

Maximum dissipated power per fuse cartridges

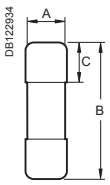
Fuse cartridge type		Ith	Pmax
8.5 x 31 mm	aM	2 to 10 A	0.9 W
	gG	2 to 10 A	2.5 W
10.3 x 38 mm	aM	2 to 25 A	1.2 W
	gG	2 to 25 A	3 W

Specific technical data STI 1P+N and 3P+N
Disconnection of the phase and neutral in the normal dimensions of the phase (2 mod. of 9 mm)
Phase opening causes compulsory opening of the neutral
The phase opens before the neutral on isolation and closes after the neutral on circuit closing

Dimensions (mm)



STI



aM, gG fuse cartridge			
Type	A	B	C
8.5 x 31.5 mm	8.5	31.5	10.3
10.3 x 38 mm	10.3	38	10.5

aM, gG

D0 fuse disconnectors switches

DB116619 DB116619

Country approval pictograms

PB110951-40

PB110955-40

IEC/EN 60947-1, IEC/EN 60947-3, IEC 60269-1, IEC 60269-3, VDE 0660-100, VDE 0660-107

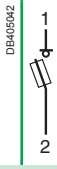
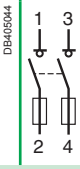
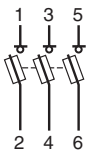
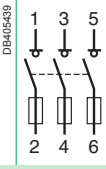
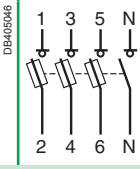
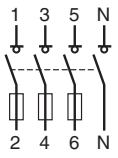
- The plug-in fuse switches disconnectors D01 and the switches disconnectors fuse D02 provide protection against overloads and short circuits.
- They are used for service sector and industrial applications.
- Depending on the versions, they should be provided with D01 or D02 type cartridges.

Accessories

- The D02 gauges allow you to limit the rating of the fuses, depending on the model used, from 20 A to 50 A.

Catalogue numbers

Fuse disconnectors switches

Type	1P	1P+N		2P	3P		3P+N	
	D01	D01	D02	D02	D01	D02	D01	D02
	DB405042 	DB405043 	DB405438 	DB405044 	DB405045 	DB405439 	DB405046 	DB405440 
D01 fuse switches disconnectors								
Rating (In)								
10 A	-	**MGN01610**		-	-		**MGN01710**	
13 A	-	**MGN01613**		-	-		**MGN01713**	
16 A	-	**MGN01616**		-	**MGN01316**		**MGN01716**	
Width in 9 mm modules	-	4		-	6		8	
D02 switches disconnectors fuse								
Rating (In)								
63 A	**MGN02163**	**MGN02663**		**MGN02263**	**MGN02363**		**MGN02763**	
Width in 9 mm modules	3	6		6	9		12	

PB110959-30

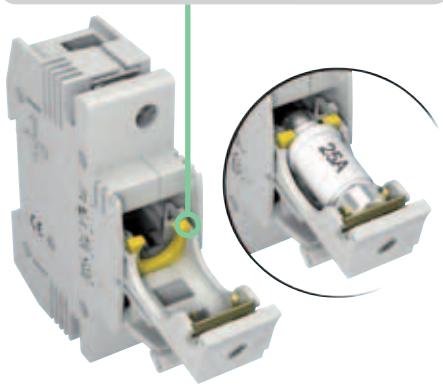
Accessories for D02 switches disconnectors fuse

Type	Rating	Colour	
Fuse gauge	20 A	Blue	**MGN09120**
	25 A	Yellow	**MGN09125**
	32-35-40 A	Black	**MGN09135**
	50 A	White	**MGN09150**

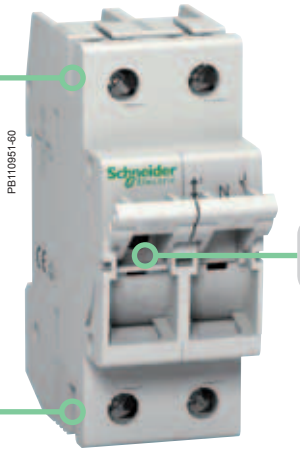
D02 : Gauges

- These allow fitting of fuses from 20 A to 50 A

PB110960-50



PB110951-60



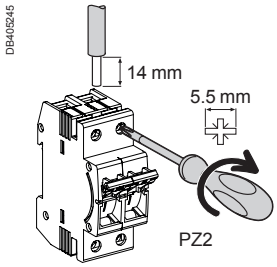
Connection

- Upstream/downstream by tunnel terminals
- For D01: by 18 mm forked comb busbar

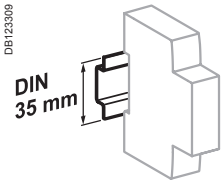
Blown-fuse indicator

D0 fuse disconnectors switches (cont.)

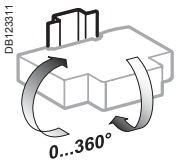
Connection



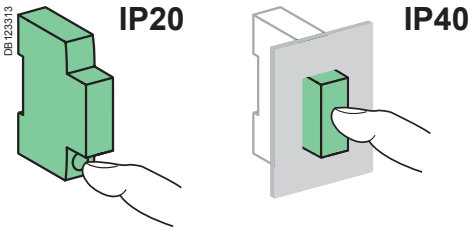
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		 DB122945	 DB122946
D01	2 N.m	1.5 to 25 mm²	1.5 to 16 mm²
D02	3 N.m	1.5 to 35 mm²	1.5 to 25 mm²



Clip on DIN rail 35 mm.



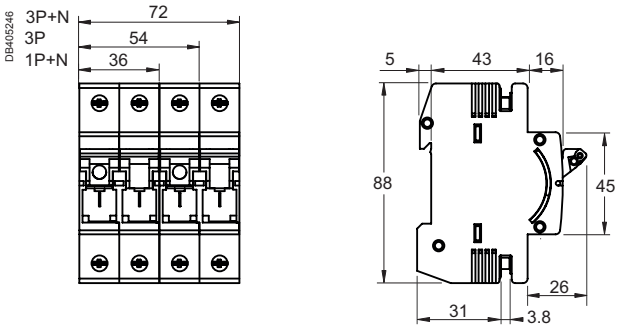
Indifferent position of installation.



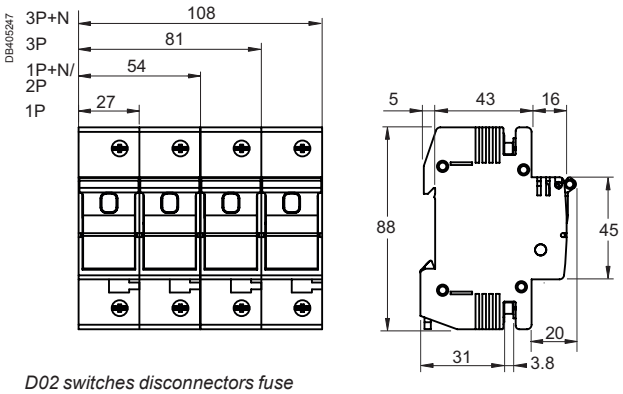
Technical data

Main characteristics		D01	D02
Operating voltage (Ue)		230/400 V AC	230/400 V AC 110 V DC (2P)
Operating frequency (Hz)		45-62 Hz	45-62 Hz
Service breaking capacity (Isc)	AC	50 kA	50 kA
	DC	-	8 kA
Rated insulation voltage (Ui)		400 V	400 V
Rated impulse withstand voltage (Ui)		6000 V	6000 V
Utilization category (IEC 60947-3)	400 V AC	AC-22A	AC-22A (63 A) AC-23A (35 A)
	110 V DC (2P)	-	DC-22B (63 A)
	48 V DC (1P)	-	DC-22A (63 A)
Endurance (O-C)	Electrical	1500 cycles	1500 cycles
	Mechanical	10,000 cycles	8500 cycles
Additional characteristics			
Degree of protection	Device only	IP20	
	Device in modular enclosure	IP40	
Operating temperature		-5°C to +40°C	
Storage temperature		-25°C to +55°C	

Dimensions (mm)

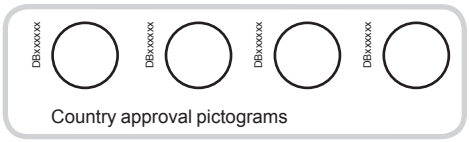


D01 fuse switches disconnectors



D02 switches disconnectors fuse

SBI fuse holder with indicator light



Country approval pictograms

IEC EN 60947-3

PB102092_SE


MGN15707

PB102097_SE


MGN15712

PB102100_SE


MGN15714

PB102104_SE


MGN15718

- SBI fuse holders provide overload and short-circuit protection.
- They are used for industrial applications requiring a high breaking capacity.
- They perform the isolation function and must not be used as switches.
- They are equipped with an indicator light indicating blowing of the fuse cartridge: to be equipped with aM or gG (gL-gI) type fuse cartridge without striker.

The general purpose fuse (gG fuse) provides overload and short-circuit protection.
The fuse for motor application (**aM fuse**) only provides short-circuit protection.
It is used for protection of loads with a high peak current (motors, transformer primaries, etc.).

Catalogue numbers

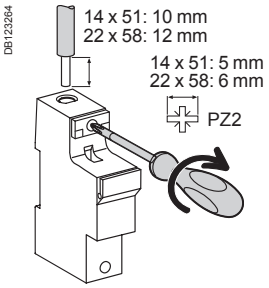
Fuse cartridge					SBI fuse holder	
Type					Network type	
	Rating	Voltage rating (Ue)	Short-circuit current (Isc)			
			aM	gG	aM	gG
PB102098-20					DB112796	
14 x 51 mm	10 A	690 V CA	120 kA	120 kA	**DF2EA10**	**DF2EN10**
	12 A	690 V CA	120 kA	-	**DF2EA12**	**-**
	16 A	690 V CA	120 kA	120 kA	**DF2EA16**	**DF2EN16**
	20 A	690 V CA	120 kA	120 kA	**DF2EA20**	**DF2EN20**
	25 A	690 V CA	120 kA	120 kA	**DF2EA25**	**DF2EN25**
	32 A	500 V CA	120 kA	120 kA	**DF2EA32**	**DF2EN32**
	40 A	500 V CA	120 kA	120 kA	**DF2EA40**	**DF2EN40**
	50 A	400 V CA	120 kA	120 kA	**DF2EA50**	**DF2EN50**
22 x 58 mm	32 A	690 V CA	80 kA	80 kA	**DF2FA32**	**DF2FN32**
	40 A	690 V CA	80 kA	80 kA	**DF2FA40**	**DF2FN40**
	50 A	690 V CA	80 kA	80 kA	**DF2FA50**	**DF2FN50**
	63 A	690 V CA	80 kA	80 kA	**DF2FA63**	**DF2FN63**
	80 A	690 V CA	80 kA	80 kA	**DF2FA80**	**DF2FN80**
	100 A	400 V CA	120 kA	120 kA	**DF2FA100**	**DF2FN100**
	125 A	400 V CA	120 kA	-	**DF2FA125**	**-**

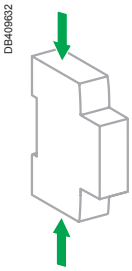
N	1P	1P+N (1)	2P	3P	3P+N (1)
DB112797	DB112798	DB112799	DB112800	DB110801	
MGN15708	**MGN15707**	**MGN15709**	**MGN15710**	**MGN15711**	**MGN15712**
3 modules of 9 mm	3 modules of 9 mm	6 modules of 9 mm	6 modules of 9 mm	9 modules of 9 mm	12 modules of 9 mm
MGN15714	**MGN15713**	**MGN15715**	**MGN15716**	**MGN15717**	**MGN15718**
4 modules of 9 mm	4 modules of 9 mm	8 modules of 9 mm	8 modules of 9 mm	12 modules of 9 mm	16 modules of 9 mm
Operating frequency: 50/60 Hz					

(1) The neutral pole comes equipped with a locked tube.

SBI fuse holder with indicator light (cont.)

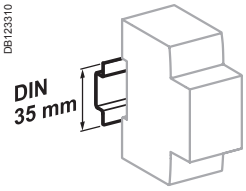
Connection



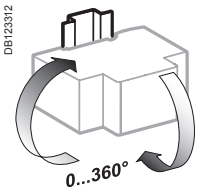


Electric power supply through the top or bottom

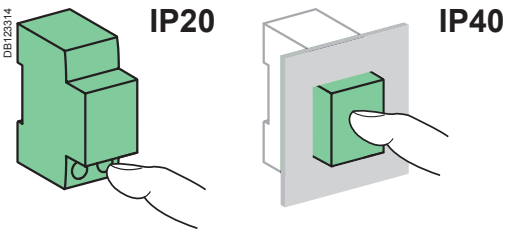
Type of fuse cartridge	Tightening torque	Copper cables		Multi-cables terminal	
		Rigid	Flexible or with ferrule	Rigid cables	Flexible cables
		DB122945 DB122946	DB118787		
14 x 51 mm	3.5 N.m	2.5 to 25 mm²	2.5 to 25 mm²	2.5 to 10 mm²	2.5 to 10 mm²
22 x 58 mm	3.5 N.m	2.5 to 35 mm²	2.5 to 35 mm²	2.5 to 25 mm²	2.5 to 16 mm²



Clip on DIN rail 35 mm.



Indifferent position of installation.



Technical data

Main characteristics		
Insulation voltage (Ui)		690 V
Utilization category		AC20B isolation by switching the drawer, must not be operated under load
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40
Operating temperature		-20°C to +60°C
Storage temperature		-40°C to +80°C
Cartridge blowing signalling		By indicator light ON (neon)

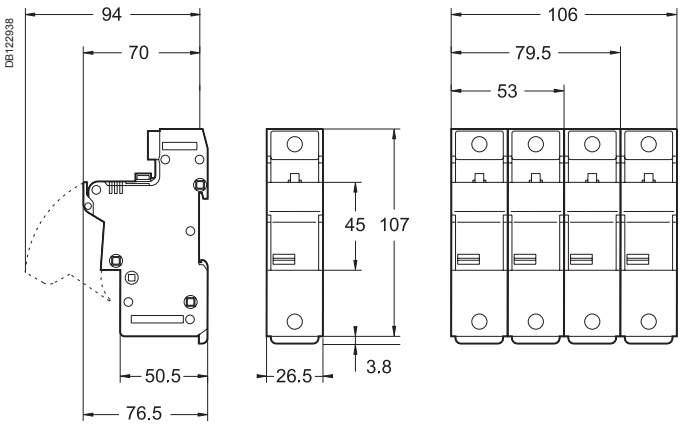
Maximum permissible characteristics of the fuse cartridges:

Fuse cartridge type		Ith	Pmax*
14 x 51 mm	aM	50 A	3 W
	gG	50 A	5 W
22 x 58 mm	aM	125 A	9.5 W
	gG	100 A	9.5 W

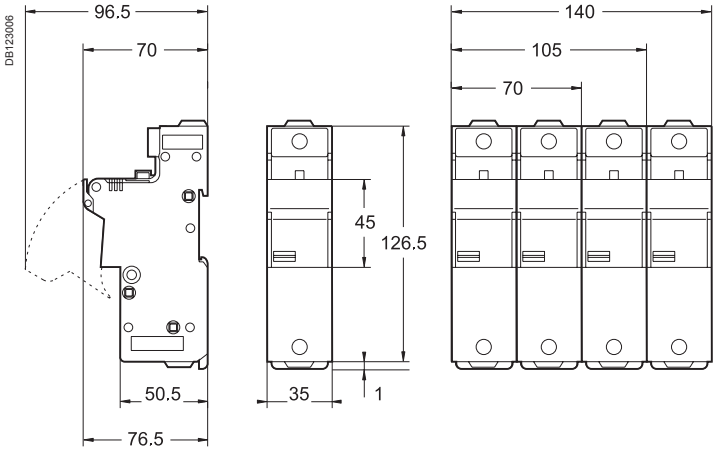
*Pmax: maximum dissipated power per fuse cartridge.

SBI fuse holder with indicator light (cont.)

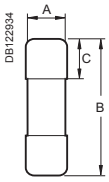
Dimensions (mm)



14 x 51 mm



22 x 58 mm



aM, gG

aM, gG fuse cartridge			
Type	**A**	**B**	**C**
14 x 51 mm	14.3	51	13.8
22 x 58 mm	22.2	58	16.2

Choice of earth leakage protection devices

Choice of sensitivity

The sensitivity of an earth leakage protection device depends mainly on the function it has to perform:
- Protection from electric shock by direct contact.
- Protection from electric shock by indirect contact.
- Protection from fire due to current leakage.

The following table gives a reminder of:
- The circuits that must be protected against these various risks (obligation or recommendation).
- The type of earth leakage protection device to be used in each case, its sensitivity, and its location in the distribution diagram.

Type of protection	Obligations		Recommended by Schneider Electric	Sensitivity (IΔn)		
	National standard *To be filled in according to the country standard*	International standard IEC 60364		30 mA (*)	100 mA to 3000 mA (depending on the earthing system)	300 mA (or 500 mA)
Protection from electric shock by direct contact						
DB123167 	*To be filled in according to the country standard*	Power supply for ■ General-purpose power sockets, up to 20 A ■ Appliances in the vicinity of a bathtub, shower, pond or swimming pool ■ Portable appliances for outdoor use, up to 32 A ■ Lighting for exhibition stands and shows ■ Outdoor lighting *To be modified according to national obligations (above)*	■ Lighting in the home	**Setup in final distribution switchboard** ■ Residual current device protecting a circuit ■ Residual current circuit breaker protecting a group of circuits		
Protection from electric shock by indirect contact						
DB123168 	*To be filled in according to the country standard*	The entire power distribution system, except for devices: ■ With class II insulation ■ Operating at Safety Extra Low Voltage (class III) *To be modified according to national obligations (above)*	–		**Setup in final distribution switchboard** ■ Residual current circuit breaker or device, on incoming feeder **Setup in subdistribution board or main switchboard** ■ Residual current device protecting a circuit ■ Residual current device or circuit breaker protecting a group of circuits ■ On incoming feeder: residual current circuit breaker or device	
Protection from fire due to current leakage						
DB123169 	*To be filled in according to the country standard*	■ High-risk premises: □ explosion (BE3) □ fire (BE2) ■ Agricultural and horticultural buildings ■ Equipment for fairs, exhibitions and shows ■ Temporary outdoor recreational installations *To be modified according to national obligations (above)*	■ Dilapidated buildings or electrical installations ■ Humid atmospheres: agricultural buildings, public swimming pools ■ Presence of chemical agents			**Setup in final distribution switchboard** ■ Residual current circuit breaker or device, on incoming feeder **Setup in subdistribution board or main switchboard** ■ Residual current device protecting each circuit to a high-risk zone ■ Residual current device or circuit breaker protecting a group of circuits ■ On incoming feeder: residual current circuit breaker or device

(*) The 10 mA sensitivity is useful for certain very specific applications, where there is a risk that someone could sustain a non-dangerous current (10 to 30 mA) without being able to get free. Example: healthcare equipment for hospital beds. Generally, devices with this very high sensitivity are liable to cause frequent tripping, due to the natural leakage currents of the installation.

Choice of earth leakage protection devices (cont.)

Interference immunity

Schneider Electric provides various equipment technologies capable of overcoming the consequences of interference of all kinds.

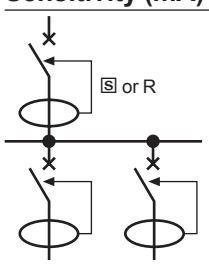
Operating conditions		Examples	Types AC	A	SI	B
Loads						
DB123165 With no special characteristics		■ General-purpose power sockets ■ Incandescent lighting ■ Household appliances: microwave oven, dishwasher, clothes dryer ■ Electric heating, water heater	■	■	■	■
Including a rectifier	Single phase	■ Household appliances: induction cooking appliances, washing machines (variable speed) ■ Single-phase variable speed drives	–	■	■	–
	Three phase	■ Three-phase variable speed industrial drives ■ Three-phase uninterruptible power supplies	–	–	–	■
Generating high-frequency interference (current peaks, harmonics)		■ Fluorescent lighting powered by extra low voltage transformer, by electronic ballast ■ Variable luminosity lighting ■ Powerful IT equipment ■ Single-phase variable speed industrial drives ■ Air conditioning ■ Telecommunications equipment ■ Capacitor banks	–	–	■	■
Including an anti-harmonic filter in the power supply		■ Microcomputer systems ■ Computer peripherals (printers, scanners, etc.)	–	–	■	■
Electrical environment						
DB123166 Vicinity of equipment generating transient overvoltages		■ High-powered switching devices ■ Reactive energy compensation banks	–	–	■	■
Circuits powered by an uninterruptible power supply		■ Backed-up networks	–	–	■	■
"Isolated neutral" (IT) earthing system		–	–	–	■	■
Major risk of lightning strokes		■ Buildings protected by a lightning protection system ■ Mountainous or humid regions ■ Regions with high keraunic level	–	–	■	■
Atmosphere						
DB123164 Ambient temperature which could be less than -5°C		–	–	■	■	■
Presence of corrosive agents (AF2 to AF4) or dust		■ Indoor swimming pools ■ Yacht harbours, marinas, camping grounds ■ Water treatment ■ Chemical industries, heavy industries, paper mills ■ Mines and cellars, road tunnels ■ Markets, stock raising, food processing industries	–	–	■ (1)	–

(1) SiE for C120 and NG125 circuit-breakers

Discrimination

Residual current devices of average sensitivity (100 mA and more) are available in a selective (S) and delayed (R) version.
This option ensures that, in the event of an earth fault downstream of the installation, only the defective part is switched off.
The table below shows (in green) which upstream/downstream equipment combinations provide this discrimination.

DB123476



Sensitivity (mA) - Downstream		Sensitivity (mA) - Upstream: Instantaneous 30	100	300	500	1000	3000	Selective S 100	300	500	1000	3000	Delayed R 1000	3000
Instantaneous	30	-	-	-	-	-	-							
	100	-	-	-	-	-	-	-						
	300	-	-	-	-	-	-	-	-	-				
	500	-	-	-	-	-	-	-	-	-	-		-	
	1000	-	-	-	-	-	-	-	-	-	-		-	
	3000	-	-	-	-	-	-	-	-	-	-	-	-	-
Selective S	100	-	-	-	-	-	-	-	-	-	-	-		
	300	-	-	-	-	-	-	-	-	-	-	-	-	
	500	-	-	-	-	-	-	-	-	-	-	-	-	
	1000	-	-	-	-	-	-	-	-	-	-	-	-	
	3000	-	-	-	-	-	-	-	-	-	-	-	-	-
Delayed R	1000	-	-	-	-	-	-	-	-	-	-	-	-	-
	3000	-	-	-	-	-	-	-	-	-	-	-	-	-

Overview of the earth leakage protection product range

Selection guide

Type			Residual current circuit breakers				
			iID K	iID		RCCB-ID 125 A	RCCB-ID type B
			PB104497-35	PB104472-35		62074_SE-35	PB101616_SE-35
							
Standards			IEC/EN 61008	IEC/EN 61008		IEC/EN 61008-1 and VDE 0664	IEC/EN 61008 and VDE 0664
Voltage (V)	Ue		230/400	110/230	230/400	230/400	230/400
Number of poles		1P+N	–	–	–	–	–
		2P	■	■	■	■	–
		3P	–	–	–	–	–
		4P	■	■	■	■	■
Type		AC	■	–	■	■	–
		A	–	■	■	■	–
		SI	–	–	■	■	–
		B	–	–	–	–	■
Impulse voltage (kV)	Uimp		4	6	6	4	4
Insulation voltage (V)	Ui		440	500	500	400	400
Current rating (A)	In		25 - 40 - 63	63	16 to 100	125	25 to 125
Frequency (Hz)			50/60	50	50	50	50
Rated breaking capacity (A)	Icn		–	–	–	–	–
Rated conditional short-circuit current	Inc		4500	10000	10000	10000	10000
Rated residual breaking and making capacity (A)	(IΔm)		10 In (500 A min.)	1500	1500	1250	10 In (500 A min.)
Sensitivity (mA)	(IΔn)	10	–	–	■	–	–
		30	■	■	■	■	■
		100	–	–	■	■	–
		300	■	–	■	■	■
		500	–	–	■	■	■
		1000	–	–	–	–	–
		3000	–	–	–	–	–
		300 Ⓢ	–	–	■	■	■
		500 Ⓢ	–	–	■	–	–
		1000 Ⓢ	–	–	–	–	–
		3000 Ⓢ	–	–	–	–	–
Electrical characteristics							
Curves		B	–	–		–	–
		C	–	–		–	–
		D	–	–		–	–
		L	–	–		–	–
		K	–	–		–	–
		MA	–	–		–	–
For more details, see module			**CA902007**	**CA902002**		**CM902001**	**CM902002**
Accessories			**–**	**CA907000, CA907001**		**CM902001**	**CM902002**
Auxiliaries			**–**	**CA907000, CA907002**		**CM902001**	**CM902002**

Inc: rated conditional short-circuit current
Value of the alternating component of the prospective current that a residual current circuit breaker protected by an appropriate short-circuit protective device (SCPD) mounted in series can withstand in specified conditions of use.

IΔc: rated residual short-circuit current
Value of the alternating component of the prospective residual current that a residual current circuit breaker protected by an appropriate short-circuit protective device (SCPD) mounted in series can withstand in specified conditions of use.

Im: rated making and breaking capacity
Value of the alternating component of the prospective current that a residual current circuit breaker is capable of establishing or interrupting in specified conditions of use.

IΔm: rated making and breaking capacity
Value of the alternating component of the prospective residual current that a residual current circuit breaker is capable of establishing and withstanding during its opening time and interrupting in specified conditions of use and behaviour.

SCPD
Short-circuit protective device (a fuse in the case of our markings): this is the max. fuse that can be used to resist the value Inc = IΔc.

Overview of the earth leakage protection product range (cont.)

	Add-on residual current devices					Residual current devices RCBO	
	Vigi iC60			Vigi C120	Vigi NG125	DPNa Vigi	DPN N Vigi
	PB104466-40 / PB107924-40			056945N_SE-35	PB104341B-35	PB104341B-35	
	IEC/EN 61009			IEC/EN 61009	IEC/EN 61009	IEC/EN 61009	IEC/EN 61009
	110/230	230/400	400/415	230/400	230/400	230	230
	–	–	–	–	–	■	■
	■	■	■	■	■	–	–
	–	■	–	■	■	–	–
	–	■	–	■	■	–	–
	■	■	–	■	■	■	■
	■	■	■	■	■	■	–
	–	■	–	■	■	–	■
	–	–	–	–	–	–	–
	6	6	6	6	8	4	4
	500	500	500	500	690	400	400
	25-40-63	25-40-63	63	10-125	63-125	10-16	4 to 40
	50/60	50/60	50/60	50/60	50/60	50/60	50/60
	–	–	–	–	–	4500	6000
	–	–	–	–	–	–	–
	–	–	–	–	–	4500	6000
	–	■	–	–	–	■	–
	■	■	■	■	■	–	■
	–	■	–	–	–	–	–
	■	■	–	■	■	–	■
	–	■	–	■	■	–	–
	–	–	–	–	■	–	–
	–	–	–	–	■	–	–
	–	■	–	■	■	–	–
	–	■	–	■	■	–	–
	–	■	–	■	■	–	–
	–	–	–	–	■	–	–
	Depending on circuit breaker used			Depending on circuit breaker used	Depending on circuit breaker used	–	■
						■	■
						–	–
						–	–
						–	–
						–	–
	CA902005			**CA902016**	**CM902008**	**CA902014**	**CA902014**
	CA907000, CA907001			**CA907012, CA907013**	**CM907004, CM907006**	**CA907013, CA907012**	**CA907013, CA907012**
	CA907000, CA907002			**CA907008, CA907013**	**CM907004, CM907005**	**CA907013, CA907008**	**CA907013, CA907008**

Overview of the earth leakage protection product range (cont.)

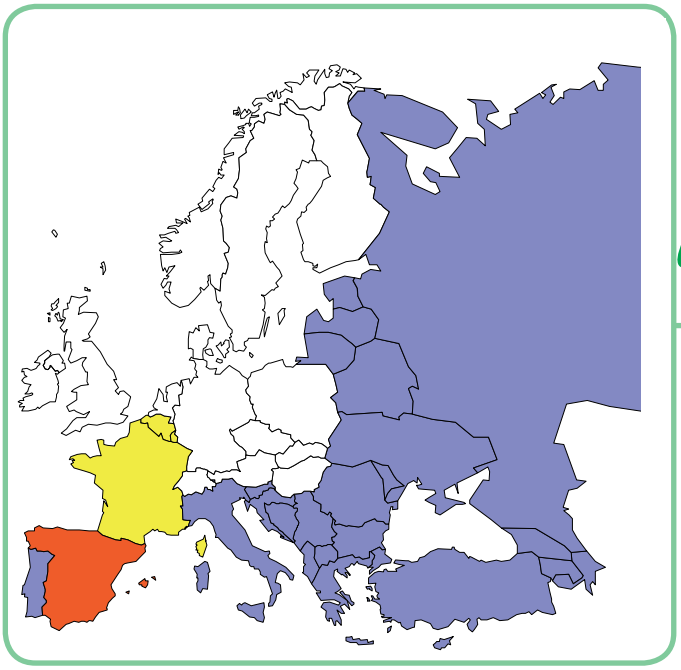
Selection guide

Type			Residual current circuit breakers	Add-on residual current devices
			xID	Vigi xC60
			PB110816-35 	PB110820-40 
Standards			IEC/EN 61008	IEC/EN 61009
Voltage (V)	Ue		230/400	230/400
Number of poles		1P+N	–	–
		2P	■	■
		3P	–	–
		4P	■	■
Type		AC	■	■
		A	–	–
		SI	■	–
		B	–	–
Impulse voltage (kV)	Uimp		6	6
Insulation voltage (V)	Ui		440	500
Current rating (A)	In		25 - 40 - 63 - 80	25 - 63
Frequency (Hz)			50/60	50/60
Rated breaking capacity (A)	Icn		–	–
Rated conditional short-circuit current	Inc		10,000	–
Rated residual breaking and making capacity (A)	(IΔm)		10 In (500 A min.)	–
Curve			–	–
Sensitivity (mA)	(IΔn)	10	–	–
		30	■	■
		100	■	■
		300	■	■
		500	–	–
		1000	–	–
		3000	–	–
		300 S	■	–
		500 S	–	–
		1000 S	–	–
		3000 S	–	–
Electrical characteristics				
Curves		B	–	Depending on circuit breaker used
		C	–	
		D	–	
		L	–	
		K	–	
		MA	–	
For more details, see module			**CA902028**	**CA902029**
Accessories			**CA907012**	**CA907012**
Auxiliaries			**CA907008**	**CA907008**

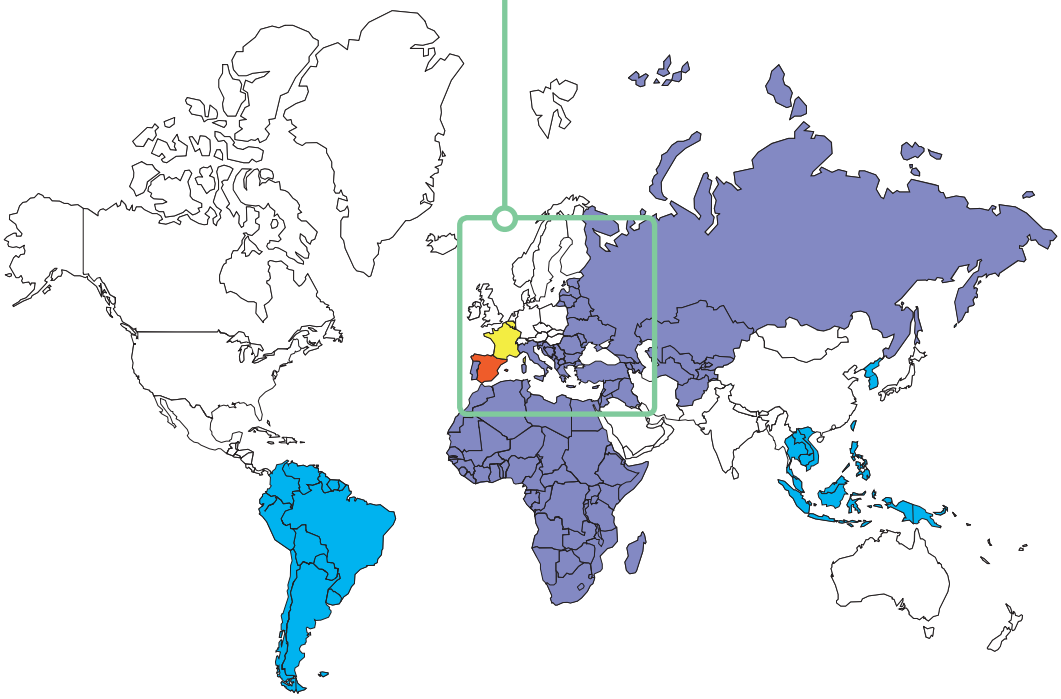
iID
Contents

Schneider Electric's range of residual current circuit breakers consists of different products (A, B, C, D) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.



iID residual current circuit breakers (AC type)

DB106604 DB123389

Country approval pictograms

IEC/EN 61008-1

PB104472-40

PB104473-40

■ The iID residual current circuit breakers provide:
□ protection of persons against electric shock by direct contact (≤ 30 mA),
□ protection of persons against electric shock by indirect contact (≥ 100 mA),
□ protection of installations against the risk of fire (300 mA or 500 mA).

Offer selection see page 159

Offer A

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Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			AC ~							Width in 9 mm module
Auxiliaries			**Module CA907002**							
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**500 mA S**	
DB122476 N 1 / N 2	Rating	16 A	**A9R10216**	-	-	-	-	-	-	4
		25 A	**A9R10225**	**A9R11225**	-	**A9R14225**	**A9R16225**	-	-	
		40 A	-	**A9R11240**	**A9R12240**	**A9R14240**	**A9R16240**	-	-	
		63 A	-	**A9R11263**	**A9R12263**	**A9R14263**	**A9R16263**	**A9R15263**	-	
		80 A	-	**A9R11280**	**A9R12280**	**A9R14280**	-	**A9R15280**	-	
		100 A	-	**A9R11291**	**A9R12291**	**A9R14291**	-	**A9R15291**	-	
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**500 mA S**	
DB122477 N 1 3 5 / N 2 4 6	Rating	25 A	-	**A9R11425**	-	**A9R14425**	**A9R16425**	-	-	8
		40 A	-	**A9R11440**	**A9R12440**	**A9R14440**	**A9R16440**	**A9R15440**	**A9R17440**	
		63 A	-	**A9R11463**	**A9R12463**	**A9R14463**	**A9R16463**	**A9R15463**	**A9R17463**	
		80 A	-	**A9R11480**	**A9R12480**	**A9R14480**	**A9R16480**	**A9R15480**	**A9R17480**	
		100 A	-	**A9R11491**	**A9R12491**	**A9R14491**	-	**A9R15491**	-	
Voltage rating (Ue)		2P	230 - 240 V							
		4P	400 - 415 V							
Operating frequency			50/60 Hz							
Accessories			**Module CA907000 and CA907001**							

iID residual current circuit breakers (A type)

DB106604 DB123399

Country approval pictograms

IEC/EN 61008-1

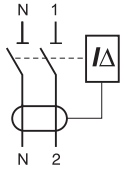
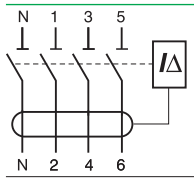
PB104472-40

PB104473-40

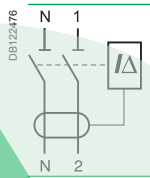
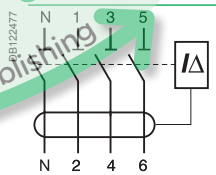
- The iID residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (≤ 30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			A						Width in 9 mm module
Auxiliaries			**Module CA907002**						
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	
DB122476 	Rating	16 A	**A9R20216**	-	-	-	-	-	4
		25 A	**A9R20225**	**A9R01225**	-	**A9R04225**	-	-	
		40 A	-	**A9R01240**	-	**A9R04240**	-	**A9R05240**	
		63 A	-	**A9R01263**	-	**A9R04263**	-	**A9R05263**	
		100 A	-	**A9R01291**	-	**A9R04291**	-	**A9R05291**	
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	
DB122477 	Rating	25 A	-	**A9R01425**	-	**A9R04425**	-	-	8
		40 A	-	**A9R01440**	**A9R22440**	**A9R04440**	**A9R26440**	**A9R05440**	
		63 A	-	**A9R01463**	**A9R22463**	**A9R04463**	**A9R26463**	**A9R05463**	
		80 A	-	**A9R21480**	-	**A9R24480**	-	**A9R25480**	
		100 A	-	**A9R01491**	-	**A9R04491**	**A9R26491**	**A9R05491**	
Voltage rating (Ue)		2P	230 - 240 V						
		4P	400 - 415 V						
Operating frequency			50/60 Hz						
Accessories			**Module CA907000 and CA907001**						

iID residual current circuit breakers for 110/230 V network

Type			A	Width in 9 mm module
Auxiliaries			**Module CA907002**	
2P		**Sensitivity**	**30 mA**	
DB122476 	Rating	63 A	**A9R08263**	4
4P		**Sensitivity**	**30 mA**	
DB122477 	Rating	63 A	**A9R08463**	8
Voltage rating (Ue)		2P	110 V	
		4P	230 V	
Operating frequency			50/60 Hz	
Accessories			**Module CA907000 and CA907001**	

iID residual current circuit breakers (*SI* type)

DB106604 DB123399

Country approval pictograms

IEC/EN 61008-1

PB104472-40

PB104473-40

■ The iID residual current circuit breakers provide:
□ protection of persons against electric shock by direct contact (≤ 30 mA),
□ protection of persons against electric shock by indirect contact (≥ 300 mA),
□ protection of installations against the risk of fire (300 mA or 500 mA).

The ***SI*** type provides increased immunity from electrical interference and polluted or corrosive environments.

Offer selection see page 159

Offer A

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Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			*SI*					Width in 9 mm module
Auxiliaries			**Module CA907002**					
2P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA S**	
DB122476	Rating	16 A	-	-	-	-	-	4
		25 A	**A9R30225**	**A9R31225**	-	-	-	
		40 A	-	**A9R31240**	-	**A9R35240**	-	
		63 A	-	**A9R31263**	-	**A9R35263**	-	
		100 A	-	-	-	**A9R35291**	-	
4P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA S**	
DB122477	Rating	25 A	-	**A9R31425**	-	-	-	8
		40 A	-	**A9R31440**	-	**A9R35440**	**A9R37440**	
		63 A	-	**A9R31463**	**A9R34463**	**A9R35463**	**A9R37463**	
		80 A	-	**A9R31480**	-	**A9R35480**	**A9R37480**	
		100 A	-	**A9R31491**	**A9R34491**	**A9R35491**	-	
Voltage rating (Ue)		2P	230 - 240 V					
		4P	400 - 415 V					
Operating frequency			50/60 Hz					
Accessories			**Module CA907000 and CA907001**					

iID residual current circuit breakers (AC type)

DB116619 DB123430 DB122858

Country approval pictograms

IEC/EN 61008-1

PB104472-40

PB104473-40

- The iID residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (⩽ 30 mA),
  - protection of persons against electric shock by indirect contact (⩾ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Offer selection see page 159

Offer B

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Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			AC ~							Width in 9 mm module
Auxiliaries			**Module CA907002**							
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**500 mA S**	
DB122476 N 1 / N 2	Rating	16 A	**A9R10216**	-	-	-	-	-	-	4
		25 A	**A9R10225**	**A9R41225**	-	**A9R44225**	**A9R16225**	-	-	
		40 A	-	**A9R41240**	**A9R12240**	**A9R44240**	**A9R16240**	-	-	
		63 A	-	**A9R41263**	**A9R12263**	**A9R44263**	**A9R16263**	**A9R15263**	-	
		80 A	-	**A9R11280**	**A9R12280**	**A9R14280**	-	**A9R15280**	-	
		100 A	-	**A9R11291**	**A9R12291**	**A9R14291**	-	**A9R15291**	-	
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**500 mA S**	
DB122477 N 1 3 5 / N 2 4 6	Rating	25 A	-	**A9R41425**	-	**A9R44425**	**A9R16425**	-	-	8
		40 A	-	**A9R41440**	**A9R12440**	**A9R44440**	**A9R16440**	**A9R15440**	**A9R17440**	
		63 A	-	**A9R41463**	**A9R12463**	**A9R44463**	**A9R16463**	**A9R15463**	**A9R17463**	
		80 A	-	**A9R11480**	**A9R12480**	**A9R14480**	**A9R16480**	**A9R15480**	**A9R17480**	
		100 A	-	**A9R11491**	**A9R12491**	**A9R14491**	-	**A9R15491**	-	
Voltage rating (Ue)		2P	230 - 240 V							
		4P	400 - 415 V							
Operating frequency			50/60 Hz							
Accessories			**Module CA907000 and CA907001**							

iID residual current circuit breakers (A type)

DB116619 DB123430 DB122858

Country approval pictograms

IEC/EN 61008-1

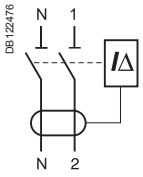
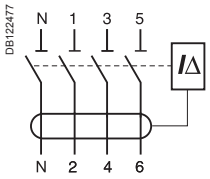
PB104472-40

PB104473-40

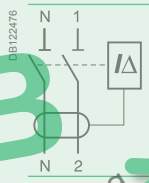
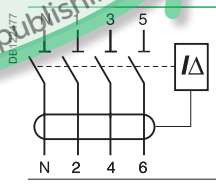
■ The iID residual current circuit breakers provide:
□ protection of persons against electric shock by direct contact (≤ 30 mA),
□ protection of persons against electric shock by indirect contact (≥ 100 mA),
□ protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			A						Width in 9 mm module
Auxiliaries			**Module CA907002**						
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	
DB122476 	Rating	16 A	**A9R20216**	-	-	-	-	-	4
		25 A	**A9R20225**	**A9R21225**	-	**A9R24225**	-	-	
		40 A	-	**A9R21240**	-	**A9R24240**	-	**A9R25240**	
		63 A	-	**A9R21263**	-	**A9R24263**	-	**A9R25263**	
		100 A	-	**A9R21291**	-	**A9R24291**	-	**A9R25291**	
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	
DB122477 	Rating	25 A	-	**A9R21425**	-	**A9R24425**	-	-	8
		40 A	-	**A9R21440**	**A9R22440**	**A9R24440**	**A9R26440**	**A9R25440**	
		63 A	-	**A9R21463**	**A9R22463**	**A9R24463**	**A9R26463**	**A9R25463**	
		80 A	-	**A9R21480**	-	**A9R24480**	-	**A9R25480**	
		100 A	-	**A9R21491**	-	**A9R24491**	**A9R26491**	**A9R25491**	
Voltage rating (Ue)		2P	230 - 240 V						
		4P	400 - 415 V						
Operating frequency			50/60 Hz						
Accessories			**Module CA907000 and CA907001**						

iID residual current circuit breakers for 110/230 V network

Type			A	Width in 9 mm module
Auxiliaries			**Module CA907002**	
2P		**Sensitivity**	**30 mA**	
DB122476 	Rating	63 A	**A9R08263**	4
4P		**Sensitivity**	**30 mA**	
DB122477 	Rating	63 A	**A9R08463**	8
Voltage rating (Ue)		2P	110 V	
		4P	230 V	
Operating frequency			50/60 Hz	
Accessories			**Module CA907000 and CA907001**	

iID residual current circuit breakers (*SI* type)

DB116619 DB123430 DB122858

Country approval pictograms

IEC/EN 61008-1

PB104472-40

PB104473-40

- The iID residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (⩽ 30 mA),
  - protection of persons against electric shock by indirect contact (⩾ 300 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

The ***SI*** type provides increased immunity from electrical interference and polluted or corrosive environments.

Offer selection see page 159

Offer B

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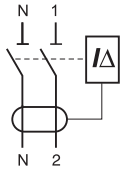
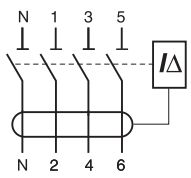
Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			*SI*					Width in 9 mm module
Auxiliaries			**Module CA907002**					
2P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA S**	
DB122476 	Rating	16 A	-	-	-	-	-	4
		25 A	**A9R30225**	**A9R61225**	-	-	-	
		40 A	-	**A9R61240**	-	**A9R35240**	-	
		63 A	-	**A9R61263**	-	**A9R35263**	-	
		100 A	-	-	-	**A9R35291**	-	
4P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA S**	
DB122477 	Rating	25 A	-	**A9R61425**	-	-	-	8
		40 A	-	**A9R61440**	-	**A9R35440**	**A9R37440**	
		63 A	-	**A9R61463**	**A9R34463**	**A9R35463**	**A9R37463**	
		80 A	-	**A9R31480**	-	**A9R35480**	**A9R37480**	
		100 A	-	**A9R31491**	**A9R34491**	**A9R35491**	-	
Voltage rating (Ue)		2P	230 - 240 V					
		4P	400 - 415 V					
Operating frequency			50/60 Hz					
Accessories			**Module CA907000 and CA907001**					

iID residual current circuit breakers (AC type)

DB116619

Country approval pictogram

IEC/EN 61008-1

PB104472-40

PB104473-40

■ The iID residual current circuit breakers provide:
□ protection of persons against electric shock by direct contact (≤ 30 mA),
□ protection of persons against electric shock by indirect contact (≥ 100 mA),
□ protection of installations against the risk of fire (300 mA or 500 mA).

Offer selection see page 159

Offer C

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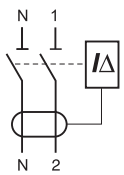
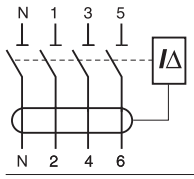
Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			AC ~							Width in 9 mm module
Auxiliaries			**Module CA907002**							
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**500 mA S**	
DB122476 	Rating	16 A	**A9R10216**	-	-	-	-	-	-	4
		25 A	**A9R10225**	**A9R71225**	-	**A9R74225**	**A9R16225**	-	-	
		40 A	-	**A9R71240**	**A9R12240**	**A9R74240**	**A9R16240**	-	-	
		63 A	-	**A9R71263**	**A9R12263**	**A9R74263**	**A9R16263**	**A9R15263**	-	
		80 A	-	**A9R11280**	**A9R12280**	**A9R14280**	-	**A9R15280**	-	
		100 A	-	**A9R11291**	**A9R12291**	**A9R14291**	-	**A9R15291**	-	
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**500 mA S**	
DB122477 	Rating	25 A	-	**A9R71425**	-	**A9R74425**	**A9R16425**	-	-	8
		40 A	-	**A9R71440**	**A9R12440**	**A9R74440**	**A9R16440**	**A9R15440**	**A9R17440**	
		63 A	-	**A9R71463**	**A9R12463**	**A9R74463**	**A9R16463**	**A9R15463**	**A9R17463**	
		80 A	-	**A9R11480**	**A9R12480**	**A9R14480**	**A9R16480**	**A9R15480**	**A9R17480**	
		100 A	-	**A9R11491**	**A9R12491**	**A9R14491**	-	**A9R15491**	-	
Voltage rating (Ue)		2P	230 - 240 V							
		4P	400 - 415 V							
Operating frequency			50/60 Hz							
Accessories			**Module CA907000 and CA907001**							

iID residual current circuit breakers (A type)

DB116619

Country approval pictogram

IEC/EN 61008-1

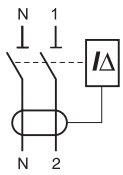
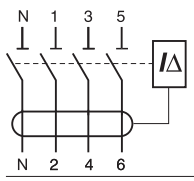
PB104472-40

PB104473-40

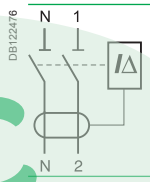
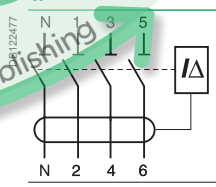
- The iID residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (≤ 30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			A						Width in 9 mm module
Auxiliaries			**Module CA907002**						
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	
DB122476 	Rating	16 A	**A9R20216**	-	-	-	-	-	4
		25 A	**A9R20225**	**A9R51225**	-	**A9R54225**	-	-	
		40 A	-	**A9R51240**	-	**A9R54240**	-	**A9R25240**	
		63 A	-	**A9R51263**	-	**A9R54263**	-	**A9R25263**	
		100 A	-	**A9R21291**	-	**A9R24291**	-	**A9R25291**	
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	
DB122477 	Rating	25 A	-	**A9R51425**	-	**A9R54425**	-	-	8
		40 A	-	**A9R51440**	**A9R22440**	**A9R54440**	**A9R26440**	**A9R25440**	
		63 A	-	**A9R51463**	**A9R22463**	**A9R54463**	**A9R26463**	**A9R25463**	
		80 A	-	**A9R21480**	-	**A9R24480**	-	**A9R25480**	
		100 A	-	**A9R21491**	-	**A9R24491**	**A9R26491**	**A9R25491**	
Voltage rating (Ue)		2P	230 - 240 V						
		4P	400 - 415 V						
Operating frequency			50/60 Hz						
Accessories			**Module CA907000 and CA907001**						

iID residual current circuit breakers for 110/230 V network

Type			A	Width in 9 mm module
Auxiliaries			**Module CA907002**	
2P		**Sensitivity**	**30 mA**	
DB122476 	Rating	63 A	**A9R08263**	4
4P		**Sensitivity**	**30 mA**	
DB122477 	Rating	63 A	**A9R08463**	8
Voltage rating (Ue)		2P	110 V	
		4P	230 V	
Operating frequency			50/60 Hz	
Accessories			**Module CA907000 and CA907001**	

iID residual current circuit breakers (*SI* type)

DB116619

Country approval pictogram

IEC/EN 61008-1

PB104472-40

PB104473-40

■ The iID residual current circuit breakers provide:
□ protection of persons against electric shock by direct contact (≤ 30 mA),
□ protection of persons against electric shock by indirect contact (≥ 300 mA),
□ protection of installations against the risk of fire (300 mA or 500 mA).

The *SI* type provides increased immunity from electrical interference and polluted or corrosive environments.

Offer selection see page 159

Offer C

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Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			*SI*					Width in 9 mm module
Auxiliaries			**Module CA907002**					
2P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA S**	
DB122476 N 1 / I∆ / N 2	Rating	16 A	-	-	-	-	-	4
		25 A	**A9R30225**	**A9R91225**	-	-	-	
		40 A	-	**A9R91240**	-	**A9R35240**	-	
		63 A	-	**A9R91263**	-	**A9R35263**	-	
		100 A	-	-	-	**A9R35291**	-	
4P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA S**	
DB122477 N 1 3 5 / I∆ / N 2 4 6	Rating	25 A	-	**A9R91425**	-	-	-	8
		40 A	-	**A9R91440**	-	**A9R35440**	**A9R37440**	
		63 A	-	**A9R91463**	**A9R34463**	**A9R35463**	**A9R37463**	
		80 A	-	**A9R31480**	-	**A9R35480**	**A9R37480**	
		100 A	-	**A9R31491**	**A9R34491**	**A9R35491**	-	
Voltage rating (Ue)		2P	230 - 240 V					
		4P	400 - 415 V					
Operating frequency			50/60 Hz					
Accessories			**Module CA907000 and CA907001**					

iID residual current circuit breakers (AC type)

DB123400

Country approval pictogram

IEC/EN 61008-1

PB104472-40

PB104473-40

- The iID residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (⩽ 30 mA),
  - protection of persons against electric shock by indirect contact (⩾ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Offer selection see page 159

Offer D

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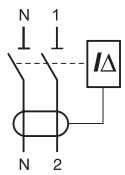
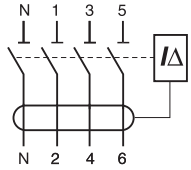
Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			AC ~							Width in 9 mm module
Auxiliaries			**Module CA907002**							
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA Ⓢ**	**500 mA Ⓢ**	
DB122476 	Rating	16 A	**A9R10216**	-	-	-	-	-	-	4
		25 A	**A9R10225**	**A9R81225**	-	**A9R84225**	**A9R16225**	-	-	
		40 A	-	**A9R81240**	**A9R12240**	**A9R84240**	**A9R16240**	-	-	
		63 A	-	**A9R81263**	**A9R12263**	**A9R84263**	**A9R16263**	**A9R15263**	-	
		80 A	-	**A9R11280**	**A9R12280**	**A9R14280**	-	**A9R15280**	-	
		100 A	-	**A9R11291**	**A9R12291**	**A9R14291**	-	**A9R15291**	-	
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA Ⓢ**	**500 mA Ⓢ**	
DB122477 	Rating	25 A	-	**A9R81425**	-	**A9R84425**	**A9R16425**	-	-	8
		40 A	-	**A9R81440**	**A9R12440**	**A9R84440**	**A9R16440**	**A9R15440**	**A9R17440**	
		63 A	-	**A9R81463**	**A9R12463**	**A9R84463**	**A9R16463**	**A9R15463**	**A9R17463**	
		80 A	-	**A9R11480**	**A9R12480**	**A9R14480**	**A9R16480**	**A9R15480**	**A9R17480**	
		100 A	-	**A9R11491**	**A9R12491**	**A9R14491**	-	**A9R15491**	-	
Voltage rating (Ue)		2P	230 - 240 V							
		4P	400 - 415 V							
Operating frequency			50/60 Hz							
Accessories			**Module CA907000 and CA907001**							

iID residual current circuit breakers (A type)

DB123400

Country approval pictogram

IEC/EN 61008-1

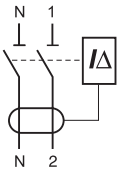
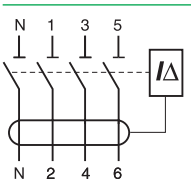
PB104472-40

PB104473-40

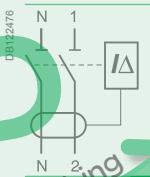
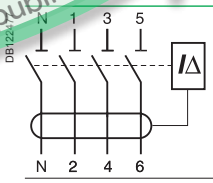
- The iID residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (≤ 30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			A						Width in 9 mm module
Auxiliaries			**Module CA907002**						
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	
DB122476 	Rating	16 A	**A9R20216**	-	-	-	-	-	4
		25 A	**A9R20225**	**A9R21225**	-	**A9R24225**	-	-	
		40 A	-	**A9R21240**	-	**A9R24240**	-	**A9R25240**	
		63 A	-	**A9R21263**	-	**A9R24263**	-	**A9R25263**	
		100 A	-	**A9R21291**	-	**A9R24291**	-	**A9R25291**	
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	
DB122477 	Rating	25 A	-	**A9R21425**	-	**A9R24425**	-	-	8
		40 A	-	**A9R21440**	**A9R22440**	**A9R24440**	**A9R26440**	**A9R25440**	
		63 A	-	**A9R21463**	**A9R22463**	**A9R24463**	**A9R26463**	**A9R25463**	
		80 A	-	**A9R21480**	-	**A9R24480**	-	**A9R25480**	
		100 A	-	**A9R21491**	-	**A9R24491**	**A9R26491**	**A9R25491**	
Voltage rating (Ue)		2P	230 - 240 V						
		4P	400 - 415 V						
Operating frequency			50/60 Hz						
Accessories			**Module CA907000 and CA907001**						

iID residual current circuit breakers for 110/230 V network

Type			A	Width in 9 mm module
Auxiliaries			**Module CA907002**	
2P		**Sensitivity**	**30 mA**	
DB122476 	Rating	63 A	**A9R08263**	4
4P		**Sensitivity**	**30 mA**	
DB122477 	Rating	63 A	**A9R08463**	8
Voltage rating (Ue)		2P	110 V	
		4P	230 V	
Operating frequency			50/60 Hz	
Accessories			**Module CA907000 and CA907001**	

iID residual current circuit breakers (*SI* type)

DB123400

Country approval pictogram

IEC/EN 61008-1

PB104472-40

PB104473-40

- The iID residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (⩽ 30 mA),
  - protection of persons against electric shock by indirect contact (⩾ 300 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

The ***SI*** type provides increased immunity from electrical interference and polluted or corrosive environments.

Offer selection see page 159

Offer D

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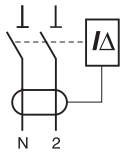
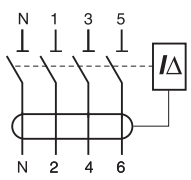
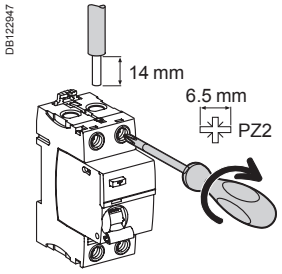
Catalogue numbers

iID residual current circuit breakers for 230/400 V network

Type			*SI*					Width in 9 mm module
Auxiliaries			**Module CA907002**					
2P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA S**	
DB122476 	Rating	16 A	-	-	-	-	-	4
		25 A	**A9R30225**	**A9R61225**	-	-	-	
		40 A	-	**A9R61240**	-	**A9R35240**	-	
		63 A	-	**A9R61263**	-	**A9R35263**	-	
		100 A	-	-	-	**A9R35291**	-	
4P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA S**	
DB122477 	Rating	25 A	-	**A9R61425**	-	-	-	8
		40 A	-	**A9R61440**	-	**A9R35440**	**A9R37440**	
		63 A	-	**A9R61463**	**A9R34463**	**A9R35463**	**A9R37463**	
		80 A	-	**A9R31480**	-	**A9R35480**	**A9R37480**	
		100 A	-	**A9R31491**	**A9R34491**	**A9R35491**	-	
Voltage rating (Ue)		2P	230 - 240 V					
		4P	400 - 415 V					
Operating frequency			50/60 Hz					
Accessories			**Module CA907000 and CA907001**					

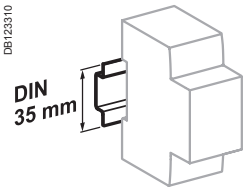
iID residual current circuit breakers (AC, A, *SI* types)

Connection

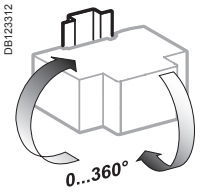


Type	Tightening torque	Without accessory: Copper cables – Rigid	Without accessory: Copper cables – Flexible or with ferrule	With accessories*: 50 mm² Al terminal	With accessories*: Screw-on connection for ring terminal	With accessories*: Multi-cables terminal – Rigid cables	With accessories*: Multi-cables terminal – Flexible cables
		DB122945	DB122946	DB122935 Al	DB118789 Ø	DB118787	
iID	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²	Ø 5 mm	3 x 16 mm²	3 x 10 mm²

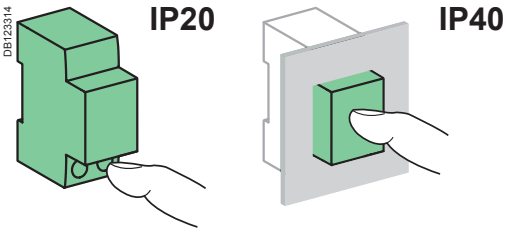
** See module CA907000*



Clip on DIN rail 35 mm.



Indifferent position of installation.



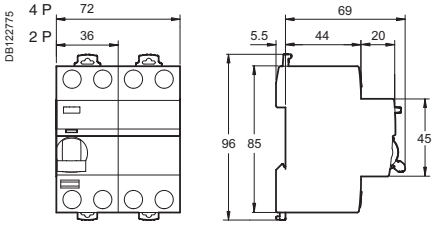
Technical data

Main characteristics			
Insulation voltage (Ui)			500 V
Pollution degree			3
Rated impulse withstand voltage (Uimp)			6 kV
According to IEC/EN 61008-1			
Making and breaking capacity (Im/IΔm)			1500 A
Surge current withstand (8/20 µs) without tripping	AC and A types (no selective Ⓢ)		250 Â
	AC, A types (selective Ⓢ)		3 kÂ
	SI type		3 kÂ
Conditional rated short circuit current (Inc/IΔc)	With iC60N/H/L		Equal to breaking capacity of iC60
	With fuse	100 A	10,000 A
Behaviour in case of voltage drop			Residual current protection down to 0 V according to IEC/EN 61008-1 § 3.3.4
Additional characteristics			
Degree of protection	Device only		IP20
	Device in modular enclosure		IP40 Insulation class II
Endurance (O-C)	Electrical (AC1)	16 to 63 A	15,000 cycles
		80 to 100 A	10,000 cycles
	Mechanical		20,000 cycles
Operating temperature	AC type		-5°C to +60°C
	A and *SI* types	-25°C	-25°C to +60°C
Storage temperature			-40°C to +85°C

Weight (g)

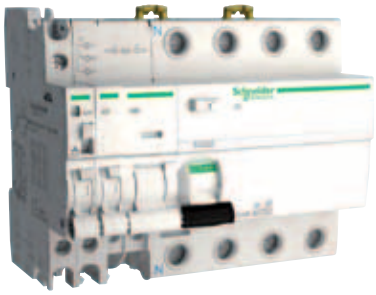
Residual current circuit breakers	
Type	**iID**
2P	210
4P	370

Dimensions (mm)

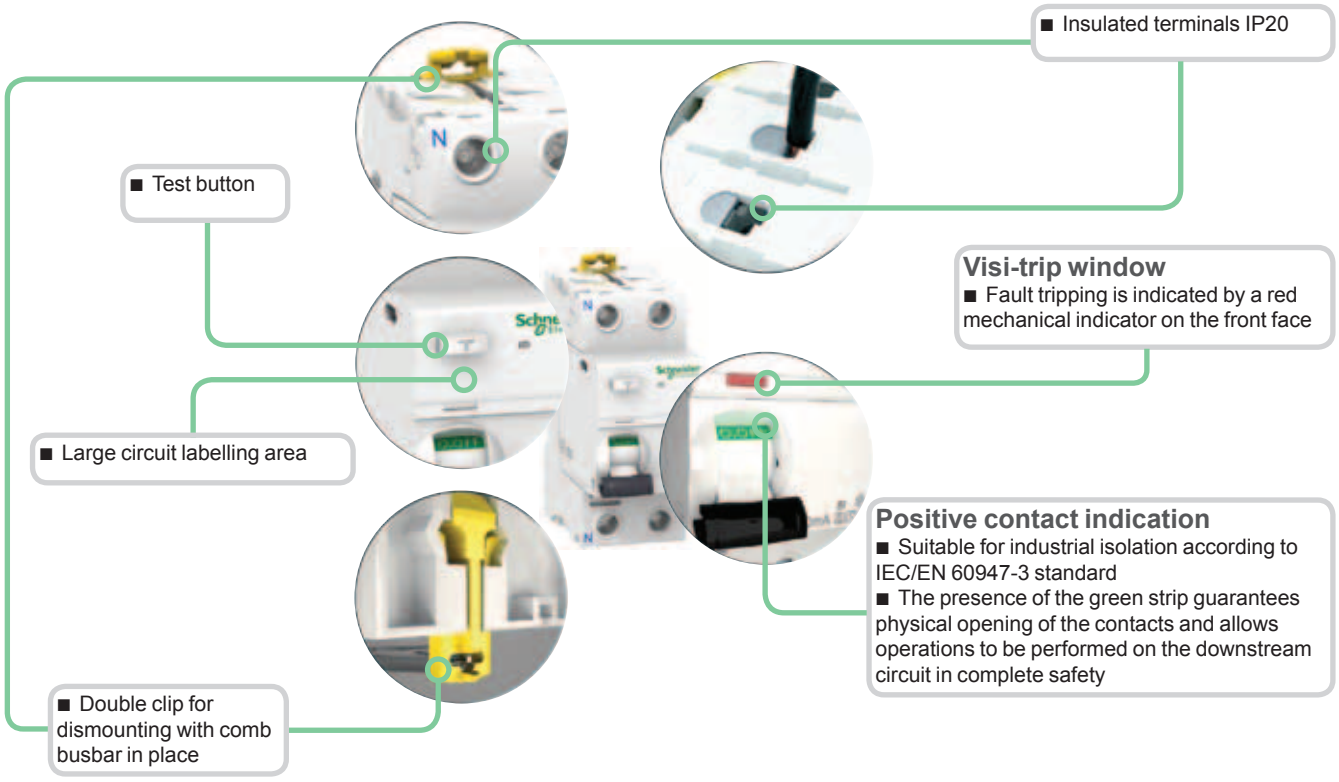


iID residual current circuit breakers (AC, A, *SI* types) (cont.)

PB104548-40



PB104472-40



SI type

The *SI* type provides increased immunity from electrical interference and polluted or corrosive environments.

iID double terminals residual current circuit breakers (AC type)

DB106619 DB123865 DB123854

Country approval pictograms

KEMA KEUR approval, only for 2P/4P 25 A to 63 A catalogue numbers.

IEC/EN 61008-1

PB107413-40

PB107414-40

- The iID double tunnel terminals residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (≤ 30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA).

Catalogue numbers

iID double terminals residual current circuit breakers

Type			AC ~								Width in 9 mm module
Product			iID								
Auxiliaries			Can accept auxiliaries, module CA907002								
2P		Sensitivity	10 mA	30 mA	30 mA Type G	100 mA	100 mA S	100 mA Type G	300 mA	300 mA S	
DB122476 N 1 / N 2	Rating	25 A	A9Z10225	A9Z11225	-	-	-	-	A9Z14225	-	4
		40 A	-	A9Z11240	A9Z76240	A9Z12240	-	A9Z77240	A9Z14240	A9Z15240	
		63 A	-	A9Z11263	A9Z76263	A9Z12263	-	A9Z77263	A9Z14263	A9Z15263	
		80 A	-	A9Z11280	-	A9Z12280	-	-	A9Z14280	A9Z15280	
		100 A	-	A9Z11291	-	A9Z12291	-	-	A9Z14291	A9Z15291	
4P		Sensitivity	10 mA	30 mA	30 mA Type G	100 mA	100 mA S	100 mA Type G	300 mA	300 mA S	
DB122477 N 1 3 5 / N 2 4 6	Rating	25 A	-	A9Z11425	-	-	-	-	A9Z14425	-	8
		40 A	-	A9Z11440	-	A9Z12440	-	-	A9Z14440	A9Z15440	
		63 A	-	A9Z11463	-	A9Z12463	-	-	A9Z14463	A9Z15463	
		80 A	-	A9Z11480	A9Z76480	A9Z12480	-	A9Z77480	A9Z14480	A9Z15480	
		100 A	-	A9Z11491	A9Z76491	A9Z12491	-	A9Z77491	A9Z14491	A9Z15491	
4P Type THV		Sensitivity	10 mA	30 mA	30 mA Type G	100 mA	100 mA S	100 mA Type G	300 mA	300 mA S	
DB122477 N 1 3 5 / N 2 4 6	Rating	40 A	-	A9Z71440	A9Z78440	A9Z72440	A9Z73440	A9Z79440	A9Z74440	A9Z75440	8
		63 A	-	A9Z71463	A9Z78463	A9Z72463	A9Z73463	A9Z79463	A9Z74463	A9Z75463	
Voltage rating (Ue)		2P	230 - 240 V								
		4P	400 - 415 V								
Operating frequency			50/60 Hz								
Accessories			Module CA907000 and CA907001								

iID double terminals residual current circuit breakers (A type)

DB106619 DB123865 DB123854

Country approval pictograms

KEMA KEUR approval, only for 2P/4P 25 A to 63 A catalogue numbers.

IEC/EN 61008-1

PB107413-40

PB107414-40

- The iID double tunnel terminals residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (⩽ 30 mA),
  - protection of persons against electric shock by indirect contact (⩾ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

iID double terminals residual current circuit breakers

Type			A									Width in 9 mm module
Product			iID									
Auxiliaries			Can accept auxiliaries, module CA907002									
2P		Sensitivity	10 mA	30 mA	30 mA Type G	100 mA	100 mA S	100 mA Type G	300 mA	300 mA S	500 mA	
DB122476 N 1 / N 2	Rating	16 A	A9Z20216	-	-	-	-	-	-	-	-	4
		25 A	A9Z20225	A9Z21225	-	-	-	-	A9Z24225	-	-	
		40 A	-	A9Z21240	A9Z81240	A9Z22240	-	A9Z82240	A9Z24240	A9Z25240	-	
		63 A	-	A9Z21263	A9Z81263	A9Z22263	-	-	A9Z24263	A9Z25263	-	
		80 A		A9Z21280	-	A9Z22280	-	-	A9Z24280	A9Z25280	-	
		100 A	-	A9Z21291	-	A9Z22291	-	-	A9Z24291	A9Z25291	-	
4P		Sensitivity	10 mA	30 mA	30 mA Type G	100 mA	100 mA S	100 mA Type G	300 mA	300 mA S	500 mA	
DB122477 N 1 3 5 / N 2 4 6	Rating	25 A	-	A9Z21425	-	-	-	-	A9Z24425	-	A9Z26425	8
		40 A	-	A9Z21440	-	A9Z22440	-	-	A9Z24440	A9Z25440	A9Z26440	
		63 A	-	A9Z21463	-	A9Z22463	-	-	A9Z24463	A9Z25463	A9Z26463	
		80 A	-	A9Z21480	A9Z81480	A9Z22480	-	-	A9Z24480	A9Z25480	A9Z26480	
		100 A	-	A9Z21491	A9Z81491	A9Z22491	-	A9Z82491	A9Z24491	A9Z25491	A9Z26491	
4P Type THV		Sensitivity	10 mA	30 mA	30 mA Type G	100 mA	100 mA S	100 mA Type G	300 mA	300 mA S	500 mA	
DB122477 N 1 3 5 / N 2 4 6	Rating	40 A	-	A9Z81440	A9Z91440	A9Z82440	A9Z83440	A9Z92440	-	-	-	8
		63 A	-	A9Z81463	A9Z91463	A9Z82463	A9Z83463	A9Z92463	-	-	-	
Voltage rating (Ue)		2P	230 - 240 V									
		4P	400 - 415 V									
Operating frequency			50/60 Hz									
Accessories			Module CA907000 and CA907001									

iID double terminals residual current circuit breakers (SI type)

DB106619 DB123865 DB123854

Country approval pictograms

KEMA KEUR approval, only for 2P/4P 25 A to 63 A catalogue numbers.

IEC/EN 61008-1

PB107413-40

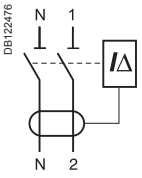
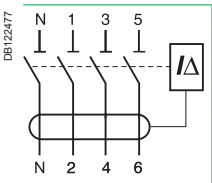
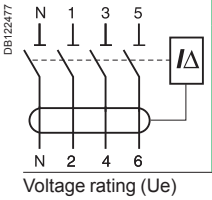
PB107414-40

■ The iID double tunnel terminals residual current circuit breakers provide:
□ protection of persons against electric shock by direct contact (≤ 30 mA),
□ protection of persons against electric shock by indirect contact (≥ 100 mA),
□ protection of installations against the risk of fire (300 mA).

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

Catalogue numbers

iID double terminals residual current circuit breakers

Type			SI					Width in 9 mm module
Product			iID					
Auxiliaries			**Can accept auxiliaries, module CA907002**					
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**100 mA S**	**300 mA S**	
DB122476 	Rating	25 A	**A9Z30225**	**A9Z31225**	-	-	-	4
		40 A	-	**A9Z31240**	**A9Z32240**	-	**A9Z35240**	
		63 A	-	**A9Z31263**	**A9Z32263**	-	**A9Z35263**	
		80 A		**A9Z31280**	**A9Z32280**	-	**A9Z35280**	
		100 A		**A9Z31291**	**A9Z32291**	-	**A9Z35291**	
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**100 mA S**	**300 mA S**	
DB122477 	Rating	25 A	-	**A9Z31425**	-	-	-	8
		40 A	-	**A9Z31440**	**A9Z32440**	-	**A9Z35440**	
		63 A	-	**A9Z31463**	**A9Z32463**	-	**A9Z35463**	
		80 A	-	**A9Z31480**	**A9Z32480**	-	**A9Z35480**	
		100 A	-	**A9Z31491**	**A9Z32491**	-	**A9Z35491**	
4P Type THV		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**100 mA S**	**300 mA S**	
DB122477 	Rating	40 A	-	-	-	**A9Z93440**	**A9Z95440**	8
		63 A	-	-	-	**A9Z93463**	**A9Z95463**	
Voltage rating (Ue)		2P	230 - 240 V					
		4P	400 - 415 V					
Operating frequency			50/60 Hz					
Accessoires			**Module CA907000 and CA907001**					

iID double terminals residual current circuit breakers (AC, A, SI types) (cont.)

Connection between double-terminal protection devices

With comb busbar at the back/cables at the front
Without comb busbar at the back/cables at the front

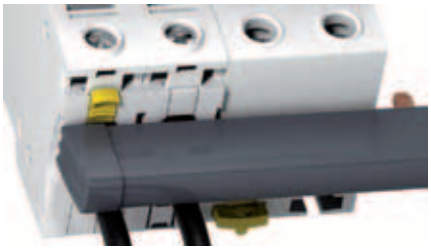
DB404815

	Back		Front	
Rating	Tightening torque	Comb busbar	Copper cables	
		Thickness of the teeth	Rigid	Flexible or with ferrule
			DB122945 	DB122946 
All	3.5 N.m	1.5 mm	1 to 35 mm²	1 to 25 mm²

Connection between double-terminal and single-terminal protection devices

Cables at the back/comb busbar at the front

DB404817

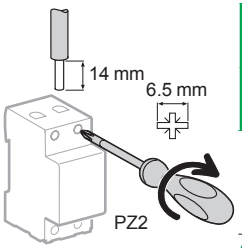


	Back			Front
Rating	Tightening torque	Copper cables		Comb busbar
		Rigid	Flexible or with ferrule	Thickness of the teeth
		DB122945 	DB122946 	
All	3.5 N.m	1 to 25 mm²	1 to 16 mm²	1.5 mm

■ Connection by comb busbar or by cable (according to EN 50027).

Connection

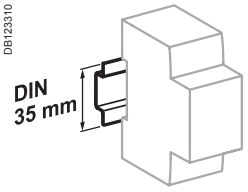
DB123947



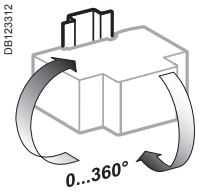
With accessories

Rating	50 mm² Al terminal	Screw-on connection for ring terminal	Multi-cables terminal	
			Rigid cables	Flexible cables
	DB 122935 Al DB118789	 Ø	DB118787 	
All	50 mm²	Ø 5 mm	3 x 16 mm²	3 x 10 mm²

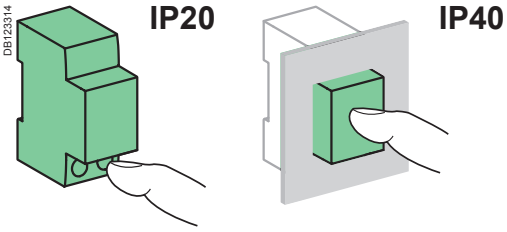
iID double terminals residual current circuit breakers (AC, A, SI types)



Clip on DIN rail 35 mm.



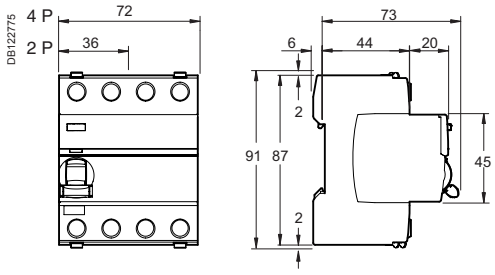
Indifferent position of installation.



Technical data

Main characteristics			
Insulation voltage (Ui)			500 V
Pollution degree			3
Rated impulse withstand voltage (Uimp)			6 kV
According to IEC/EN 61008-1			
Making and breaking capacity (Im/IΔm)			1500 A
Surge current withstand (8/20 µs) without tripping	AC and A types (no selective Ⓢ)		250 Â
	AC, A types (selective Ⓢ)		3 kÂ
	SI type		3 kÂ
Conditional rated short circuit current (Inc/IΔc)	With iC60N/H/L		Equal to breaking capacity of iC60
	With fuse	100 A	10,000 A
Behaviour in case of voltage drop			Residual current protection down to 0 V according to IEC/EN 61008-1 § 3.3.4
Additional characteristics			
Degree of protection	Device only		IP20
	Device in modular enclosure		IP40 Insulation class II
Endurance (O-C)	Electrical (AC1)	16 to 63 A	15,000 cycles
		80 to 100 A	10,000 cycles
	Mechanical		20,000 cycles
Operating temperature	AC type		-5°C to +60°C
	A and **SI** types	-25°C	-25°C to +60°C
Storage temperature			-40°C to +85°C

Dimensions (mm)



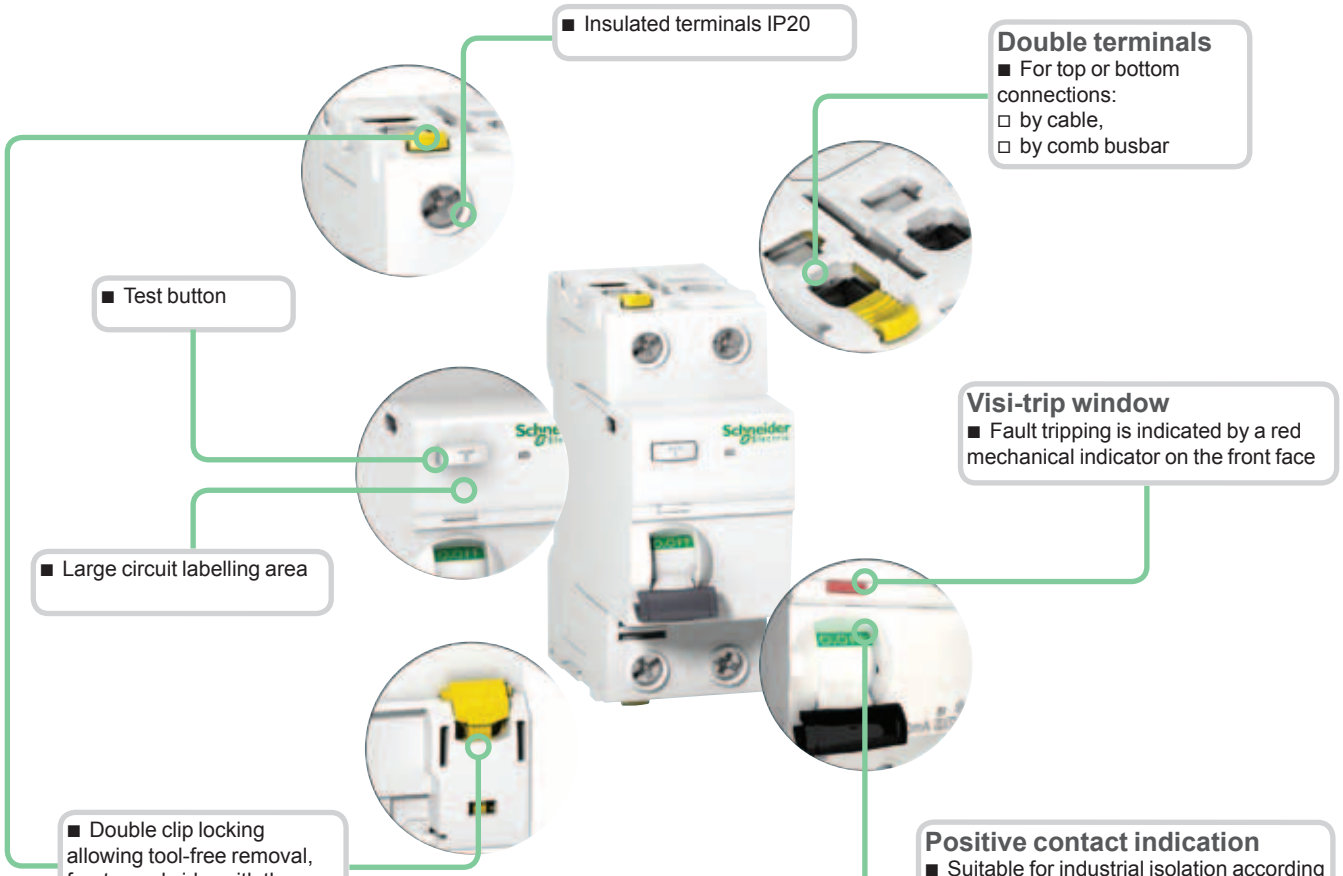
Weight (g)

iID double terminals residual current circuit breakers	
Type	**iID**
2P	210
4P	370

iID double terminals residual current circuit breakers (AC, A, SI types) (cont.)

PB107414-40

PB107413-60



SI type

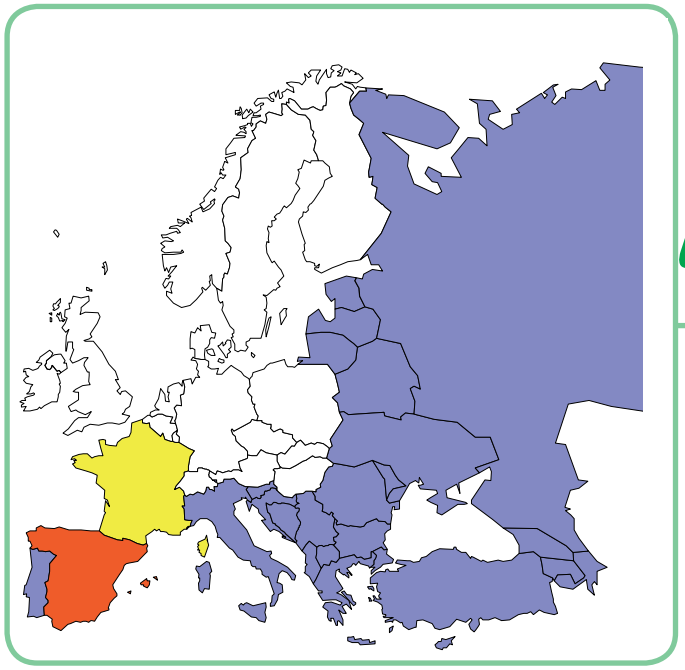
The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

iID K
Contents

Schneider Electric's range of residual current circuit breakers consists of different products (A, B, C, D) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

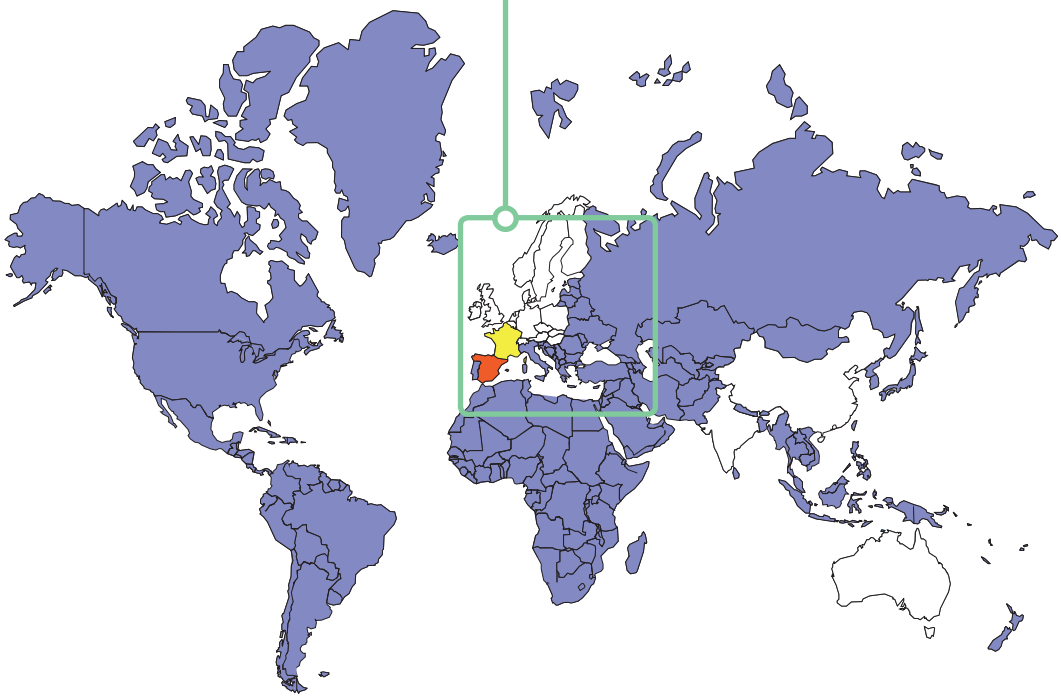
Variants

DB406490



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

DB406491



iID K residual current circuit breakers

DB106604

Country approval pictogram

IEC/EN 61008-1

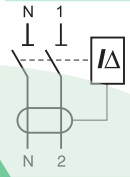
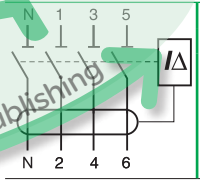
- The iID K residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (300 mA),
  - protection of installations against the risk of fire (300 mA).

PB104497-40

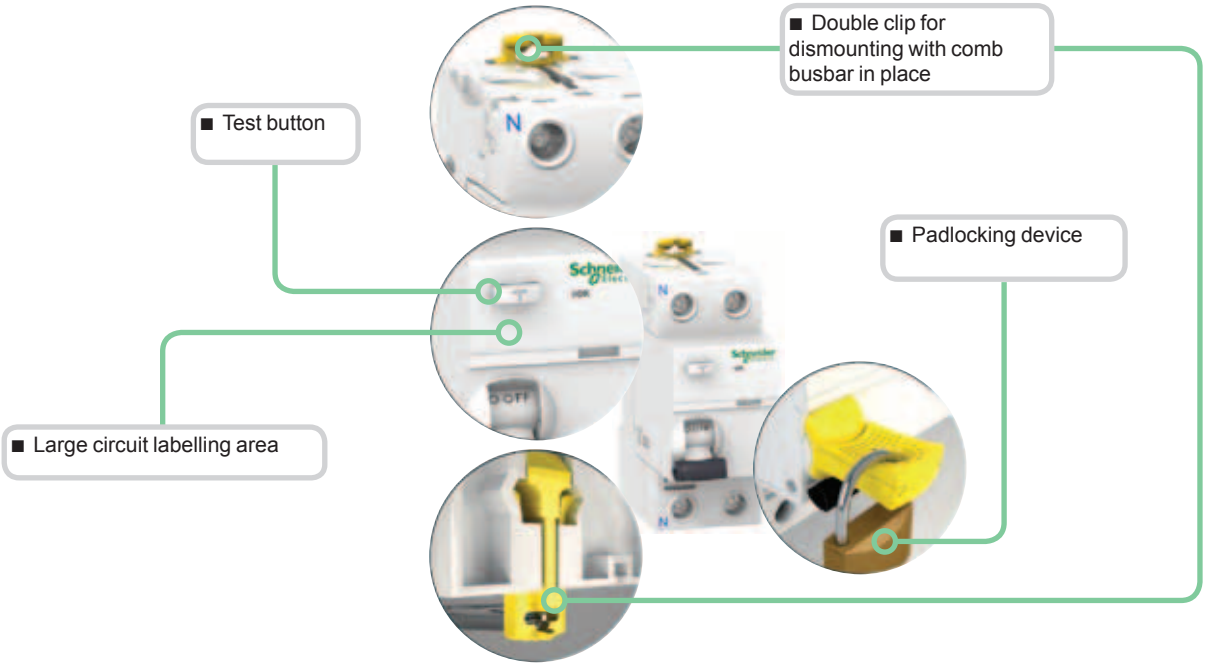
PB104498-40

Catalogue numbers

iID K residual current circuit breakers

Type			AC ~		Width in 9-mm modules
Product			iID K		
Auxiliaries			Without auxiliaries		
2P		Sensitivity	30 mA	300 mA	
DB122476 	Rating	25 A	A9R55225	A9R56225	4
		40 A	A9R55240	A9R56240	
4P		Sensitivity	30 mA	300 mA	
DB122477 	Rating	25 A	A9R55425	A9R56425	8
		40 A	A9R55440	A9R56440	
Voltage rating (Ue)		2P	230 - 240 V		
		4P	400 - 415 V		
Operating frequency			50/60 Hz		

PB104497-40



iID K residual current circuit breakers (cont.)

DB116619 DB123430

Country approval pictograms

IEC/EN 61008-1

- The iID K residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (300 mA),
  - protection of installations against the risk of fire (300 mA).

PB104497-40

PB104498-40

Catalogue numbers

iID K residual current circuit breakers					
Type			**AC**		**Width in 9-mm modules**
Product			**iID K**		
Auxiliaries			**Without auxiliaries**		
2P		**Sensitivity**	**30 mA**	**300 mA**	
DB122476	Rating	25 A	**A9R50225**	**A9R75225**	4
		40 A	**A9R50240**	**A9R75240**	
4P		**Sensitivity**	**30 mA**	**300 mA**	
DB122477	Rating	25 A	**A9R50425**	**A9R75425**	8
		40 A	**A9R50440**	**A9R75440**	
		63 A	**A9R70463**	**A9R75463**	
Voltage rating (Ue)		2P	230 - 240 V		
		4P	400 - 415 V		
Operating frequency			50/60 Hz		

Offer selection see page 180

Offer B, C

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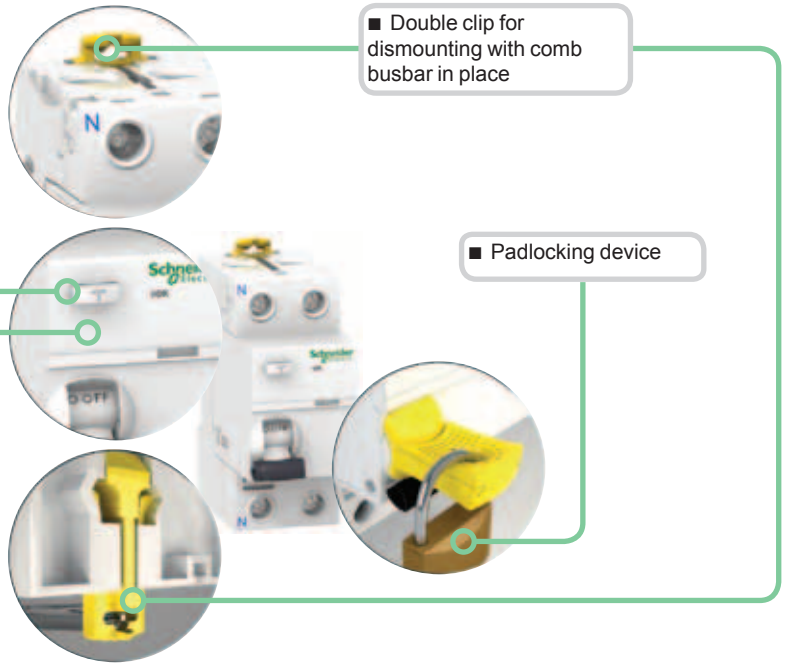
PB104497-40



iID K residual current circuit breakers (cont.)

DB123400

Country approval pictogram

IEC/EN 61008-1


PB104497-40


PB104498-40

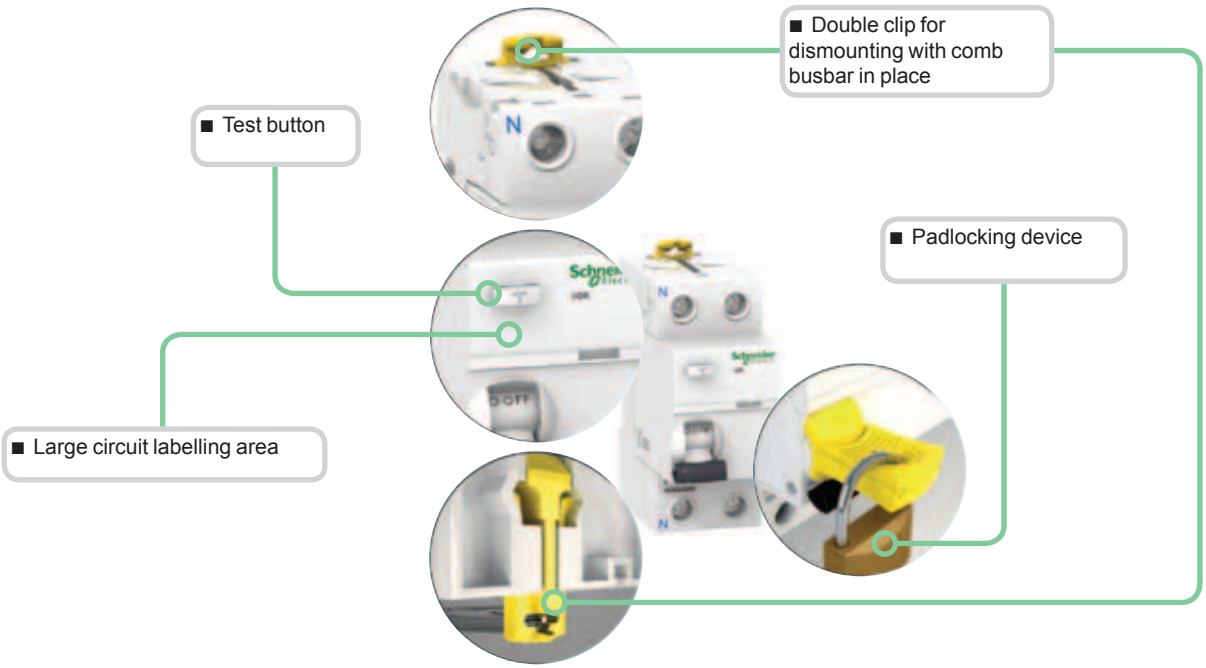
- The iID K residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (300 mA),
  - protection of installations against the risk of fire (300 mA).

Catalogue numbers

iID K residual current circuit breakers

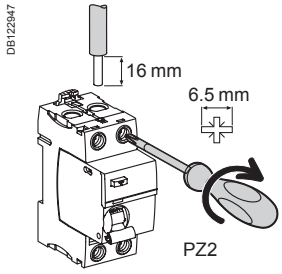
Type			AC		Width in 9-mm modules
Product			iID K		
Auxiliaries			Without auxiliaries		
2P		Sensitivity	30 mA	300 mA	
DB122476	Rating	25 A	A9R60225	A9R75225	4
		40 A	A9R60240	A9R75240	
4P		Sensitivity	30 mA	300 mA	
DB122477	Rating	25 A	A9R50425	A9R75425	8
		40 A	A9R50440	A9R75440	
		63 A	A9R70463	A9R75463	
Voltage rating (Ue)		2P	230 - 240 V		
		4P	400 - 415 V		
Operating frequency			50/60 Hz		

PB104497-40

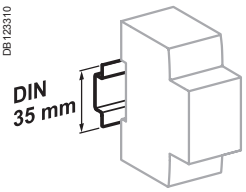


iID K residual current circuit breakers (cont.)

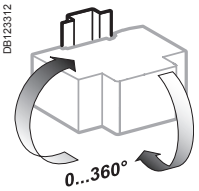
Connection



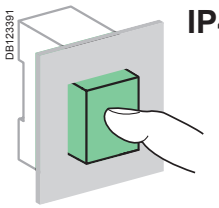
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945 DB122946	
iID K	3.5 N.m	1 to 35 mm²	1 to 25 mm²



Clip on DIN rail 35 mm.



Indifferent position of installation.



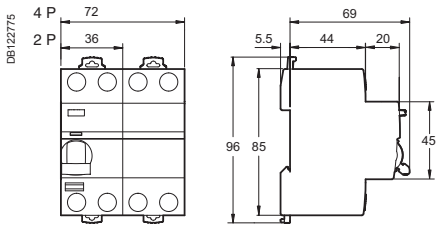
Technical data

Main characteristics		
According to IEC/EN 61008-1		
Insulation voltage (Ui)		440 V
Pollution degree		2
Rated impulse withstand voltage (Uimp)		4 kV
Making and breaking capacity (Im/IΔm)	25 to 40 A	500 A
	63 A	630 A
Surge current withstand (8/20 µs) without tripping		Up to 200 Â
Conditional rated short circuit current (Inc/IΔc)	With iC60N/H/L, iK60N	6000 A
	With fuse 100 A	4500 A
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61008-1 § 3.3.4
Additional characteristics		
Degree of protection	Device in modular enclosure	IP40
Endurance (O-C)	Electrical	2000 cycles (AC1)
	Mechanical	5000 cycles
Operating temperature		-5°C to +60°C
Storage temperature		-40°C to +85°C

Weight (g)

Residual current circuit breakers	
Type	**iID K**
2P	210
4P	370

Dimensions (mm)



ID K Biconnect residual current circuit breakers

Offers
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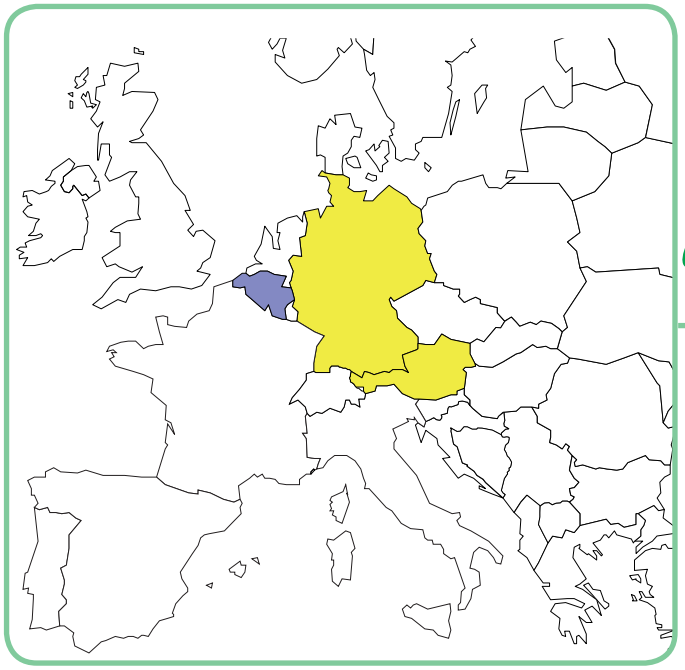
Schneider Electric's range of ID K Biconnect residual current circuit breakers consists of different products (A, B, C, D) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

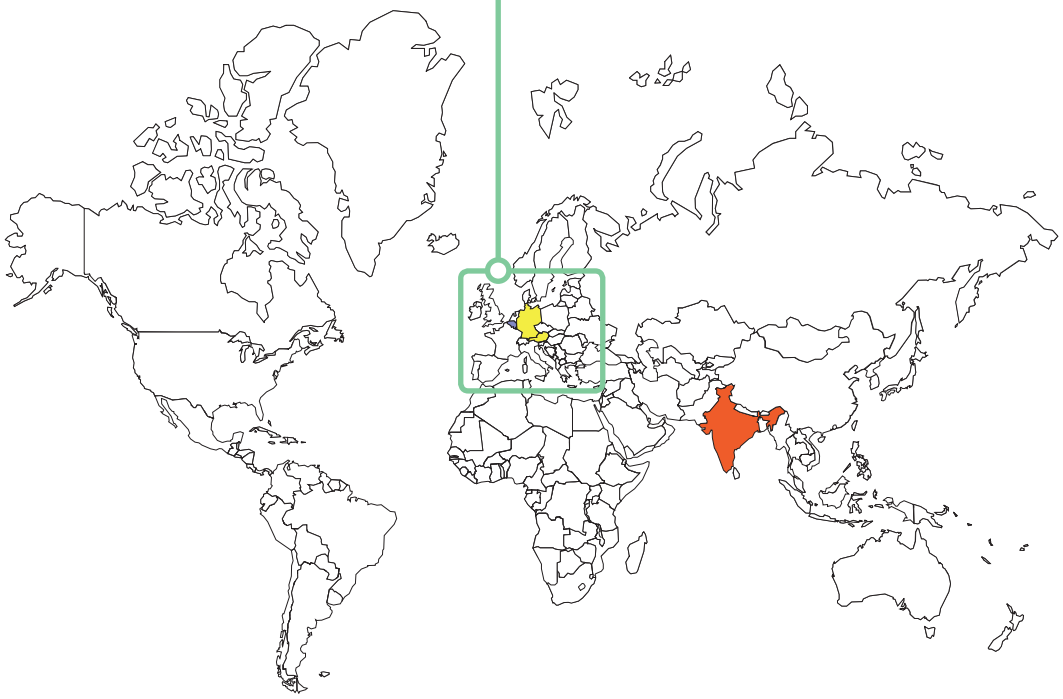
Variants

DB406951



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

DB406950



ID K Biconnect residual current circuit breakers (cont.)

DB116619 DB123865

Country approval pictograms

IEC/EN 61008-1

PB110018-40 PB110019-40

- The ID K Biconnect residual current circuit breakers offer the following functions:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (300 mA),
  - protection of installations against the risks of fire (300 mA).

Catalogue numbers

ID K Biconnect residual current circuit breakers

Type			AC ~		A ~		Width in 9 mm modules
2P	Sensitivity		30 mA	300 mA	30 mA	300 mA	
DB122476	Rating	25 A	A9Z05225	-	A9Z01225	-	4
		40 A	A9Z05240	-	A9Z01240	-	
4P	Sensitivity		30 mA	300 mA	30 mA	300 mA	
DB122477	Rating	25 A	A9Z05425	-	A9Z01425	-	8
		40 A	A9Z05440	A9Z06440	A9Z01440	A9Z04440	
		63 A	A9Z05463	A9Z06463	A9Z01463	A9Z04463	
Operating voltage (Ue)		2P	230 - 240 V				
		4P	400 - 415 V				
Operating frequency			50 Hz				

Offer selection see page 185

Offer A

Catalogue numbers

ID K Biconnect residual current circuit breakers Type G

Type			AC ~	AC ~ THV	Width in 9 mm modules
4P	Sensitivity		30 mA Type G	30 mA Type G	
DB122477	Rating	40 A	A9Z07440	A9Z08440	8
Operating voltage (Ue)			400 - 415 V		
Operating frequency			50 Hz		

ID K Biconnect residual current circuit breakers (cont.)

DB123399

Country approval pictogram

IEC/EN 61008-1

■ The ID K Biconnect residual current circuit breakers offer the following functions:
□ protection of persons against electric shock by direct contact (30 mA),
□ protection of persons against electric shock by indirect contact (300 mA),
□ protection of installations against the risks of fire (300 mA).

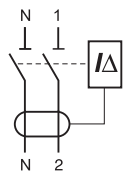
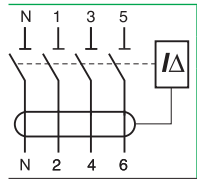
■ Delivered with sealable screw shield (lead sealing wire diameter: mini 1.5 mm, maxi 1.7 mm).

PB114579-52

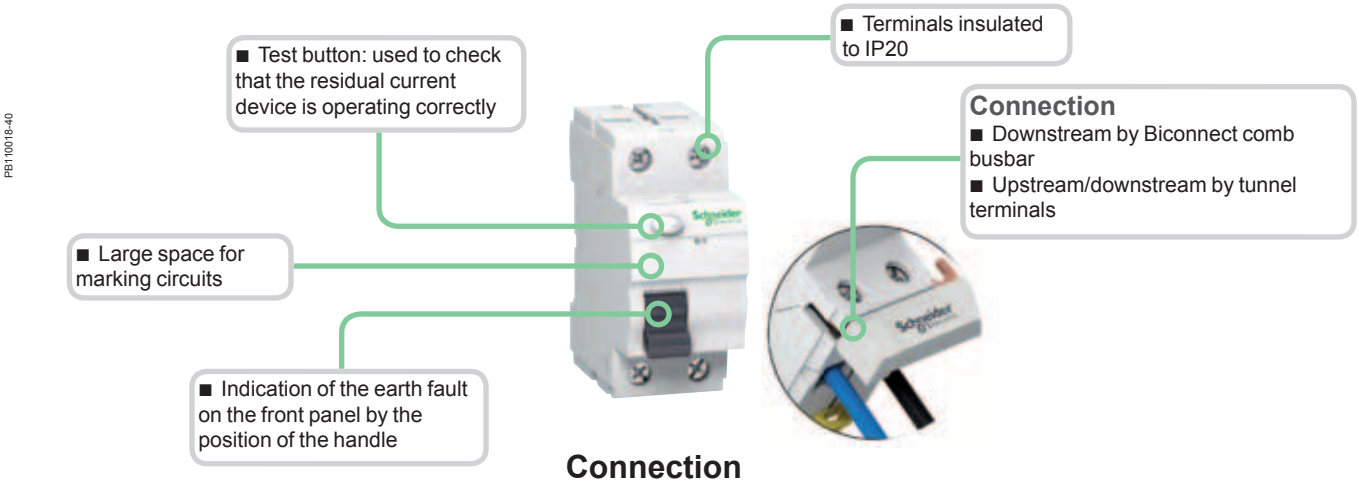
PB110019-40

Catalogue numbers

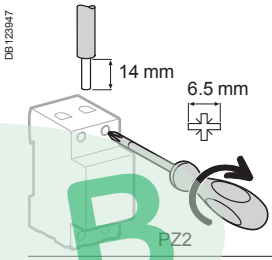
ID K Biconnect residual current circuit breakers

Type			A		Width in 9 mm modules
2P	Sensitivity		30 mA	300 mA	
DB122476 	Rating	40 A	A9Z02240	A9Z03240	4
		63 A	A9Z02263	A9Z03263	
4P	Sensitivity		30 mA	300 mA	
DB122477 	Rating	40 A	A9Z02440	A9Z03440	8
		63 A	A9Z02463	A9Z03463	
Operating voltage (Ue)		2P	230 - 240 V		
		4P	400 - 415 V		
Operating frequency			50 Hz		

ID K Biconnect residual current circuit breakers (cont.)



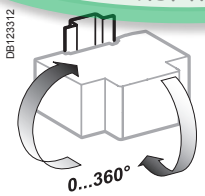
Connection



Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
ID K Biconnect	3.5 N.m	1 to 35 mm²	1 to 25 mm²

■ Connection by comb busbar or cables (conforms to EN 50027).

Clip on DIN rail 35 mm.

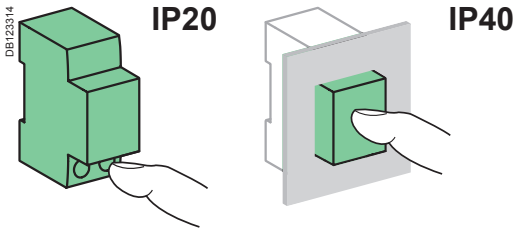


Indifferent position of installation.

Technical data

Main characteristics		
Insulation voltage (Ui)		440 V
Degree of pollution		2
Rated impulse withstand voltage (Uimp)		4 kV
Making and breaking capacity (Im/IΔm)		500 A
Impulse current withstand (8/20 µs) without tripping		Up to 200 Â
Conditional rated short-circuit current (Inc/IΔc)	With circuit breaker	6000 A
	With fuse	4500 A
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61008-1 § 3.3.4

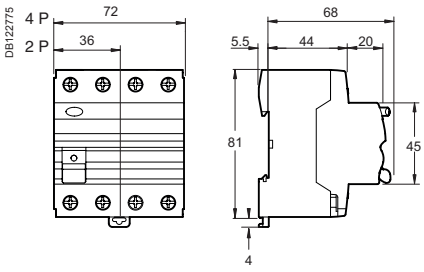
Additional characteristics		
Degree of protection	Device only	IP20
	Device in a modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	2000 cycles (AC1)
	Mechanical	5000 cycles
Operating temperature	AC type	-5°C to +40°C
	A type	-25°C to +40°C
Storage temperature		-30°C to +70°C



Weight (g)

Residual current circuit breakers	
Type	ID K Biconnect
2P	180
4P	350

Dimensions (mm)



ID K Biconnect residual current circuit breakers (cont.)

DB404807

Country approval pictogram

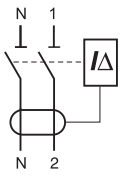
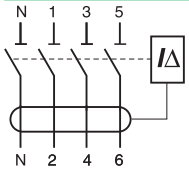
IS 12640 (Part 1)
IEC/EN 61008-1

PB110018-40

PB110019-40

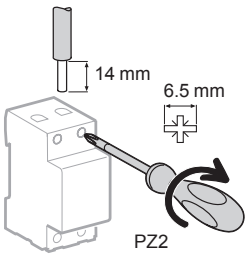
- The ID K Biconnect residual current circuit breakers offer the following functions:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact ((≥ 100 mA),
  - protection of installations against the risks of fire (300 mA).

Catalogue numbers

ID K Biconnect residual current circuit breakers						
Type			AC			Width in 9 mm modules
2P	Sensitivity		30 mA	100 mA	300 mA	
DB122476 	Rating	25 A	A9KR11225	A9KR12225	A9KR14225	4
		40 A	A9KR11240	A9KR12240	A9KR14240	
		63 A	A9KR11263	A9KR12263	A9KR14263	
4P	Sensitivity					
DB122477 	Rating	25 A	A9KR11425	A9KR12425	A9KR14425	8
		40 A	A9KR11440	A9KR12440	A9KR14440	
		63 A	A9KR11463	A9KR12463	A9KR14463	
Operating voltage (Ue)		2P	240 V			
		4P	415 V			
Operating frequency			50 Hz			

Connection

DB123947



Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945 	DB122946 
ID K Biconnect	3.5 N.m	1 to 35 mm²	1 to 25 mm²

ID K Biconnect residual current circuit breakers (cont.)

Country approval pictogram

IEC/EN 61008-1

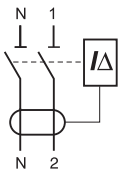
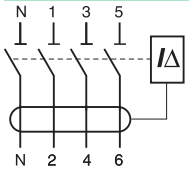
PB110018-40

PB110019-40

■ The ID K Biconnect residual current circuit breakers offer the following functions:
□ protection of persons against electric shock by direct contact (30 mA),
□ protection of persons against electric shock by indirect contact ((≥ 100 mA),
□ protection of installations against the risks of fire (300 mA).

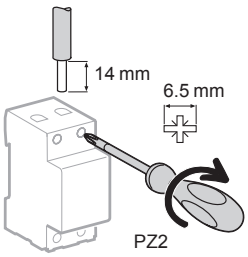
Catalogue numbers

ID K Biconnect residual current circuit breakers

Type			AC ~			Width in 9 mm modules
2P	Sensitivity		30 mA	100 mA	300 mA	
DB122476 	Rating	25 A	A9KR13225	-	A9KR16225	4
		40 A	A9KR13240	A9KR15240	A9KR16240	
		63 A	A9KR13263	A9KR15263	A9KR16263	
4P	Sensitivity					
DB122477 	Rating	40 A	A9KR13440	A9KR15440	A9KR16440	8
		63 A	A9KR13463	A9KR15463	A9KR16463	
Operating voltage (Ue)		2P	240 V			
		4P	415 V			
Operating frequency			50 Hz			

Offer selection see page 185

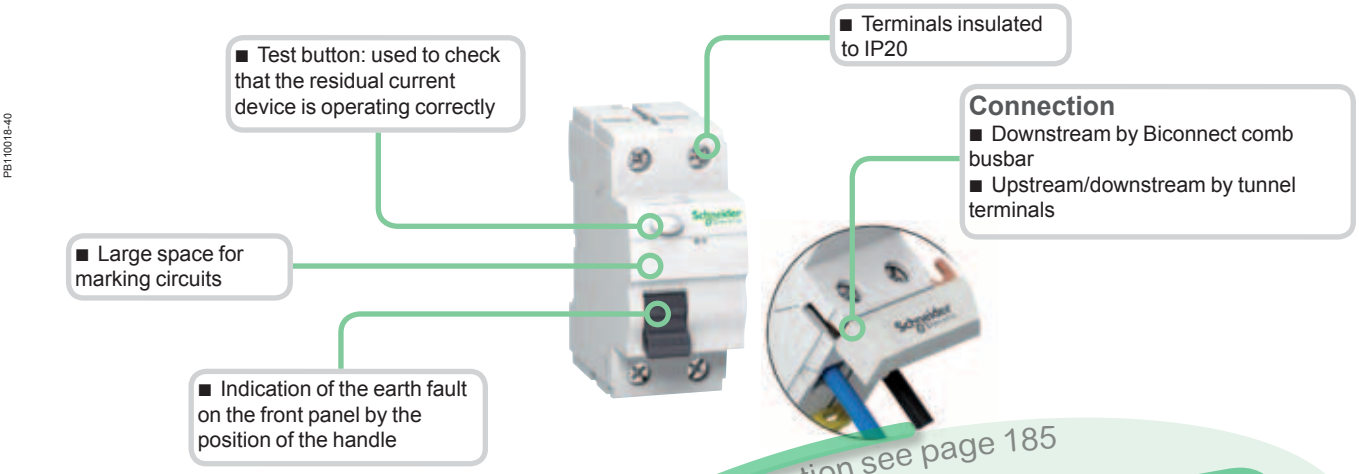
Connection

DB123947 

Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945 	DB122946 
ID K Biconnect	3.5 N.m	1 to 35 mm^2	1 to 25 mm^2

ID K Biconnect residual current circuit breakers (cont.)

PB110018-40

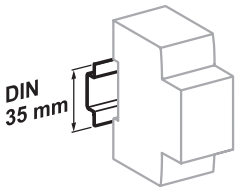


Offer selection see page 185

Offer C, D

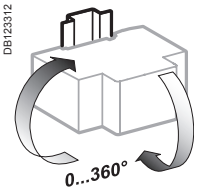
This sticker must be removed before publishing

DB123310



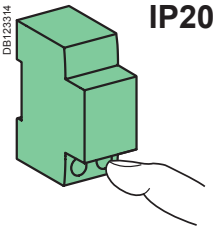
Clip on DIN rail 35 mm.

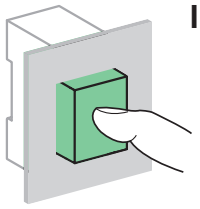
DB123312



Indifferent position of installation.

DB123314





Technical data

Main characteristics		
Insulation voltage (Ui)		440 V
Degree of pollution		2
Rated impulse withstand voltage (Uimp)		4 kV
Making and breaking capacity (Im/IΔm)	25 - 40 A	500 A
	63 A	630 A
Impulse current withstand (8/20 µs) without tripping		Up to 200 Â
Conditional rated short-circuit current (Inc/IΔc)	With circuit breaker	6000 A
	With fuse	4500 A
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61008-1 § 3.3.4

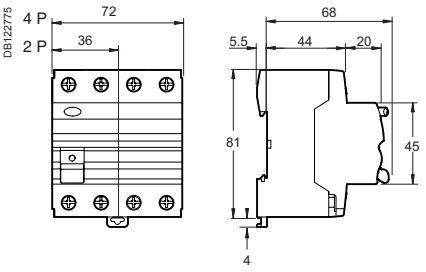
Additional characteristics		
Degree of protection	Device only	IP20
	Device in a modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	4000 cycles (AC1)
	Mechanical	5000 cycles
Operating temperature	AC type	-5°C to +55°C
Storage temperature		-25°C to +85°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95% at 55°C)

Weight (g)

Residual current circuit breakers	
Type	**ID K Biconnect**
2P	180
4P	350

Dimensions (mm)

DB122775



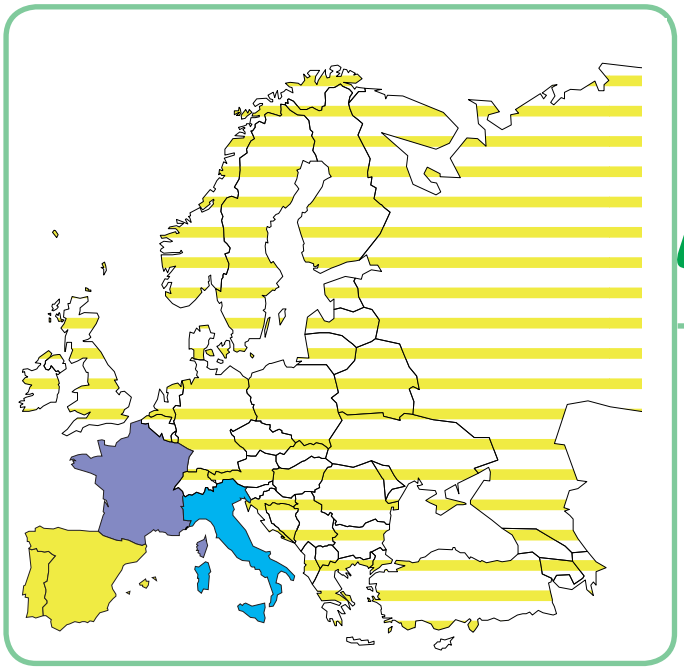
Residual current circuit breakers

Clario, Prodis, Librio

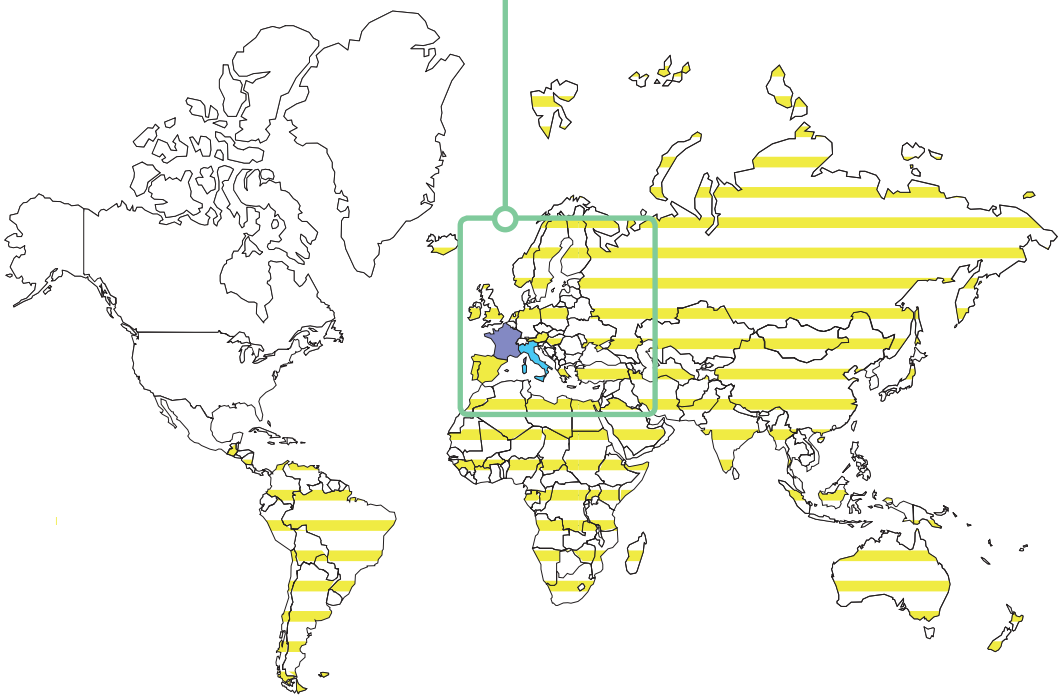
Contents

The Schneider Electric range of residual current circuit breakers comprises various offers (Clario, Prodis, Librio) so as to be as competitive as possible in each country, taking into account the specific features of each market:
- installation customs
- price
- approval by local organizations.

Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.



IDc residual current circuit breakers
Clario
Group Feeder

DBxxxxxx

Country approval pictograms

IEC/EN 61008-1

Adapted to the needs of service sector and industrial building installations, residual current circuit breakers ensure:
- earth leakage protection of final distribution circuits.
- disconnection.

In accordance with the IEC 61008 standard for residual current devices, a residual current circuit breaker also performs the function of disconnection of electrical circuits.

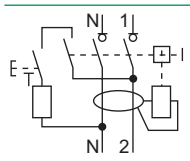
Residual current circuit breakers include in their enclosure the residual current relay and the toroid. The residual current tripping device is electromechanical and operates without an auxiliary source.

Operation
- When an earth fault occurs, the residual current circuit breaker uses the energy of the fault to perform tripping. Fault indication is performed on the front panel by a mechanical indicator.
- Resetting is performed using the reset handle.

PB107117-32

Catalogue numbers

Residual current circuit breakers

Type			AC		SI		Width in 9-mm modules
Auxiliaries			**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**		
1P+N		**Sensitivity**	**30 mA**	**300 mA**	**30 mA**	**300 mA**	
DB123665 	Rating	25 A	**A9N21780**	**A9N21781**	**A9N21784**	-	4
		40 A	**A9N21782**	**A9N21783**	**A9N21786**	**A9N21785**	
Voltage rating (Ue)			230 V AC		230 V AC		
Operating frequency			50 Hz		50 Hz		
Accessories			**Modules CA907010 and CA907012**		**Modules CA907010 and CA907012**		

"Group Feeder"
- Residual current circuit breakers are especially suitable for "Group Feeder" protection: the downstream terminals are located in the upper part of the device for direct connection to the comb busbar.

PB107117-40

Terminals with guard
- Automatic cable guiding in the correct position

ITG40 residual current circuit breakers

Prodis

Group Feeder

DBxxxxxx

Country approval pictograms

IEC/EN 61008-1

Adapted to the needs of service sector and industrial building installations, residual current circuit breakers ensure:
- earth leakage protection of final distribution circuits.
- disconnection.

In accordance with the IEC 61008 standard for residual current devices, a residual current circuit breaker also performs the function of disconnection of electrical circuits.

Residual current circuit breakers include in their enclosure the residual current relay and the toroid. The residual current tripping device is electromechanical and operates without an auxiliary source.

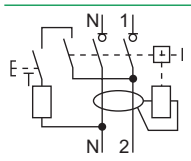
Operation

- When an earth fault occurs, the residual current circuit breaker uses the energy of the fault to perform tripping. Fault indication is performed on the front panel by a mechanical indicator.
- Resetting is performed using the reset handle.

PB107180-32

Offer selection see page 192

Catalogue numbers

Residual current circuit breakers							
Type			**AC** ~		***SI***		**Width in 9-mm modules**
Auxiliaries			**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**		
1P+N		**Sensitivity**	**30 mA**	**300 mA**	**30 mA**	**300 mA** S	
DB123665 	Rating	25 A	**A9N21520**	**A9N21522**	**A9N21524**	-	4
		40 A	**A9N21521**	**A9N21523**	**A9N21526**	**A9N21529**	
Voltage rating (Ue)			230 V AC		230 V AC		
Operating frequency			50 Hz		50 Hz		
Accessories			**Modules CA907010 and CA907012**		**Modules CA907010 and CA907012**		

"Group Feeder"

- Residual current circuit breakers are especially suitable for "Group Feeder" protection: the downstream terminals are located in the upper part of the device for direct connection to the comb busbar

PB107180-40

Terminals with guard

- Automatic cable guiding in the correct position

ID C40 residual current circuit breakers

Librio

Group Feeder

DBxxxxxx

Country approval pictograms

IEC/EN 61008-1

Adapted to the needs of service sector and industrial building installations, residual current circuit breakers ensure:
- earth leakage protection of final distribution circuits.
- disconnection.

In accordance with the IEC 61008 standard for residual current devices, a residual current circuit breaker also performs the function of disconnection of electrical circuits.

Residual current circuit breakers include in their enclosure the residual current relay and the toroid. The residual current tripping device is electromechanical and operates without an auxiliary source.

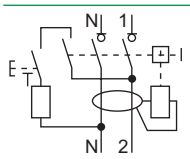
Operation

- When an earth fault occurs, the residual current circuit breaker uses the energy of the fault to perform tripping. Fault indication is performed on the front panel by a mechanical indicator.
- Resetting is performed using the reset handle.

PB107910-32

Catalogue numbers

Residual current circuit breakers

Type			AC ~		A ~		SI ~		Width in 9-mm modules
Auxiliaries			**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**		**Modules CA907008 and CA907010**		
1P+N		**Sensitivity**	**30 mA**	**300 mA**	**30 mA**	**300 mA**	**30 mA**	**300 mA S**	
DB123665 	Rating	25 A	**A9N19410**	**A9N19411**	**A9N19414**	**A9N19415**	**A9N19418**	-	4
		40 A	**A9N19412**	**A9N19413**	**A9N19416**	**A9N19417**	**A9N19420**	**A9N19423**	
Voltage rating (Ue)			230 V AC		230 V AC		230 V AC		
Operating frequency			50 Hz		50 Hz		50 Hz		
Accessories			**Modules CA907010 and CA907012**		**Modules CA907010 and CA907012**		**Modules CA907010 and CA907012**		

"Group Feeder"

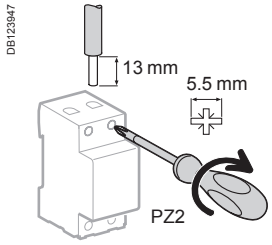
- Residual current circuit breakers are especially suitable for "Group Feeder" protection: the downstream terminals are located in the upper part of the device for direct connection to the comb busbar

Terminals with guard

- Automatic cable guiding in the correct position

Residual current circuit breakers
Clario, Librio, Prodis
Group Feeder (cont)

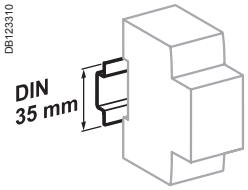
Connection



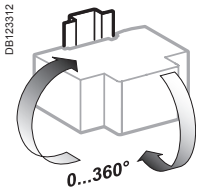
Rating	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
25 and 40 A	2 N.m	1 to 16 mm²	1 to 10 mm²

- Where there is a comb busbar tooth, the connection of cables of cross section 16 mm² remains possible.
- **Connection by comb busbar** or cables (as per EN 50027).

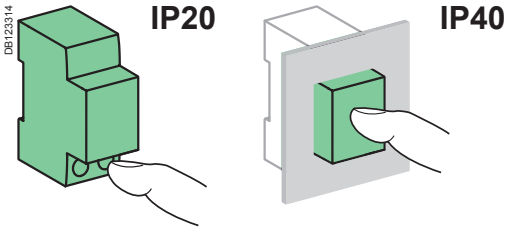
"Group Feeder" connection:
- Upstream: by cables.
- Downstream: direct by comb busbar.



Clip on DIN rail 35 mm.



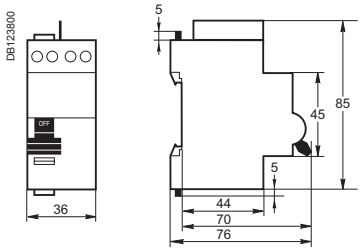
Indifferent position of installation.



Technical data

Main characteristics		
Insulation voltage (Ui)		440 V AC
Voltage rating (Ue)	Phase-to-neutral	230 V AC
	Phase-to-phase	400 V AC
Rated impulse withstand voltage (Uimp)		4 kV
Positive contact indication		A green strip on the operating handle guarantees opening of all the poles in safety conditions for work to be carried out on live parts
According to IEC/EN 61008-1		
Rated residual breaking and making capacity (IΔm)		1 kA
Rated breaking and making capacity (Im)	Instantaneous	1 kA
	Selective Ⓢ	630 A
Rated conditional short-circuit current (Inc) identical to the rated residual short-circuit current (IΔc)	Instantaneous	6 kA
	Selective Ⓢ	630 A
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61008-1 § 3.3.4
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40
Operating temperature	AC Types	-5°C to +40°C
	A, *SI* types -25°C	-25 °C to +40°C
Storage temperature		-40°C to +70°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)

Dimensions (mm)



Weight (g)

Residual current circuit breakers	
Type	
1P+N	205

RCCB-ID 125 A residual current circuit breaker (AC, A, SI types)

IEC/EN 61008-1
VDE 0664


16973


16921


16940


16938


16939

- The RCCB-ID 125 A residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

OFsp auxiliary

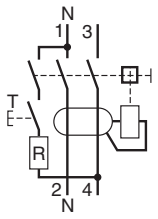
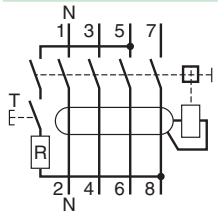
- Electrical indication: by OFsp auxiliary mounted to the left, it has a double changeover switch indicating the "open" or "closed" position of the RCCB-ID 125 A.

Accessories

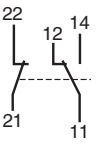
- 2P and 4P sealable screw shield.

Catalogue numbers

RCCB-ID 125 A residual current circuit breakers

Type			AC				A				SI		Width in 9 mm module
2P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA**	**30 mA**	**300 mA**	
	Rating	125 A	**16966**	-	**16967**	-	**16970**	**16971**	-	-	**16972**	**16973**	4
4P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**30 mA**	**300 mA**	**300 mA S**	**500 mA**	**30 mA**	**300 mA**	
	Rating	125 A	**16905**	**16906**	**16907**	**16908**	**16924**	**16926**	**16925**	**16927**	**16920**	**16921**	8
Voltage rating (Ue)		2P	230 V										
		4P	400 V										
Operating frequency			50 Hz										

Auxiliary

Type				Width in 9 mm module
Contact OFsp	**Contact**	**Voltage**		
	1 A	110 V DC	**16940**	1
	6 A	230 V AC (AC15)		

Accessory

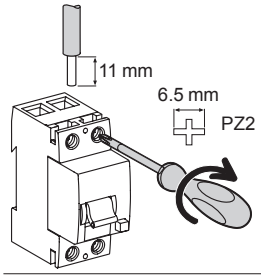
Type	Number of pole	
Screw shield (set of 10) for upstream or downstream	2P	**16938**
	4P	**16939**

RCCB-ID 125 A residual current circuit breaker (AC, A, SI types) (cont.)

Connection

■ By tunnel terminals for:

DB123737

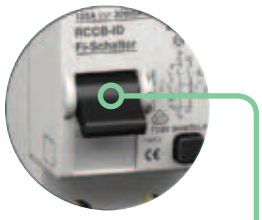


Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB112804	DB112805
RCCB-ID	3 N.m	1 x 1.5 to 50 mm²	1 x 1.5 to 35 mm²
		2 x 1.5 to 16 mm²	2 x 1.5 to 16 mm²
OFsp	0.8 N.m	1 to 1.5 mm²	1 to 1.5 mm²

OFsp contact status, depending on the position of the residual current circuit breaker

Type				
RCCB-ID 125 A	Closed	■	-	-
	Open	-	■	-
	Tripped on fault	-	-	■
Contact OFsp	22/21 12/11	Open	Closed	Closed
	14/11	Closed	Open	Open

DB122835



Indication of the status of the RCCB-ID via the 3-position toggle and front panel indicator

- Closed (red indicator)
- Tripped on fault (green indicator)
- Open (green indicator)

Technical data

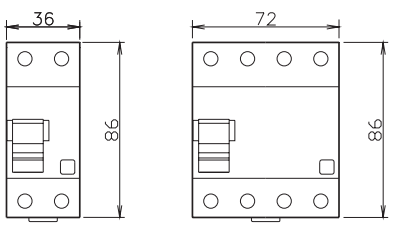
Electrical characteristics			
Insulation voltage (Ui)			400 V
Pollution degree			3
Rated impulse withstand voltage (Uimp)			4 kV
According to IEC/EN 61008-1			
Making and breaking capacity (Im/IΔm)			1250 A
Surge current withstand (8/20 µs) without tripping	AC and A types (no selective Ⓢ)		250 Â
	SI type (no selective Ⓢ)		3 kÂ
	AC, A and SI types (selective Ⓢ)		3 kÂ
Conditional rated short circuit current (Inc/IΔc)	With FU 125 A gG fuse		10,000 A
Behaviour in case of voltage drop			Residual current protection down to 0 V according to IEC/EN 61008-1 § 3.3.4
Additional characteristics			
Degree of protection	Device only		IP20 IP40 with screw shield
	Device in modular enclosure		IP40 Insulation class II
Endurance (O-C)	Electrical		> 2 000 cycles
	Mechanical		> 5 000 cycles
Operating temperature	-25°C		-25°C to +40°C
Storage temperature			-40°C to +85°C
Range of test button operating voltage	30 mA	2P	160...250 V AC
		4P	250...440 V AC
	100, 300, 500 mA	2P	185...250 V AC
		4P	185...440 V AC

Weight (g)

Residual current circuit breakers and auxiliary		
Type	RCCB-ID 125 A	OFsp
2P	230	40
4P	420	

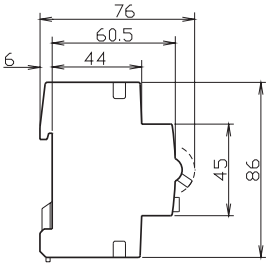
Dimensions (mm)

0140302_1

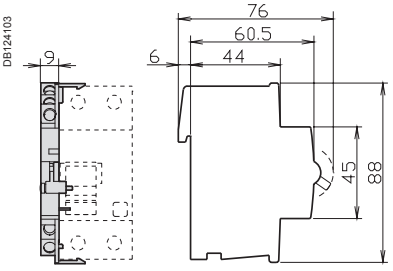


2P
RCCB-ID 125 A

4P



DB124103



Contact OFsp

RCCB-ID residual current circuit breaker (B type)

IEC

PB111281-35

16766

PB107510-33

16940

PB100572-18

16939

IEC/EN 61008-1
VDE 0664

- The RCCB-ID 125 A residual current circuit breakers provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (≥ 300 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

B type

The RCCB-ID B type residual current circuit breakers provide:
- protection in the event of a continuous fault current on three-phase networks generated by:
  - controllers and variable speed drives,
  - battery chargers and inverters,
  - backed-up power supplies.

- They include and also guarantee protection against fault currents:
  - sinusoidal AC residual currents (AC type),
  - pulsed DC residual currents (A type).

They can be adapted to all the application cases defined in standards IEC 60364 and EN 50178.
- Schneider Electric guarantees that the type B RCCB-ID works correctly in combination with the variable speed drives manufactured by Schneider Electric.

OFsp auxiliary

- Electrical indication: by OFsp auxiliary mounted to the left.

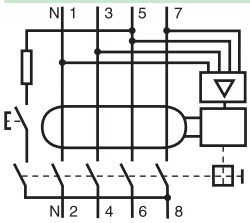
It has a double changeover switch indicating the "open" or "closed" position of the RCCB-ID B type.

Accessories

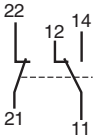
- 4P sealable screw shield.

Catalogue numbers

RCCB-ID B type residual current circuit breakers

Type			B				Width in 9 mm module
4P		Sensitivity	30 mA	300 mA	300 mA S	500 mA	
DB123726 	Rating	25 A	**16750**	**16751**	**-**	**-**	8
		40 A	**16752**	**16753**	**16754**	**16755**	
		63 A	**16756**	**16757**	**16758**	**16759**	
		80 A	**16760**	**16761**	**16762**	**-**	
		125 A	**16763**	**16764**	**16765**	**16766**	
Voltage rating (Ue)			230/400 V				
Operating frequency			50 Hz				

Auxiliary

Type				Width in 9 mm module
Contact OFsp	Contact	Voltage		
E91415 	1 A	110 V DC	**16940**	1
	6 A	230 V AC (AC15)		

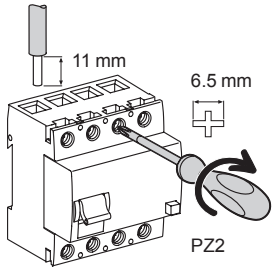
Accessory

Type	Number of pole	
Screw shield (set of 10) for upstream or downstream	4P	**16939**

RCCB-ID residual current circuit breaker (B type) (cont.)

Connection

DB123736



Type	Tightening torque	Copper cables			
		Rigid		Flexible or with ferrule	
		DB122945		DB122946	
RCCB-ID B type	3 N.m (27 lb.in)	1 x 1.5 to 50 mm²	1 x AWG #16 to #1	1 x 1.5 to 35 mm²	1 x AWG #16 to #2
		2 x 1.5 to 16 mm²	2 x AWG #16 to #6	2 x 1.5 to 16 mm²	2 x AWG #16 to #6
OFsp	0.8 N.m (7 lb.in)	1 to 1.5 mm²	AWG #18 to #16	1 to 1.5 mm²	AWG #18 to #16

OFsp contact status, depending on the position of the residual current circuit breaker

Type				
RCCB-ID B type	Closed	■	-	-
	Open	-	■	-
	Tripped on fault	-	-	■
Contact OFsp	22/21 12/11	Open	Closed	Closed
	14/11	Closed	Open	Open

DB122842

Indication of the status of the RCCB-ID B type via the 3-position toggle and front panel indicator

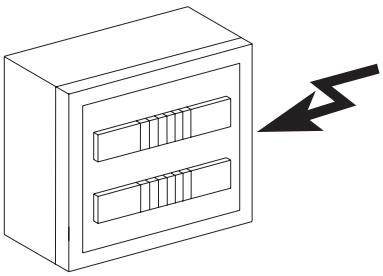
- ■ Closed (red indicator)
- ■ Tripped on fault (green indicator)
- ■ Open (green indicator)

Technical data

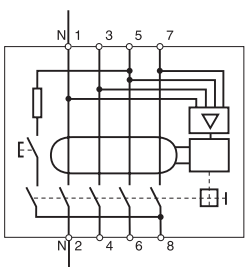
Electrical characteristics		
Insulation voltage (Ui)		440 V
Pollution degree		3
Rated impulse withstand voltage (Uimp)		4 kV
According to IEC/EN 61008-1		
Making and breaking capacity (Im/IΔm)	25/40 A	500 A
	63 A	630 A
	80 A	800 A
	125 A	1250 A
Surge current withstand (8/20 µs) without tripping	No selective Ⓢ	3 kÂ
	Selective Ⓢ	5 kÂ
Conditional rated short circuit current (Inc/IΔc)	25/40 A with FU 80 A gG fuse	10,000 A
	63 A with FU 100 A gG fuse	10,000 A
	80/125 A with FU 125 A gG fuse	10,000 A
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	> 2 000 cycles
	Mechanical	> 5 000 cycles
Range of test button operating voltage	30 mA	250...400 V AC
	300, 500 mA	185...400 V AC
Operating temperature		-25°C to +40°C / -13°F to 104°F
Storage temperature		-40°C to +85°C / -40°F to 185°F
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % at 55°C / 131°F)
Dissipated power		Module CM908012

Dielectric test

E63606



DB109414



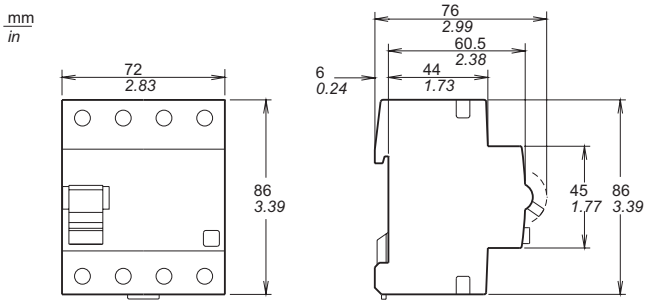
⚠ **To perform the dielectric test, disconnect terminals 3, 5, 7 and 4, 6, 8.**

Weight (g / oz)

Residual current circuit breakers and auxiliary		
Type	**RCCB-ID B type**	**OFsp**
4P	450 g / 15.87 oz	40 g / 1.41 oz

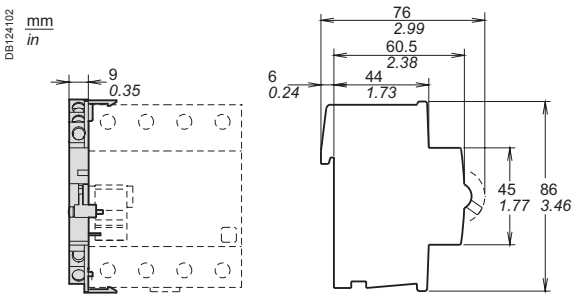
Dimensions (mm / inches)

DB122838



RCCB-ID B type

DB124102



Contact OFsp

Vigi iC60
Contents

Offers
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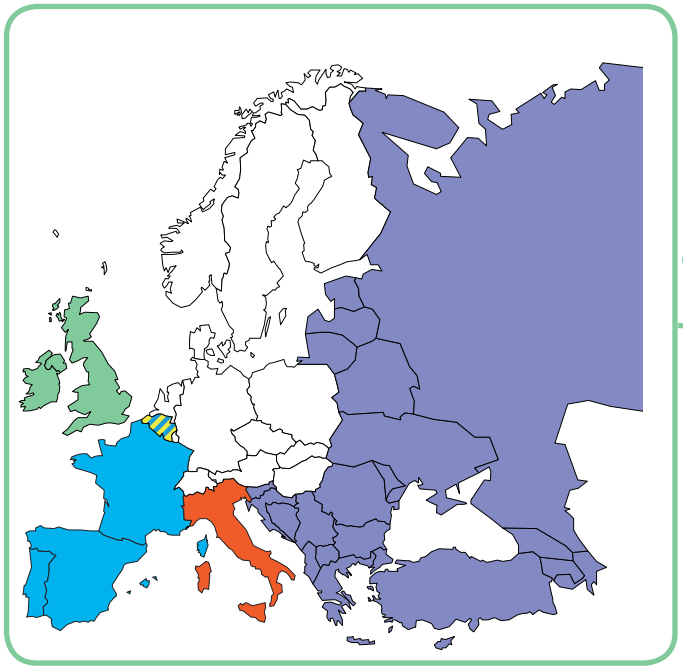
Schneider Electric's range of add-on residual current devices consists of different products (A, B, C, D, E) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

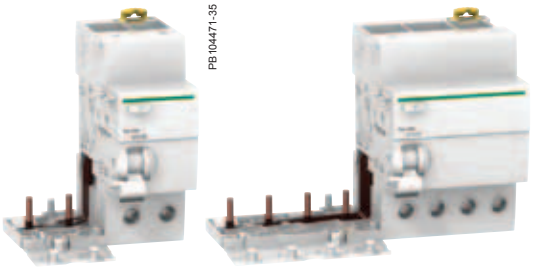
Vigi iC60 add-on residual current devices (AC type)

DB116619 DB123399

Country approval pictograms

IEC/EN 61009-1

PB104466-35 PB104471-35



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (≤ 30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			AC							Width in 9 mm modules
Auxiliaries			Without auxiliaries							
2P		Sensitivity	10 mA	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122462	Rating	25 A	A9V10225	A9V11225	A9V12225	A9V14225	A9V16225	-	-	3
		40 A	-	A9V11240	-	A9V14240	A9V16240	-	-	4
		63 A	-	A9V11263	A9V12263	A9V14263	A9V16263	A9V15263	A9V19263	4
3P		Sensitivity	10 mA	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122463	Rating	25 A	-	A9V11325	-	A9V14325	A9V16325	-	-	6
		40 A	-	A9V11340	-	A9V14340	A9V16340	-	-	7
		63 A	-	A9V11363	-	A9V14363	A9V16363	A9V15363	A9V19363	7
4P		Sensitivity	10 mA	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122464	Rating	25 A	-	A9V11425	A9V12425	A9V14425	A9V16425	-	-	6
		40 A	-	A9V11440	-	A9V14440	A9V16440	-	-	7
		63 A	-	A9V11463	A9V12463	A9V14463	A9V16463	A9V15463	A9V19463	7
Voltage rating (Ue)		2P	230 - 240 V							
		3P-4P	400 - 415 V							
Operating frequency			50/60 Hz							
Accessories			Module CA907000							

Offer selection see page 201

Offer A

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Vigi iC60 add-on residual current devices for 110 V network

Type			AC		Width in 9 mm modules
Auxiliaries			Without auxiliaries		
2P		Sensitivity	30 mA	300 mA	
DB122462	Rating	25 A	A9V01225	A9V04225	3
		40 A	A9V01240	A9V04240	4
		63 A	A9V01263	A9V04263	4
Voltage rating (Ue)			110 V		
Operating frequency			50/60 Hz		
Accessories			Module CA907000		

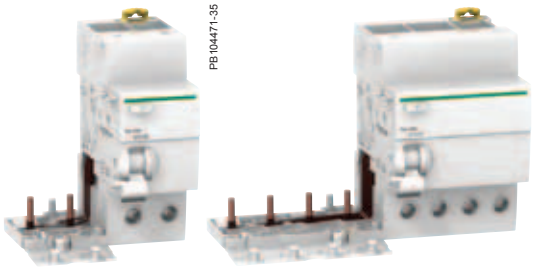
Vigi iC60 add-on residual current devices (A type)

DB116619 DB123399

Country approval pictograms

IEC/EN 61009-1

PB104466-35 PB104471-35



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			A						Width in 9 mm modules
Auxiliaries			Without auxiliaries						
2P		Sensitivity	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122462	Rating	25 A	A9V21225	A9V22225	A9V24225	A9V26225	-	-	3
		63 A	A9V21263	A9V22263	A9V24263	A9V26263	A9V25263	A9V29263	4
3P		Sensitivity	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122463	Rating	25 A	A9V21325	A9V22325	A9V24325	A9V26325	-	-	6
		63 A	A9V21363	-	A9V24363	A9V26363	A9V25363	A9V29363	7
4P		Sensitivity	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122464	Rating	25 A	A9V21425	A9V22425	A9V24425	A9V26425	-	-	6
		63 A	A9V21463	A9V22463	A9V24463	A9V26463	A9V25463	A9V29463	7
Voltage rating (Ue)		2P	230 - 240 V						
		3P-4P	400 - 415 V						
Operating frequency			50/60 Hz						
Accessories			Module CA907000						

Vigi iC60 add-on residual current devices for 400 V network

Type			A	Width in 9 mm modules
Auxiliaries			Without auxiliaries	
2P		Sensitivity	30 mA	
DB122462	Rating	63 A	A9V07263	4
Voltage rating (Ue)			400 - 415 V	
Operating frequency			50/60 Hz	
Accessories			Module CA907000	

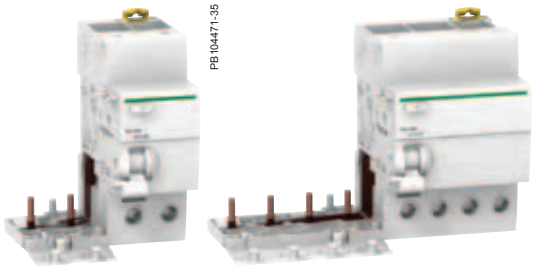
Vigi iC60 add-on residual current devices (SI type)

DB116619 DB123389

Country approval pictograms

IEC/EN 61009-1

PB104466-35 PB104471-35



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (≤ 30 mA),
  - protection of persons against electric shock by indirect contact (≥ 300 mA),
  - protection of installations against the risk of fire (300 mA).

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			SI				Width in 9 mm modules
Auxiliaries			**Without auxiliaries**				
2P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA** S	**1000 mA** S	
DB122462	Rating	25 A	**A9V30225**	**A9V31225**	-	-	3
		40 A	-	**A9V31240**	-	-	4
		63 A	-	**A9V31263**	**A9V35263**	**A9V39263**	4
3P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA** S	**1000 mA** S	
DB122463	Rating	25 A	-	**A9V31325**	-	-	6
		40 A	-	**A9V31340**	-	-	7
		63 A	-	**A9V31363**	**A9V35363**	**A9V39363**	7
4P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA** S	**1000 mA** S	
DB122464	Rating	25 A	-	**A9V31425**	-	-	6
		40 A	-	**A9V31440**	-	-	7
		63 A	-	**A9V31463**	**A9V35463**	**A9V39463**	7
Voltage rating (Ue)		2P	230 - 240 V				
		3P-4P	400 - 415 V				
Operating frequency			50/60 Hz				
Accessories			**Module CA907000**				

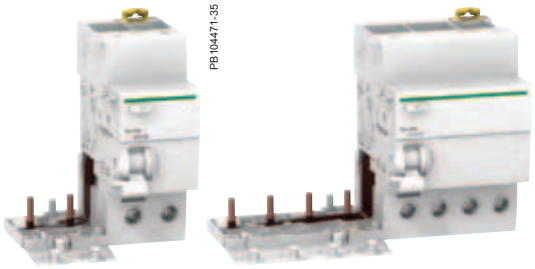
Vigi iC60 add-on residual current devices (AC type)

DB116619 DB123430

Country approval pictograms

IEC/EN 61009-1

PB104466-35 PB104471-35



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (⩽ 30 mA),
  - protection of persons against electric shock by indirect contact (⩾ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			AC							Width in 9 mm modules
Auxiliaries			Without auxiliaries							
2P		Sensitivity	10 mA	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122462	Rating	25 A	A9V10225	A9V41225	A9V12225	A9V44225	A9V16225	-	-	3
		40 A	-	A9V41240	-	A9V44240	A9V16240	-	-	4
		63 A	-	A9V41263	A9V12263	A9V44263	A9V16263	A9V15263	A9V19263	4
3P		Sensitivity	10 mA	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122463	Rating	25 A	-	A9V41325	-	A9V44325	A9V16325	-	-	6
		40 A	-	A9V41340	-	A9V44340	A9V16340	-	-	7
		63 A	-	A9V41363	-	A9V44363	A9V16363	A9V15363	A9V19363	7
4P		Sensitivity	10 mA	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122464	Rating	25 A	-	A9V41425	A9V12425	A9V44425	A9V16425	-	-	6
		40 A	-	A9V41440	-	A9V44440	A9V16440	-	-	7
		63 A	-	A9V41463	A9V12463	A9V44463	A9V16463	A9V15463	A9V19463	7
Voltage rating (Ue)		2P	230 - 240 V							
		3P-4P	400 - 415 V							
Operating frequency			50/60 Hz							
Accessories			Module CA907000							

Vigi iC60 add-on residual current devices for 110 V network

Type			AC		Width in 9 mm modules
Auxiliaries			Without auxiliaries		
2P		Sensitivity	30 mA	300 mA	
DB122462	Rating	25 A	A9V01225	A9V04225	3
		40 A	A9V01240	A9V04240	4
		63 A	A9V01263	A9V04263	4
Voltage rating (Ue)			110 V		
Operating frequency			50/60 Hz		
Accessories			Module CA907000		

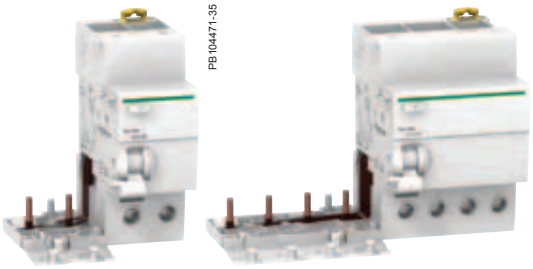
Vigi iC60 add-on residual current devices (A type)

DB116619 DB123430

Country approval pictograms

IEC/EN 61009-1

PB104466-35 PB104471-35



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			A						Width in 9 mm modules
Auxiliaries			Without auxiliaries						
2P		Sensitivity	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122462	Rating	25 A	A9V51225	A9V22225	A9V54225	A9V26225	-	-	3
		63 A	A9V51263	A9V22263	A9V54263	A9V26263	A9V25263	A9V29263	4
3P		Sensitivity	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122463	Rating	25 A	A9V51325	A9V22325	A9V54325	A9V26325	-	-	6
		63 A	A9V51363	-	A9V54363	A9V26363	A9V25363	A9V29363	7
4P		Sensitivity	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122464	Rating	25 A	A9V51425	A9V22425	A9V54425	A9V26425	-	-	6
		63 A	A9V51463	A9V22463	A9V54463	A9V26463	A9V25463	A9V29463	7
Voltage rating (Ue)		2P	230 - 240 V						
		3P-4P	400 - 415 V						
Operating frequency			50/60 Hz						
Accessories			Module CA907000						

Offer selection see page 201

Offer B

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Vigi iC60 add-on residual current devices for 400 V network

Type			A	Width in 9 mm modules
Auxiliaries			Without auxiliaries	
2P		Sensitivity	30 mA	
DB122462	Rating	63 A	A9V07263	4
Voltage rating (Ue)			400 - 415 V	
Operating frequency			50/60 Hz	
Accessories			Module CA907000	

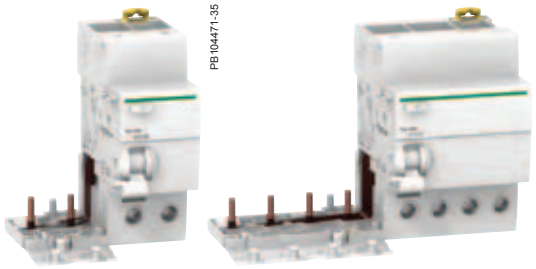
Vigi iC60 add-on residual current devices (SI type)

DB116619 DB123430

Country approval pictograms

IEC/EN 61009-1

PB104466-35 PB104471-35



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (≤ 30 mA),
  - protection of persons against electric shock by indirect contact (≥ 300 mA),
  - protection of installations against the risk of fire (300 mA).

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			SI				Width in 9 mm modules
Auxiliaries			**Without auxiliaries**				
2P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA S**	**1000 mA S**	
DB122462	Rating	25 A	**A9V30225**	**A9V61225**	-	-	3
		40 A	-	**A9V61240**	-	-	4
		63 A	-	**A9V61263**	**A9V65263**	**A9V39263**	4
3P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA S**	**1000 mA S**	
DB122463	Rating	25 A	-	**A9V61325**	-	-	6
		40 A	-	**A9V61340**	-	-	7
		63 A	-	**A9V61363**	**A9V65363**	**A9V39363**	7
4P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA S**	**1000 mA S**	
DB122464	Rating	25 A	-	**A9V61425**	-	-	6
		40 A	-	**A9V61440**	-	-	7
		63 A	-	**A9V61463**	**A9V65463**	**A9V39463**	7
Voltage rating (Ue)		2P	230 - 240 V				
		3P-4P	400 - 415 V				
Operating frequency			50/60 Hz				
Accessories			**Module CA907000**				

Vigi iC60 add-on residual current devices (type A)

DB405571

Country approval pictogram

IEC/EN 61009-1

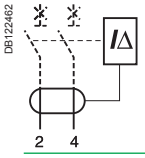
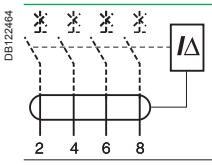
PB104464-45

PB104469-45

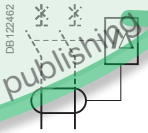
- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA).

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

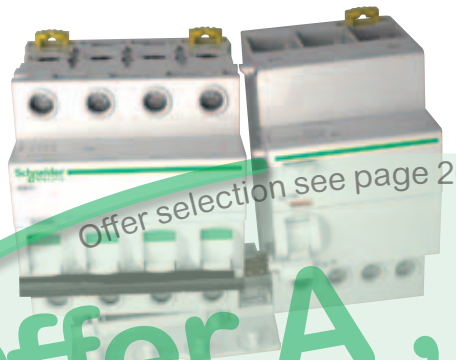
Type			A			Width in 9 mm modules
Auxiliaries			**Without auxiliaries**			
2P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	
DB122462 	Rating	25 A				3
		63 A	**A9V02663**	**A9V03663**	**A9V06663**	4
4P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	
DB122464 	Rating	63 A	**A9V02763**	-	**A9V06763**	7
Voltage rating (Ue)		2P	230 - 240 V			
		4P	400 - 415 V			
Operating frequency			50/60 Hz			
Accessories			**Module CA907000**			

Vigi iC60 add-on residual current devices for 110 V network

Type			A	Width in 9 mm modules
Auxiliaries			**Without auxiliaries**	
2P		**Sensitivity**	**30 mA**	
DB122462 	Rating	63 A	**A9V01663**	4
Voltage rating (Ue)			110 V	
Operating frequency			50/60 Hz	
Accessories			**Module CA907000**	

Vigi iC60 add-on residual current devices (AC, A, SI types) (cont.)

PB104556-51



Association iC60a, N, H, L + Vigi iC60

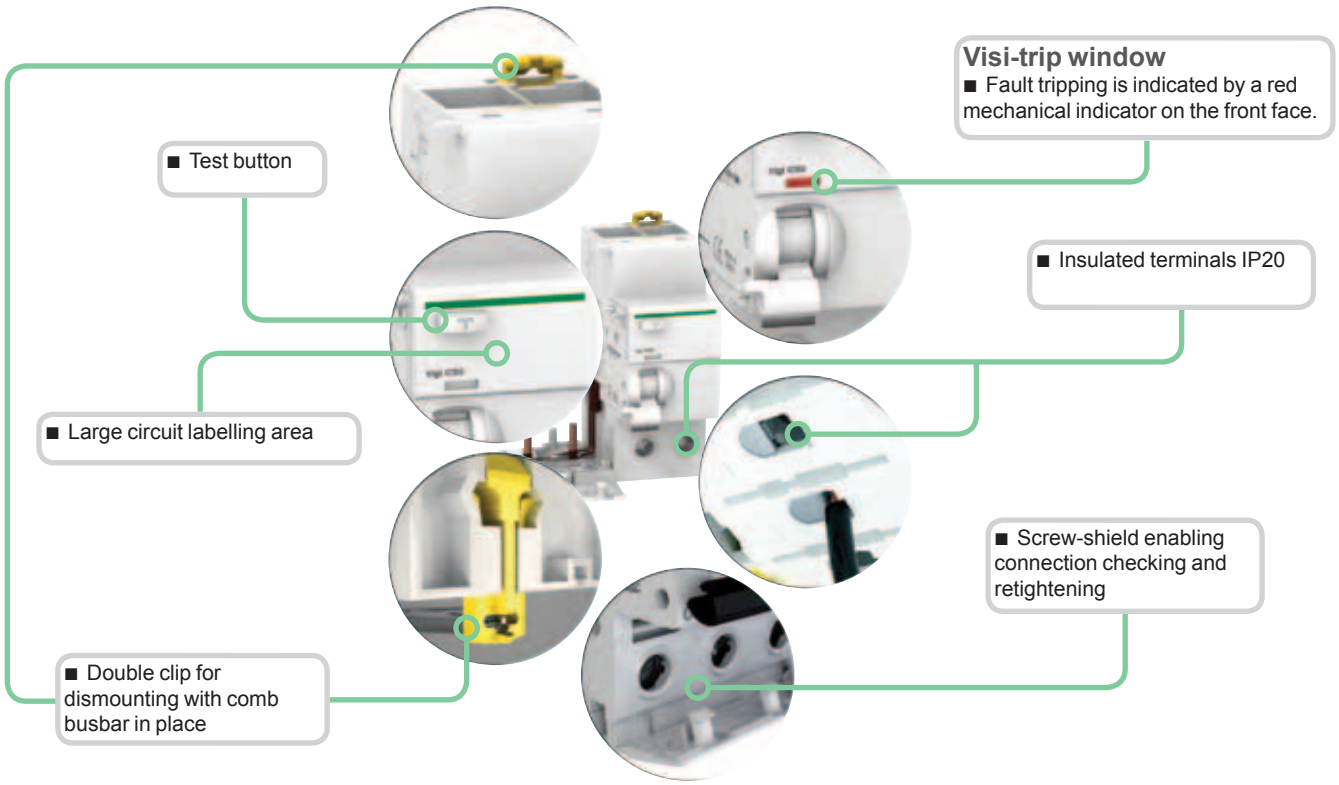
iC60	Vigi iC60 25 A	Vigi iC60 40 A	Vigi iC60 63 A
0.5 A to 25 A	■	■	■
32 A - 40 A	NO	■	■
50 A - 63 A	NO	NO	■

Association iC60L-MA + Vigi iC60

iC60	Vigi iC60 25 A	Vigi iC60 40 A	Vigi iC60 63 A
1.6 A to 16 A	■	■	■
25 A	NO	■	■
40 A	NO	NO	■

Combining iC60 L-MA units with Vigi modules of higher rating.

PB104466-40



SI type

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

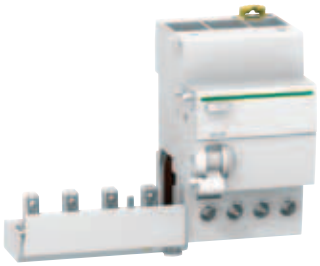
Vigi iC60 add-on residual current devices (AC type)

DB123399 DB106604 DB123400

Country approval pictograms

IEC/EN 61009-1

DB123611



- ■ Combined with iC60 circuit breaker, the Vigi iC60 provide:
- □ protection of persons against electric shock by direct contact (≤ 30 mA),
- □ protection of persons against electric shock by indirect contact (≥ 100 mA),
- □ protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			AC							Width in 9 mm modules
Auxiliaries			Without auxiliaries							
2P		Sensitivity	10 mA	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122462	Rating	25 A	A9Q10225	A9Q11225	A9Q12225	A9Q14225	A9Q16225	-	-	3
		40 A	-	A9Q11240	-	A9Q14240	A9Q16240	-	-	4
		63 A(1)	-	A9V11263	A9V12263	A9V14263	A9V16263	A9V15263	A9V19263	4
3P		Sensitivity	10 mA	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122463	Rating	25 A	-	A9Q11325	-	A9Q14325	A9Q16325	-	-	6
		40 A	-	A9Q11340	-	A9Q14340	A9Q16340	-	-	7
		63 A(1)	-	A9V11363	-	A9V14363	A9V16363	A9V15363	A9V19363	7
4P		Sensitivity	10 mA	30 mA	100 mA	300 mA	500 mA	300 mA S	1000 mA S	
DB122464	Rating	25 A	-	A9Q11425	A9Q12425	A9Q14425	A9Q16425	-	-	6
		40 A	-	A9Q11440	-	A9Q14440	A9Q16440	-	-	7
		63 A(1)	-	A9V11463	A9V12463	A9V14463	A9V16463	A9V15463	A9V19463	7
Voltage rating (Ue)		2P	230 - 240 V							
		3P-4P	400 - 415 V							
Operating frequency			50/60 Hz							
Accessories			Module CA907000							

(1) Vigi iC60 add-on residual current devices rated at 63 A are VDE approved.

Vigi iC60 add-on residual current devices for 110 V network

Type			AC		Width in 9 mm modules
Auxiliaries			Without auxiliaries		
2P		Sensitivity	30 mA	300 mA	
DB122462	Rating	25 A	A9Q01225	A9Q04225	3
		40 A	A9Q01240	A9Q04240	4
		63 A(1)	A9V01263	A9V04263	4
Voltage rating (Ue)			110 V		
Operating frequency			50/60 Hz		
Accessories			Module CA907000		

(1) Vigi iC60 add-on residual current devices rated at 63 A are VDE approved.

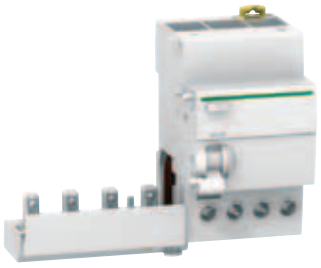
Vigi iC60 add-on residual current devices (A type)

DB123399 DB106604 DB123400

Country approval pictograms

IEC/EN 61009-1

DB123611



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			A						Width in 9 mm modules
Auxiliaries			**Without auxiliaries**						
2P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
DB122462	Rating	25 A	**A9Q21225**	**A9Q22225**	**A9Q24225**	**A9Q26225**	-	-	3
		63 A(1)	**A9V21263**	**A9V22263**	**A9V24263**	**A9V26263**	**A9V25263**	**A9V29263**	4
3P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
DB122463	Rating	25 A	**A9Q21325**	**A9Q22325**	**A9Q24325**	**A9Q26325**	-	-	6
		63 A(1)	**A9V21363**	-	**A9V24363**	**A9V26363**	**A9V25363**	**A9V29363**	7
4P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
DB122464	Rating	25 A	**A9Q21425**	**A9Q22425**	**A9Q24425**	**A9Q26425**	-	-	6
		63 A(1)	**A9V21463**	**A9V22463**	**A9V24463**	**A9V26463**	**A9V25463**	**A9V29463**	7
Voltage rating (Ue)		2P	230 - 240 V						
		3P-4P	400 - 415 V						
Operating frequency			50/60 Hz						
Accessories			**Module CA907000**						

(1) Vigi iC60 add-on residual current devices rated at 63 A are VDE approved.

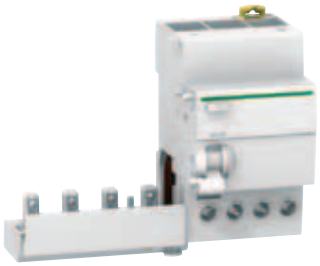
Vigi iC60 add-on residual current devices (SI type)

DB123399 DB106604 DB123400

Country approval pictograms

IEC/EN 61009-1

DB123611



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (≤ 30 mA),
  - protection of persons against electric shock by indirect contact (≥ 300 mA),
  - protection of installations against the risk of fire (300 mA).

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			SI				Width in 9 mm modules
Auxiliaries			**Without auxiliaries**				
2P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA S**	**1000 mA S**	
DB122462	Rating	25 A	**A9Q30225**	**A9Q31225**	-	-	3
		40 A	-	**A9Q31240**	-	-	4
		63 A(1)	-	**A9V31263**	**A9V35263**	**A9V39263**	4
3P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA S**	**1000 mA S**	
DB122463	Rating	25 A	-	**A9Q31325**	-	-	6
		40 A	-	**A9Q31340**	-	-	7
		63 A(1)	-	**A9V31363**	**A9V35363**	**A9V39363**	7
4P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA S**	**1000 mA S**	
DB122464	Rating	25 A	-	**A9Q31425**	-	-	6
		40 A	-	**A9Q31440**	-	-	7
		63 A(1)	-	**A9V31463**	**A9V35463**	**A9V39463**	7
Voltage rating (Ue)		2P	230 - 240 V				
		3P-4P	400 - 415 V				
Operating frequency			50/60 Hz				
Accessories			**Module CA907000**				

(1) Vigi iC60 add-on residual current devices rated at 63 A are VDE approved.

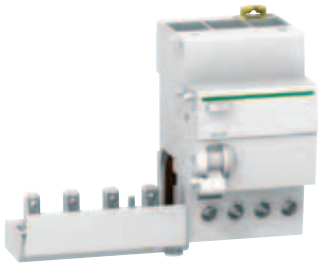
Vigi iC60 add-on residual current devices (AC type)

DB122858

Country approval pictogram

IEC/EN 61009-1

DB123611



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (⩽ 30 mA),
  - protection of persons against electric shock by indirect contact (⩾ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			AC							Width in 9 mm modules
Auxiliaries			**Without auxiliaries**							
2P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
DB122462	Rating	25 A	**A9Q10225**	**A9Q41225**	**A9Q12225**	**A9Q44225**	**A9Q16225**	-	-	3
		40 A	-	**A9Q41240**	-	**A9Q44240**	**A9Q16240**	-	-	4
		63 A(1)	-	**A9V41263**	**A9V12263**	**A9V44263**	**A9V16263**	**A9V15263**	**A9V19263**	4
3P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
DB122463	Rating	25 A	-	**A9Q41325**	-	**A9Q44325**	**A9Q16325**	-	-	6
		40 A	-	**A9Q41340**	-	**A9Q44340**	**A9Q16340**	-	-	7
		63 A(1)	-	**A9V41363**	-	**A9V44363**	**A9V16363**	**A9V15363**	**A9V19363**	7
4P		**Sensitivity**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
DB122464	Rating	25 A	-	**A9Q41425**	**A9Q12425**	**A9Q44425**	**A9Q16425**	-	-	6
		40 A	-	**A9Q41440**	-	**A9Q44440**	**A9Q16440**	-	-	7
		63 A(1)	-	**A9V41463**	**A9V12463**	**A9V44463**	**A9V16463**	**A9V15463**	**A9V19463**	7
Voltage rating (Ue)		2P	230 - 240 V							
		3P-4P	400 - 415 V							
Operating frequency			50/60 Hz							
Accessories			**Module CA907000**							

(1) Vigi iC60 add-on residual current devices rated at 63 A are VDE approved.

Vigi iC60 add-on residual current devices for 110 V network

Type			AC		Width in 9 mm modules
Auxiliaries			**Without auxiliaries**		
2P		**Sensitivity**	**30 mA**	**300 mA**	
DB122462	Rating	25 A	**A9Q01225**	**A9Q04225**	3
		40 A	**A9Q01240**	**A9Q04240**	4
		63 A(1)	**A9V01263**	**A9V04263**	4
Voltage rating (Ue)			110 V		
Operating frequency			50/60 Hz		
Accessories			**Module CA907000**		

(1) Vigi iC60 add-on residual current devices rated at 63 A are VDE approved.

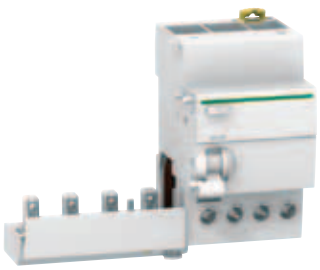
Vigi iC60 add-on residual current devices (A type)

DB122858

Country approval pictogram

IEC/EN 61009-1

DB123611



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (30 mA),
  - protection of persons against electric shock by indirect contact (≥ 100 mA),
  - protection of installations against the risk of fire (300 mA or 500 mA).

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			A						Width in 9 mm modules
Auxiliaries			**Without auxiliaries**						
2P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
DB122462	Rating	25 A	**A9Q51225**	**A9Q22225**	**A9Q54225**	**A9Q26225**	-	-	3
		63 A(1)	**A9V51263**	**A9V22263**	**A9V54263**	**A9V26263**	**A9V25263**	**A9V29263**	4
3P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
DB122463	Rating	25 A	**A9Q51325**	**A9Q22325**	**A9Q54325**	**A9Q26325**	-	-	6
		63 A(1)	**A9V51363**	-	**A9V54363**	**A9V26363**	**A9V25363**	**A9V29363**	7
4P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
DB122464	Rating	25 A	**A9Q51425**	**A9Q22425**	**A9Q54425**	**A9Q26425**	-	-	6
		63 A(1)	**A9V51463**	**A9V22463**	**A9V54463**	**A9V26463**	**A9V25463**	**A9V29463**	7
Voltage rating (Ue)		2P	230 - 240 V,						
		3P-4P	400 - 415 V						
Operating frequency			50/60 Hz						
Accessories			**Module CA907000**						

(1) Vigi iC60 add-on residual current devices rated at 63 A are VDE approved.

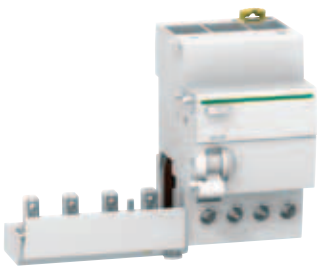
Vigi iC60 add-on residual current devices (SI type)

DB122858

Country approval pictogram

IEC/EN 61009-1

DB123611



- Combined with iC60 circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (≤ 30 mA),
  - protection of persons against electric shock by indirect contact (≥ 300 mA),
  - protection of installations against the risk of fire (300 mA).

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

Catalogue numbers

Vigi iC60 add-on residual current devices for 230/400 V network

Type			SI				Width in 9 mm modules
Auxiliaries			**Without auxiliaries**				
2P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA S**	**1000 mA S**	
DB122462	Rating	25 A	**A9Q30225**	**A9Q61225**	-	-	3
		40 A	-	**A9Q61240**	-	-	4
		63 A(1)	-	**A9V61263**	**A9V65263**	**A9V39263**	4
3P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA S**	**1000 mA S**	
DB122463	Rating	25 A	-	**A9Q61325**	-	-	6
		40 A	-	**A9Q61340**	-	-	7
		63 A(1)	-	**A9V61363**	**A9V65363**	**A9V39363**	7
4P		**Sensitivity**	**10 mA**	**30 mA**	**300 mA S**	**1000 mA S**	
DB122464	Rating	25 A	-	**A9Q61425**	-	-	6
		40 A	-	**A9Q61440**	-	-	7
		63 A(1)	-	**A9V61463**	**A9V65463**	**A9V39463**	7
Voltage rating (Ue)		2P	230 - 240 V				
		3P-4P	400 - 415 V				
Operating frequency			50/60 Hz				
Accessories			**Module CA907000**				
			(1) Vigi iC60 add-on residual current devices rated at 63 A are VDE approved.				

Vigi iC60 add-on residual current devices (AC, A, SI types) (cont.)

DB123612

Association iC60a, N, H, L + Vigi iC60

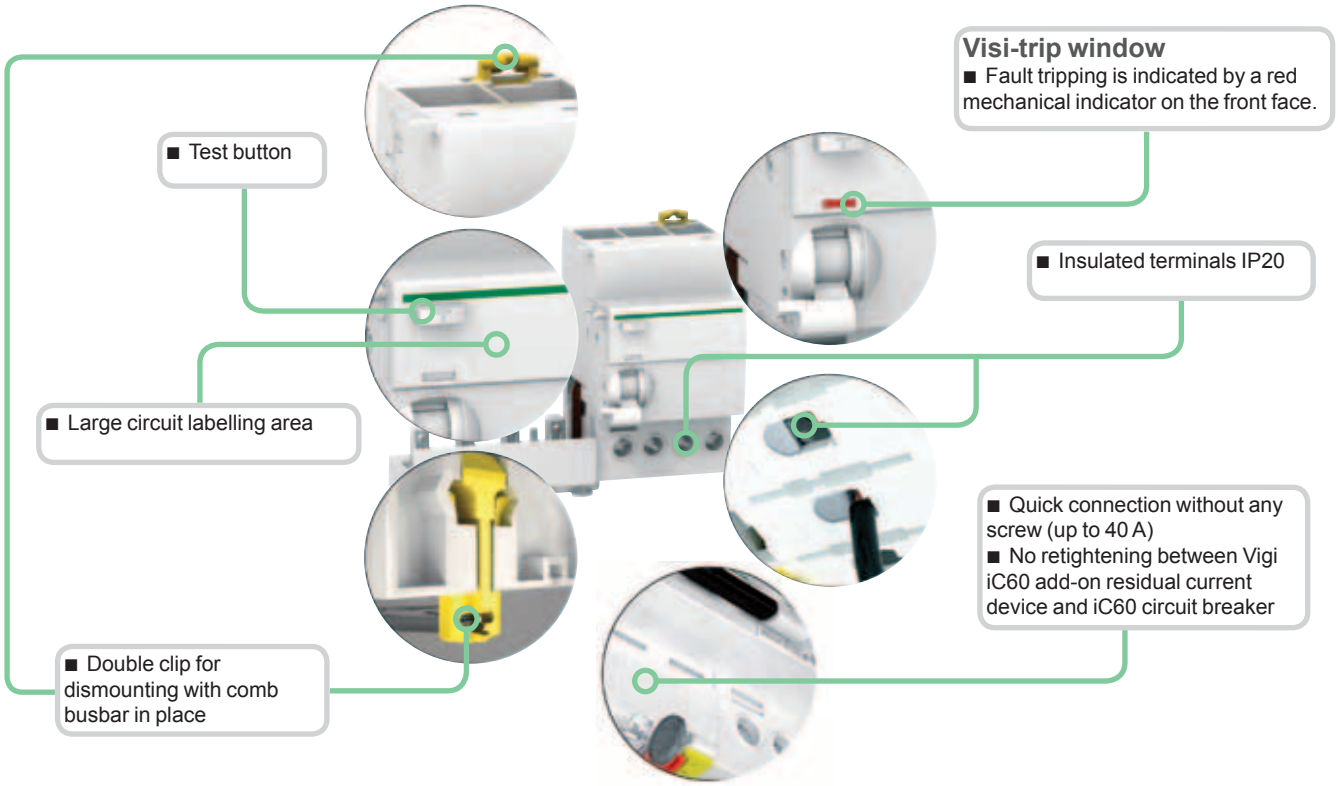
iC60	Vigi iC60 25 A	Vigi iC60 40 A	Vigi iC60 63 A
0.5 A to 25 A	■	■	■
32 A - 40 A	NO	■	■
50 A - 63 A	NO	NO	■

Association iC60L-MA + Vigi iC60

iC60	Vigi iC60 25 A	Vigi iC60 40 A	Vigi iC60 63 A
1.6 A to 16 A	■	■	■
25 A	NO	■	■
40 A	NO	NO	■

Combining iC60 L-MA units with Vigi modules of higher rating.

DB123515



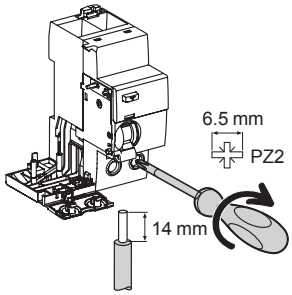
SI type

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

Vigi iC60 add-on residual current devices (AC, A, SI types) (cont.)

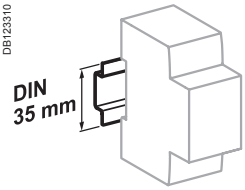
Connection

DB122948



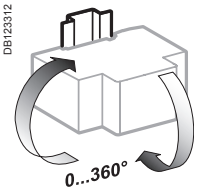
Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
			DB122945 	DB122946 
Vigi iC60	**25 A**	2 N.m	1 to 25 mm²	1 to 16 mm²
	40 to 63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²

DB123310



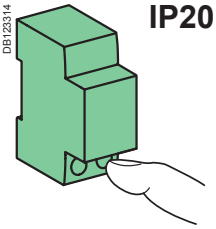
Clip on DIN rail 35 mm.

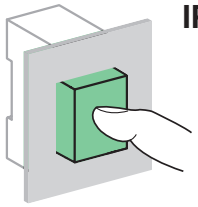
DB123312



Indifferent position of installation.

DB123314





Technical data

Main characteristics		
Insulation voltage (Ui)		500 V
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV
According to IEC/EN 61009-1		
Surge current withstand (8/20 µs) without tripping	AC and A types (no selective Ⓢ)	250 Â
	AC, A types (selective Ⓢ)	3 kÂ
	SI type	3 kÂ
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61009-1 § 3.3.8
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Operating temperature	AC type	-5°C to +60°C
	A and **SI** types -25°C	-25°C to +60°C
Storage temperature		-40°C to +85°C

Vigi iC60 add-on residual current devices (AC, A, SI types) (cont.)

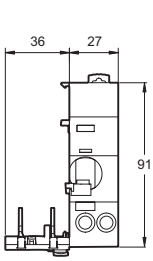
Weight (g)

Add-on residual current devices	
Type	**Vigi iC60**
2P	165
3P	210
4P	245

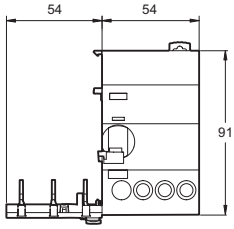
Dimensions (mm)

Vigi iC60 25 A

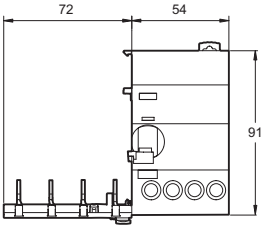
DB122766



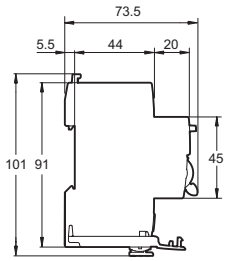
2P



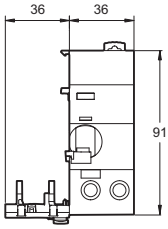
3P



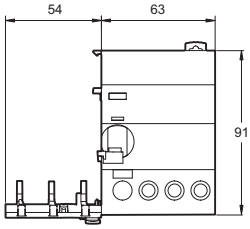
4P



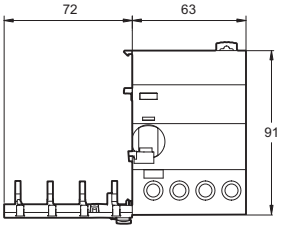
Vigi iC60 40 and 63 A



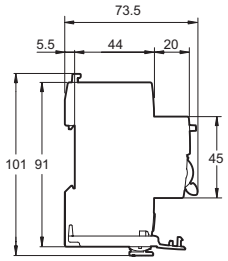
2P



3P



4P



Vigi iC60 add-on residual current devices for iC60 double terminals (AC type)

DB116619

Country approval pictogram

IEC/EN 61009-1

- Combined with iC60 double tunnel terminals circuit breaker, the Vigi iC60 provide:
  - protection of persons against electric shock by direct contact (⩽ 30 mA),
  - protection of persons against electric shock by indirect contact (⩾ 100 mA),
  - protection of installations against the risk of fire (300 mA).

PB107415-40

PB107417-40

PB107419-40

Catalogue numbers

Vigi iC60 add-on residual current devices

Type			AC ~				Width in 9 mm modules
Product			Vigi iC60				
Auxiliaries			Without auxiliaries				
2P		Sensitivity	10 mA	30 mA	100 mA	300 mA	
DB405610	Rating	25 A	A9W10225	A9W11225 A9W01225*	A9W12225	A9W14225	3
		63 A	-	A9W11263	A9W12263	A9W14263	4
3P		Sensitivity	10 mA	30 mA	100 mA	300 mA	
DB122463	Rating	25 A	-	A9W11325	-	A9W14325	6
		63 A	-	A9W11363	-	A9W14363	7
4P		Sensitivity	10 mA	30 mA	100 mA	300 mA	
DB405511	Rating	25 A	-	A9W11425	A9W12425	A9W14425	6
		63 A	-	A9W11463	A9W12463	A9W14463	7
Voltage rating (Ue)		2P	230 - 240 V Except * 130 V				
		3P-4P	400 - 415 V				
Operating frequency			50/60 Hz				
Accessories			Module CA907000				

Vigi iC60 add-on residual current devices for iC60 double terminals (A type)

DB116619

Country approval pictogram

IEC/EN 61009-1

■ Combined with iC60 double tunnel terminals circuit breaker, the Vigi iC60 provide:
□ protection of persons against electric shock by direct contact (30 mA),
□ protection of persons against electric shock by indirect contact (≥ 100 mA),
□ protection of installations against the risk of fire (300 mA or 500 mA).

PB107416-40

PB107418-40

PB107420-40

Catalogue numbers

Vigi iC60 add-on residual current devices

Type			A					Width in 9 mm modules
Product			Vigi iC60					
Auxiliaries			Without auxiliaries					
2P		Sensitivity	30 mA	100 mA	300 mA	300 mA S	500 mA	
DB405510	Rating	25 A	A9W21225	A9W22225	A9W24225	-	A9W26225	3
		63 A	A9W21263	A9W22263	A9W24263	A9W25263	A9W26263	4
3P		Sensitivity	30 mA	100 mA	300 mA	300 mA S	500 mA	
DB122463	Rating	25 A	A9W21325	-	A9W24325	-	A9W26325	6
		63 A	A9W21363	-	A9W24363	A9W25363	A9W26363	7
4P		Sensitivity	30 mA	100 mA	300 mA	300 mA S	500 mA	
DB405511	Rating	25 A	A9W21425	A9W22425	A9W24425	-	A9W26425	6
		63 A	A9W21463	A9W22463	A9W24463	A9W25463	A9W26463	7
Voltage rating (Ue)		2P	230 - 240 V					
		3P-4P	400 - 415 V					
Operating frequency			50/60 Hz					
Accessories			Module CA907000					

Vigi iC60 add-on residual current devices for iC60 double terminals (SI type)

DB116619

Country approval pictogram

IEC/EN 61009-1

■ Combined with iC60 double tunnel terminals circuit breaker, the Vigi iC60 provide:
□ protection of persons against electric shock by direct contact (⩽ 30 mA),
□ protection of persons against electric shock by indirect contact (⩾ 300 mA),
□ protection of installations against the risk of fire (300 mA).

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

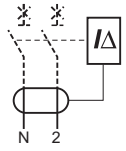
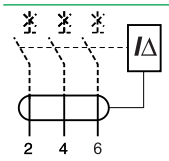
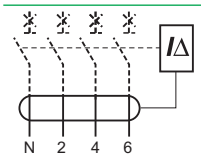
PB107415-40

PB107417-40

PB107419-40

Catalogue numbers

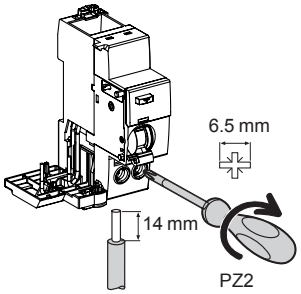
Vigi iC60 add-on residual current devices

Type			SI			Width in 9 mm modules
Product			Vigi iC60			
Auxiliaries			Auxiliaries			
2P		Sensitivity	10 mA	30 mA	300 mA S	
DB405510 	Rating	25 A	A9W30225	A9W31225	-	3
		63 A	-	A9W31263	A9W35263	4
3P		Sensitivity	10 mA	30 mA	300 mA S	
DB122463 	Rating	25 A	-	A9W31325	-	6
		63 A	-	A9W31363	A9W35363	7
4P		Sensitivity	10 mA	30 mA	300 mA S	
DB405511 	Rating	25 A	-	A9W31425	-	6
		63 A	-	A9W31463	A9W35463	7
Voltage rating (Ue)		2P	230 - 240 V			
		3P-4P	400 - 415 V			
Operating frequency			50/60 Hz			
Accessories			Module CA907000			

Vigi iC60 add-on residual current devices for iC60 double terminals (AC, A, SI types)

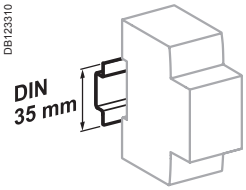
Connection

DB124393



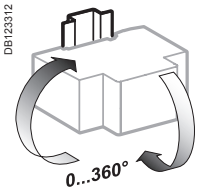
Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
			DB122945	DB122946
Vigi iC60	25 A	2 N.m	1 to 25 mm²	1 to 16 mm²
	63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²

DB123310



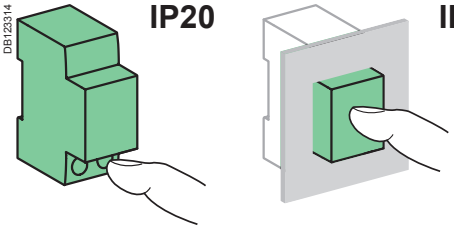
Clip on DIN rail 35 mm.

DB123312



Indifferent position of installation.

DB123314



Technical data

Main characteristics		
Insulation voltage (Ui)		500 V
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV
According to IEC/EN 61009-1		
Surge current withstand (8/20 µs) without tripping	AC and A types (no selective)	250 Â
	AC, A types (selective Ⓢ)	3 kÂ
	SI type	3 kÂ
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61009-1 § 3.3.8
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Operating temperature	AC type	-5°C to +60°C
	A and SI types	-25°C to +60°C
Storage temperature		-40°C to +85°C

Vigi iC60 add-on residual current devices for iC60 double terminals (AC, A, SI types) (cont.)

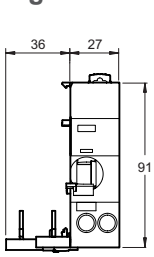
Weight (g)

Add-on residual current devices	
Type	**Vigi iC60**
2P	165
3P	210
4P	245

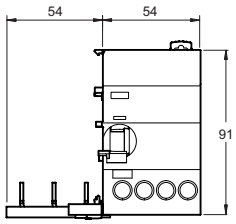
Dimensions (mm)

Vigi iC60 25 A

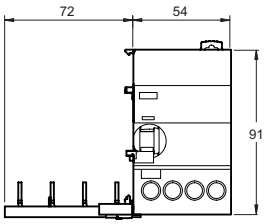
DB124400



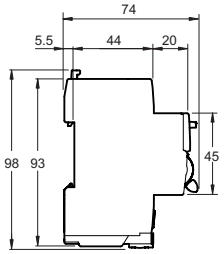
2P



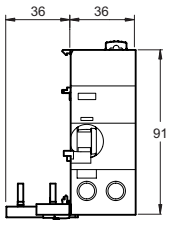
3P



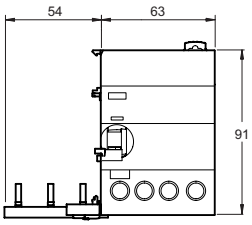
4P



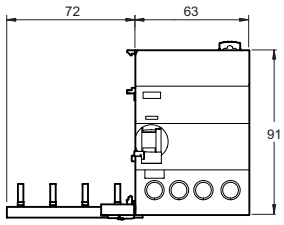
Vigi iC60 63 A



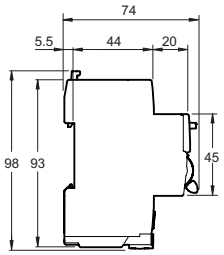
2P



3P

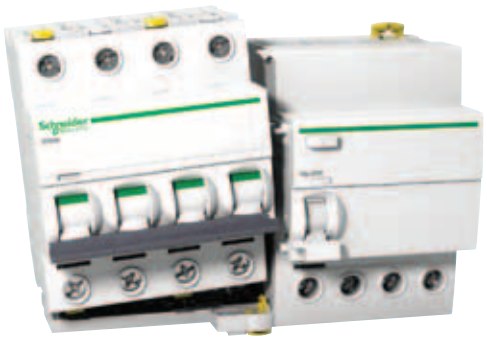


4P



Vigi iC60 add-on residual current devices for iC60 double terminals (AC, A, SI types) (cont.)

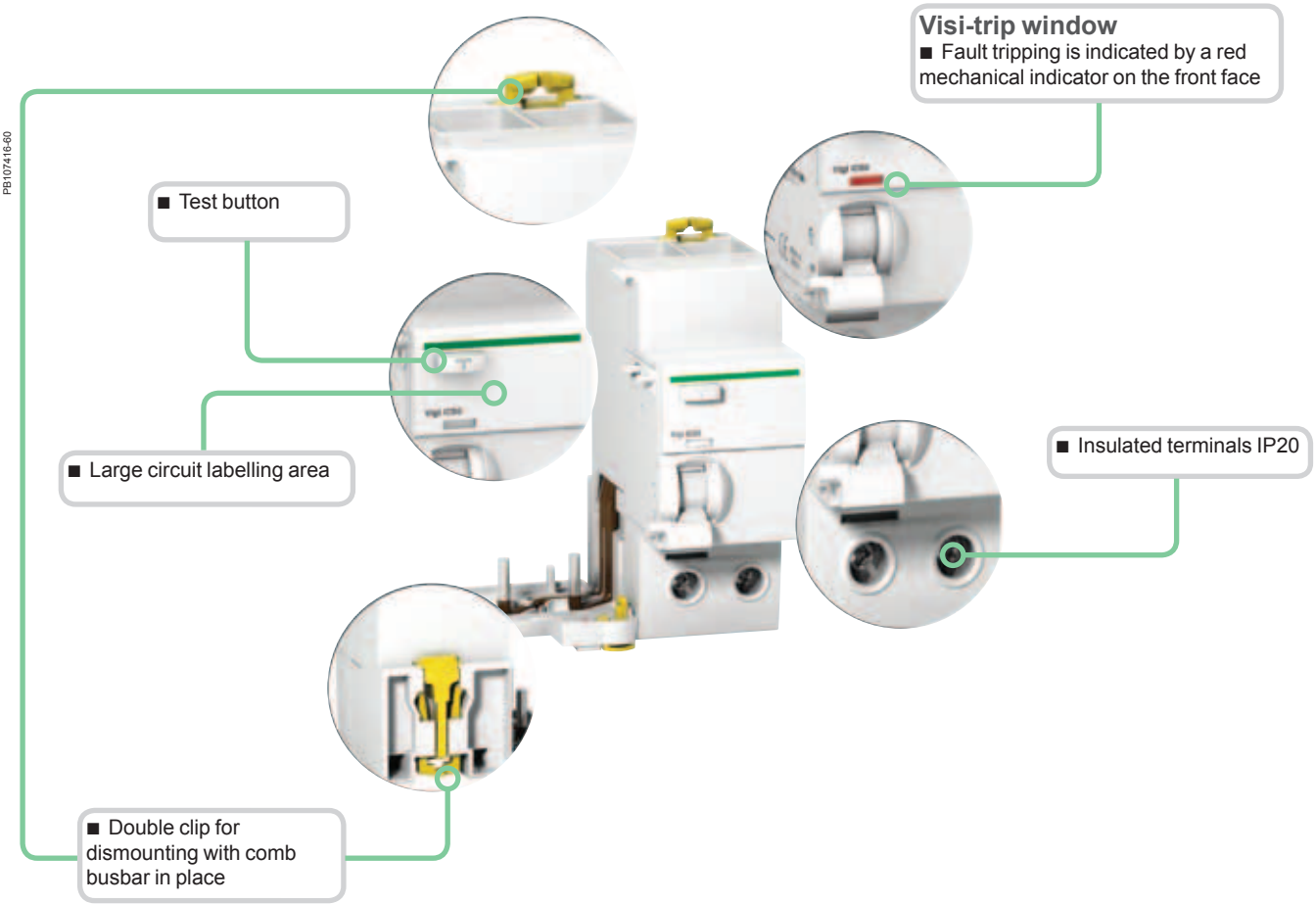
DB124394



Association iC60N, H + Vigi iC60

iC60	Vigi iC60 25 A	Vigi iC60 63 A
0.5 A to 25 A	■	■
32 A - 40 A	NO	■
50 A - 63 A	NO	■

PB107416-60



Type SI

The **SI** type provides increased immunity from electrical interference and polluted or corrosive environments.

Vigi C120 add-on residual current devices (type AC)

DB123430

Country approval pictograms

EN 61009

When a Vigi C120 device is combined with a C120 circuit breaker, it provides the following functions:
- protection of persons against electric shock by direct contact (30 mA),
- protection of persons against electric shock by indirect contact (≥ 300 mA),
- protection of installations against fire hazards (300 mA to 1000 mA).

PB107924-30

2P

PB107925-30

3P

PB107926-30

4P

Catalogue numbers

Vigi C120 add-on residual current devices

Type		AC ~					Width in 9 mm modules
Product		Vigi C120					
Auxiliaries		Without auxiliary					
2P	Sensitivity	30 mA	300 mA	500 mA	300 mA S	1000 mA S	
dess. 077		A9N18563	A9N18564	A9N18565	A9N18544	A9N18545	7
3P	Sensitivity	30 mA	300 mA	500 mA	300 mA S	1000 mA S	
dess. 079		A9N18566	A9N18567	A9N18568	A9N18546	A9N18547	10
4P	Sensitivity	30 mA	300 mA	500 mA	300 mA S	1000 mA S	
dess. 078B		A9N18569 A9N18542(1)	A9N18570 A9N18543(1)	A9N18571	A9N18548	A9N18549	10
Operating voltage (Ue)	2P	230 - 240 V					
	3P-4P	400 - 415 V					
Operating frequency		50/60 Hz					
Accessories		Module CA907012 and CA907013					

(1) specific offer for France

Vigi C120 add-on residual current devices (type A)

DB123430

Country approval pictograms

EN 61009

When a Vigi C120 device is combined with a C120 circuit breaker, it provides the following functions:
- protection of persons against electric shock by direct contact (30 mA),
- protection of persons against electric shock by indirect contact (≥ 300 mA),
- protection of installations against fire hazards (300 mA to 1000 mA).

PB107924-30

2P

PB107925-30

3P

PB107926-30

4P

Catalogue numbers

Vigi C120 add-on residual current devices

Type		A						Width in 9 mm modules
Product		Vigi C120						
Auxiliaries		Without auxiliary						
2P	Sensitivity	30 mA	300 mA	500 mA	300 mA S	500 mA S	1000 mA S	
dess. 077		A9N18572	A9N18573	A9N18574	-	-	-	7
3P	Sensitivity	30 mA	300 mA	500 mA	300 mA S	500 mA S	1000 mA S	
dess. 079		A9N18575	A9N18576	A9N18577	-	-	-	10
4P	Sensitivity	30 mA	300 mA	500 mA	300 mA S	500 mA S	1000 mA S	
dess. 078B		A9N18578	A9N18579	A9N18580	A9N18587	A9N18588	A9N18589	10
Operating voltage (Ue)	2P	230 - 240 V						
	3P-4P	400 - 415 V						
Operating frequency		50/60 Hz						
Accessories		Module CA907012 and CA907013						

Vigi C120 add-on residual current devices (type *SI*)

DB123430

Country approval pictograms

PB107924-30

2P

PB107925-30

3P

PB107926-30

4P

EN 61009

When a Vigi C120 device is combined with a C120 circuit breaker, it provides the following functions:
- protection of persons against electric shock by direct contact (30 mA),
- protection of persons against electric shock by indirect contact (≥ 300 mA),
- protection of installations against fire hazards (300 mA to 1000 mA).

Special feature of type *SI* :
They are appropriate for operating in environments with:
- high risk of nuisance tripping: frequent lightning strikes, IT system, presence of electronic ballasts, frequency converters, presence of switchgear incorporating lighting type interference filters, computer system, etc.
- blind sources:
  - presence of harmonics or high frequency rejections
  - presence of DC components: diodes, diode bridges, switch-mode power supplies, etc.
- protected against nuisance tripping caused by transient voltage surges (lightning strike, operation of switchgear on the network, etc.)

Catalogue numbers

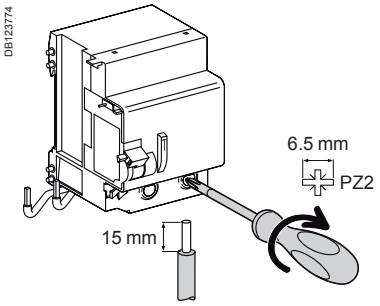
Vigi C120 add-on residual current devices

Type		*SI*					Width in 9 mm modules
Product		**Vigi C120**					
Auxiliaries		**Without auxiliary**					
2P	**Sensitivity**	**30 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
dess. 077		**A9N18591**	**A9N18592**	**-**	**A9N18556**	**A9N18557**	7
3P	**Sensitivity**	**30 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
dess. 079		**A9N18594**	**A9N18595**	**-**	**A9N18558**	**A9N18559**	10
4P	**Sensitivity**	**30 mA**	**300 mA**	**500 mA**	**300 mA S**	**1000 mA S**	
dess. 078B		**A9N18597** **A9N18554**(1)	**A9N18598** **A9N18555**(1)	**A9N18599**	**A9N18560**	**A9N18561**	10
Operating voltage (Ue)	2P	230 - 240 V					
	3P-4P	400 - 415 V					
Operating frequency		50 Hz					
Accessories		**Module CA907012 and CA907013**					

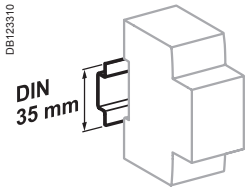
(1) specific offer for France

Vigi C120 add-on residual current devices (types AC, A and *SI*)

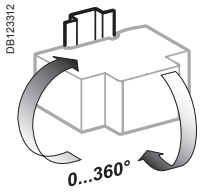
Connection



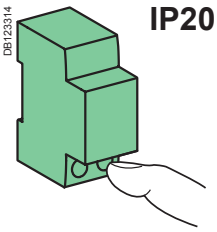
Type	Sensitivity	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
			DB122945	DB122946
Vigi C120	30...1000 mA	3.5 N.m	1 to 50 mm²	1 to 35 mm²

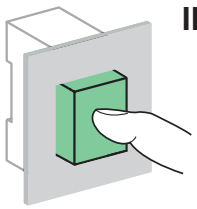


Clips onto 35 mm DIN rail.



Any installation position.





Technical data

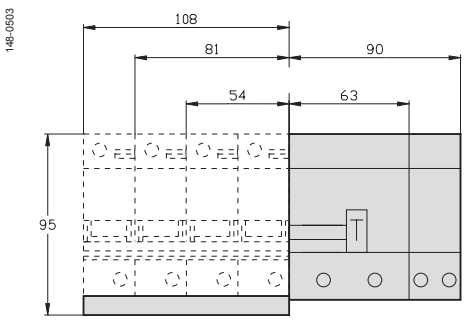
Main characteristics		
To IEC 60947-2		
Insulation voltage (Ui)		500 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		6 kV
To EN 61009		
Impulse current withstand (8/20 µs) without tripping	Types AC and A (non-selective Ⓢ)	250 Â
	Types AC and A (selective Ⓢ)	3 kÂ
	Types *SI* (non-selective Ⓢ)	3 kÂ
	Types *SI* (selective Ⓢ)	5 kÂ
Additional characteristics		
Degree of protection	Device only	IP20
	Device in a modular enclosure	IP40 Insulation class II
Operating temperature	Type AC	-5 °C to +60 °C
	Types A and *SI*	-25 °C to +60 °C
Storage temperature		-40 °C to +85 °C

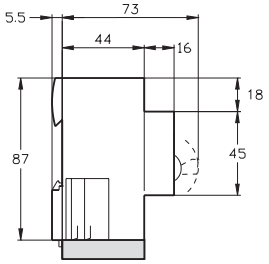
Weight (g)

Add-on residual current devices	
Type	**Vigi C120**
2P	325
3P	500
4P	580

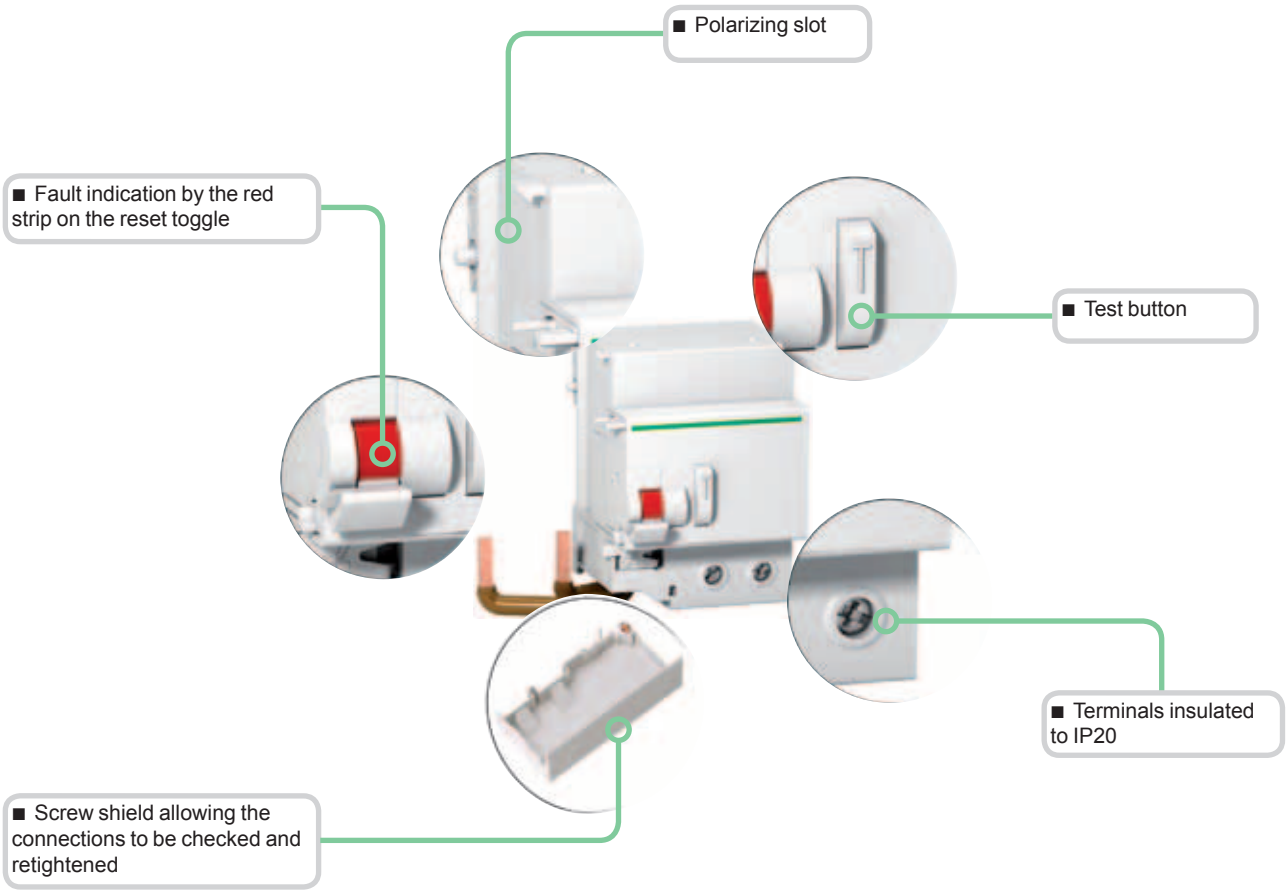
Dimensions (mm)

C120 + Vigi C120





Vigi C120 add-on residual current devices (types AC, A and *SI*) (cont.)

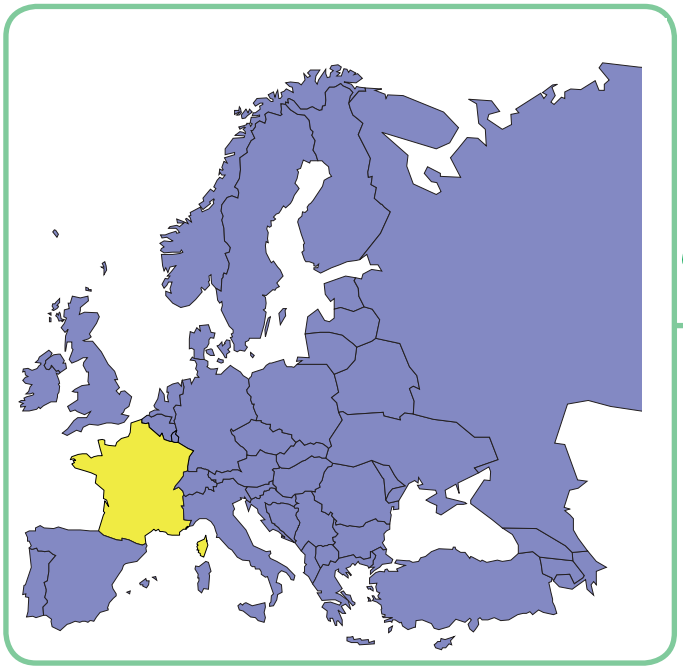


Type *SI*
The ***SI*** type provides increased immunity from electrical interference and polluted or corrosive environments.

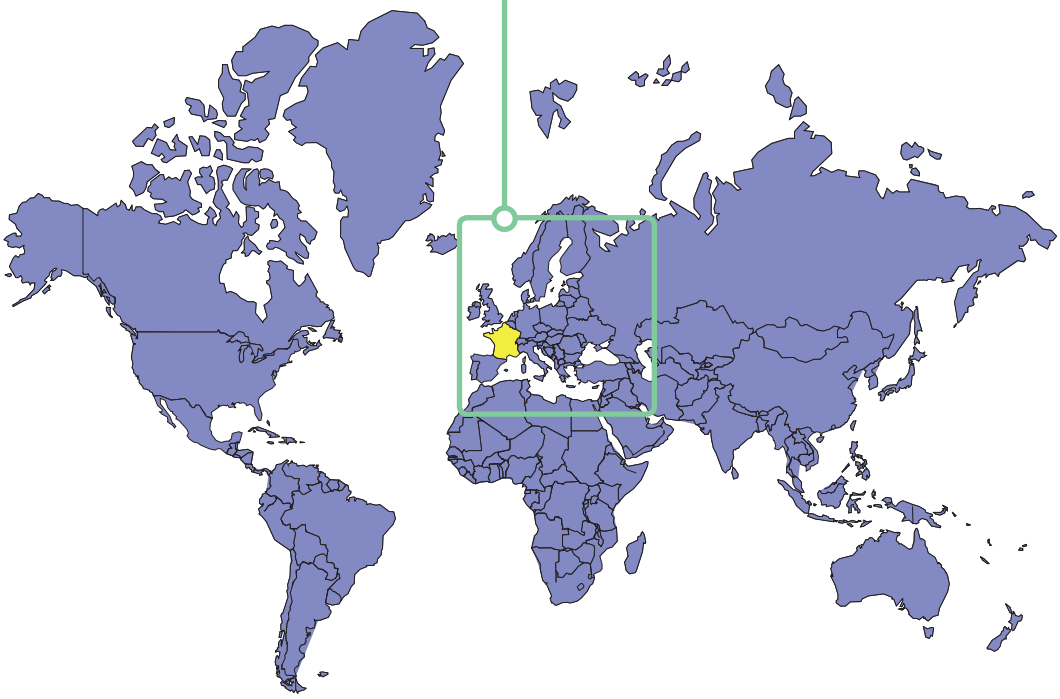
Vigi NG125
Contents

Schneider Electric's range of add-on residual current devices consists of different products (A, B) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.



Vigi NG125 add-on residual current devices (AC type)

DB116619

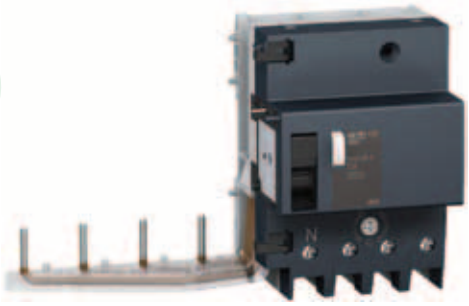
Country approval pictogram

IEC/EN 61009-1

PB103984-40

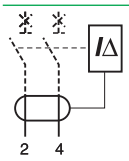
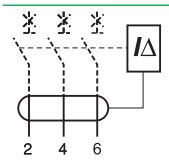
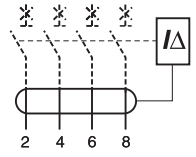
PB103985-40

PB103986-40



■ When it is combined with an NG125 circuit breaker, the Vigi NG125 add-on residual current device offers the following functions:
□ protection of persons against electric shocks by direct contact (30 mA),
□ protection of persons against electric shocks by indirect contact (300 mA),
□ protection of installations against fire risks (300 mA).

Catalogue numbers

Vigi NG125 add-on residual current devices					
Type			**AC** ~		**Width in 9 mm modules**
Product			**Vigi NG125**		
Auxiliaries			**Without auxiliaries**		
2P		**Sensitivity**	**30 mA**	**300 mA**	
DB122462 	Rating	63 A	**19000**	**19001**	5
3P		**Sensitivity**	**30 mA**	**300 mA**	
DB122463 	Rating	63 A	**19002**	**19003**	9
4P		**Sensitivity**	**30 mA**	**300 mA**	
DB122464 	Rating	63 A	**19004**	**19005**	9
Voltage rating (Ue)			230 - 240 V, 400 - 415 V		
Operating frequency			50/60 Hz		
Accessories			**Module CM907006**		

Vigi NG125 add-on residual current devices (A type)

DB116619

Country approval pictogram

IEC/EN 61009-1

0943831M-40

PB103998-40

■ When it is combined with an NG125 circuit breaker, the Vigi NG125 add-on residual current device offers the following functions:
□ protection of persons against electric shocks by direct contact (30 mA),
□ protection of persons against electric shocks by indirect contact (≥ 300 mA),
□ protection of installations against fire risks (300 mA or 500 mA).

Catalogue numbers

Vigi NG125 add-on residual current devices

Type			A						Width in 9 mm modules
Product			Vigi NG125						
Auxiliaries			Module CM907005						
2P		Sensitivity	30 mA	300 mA	300 mA S	1000 mA S	300…1000 I/S	300…3000 I/S/R	
DB122462	Rating	63 A	**19011** *19008 (1)*	**19012** *19009 (1)*	**19030**	**19031**	-	-	5
3P		Sensitivity	30 mA	300 mA	300 mA S	1000 mA S	300…1000 I/S	300…3000 I/S/R	
DB122463	Rating	63 A	**19013**	**19014**	**19032**	**19033**	-	-	9
			-	-	-	-	-	**19036** *19053 (2)*	11
		125 A	**19039** *19050 (2)*	-	-	-	**19044**	**19047** *19055 (2)*	11
4P		Sensitivity	30 mA	300 mA	300 mA S	1000 mA S	300…1000 I/S	300…3000 I/S/R	
DB122464	Rating	63 A	**19017**	**19018**	**19034**	**19035**	-	-	9
			-	-	-	-	-	**19037** *19054 (2)*	11
		125 A	**19041** *19051 (2)*	**19042**	-	-	**19045**	**19048** *19056 (2)*	11
Voltage rating (Ue)			230 - 240 V, 400 - 415 V *Except: (1) 110…220 V and (2) 440…500 V*						
Operating frequency			50/60 Hz						
Accessories			Module CM907006						

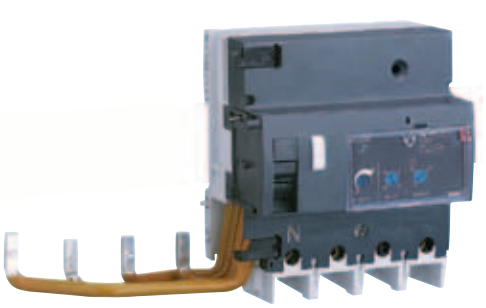
Vigi NG125 add-on residual current devices (*SI* type)

DB116619

Country approval pictogram

IEC/EN 61009-1

057484-40



■ When it is combined with an NG125 circuit breaker, the Vigi NG125 add-on residual current device offers the following functions:
□ protection of persons against electric shocks by direct contact (30 mA),
□ protection of persons against electric shocks by indirect contact (≥ 300 mA),
□ protection of installations against fire risks (300 mA or 500 mA).

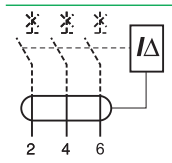
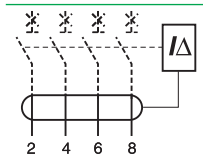
SI types are appropriate for operating in environments with:
■ High risk of nuisance tripping: frequent lightning strikes, IT system, presence of electronic ballasts, frequency converters, presence of switchgear incorporating lighting type interference filters, computer system, etc.
■ Blind sources
□ presence of harmonics or high frequency rejections,
□ presence of DC components: diodes, diode bridges, switch-mode power supplies, etc.
■ Protected against nuisance tripping caused by transient voltage surges (lightning strike, operation of switchgear on the network, etc.).

Offer selection see page 230

Offer A

Catalogue numbers

Vigi NG125 add-on residual current devices

Type			*SI*		Width in 9 mm modules
Product			Vigi NG125		
Auxiliaries			Module CM907005		
3P		Sensitivity	30 mA	300…3000 I/S/R	
DB122463 	Rating	125 A	19100	19106	11
4P		Sensitivity	30 mA	300…3000 I/S/R	
DB122464 	Rating	125 A	19101	19107	11
Voltage rating (Ue)			230 - 240 V, 400 - 415 V		
Operating frequency			50/60 Hz		
Accessories			Module CM907006		

Vigi NG125 add-on residual current devices (AC type)

DB116619

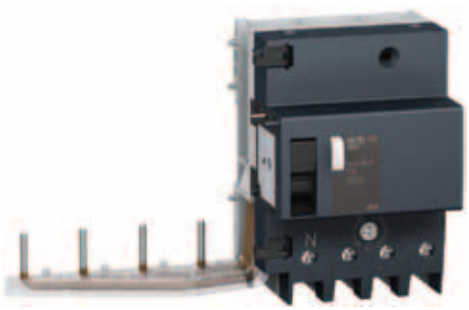
Country approval pictogram

IEC/EN 61009-1

PB103984-40

PB103985-40

PB103986-40



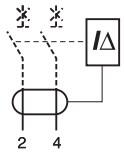
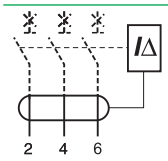
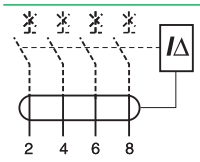
■ When it is combined with an NG125 circuit breaker, the Vigi NG125 add-on residual current device offers the following functions:
□ protection of persons against electric shocks by direct contact (30 mA),
□ protection of persons against electric shocks by indirect contact (300 mA),
□ protection of installations against fire risks (300 mA).

Offer selection see page 230

Offer B

This sticker must be removed before publishing

Catalogue numbers

Vigi NG125 add-on residual current devices					
Type			**AC** ~		**Width in 9 mm modules**
Product			**Vigi NG125**		
Auxiliaries			**Without auxiliaries**		
2P		**Sensitivity**	**30 mA**	**300 mA**	
DB122462 	Rating	63 A	**19000**	**19001**	5
3P		**Sensitivity**	**30 mA**	**300 mA**	
DB122463 	Rating	63 A	**19002**	**19003**	9
4P		**Sensitivity**	**30 mA**	**300 mA**	
DB122464 	Rating	63 A	**19004**	**19005**	9
Voltage rating (Ue)			230 - 240 V, 400 - 415 V		
Operating frequency			50/60 Hz		
Accessories			**Module CM907006**		

Vigi NG125 add-on residual current devices (A type)

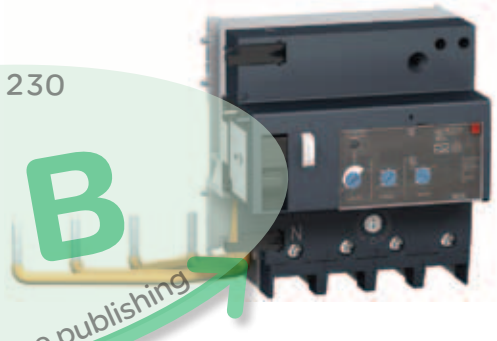
DB116619

Country approval pictogram

IEC/EN 61009-1

054383M-40

PB103998-40



Offer selection see page 230

Offer B

This sticker must be removed before publishing

■ When it is combined with an NG125 circuit breaker, the Vigi NG125 add-on residual current device offers the following functions:
- □ protection of persons against electric shocks by direct contact (30 mA),
- □ protection of persons against electric shocks by indirect contact (≥ 300 mA),
- □ protection of installations against fire risks (300 mA or 500 mA).

Catalogue numbers

Vigi NG125 add-on residual current devices

Type			A						Width in 9 mm modules
Product			Vigi NG125						
Auxiliaries			Module CM907005						
2P		Sensitivity	30 mA	300 mA	300 mA S	1000 mA S	300…1000 I/S	300…3000 I/S/R	
DB122462	Rating	63 A	**19010** *19008 (1)*	**19012** *19009 (1)*	**19030**	**19031**	-	-	5
3P		Sensitivity	30 mA	300 mA	300 mA S	1000 mA S	300…1000 I/S	300…3000 I/S/R	
DB122463	Rating	63 A	**19013**	**19014**	**19032**	**19033**	-	-	9
			-	-	-	-	-	**19036** *19053 (2)*	11
		125 A	**19039**	-	-	-	**19044**	**19047** *19055 (2)*	11
4P		Sensitivity	30 mA	300 mA	300 mA S	1000 mA S	300…1000 I/S	300…3000 I/S/R	
DB122464	Rating	63 A	**19015**	**19016**	**19034**	**19035**	-	-	9
			-	-	-	-	-	**19037** *19054 (2)*	11
		125 A	**19041**	**19042**	-	-	**19046**	**19049** *19056 (2)*	11
Voltage rating (Ue)			230 - 240 V, 400 - 415 V *Except: (1) 110…220 V and (2) 440…500 V*						
Operating frequency			50/60 Hz						
Accessories			Module CM907006						

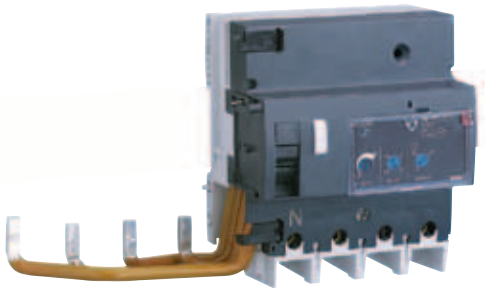
Vigi NG125 add-on residual current devices (*SI* type)

DB116619

Country approval pictogram

IEC/EN 61009-1

057484-40



■ When it is combined with an NG125 circuit breaker, the Vigi NG125 add-on residual current device offers the following functions:
□ protection of persons against electric shocks by direct contact (30 mA),
□ protection of persons against electric shocks by indirect contact (≥ 300 mA),
□ protection of installations against fire risks (300 mA or 500 mA).

SI types are appropriate for operating in environments with:
■ High risk of nuisance tripping: frequent lightning strikes, IT system, presence of electronic ballasts, frequency converters, presence of switchgear incorporating lighting type interference filters, computer system, etc.
■ Blind sources
□ presence of harmonics or high frequency rejections,
□ presence of DC components: diodes, diode bridges, switch-mode power supplies, etc.
■ Protected against nuisance tripping caused by transient voltage surges (lightning strike, operation of switchgear on the network, etc.).

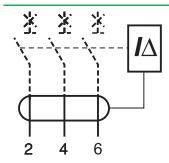
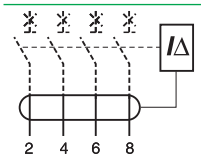
Offer selection see page 230

Offer B

This sticker must be removed before publishing

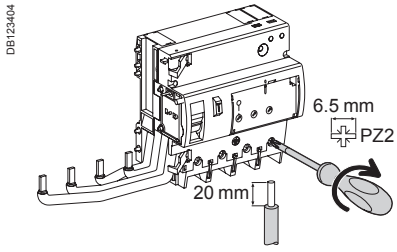
Catalogue numbers

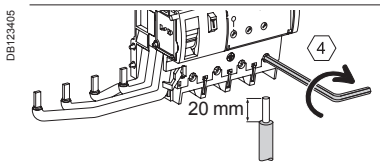
Vigi NG125 add-on residual current devices

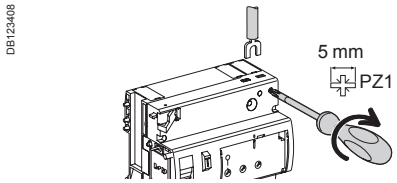
Type			*SI*		Width in 9 mm modules
Product			Vigi NG125		
Auxiliaries			Module CM907005		
3P		Sensitivity	30 mA	300…3000 I/S/R	
DB122463 	Rating	125 A	19100	19106	11
4P		Sensitivity	30 mA	300…3000 I/S/R	
DB122464 	Rating	125 A	19101	19107	11
Voltage rating (Ue)			230 - 240 V, 400 - 415 V		
Operating frequency			50/60 Hz		
Accessories			Module CM907006		

Vigi NG125 add-on residual current devices (AC, A, *SI* types)

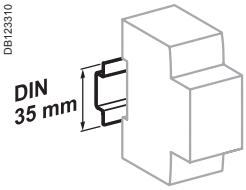
Connection



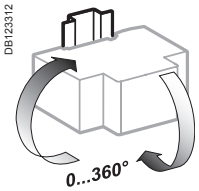




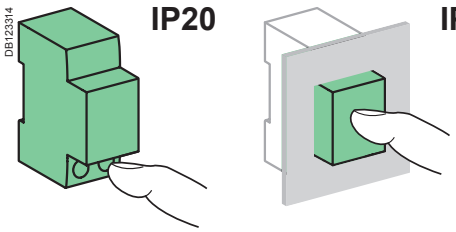
Rating	Tightening torque	Without accessories: Copper cables – Rigid	Without accessories: Copper cables – Flexible or with ferrule	Without accessories: Copper cables – Screw clamp terminal	With accessories: 70 mm² Al terminal	With accessories: Screw-on connection for ring terminal
		DB122945	DB122946	DB123409 DB123410	DB123488	
63 A	3.5 N.m	1.5 to 50 mm²	1 to 35 mm²	-	-	-
125 A	6 N.m	16 to 70 mm²	10 to 50 mm²	-	25 to 70 mm²	2 x 35 mm² 1 x 50 mm²
Pre-alarm	1 N.m	2 x 2.5 mm²	2 x 1.5 mm²	2 x 1.5 mm²	-	-



Clip on DIN rail 35 mm.



Indifferent position of installation.



Technical data

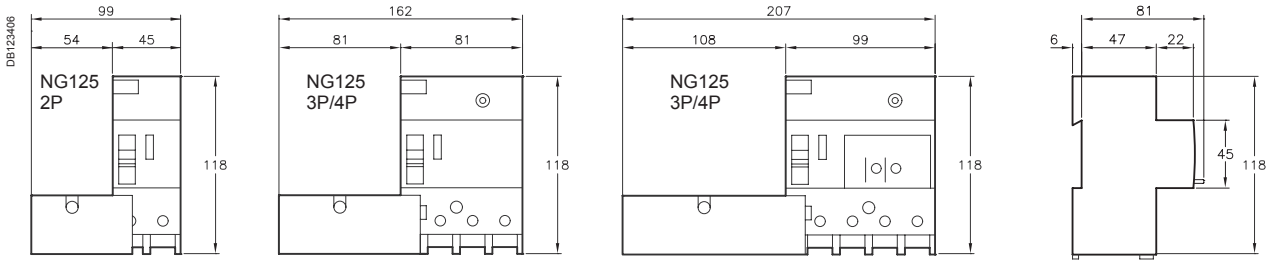
Main characteristics		
Insulation voltage (Ui)		690 V
Pollution degree		3
Rated impulse withstand voltage (Uimp)		8 kV
According to IEC/EN 61009-1		
Surge current withstand (8/20 µs) without tripping	Selective Ⓢ or R	5 kÂ
	Instantaneous	3 kÂ
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61009-1 § 3.3.8
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40
Operating temperature	AC type	-5°C to +60°C
	A and *SI* types	-25°C to +60°C
Storage temperature		-40°C to +85°C
Additional characteristics		
Vigi 125 A and adjustable		
Plug-in auxiliaries	MXV	Remote tripping
	SDV	Indication of tripping upon earth fault
Adjustable Vigi		
Sensitivity adjustable by notch (IΔn)		300, 500, 1000, 3000 mA
Tripping time	Instantaneous	
	Selective Ⓢ	60 ms
	Time-delayed	150 ms
Leakage current indication on 3P and 4P 300...3000 I/S/R (pre-alarm)		On front face by LED
		Remote, by potential-free normally-open contact 250 V - 1 A (low level)
		Threshold setting by potentiometer from 10 % to 50 % of IΔn
Disconnection essential for dielectric test		By integral pushbutton

Vigi NG125 add-on residual current devices (AC, A, *SI* types) (cont.)

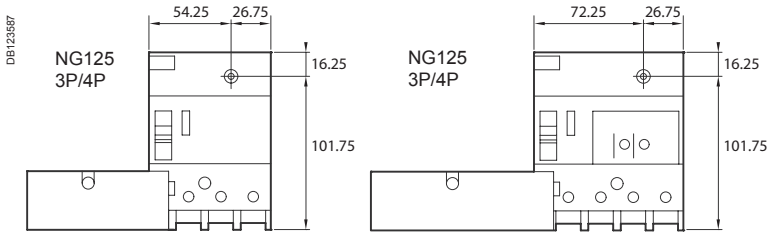
Weight (g)

Add-on residual current devices			
Number of 9 mm modules	**2P**	**3P**	**4P**
5 modules	250	-	-
9 modules	-	410	450
11 modules	-	750	800

Dimensions (mm)



2P (5 modules) *63, 125 A (9 modules)* *63, 125 A (11 modules)*



Spacing for mounting on panel

Vigi NG125 add-on residual current devices (AC, A, *SI* types) (cont.)

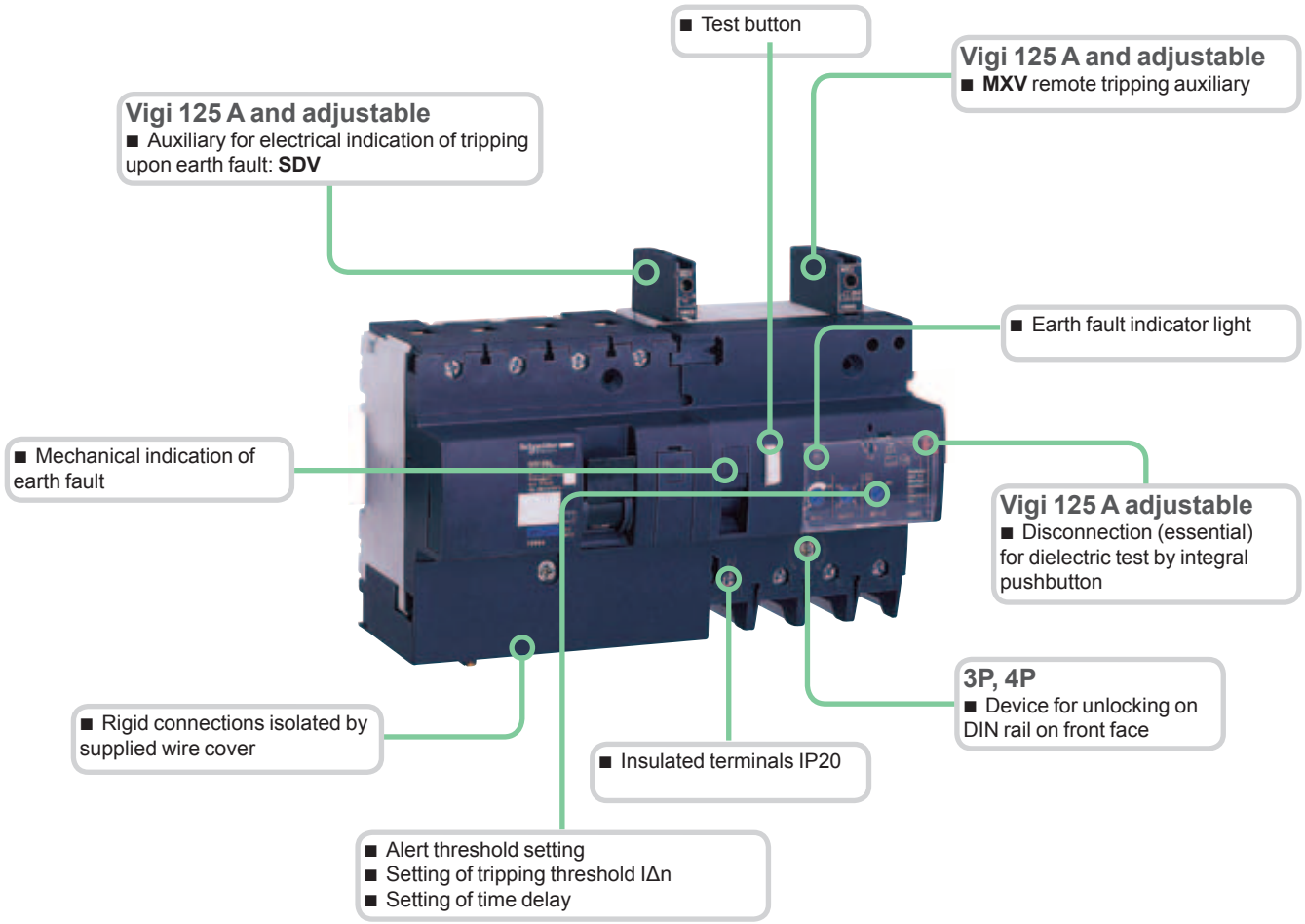
056341_SE-50

Association NG125 + Vigi NG125

	Vigi NG125 63 A	Vigi NG125 125 A
NG125 ⩽ 63 A	■	**NO**
NG125 80…125 A*	**NO**	■

(*) No Vigi add-on residual current device for 2P circuit breakers of rating 80 A.

PB104466-40



SI type

SI types are appropriate for operating in environments with:
■ High risk of nuisance tripping: frequent lightning strikes, IT system, presence of electronic ballasts, frequency converters, presence of switchgear incorporating lighting type interference filters, computer system, etc.
■ Blind sources
□ presence of harmonics or high frequency rejections,
□ presence of DC components: diodes, diode bridges, switch-mode power supplies, etc.
■ Protected against nuisance tripping caused by transient voltage surges (lightning strike, operation of switchgear on the network, etc.).

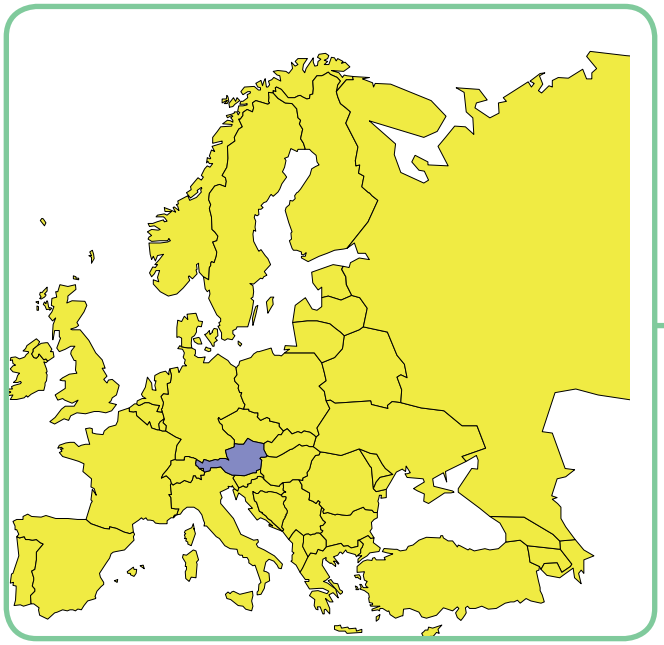
iDPN Vigi
Contents

Offers
This page must be removed before publishing

Schneider Electric's range of residual current devices consists of different products (A, B) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

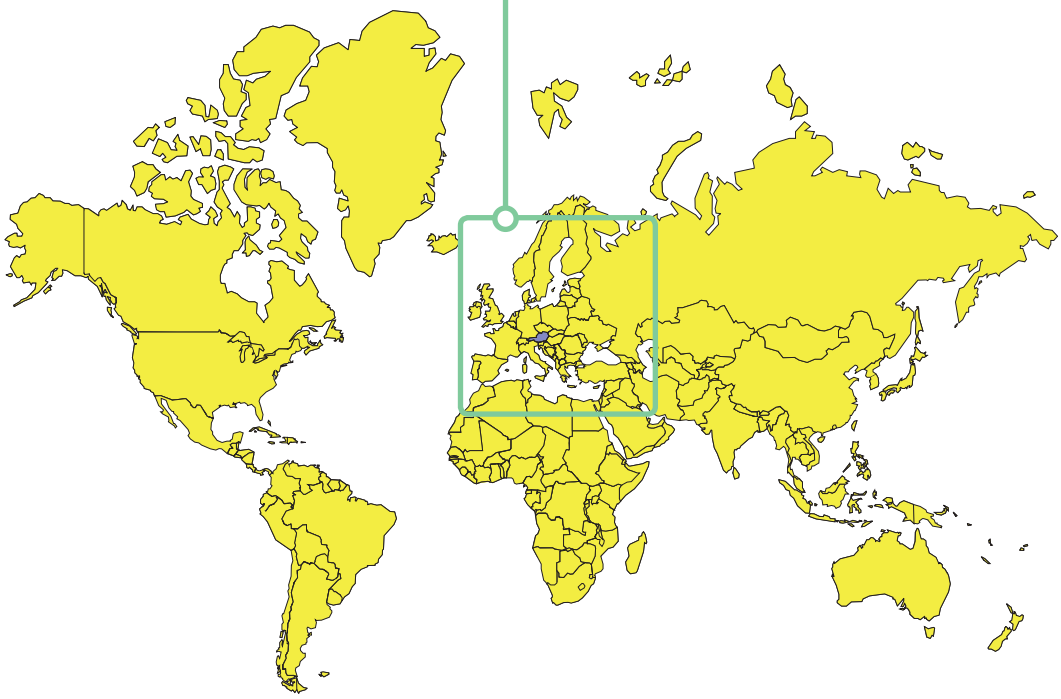
Variants

DB406662



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

DB406661



Residual current devices
iDPN Vigi

DB116619 DB123430 DB123400

Country approval pictograms

IEC/EN 61009-1

PB110000-40

iDPNa Vigi

PB110001-40

iDPN H Vigi

■ The iDPN Vigi residual current device provide complete protection for final circuits (against overcurrents and insulation faults):
- protection for users against electric shocks by direct contacts (≤ 30 mA),
- protection for users against electric shocks by indirect contacts (300 mA),
- protection of the installations against fire risks (300 mA).

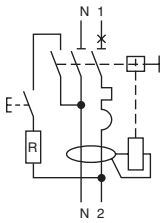
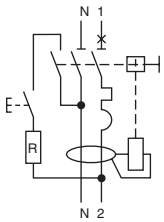
■ The ***SI*** range has been designed to maintain a network with optimum safety and continuity of service in installations disturbed by:
- extreme atmospheric conditions,
- harmonic generating loads,
- transient operating currents.

PB110002-40

iDPN N Vigi

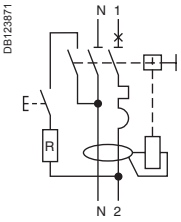
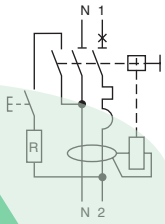
Catalogue numbers

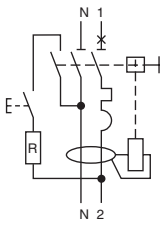
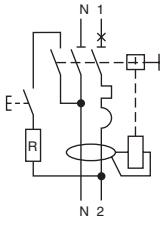
iDPNa Vigi 4500

Type			AC		A		Width in 9 mm modules
Auxiliaries			**Module CA907000 and CA907013**				
1P+N Curve B		**Sensitivity**	**30 mA**	**300 mA**	**10 mA**	**30 mA**	
DB123871 	Rating (In)	6 A	**A9D51606**	-	-	**A9D54606**	4
		10 A	**A9D51610**	-	-	**A9D54610**	
		13 A	-	-	-	**A9D54613**	
		16 A	**A9D51616**	-	-	**A9D54616**	
		20 A	**A9D51620**	-	-	**A9D54620**	
		25 A	**A9D51625**	-	-	**A9D54625**	
		32 A	**A9D51632**	-	-	**A9D54632**	
		40 A	**A9D51640**	-	-	**A9D54640**	
1P+N Curve C		**Sensitivity**	**30 mA**	**300 mA**	**10 mA**	**30 mA**	
DB123871 	Rating (In)	6 A	**A9D34606**	**A9D44606**	-	**A9D35606**	4
		10 A	**A9D34610**	**A9D44610**	**A9D05610**	**A9D35610**	
		13 A	-	-	-	**A9D35613**	
		16 A	**A9D34616**	**A9D44616**	**A9D05616**	**A9D35616**	
		20 A	**A9D34620**	**A9D44620**	-	**A9D35620**	
		25 A	**A9D34625**	**A9D44625**	-	**A9D35625**	
		32 A	**A9D34632**	**A9D44632**	-	**A9D35632**	
		40 A	**A9D34640**	**A9D44640**	-	**A9D35640**	
Voltage rating (Ue)			230...240 V AC				
Operating frequency			50 Hz				
Accessories			**Module CA907000 and CA907001, comb busbars CA907013**				

Residual current devices iDPN Vigi (cont.)

Catalogue numbers

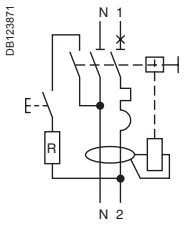
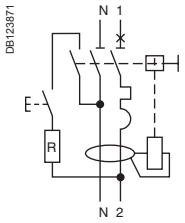
iDPN N Vigi 6000					
Type				**A**	**Width in 9 mm modules**
Auxiliaries				**Module CA907000 and CA907013**	
1P+N	**Curve B**		**Sensitivity**	**30 mA**	
DB123871 		Rating (In)	10 A	**A9D06610**	4
			16 A	**A9D06616**	
			20 A	**A9D06620**	
1P+N	**Curve C**		**Sensitivity**	**30 mA**	
		Rating (In)	10 A	**A9D01610**	4
			16 A	**A9D01616**	
			20 A	**A9D01620**	
Voltage rating (Ue)				110 V AC	
Operating frequency				50 Hz	
Accessories				**Module CA907000 and CA907001, comb busbars CA907013**	

iDPN N Vigi 6000												
Type			**AC**		**A**			**SI**			**Width in 9 mm modules**
Auxiliaries			**Module CA907000 and CA907013**									
1P+N	**Curve B**	**Sensitivity**	**30 mA**	**300 mA**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**30 mA**	**100 mA**	**300 mA**	
DB123871 	Rating (In) 4 A		**A9D55604**	**A9D68604**	-	**A9D56604**	**A9D60604**	**A9D69604**	-	-	-	4
	6 A		**A9D55606**	**A9D68606**	-	**A9D56606**	**A9D60606**	**A9D69606**	-	-	-	
	10 A		**A9D55610**	**A9D68610**	**A9D08610**	**A9D56610**	**A9D60610**	**A9D69610**	-	-	-	
	13 A		-	-	-	**A9D56613**	**A9D60613**	**A9D69613**	-	-	-	
	16 A		**A9D55616**	**A9D68616**	**A9D08616**	**A9D56616**	**A9D60616**	**A9D69616**	-	-	-	
	20 A		**A9D55620**	**A9D68620**	-	**A9D56620**	**A9D60620**	**A9D69620**	-	-	-	
	25 A		**A9D55625**	**A9D68625**	-	**A9D56625**	**A9D60625**	**A9D69625**	-	-	-	
	32 A		**A9D55632**	**A9D68632**	-	**A9D56632**	**A9D60632**	**A9D69632**	-	-	-	
	40 A		**A9D55640**	**A9D68640**	-	**A9D56640**	**A9D60640**	**A9D69640**	-	-	-	
1P+N	**Curve C**	**Sensitivity**	**30 mA**	**300 mA**	**10 mA**	**30 mA**	**100 mA**	**300 mA**	**30 mA**	**100 mA**	**300 mA**	
DB123871 	Rating (In) 6 A		**A9D31606**	**A9D41606**	-	**A9D32606**	**A9D52606**	**A9D42606**	**A9D33606**	**A9D53606**	**A9D43606**	4
	10 A		**A9D31610**	**A9D41610**	**A9D02610**	**A9D32610**	**A9D52610**	**A9D42610**	**A9D33610**	**A9D53610**	**A9D43610**	
	13 A		-	-	-	**A9D32613**	**A9D52613**	**A9D42613**	**A9D33613**	**A9D53613**	**A9D43613**	
	16 A		**A9D31616**	**A9D41616**	**A9D02616**	**A9D32616**	**A9D52616**	**A9D42616**	**A9D33616**	**A9D53616**	**A9D43616**	
	20 A		**A9D31620**	**A9D41620**	-	**A9D32620**	**A9D52620**	**A9D42620**	**A9D33620**	**A9D53620**	**A9D43620**	
	25 A		**A9D31625**	**A9D41625**	-	**A9D32625**	**A9D52625**	**A9D42625**	**A9D33625**	**A9D53625**	**A9D43625**	
	32 A		**A9D31632**	**A9D41632**	-	**A9D32632**	**A9D52632**	**A9D42632**	**A9D33632**	**A9D53632**	**A9D43632**	
	40 A		**A9D31640**	**A9D41640**	-	**A9D32640**	**A9D52640**	**A9D42640**	**A9D33640**	**A9D53640**	**A9D43640**	
Voltage rating (Ue)			230...240 V AC									
Operating frequency			50 Hz									
Accessories			**Module CA907000 and CA907001, comb busbars CA907013**									

Residual current devices iDPN Vigi (cont.)

Catalogue numbers

iDPN H Vigi 10000

Type			A		SI		Width in 9 mm modules
Auxiliaries			**Module CA907000 and CA907013**				
1P+N Curve B		**Sensitivity**	**30 mA**	**300 mA**	**30 mA**	**300 mA**	
 DB123871	Rating (In)	6 A	**A9D07606**	-	-	-	4
		10 A	**A9D07610**	-	-	-	
		16 A	**A9D07616**	-	-	-	
		20 A	**A9D07620**	-	-	-	
		25 A	**A9D07625**	-	-	-	
		32 A	**A9D07632**	-	-	-	
1P+N Curve C		**Sensitivity**	**30 mA**	**300 mA**	**30 mA**	**300 mA**	
 DB123871	Rating (In)	6 A	**A9D37606**	**A9D47606**	**A9D38606**	**A9D48606**	4
		10 A	**A9D37610**	**A9D47610**	**A9D38610**	**A9D48610**	
		16 A	**A9D37616**	**A9D47616**	**A9D38616**	**A9D48616**	
		20 A	**A9D37620**	**A9D47620**	**A9D38620**	**A9D48620**	
		25 A	**A9D37625**	**A9D47625**	**A9D38625**	**A9D48625**	
		32 A	**A9D37632**	**A9D47632**	**A9D38632**	**A9D48632**	
Voltage rating (Ue)			230...240 V AC				
Operating frequency			50 Hz				
Accessories			**Module CA907000 and CA907001, comb busbars CA907013**				

Residual current devices iDPN Vigi (cont.)

DB116619

Country approval pictogram

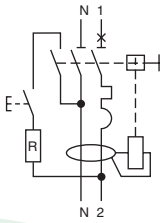
PB110002-40

iDPN N Vigi

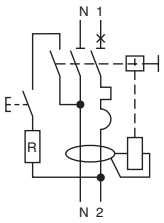
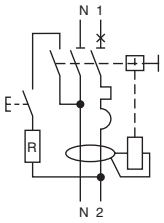
IEC/EN 61009-1

■ The iDPN Vigi residual current device provide complete protection for final circuits (against overcurrents and insulation faults):
□ protection for users against electric shocks by direct contacts (30 mA),
□ protection for users against electric shocks by indirect contacts (100 mA),
□ protection of the installations against fire risks (100 mA).

Catalogue numbers

iDPN N Vigi G Type 6000				
Type			**AC** ~	**Width in 9 mm modules**
Auxiliaries			**Module CA907000 and CA907013**	
1P+N **Curve C**		**Sensitivity**	**30 mA**	
DB123871 	Rating (In)	6 A	**A9D62606**	4
		10 A	**A9D62610**	
		13 A	**A9D62613**	
		16 A	**A9D62616**	
Voltage rating (Ue)			230...240 V AC	
Operating frequency			50 Hz	
Accessories			**Module CA907000 and CA907001, comb busbars CA907013**	

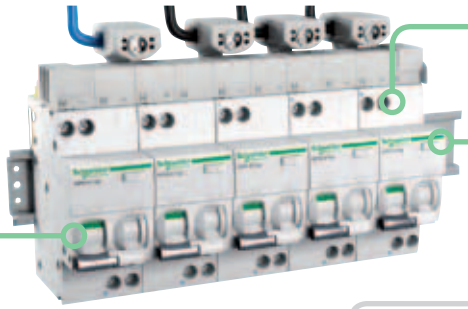
Catalogue numbers

iDPN N Vigi G Type 10000				
Type			**A** ~	**Width in 9 mm modules**
Auxiliaries			**Module CA907000 and CA907013**	
1P+N **Curve B**		**Sensitivity**	**30 mA**	
DB123871 	Rating (In)	13 A	**A9D07713**	4
		16 A	**A9D07716**	
1P+N **Curve C**		**Sensitivity**	**30 mA**	
	Rating (In)	13 A	**A9D37713**	4
		16 A	**A9D37716**	
Voltage rating (Ue)			230...240 V AC	
Operating frequency			50 Hz	
Accessories			**Module CA907000 and CA907001, comb busbars CA907013**	

Residual current devices iDPN Vigi (cont.)

DB405958-40

■ Fast contact closure



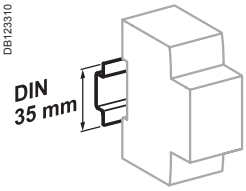
■ Insulated terminals IP20

Visi-trip double window
■ Fault tripping circuit breaker is indicated by a red mechanical indicator on the front face.
■ Earth fault is indicated by a red mechanical indicator on the front face

■ Test button

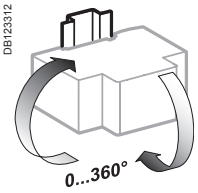
Positive contact indication
■ A green strip on the toggle guarantees opening of all the poles in safety conditions (padlocking possible) for work to be carried out on live parts

DB123310



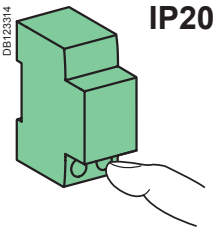
Clip on DIN rail 35 mm.

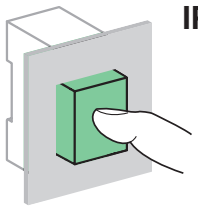
DB123312



Indifferent position of installation.

DB123314



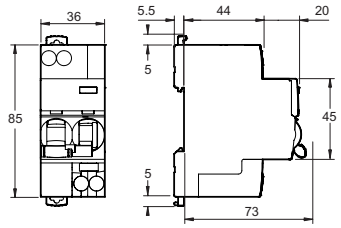


Weight (g)

Residual current device	
Type	**iDPN Vigi**
1P+N	125

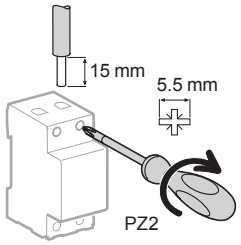
Dimensions (mm)

DB124454



Connection

DB123947



Rating	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
4 to 40 A	2 N.m	1 to 16 mm²	1 to 10 mm²

Technical data

Main characteristics				
Type		**iDPNa Vigi**	**iDPN N Vigi**	**iDPN H Vigi**
Insulation voltage (Ui)		400 V AC		
Pollution degree		3		
Rated impulse withstand voltage (Uimp)		4 kV		
Setting temperature for ratings		30°C		
Magnetic tripping	Curve B	Between 3 and 5 In		
	Curve C	Between 5 and 10 In		
According to IEC/EN 61009-1				
Limitation class		3		
Rated breaking capacity (Icn)		4500 A	6000 A	10,000 A
Rated residual breaking and making capacity (IΔm)		4500 A	6000 A	10,000 A
8/20 µs impulse withstand	Type AC	250 Â	250 Â	250 Â
	Type A	250 Â	250 Â	250 Â
	Type *SI*	-	3 kÂ	3 kÂ
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61009-1 § 3.3.8		
Additional characteristics				
Earth leakage protection with instantaneous tripping		10, 30, 300 mA	10, 30, 100, 300 mA	30, 300 mA
Degree of protection (IEC 60529)	Device only	IP20		
	Device in modular enclosure	IP40 Insulation class II		
Endurance (O-C)	Electrical ≤ 20 A	20,000 cycles		
	Electrical ≥ 25 A	10,000 cycles		
	Mechanical	20,000 cycles		
Overvoltage category (IEC 60364)		III		
Operating temperature	Type AC	-5°C to +60°C		
	Type A, *SI*	-25°C to +60°C		
Storage temperature		-40°C to +85°C		
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)		

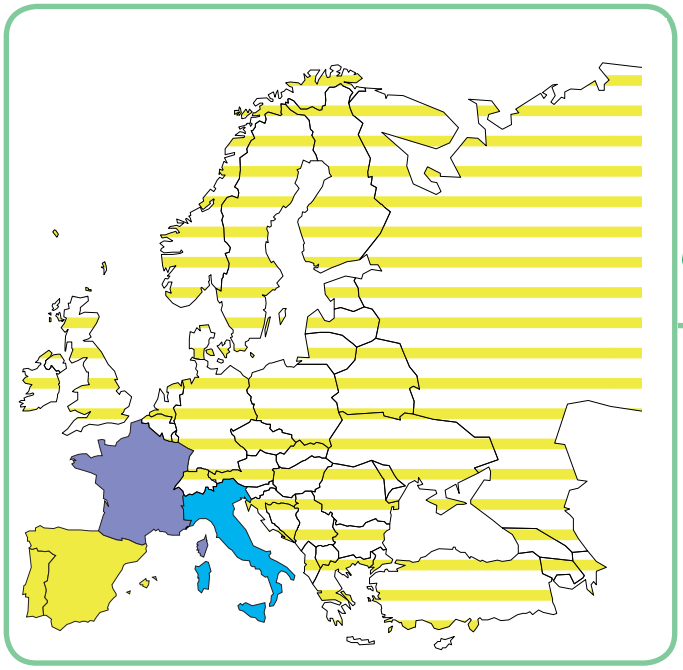
Vigi modules and residual current devices

Clario, Prodis, Librio

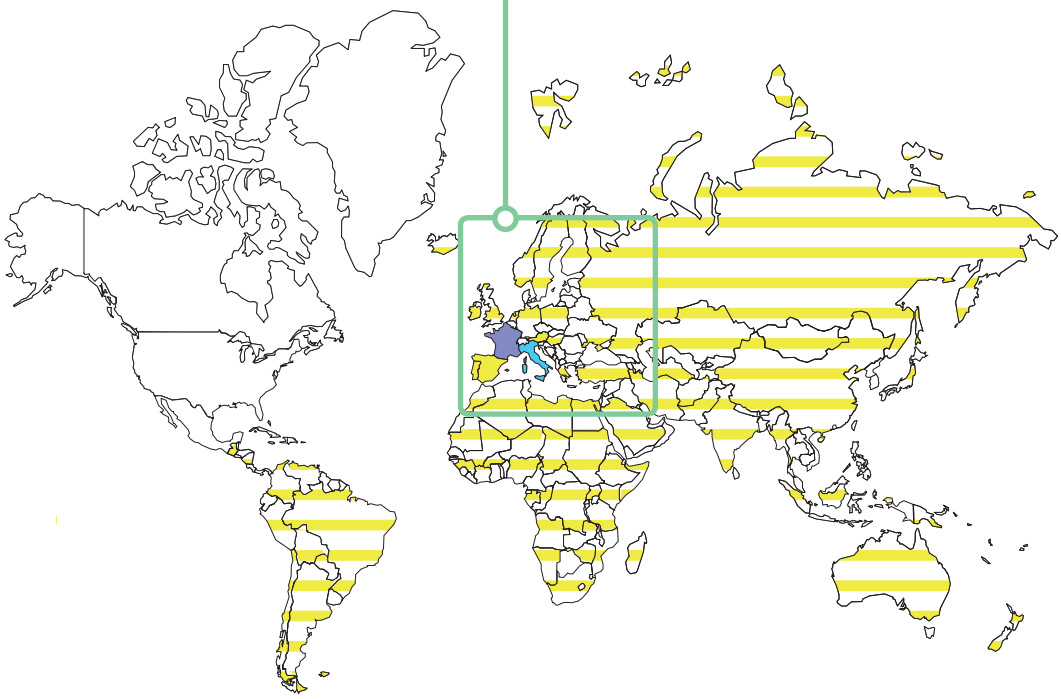
Contents

The Schneider Electric residual current device range comprises various offers (Clario, Prodis, Librio) so as to be as competitive as possible in each country, taking into account the specific features of each market:
- installation customs
- price
- approval by local organizations.

Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

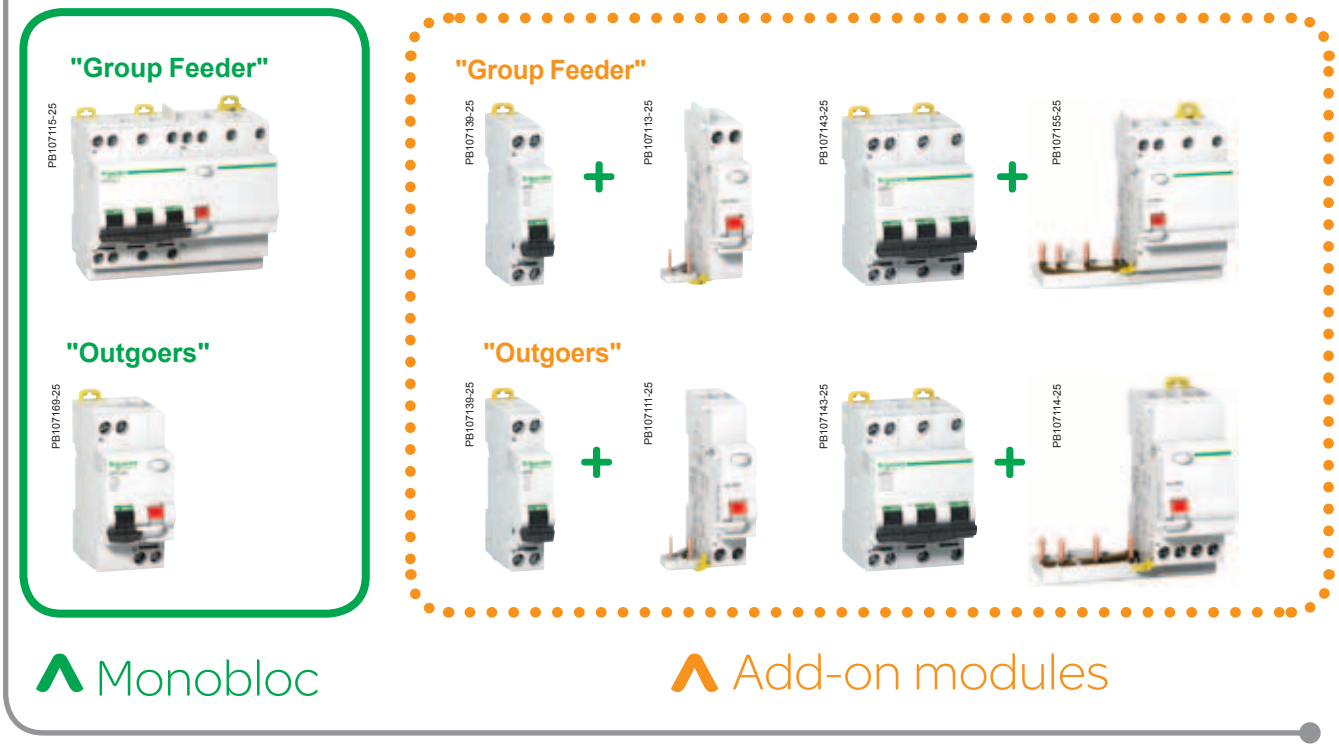


Vigi modules and residual current devices
Clario, Prodis, Librio

The Vigi module combined with a circuit breaker or the residual current device offers the following functions of earth leakage protection and circuit protection.

- ■ Earth leakage protection:
  - □ protection of persons against electric shock by direct contact (30 mA),
  - □ protection of persons against electric shock by indirect contact,
  - □ protection of installations against the risk of fire.
- ■ Circuit protection:
  - □ circuit protection against short-circuit currents,
  - □ circuit protection against overload currents,
  - □ disconnection.

Earth leakage protection



Vigi modules and residual current devices
"Group Feeder"

DBxxxxxx

Country approval pictograms

IEC/EN 61009-1

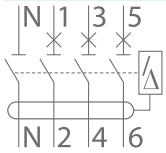
Earth leakage protection for "Group Feeders" is performed:
- either by a monobloc residual current device
- or by a circuit breaker combined with a Vigi module.

Offer selection see page 246

PB107115-32

Catalogue numbers

DPN Vigi *c* residual current devices 6000 EN 61009 - C curve

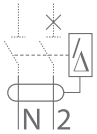
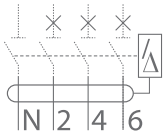
Type			AC			Width in 9-mm modules
Auxiliairies			Add-on auxiliaries: see modules CA907008 and CA907010			
3P+N		Sensitivity	30 mA	300 mA	300 mA S	
DB406482 	Rating	25 A	A9N21771	A9N21775	A9N21772	12
		40 A	A9N21773	A9N21776	A9N21774	

PB107113-32

PB107155-32

Catalogue numbers

"Group Feeder" Vigi *i* DPN modules

Type			AC			A		SI			Width in 9-mm modules
1P+N		Sensitivity	30 mA	300 mA	300 mA S	30 mA	300 mA	30 mA	300 mA	300 mA S	
DB406483 	Rating	25 A	A9N21741	A9N21742	-	A9N21745	A9N21746	A9N21749	A9N21750	-	2
		40 A	A9N21743	A9N21744	-	A9N21747	A9N21748	A9N21751	A9N21752	A9N21753	
3P+N		Sensitivity	30 mA	300 mA	300 mA S	30 mA	300 mA	30 mA	300 mA	300 mA S	
DB406485 	Rating	25 A	A9N21755	A9N21756	-	A9N21759	A9N21760	A9N21763	A9N21764	-	6
		40 A	A9N21757	A9N21758	-	A9N21761	A9N21762	A9N21765	A9N21766	A9N21767	

Vigi modules and residual current devices *i* DPN
"Outgoer"

DBxxxxxx

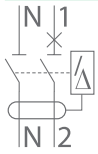
Country approval pictograms

IEC/EN 61009-1

For the earth leakage protection of "outgoers", a residual current device is built by combining a circuit breaker and a Vigi module.
"Outgoer" residual current devices are also available in monobloc version.

PB107169-32

Catalogue numbers

i DPN Vigi residual current devices 4500 EN 61009 - C curve					
Type			**AC** ~		**Width in 9-mm modules**
Auxiliaries			**Add-on auxiliaries: see modules CA907008 and CA907010**		
1P+N		**Sensitivity**	**30 mA**	**300 mA**	
DB406480 	Rating	6 A	**A9N21614**	**A9N21624**	4
		10 A	**A9N21615**	**A9N21625**	
		16 A	**A9N21616**	**A9N21626**	
		20 A	**A9N21617**	**A9N21627**	
		25 A	**A9N21618**	**A9N21628**	
		32 A	**A9N21619**	**A9N21629**	
		40 A	**A9N21620**	**A9N21630**	

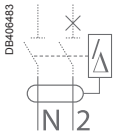
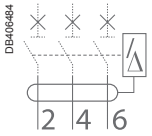
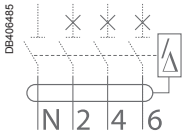
Offer selection see page 246

PB107111-32

PB107112-32

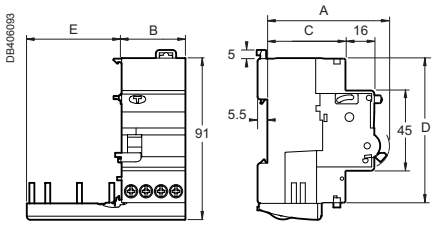
PB107114-32

Catalogue numbers

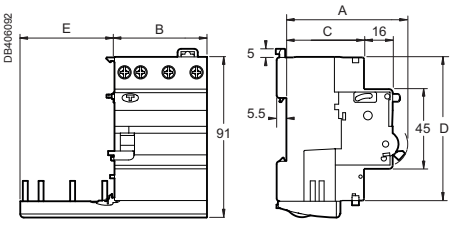
"Outgoer" Vigi *i* DPN modules										
Type			**AC** ~			**A** ~		***SI*** ~		**Width in 9-mm modules**
1P+N		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**30 mA**	**300 mA**	**30 mA**	**300 mA**	
DB406483 	Rating	25 A	**A9N21681**	**A9N21678**	**A9N21682**	**A9N21685**	**A9N21686**	**A9N21689**	**A9N21690**	2
			A9N21680 Type G	**A9N21679 Type G**						
		40 A	**A9N21683**	-	**A9N21684**	**A9N21687**	**A9N21688**	**A9N21691**	**A9N21692**	
3P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**30 mA**	**300 mA**	**30 mA**	**300 mA**	
DB406484 	Rating	25 A	**A9N21695**	-	**A9N21696**	**A9N21699**	**A9N21700**	**A9N21703**	**A9N21704**	4
		40 A	**A9N21697**	-	**A9N21698**	**A9N21701**	**A9N21702**	**A9N21705**	**A9N21706**	
3P+N		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**30 mA**	**300 mA**	**30 mA**	**300 mA**	
DB406485 	Rating	25 A	**A9N21709**	-	**A9N21710**	**A9N21713**	**A9N21714**	**A9N21717**	**A9N21718**	4
		40 A	**A9N21711**	-	**A9N21712**	**A9N21715**	**A9N21716**	**A9N21719**	**A9N21720**	

Vigi modules and residual current devices
Clario (cont.)

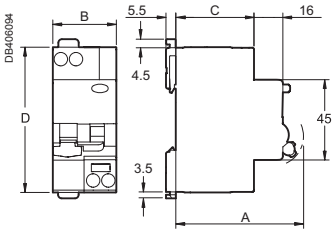
Dimensions (mm)



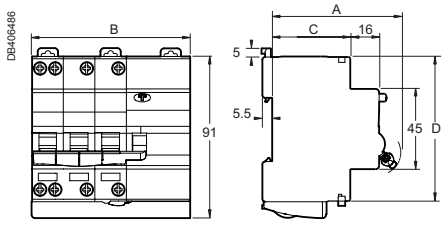
"Outgoer" Vigi modules



"Group Feeder" Vigi modules



1P+N Residual current devices

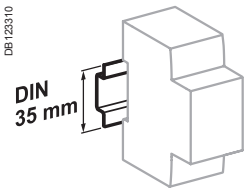


3P+N DPN Vigi c Residual current devices

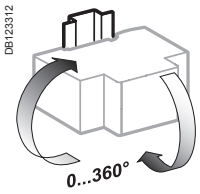
Earth leakage protection						
Type	**Number of poles**	**A**	**B**	**C**	**D**	**E**
"Outgoer" Vigi *i* DPN modules	1P+N	69	18	44	81	18
	3P	69	36	44	81	54
	3P+N	69	36	44	81	54
"Group Feeder" Vigi *i* DPN modules	1P+N	70	18	44	82	18
	3P+N	70	54	44	82	54
Residual current devices *i* DPN Vigi	1P+N	71	36	44	81	-
Residual current devices DPN Vigi *c*	3P+N	71	108	44	81	-

Offer selection see page 246

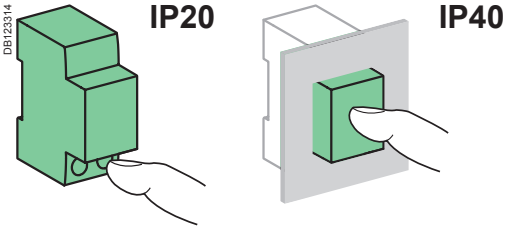
Technical data



Clip on DIN rail 35 mm.



Indifferent position of installation.



Main characteristics		
According to IEC/EN 61009-1		
Insulation voltage (Ui)	Phase-to-phase	440 V AC
Voltage rating (Ue)	Phase-to-neutral	230 V AC
	Phase-to-phase	400 V AC
Operating frequency		50 Hz
Pollution degree		3 as per IEC 61009 (for installation in industrial environment)
Rated impulse withstand voltage (Uimp)		4 kV
Behaviour in the event of a phase-to-earth fault in TN-S earthing system		Residual breaking and making capacity (IΔm) identical to the rated breaking capacity (Icn)
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61009-1 § 3.3.8
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40
Operating temperature	A and *SI* types	-25°C to +60°C
	AC type	-5°C...+60°C
Storage temperature		-40°C to +60°C
Tropicalization		Treatment 2 (relative humidity of 95 % at 55°C)
Reinforced cable pull-out strength		Serrated terminals
Automatic cable guiding in the correct position		Terminals with guard

Vigi modules TG40, TG60
"Group Feeder"

DBxxxxxx

Country approval pictograms

EN 61009-1, EN 60947-2

Earth leakage protection for "Group Feeders" is performed by a circuit breaker combined with a Vigi module.

Offer selection see page 246

PB107174-32

PB107175-32

PB107173-32

Catalogue numbers

"Group Feeder" Vigi TG40 modules

Type			AC		SI			Width in 9-mm modules
1P+N		Sensitivity	30 mA	300 mA	30 mA	300 mA	300 mA S	
DB406483	Rating	25 A	A9N21480	A9N21481	A9N21484	A9N21485	-	2
		40 A	A9N21482	A9N21483	A9N21486	A9N21487	A9N21489	
3P+N		Sensitivity	30 mA	300 mA	30 mA	300 mA	300 mA S	
DB406484	Rating	25 A	A9N21490	A9N21491	A9N21494	A9N21495	-	6
		40 A	A9N21492	A9N21493	A9N21496	A9N21497	A9N21499	

"Group Feeder" Vigi TG60 modules

Type			AC		SI			Width in 9-mm modules
4P		Sensitivity	30 mA	300 mA	30 mA	300 mA	300 mA S	
DB406485	Rating	40 A	A9N21511	A9N21512	A9N21513	A9N21514	A9N21518	6
		63 A	A9N21562	A9N21563	A9N21564	A9N21572	A9N21573	

Residual current devices
DT40 Vigi K
"Outgoer"

DB106604

Country approval pictogram

EN 61009-1, EN 60947-2

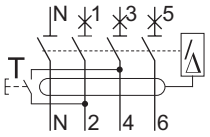
Earth leakage protection for "Outgoer" is performed by a monobloc residual current device.

PB113615-32

PB113616-32

Catalogue numbers

DT40 Vigi K residual current devices 4500 EN 61009 - C curve

Type			AC ~		Width in 9-mm modules
1P+N		**Sensitivity**	**30 mA**	**300 mA**	
DB406480 	Rating	10 A	**A9N21201**	**A9N21207**	4
		16 A	**A9N21202**	**A9N21208**	
		20 A	**A9N21203**	**A9N21209**	
		25 A	**A9N21204**	**A9N21210**	
		32 A	**A9N21205**	**A9N21211**	
		40 A	**A9N21206**	**A9N21212**	
3P+N		**Sensitivity**	**30 mA**	**300 mA**	
DB406134 	Rating	10 A	**A9N21221**	**A9N21227**	10
		16 A	**A9N21222**	**A9N21228**	
		20 A	**A9N21223**	**A9N21229**	
		25 A	**A9N21224**	**A9N21230**	
		32 A	**A9N21225**	**A9N21231**	
		40 A	**A9N21226**	**A9N21232**	

Vigi modules and residual current devices DT40
"Outgoer"

DB106604

Country approval pictogram

EN 61009-1

EN 60947-2, DT40 Vigi

For the earth leakage protection of "outgoers", a residual current device is built by combining a circuit breaker and a Vigi module.
"Outgoer" residual current devices are also available in monobloc version.

PB107179-32

Catalogue numbers

DT40 Vigi residual current devices 4500 EN 61009 - C curve

Type			AC		SI	Width in 9-mm modules
Auxiliaries			Add-on auxiliaries: see modules CA907008 and CA907010			
1P+N		Sensitivity	30 mA	300 mA	30 mA	
DB406480 N 1 N 2	Rating	10 A	A9N21442	A9N21443	A9N21440	4
		16 A	A9N21444	A9N21445	A9N21441	
		20 A	A9N21446	A9N21447	A9N21448	

Offer selection see page 246

PB107176-32

PB107177-32

PB107178-32

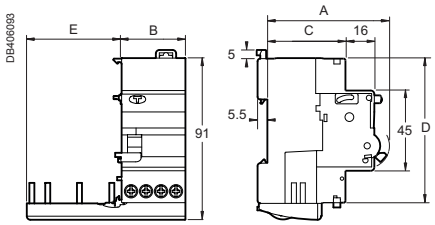
Catalogue numbers

"Outgoer" Vigi DT40 modules

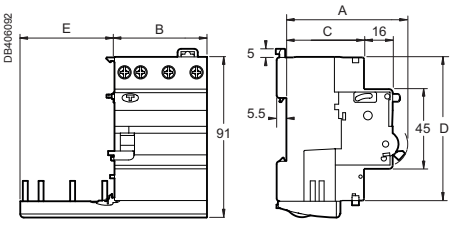
Type			AC		SI		Width in 9-mm modules
1P+N		Sensitivity	30 mA	300 mA	30 mA	300 mA	
DB406483 N 2	Rating	25 A	A9N21450	A9N21451	A9N21454	A9N21455	2
		40 A	A9N21452	A9N21453	A9N21456	A9N21457	
3P		Sensitivity	30 mA	300 mA	30 mA	300 mA	
DB406484 2 4 6	Rating	25 A	A9N21460	A9N21461	A9N21464	A9N21465	4
		40 A	A9N21462	A9N21463	A9N21466	A9N21467	
3P+N		Sensitivity	30 mA	300 mA	30 mA	300 mA	
DB406485 N 2 4 6	Rating	25 A	A9N21470	A9N21471	A9N21474	A9N21475	4
		40 A	A9N21472	A9N21473	A9N21476	A9N21477	

Vigi modules and residual current devices
Prodis (cont.)

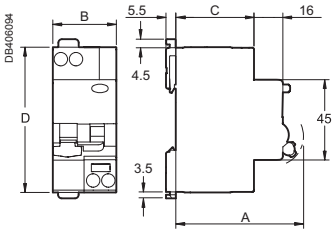
Dimensions (mm)



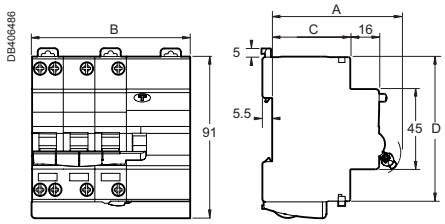
"Outgoer" Vigi modules



"Group Feeder" Vigi modules



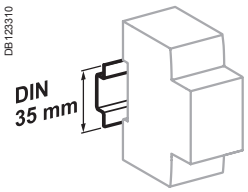
1P+N Residual current devices



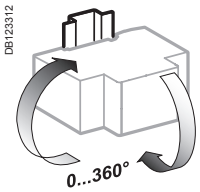
3P+N DT40 Vigi K Residual current devices

Earth leakage protection						
Type	**Number of poles**	**A**	**B**	**C**	**D**	**E**
"Outgoer" Vigi DT40 modules	1P+N	69	18	44	81	18
	3P	69	36	44	81	54
	3P+N	69	36	44	81	54
"Group Feeder" Vigi TG40, Vigi TG60 modules	1P+N	70	18	44	82	18
	3P+N	70	54	44	82	54
	4P	70	54	44	82	72
Residual current devices DT40 Vigi, DT40 Vigi K	1P+N	71	36	44	81	-
DT40 Vigi K	3P+N	73	90	44	81	-

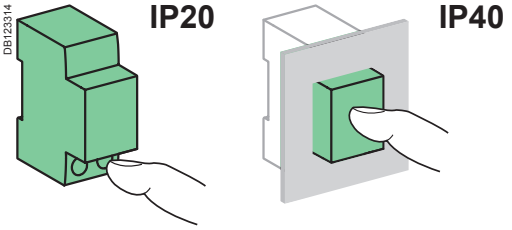
Offer selection see page 246



Clip on DIN rail 35 mm.



Indifferent position of installation.



Technical data

Main characteristics		
According to EN 61009-1		
Insulation voltage (Ui)	Phase-to-phase	440 V AC
Voltage rating (Ue)	Phase-to-neutral	230 V AC
	Phase-to-phase	400 V AC
Operating frequency		50 Hz
Pollution degree		3 as per IEC 61009 (for installation in industrial environment)
Rated impulse withstand voltage (Uimp)		4 kV
Behaviour in the event of a phase-to-earth fault in TN-S earthing system		Residual breaking and making capacity (IΔm) identical to the rated breaking capacity (Icn)
Behaviour in case of voltage drop		Residual current protection down to 0 V according to NF EN 61009-1 § 3.3.8

Additional characteristics		
Breaking capacity (Icu) according to EN 60947- 2		4.5 kA
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40
Operating temperature	A and *SI* types	-25°C to +60°C
	AC type	-5°C...+60°C
Storage temperature		-40°C to +60°C
Tropicalization		Treatment 2 (relative humidity of 95 % at 55°C)
Reinforced cable pull-out strength		Serrated terminals
Automatic cable guiding in the correct position		Terminals with guard

According to EN 60947- 2	DT40 Vigi	DT40 Vigi K
Rated impulse withstand voltage (Uimp)	4 kA	4 kA
Breaking capacity (Icu)	6 kA	4 kA
Service breaking capacity (Ics)	75 %	100 %

Vigi modules C40
"Group Feeder"

DBxxxxxx

Country approval pictograms

EN 61009-1

Earth leakage protection for "Group Feeders" is performed by a circuit breaker combined with a Vigi module.

PB107904-32

PB107905-32

Catalogue numbers

"Group Feeder" Vigi C40 modules

Type			AC		A		SI		Width in 9-mm modules
1P+N		Sensitivity	30 mA	300 mA	30 mA	300 mA	30 mA	300 mA S	
DB406483 N 2	Rating	25 A	A9N19470	A9N19471	A9N19480	A9N19481	A9N19490	-	2
		40 A	A9N19474	A9N19475	A9N19484	A9N19485	A9N19494	A9N19499	
3P+N		Sensitivity	30 mA	300 mA	30 mA	300 mA	30 mA	300 mA S	
DB406485 N 2 4 6	Rating	25 A	A9N19472	A9N19473	A9N19482	A9N19483	A9N19492	-	6
		40 A	A9N19476	A9N19477	A9N19486	A9N19487	A9N19496	A9N19500	

Vigi modules and residual current devices C40
"Outgoer"

DBxxxxxx

Country approval pictograms

EN 61009-1

For the earth leakage protection of "outgoers", a residual current device is built by combining a circuit breaker and a Vigi module.
"Outgoer" residual current devices are also available in monobloc version.

PB107908-32

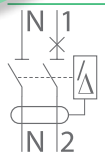
PB107909-32

Catalogue numbers

C40a Vigi residual current devices 4500 EN 61009 - C curve

Type			AC ~	Width in 9-mm modules
Auxiliaries			Add-on auxiliaries: see modules CA907008 and CA907010	
1P+N		Sensitivity	30 mA	
DB406480 	Rating	6 A	A9N19275	4
		10 A	A9N19276	
		16 A	A9N19277	
		20 A	A9N19278	
		25 A	A9N19279	
		32 A	A9N19280	
		40 A	A9N19281	

C40N Vigi residual current devices 6000 EN 61009 - C curve

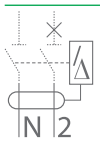
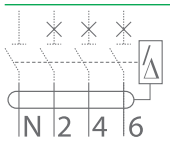
Type			AC ~	Width in 9-mm modules
Auxiliaries			Add-on auxiliaries: see modules CA907008 and CA907010	
1P+N		Sensitivity	30 mA	
DB406480 	Rating	6 A	A9N19285	4
		10 A	A9N19286	
		16 A	A9N19287	
		20 A	A9N19288	
		25 A	A9N19289	
		32 A	A9N19290	
		40 A	A9N19291	

PB107906-32

PB107907-32

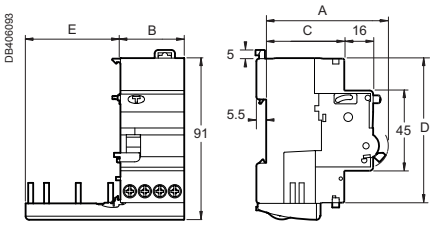
Catalogue numbers

"Outgoer" Vigi C40 modules

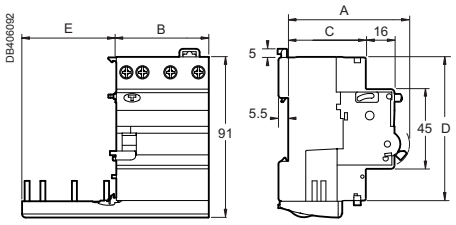
Type			AC ~		A ~		SI ~	Width in 9-mm modules
1P+N		Sensitivity	30 mA	300 mA	30 mA	300 mA	30 mA	
DB406483 	Rating	25 A	A9N19440	A9N19441	A9N19450	A9N19451	A9N19460	2
		40 A	A9N19444	A9N19445	A9N19454	A9N19455	A9N19464	
3P+N		Sensitivity	30 mA	300 mA	30 mA	300 mA	30 mA	
DB406485 	Rating	25 A	A9N19442	A9N19443	A9N19452	A9N19453	A9N19462	4
		40 A	A9N19446	A9N19447	A9N19456	A9N19457	A9N19466	

Vigi modules and residual current devices
Librio (cont.)

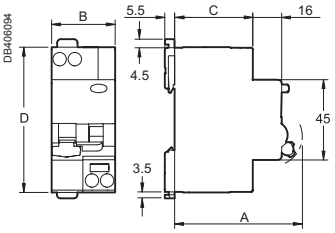
Dimensions (mm)



"Outgoer" Vigi modules



"Group Feeder" Vigi modules



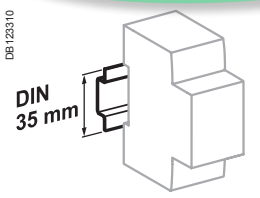
Residual current devices

Earth leakage protection						
Type	**Number of poles**	**A**	**B**	**C**	**D**	**E**
"Outgoer" Vigi C40 modules	1P+N	69	18	44	81	18
	3P	69	36	44	81	54
	3P+N	69	36	44	81	54
"Group Feeder" Vigi C40 modules	1P+N	70	18	44	82	18
	3P+N	70	54	44	82	54
Residual current devices C40a Vigi, C40N vigi	1P+N	71	36	44	81	-

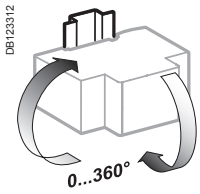
Offer selection see page 246

Librio

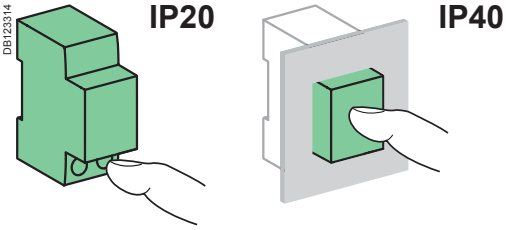
This sticker must be removed before publishing



Clip on DIN rail 35 mm.



Indifferent position of installation.



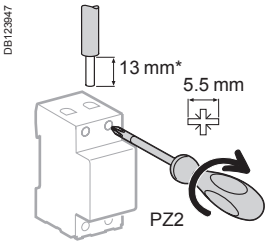
Technical data

Main characteristics		
According to EN 61009-1		
Insulation voltage (Ui)	Phase-to-phase	440 V AC
Voltage rating (Ue)	Phase-to-neutral	230 V AC
	Phase-to-phase	400 V AC
Operating frequency		50 Hz
Pollution degree		3 as per IEC 61009 (for installation in industrial environment)
Rated impulse withstand voltage (Uimp)		4 kV
Behaviour in the event of a phase-to-earth fault in TN-S earthing system		Residual breaking and making capacity (IΔm) identical to the rated breaking capacity (Icn)
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61009-1 § 3.3.8

Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40
Operating temperature	A and *SI* types	-25°C to +60°C
	AC type	-5°C...+60°C
Storage temperature		-40°C to +60°C
Tropicalization		Treatment 2 (relative humidity of 95 % at 55°C)
Reinforced cable pull-out strength		Serrated terminals
Automatic cable guiding in the correct position		Terminals with guard

Vigi modules and residual current devices
Clario, Prodis, Librio

Connection



Tightening torque	Copper cables	
	Rigid	Flexible or with ferrule
		
2 N.m	0.75 to 16 mm²	0.33 to 10 mm²

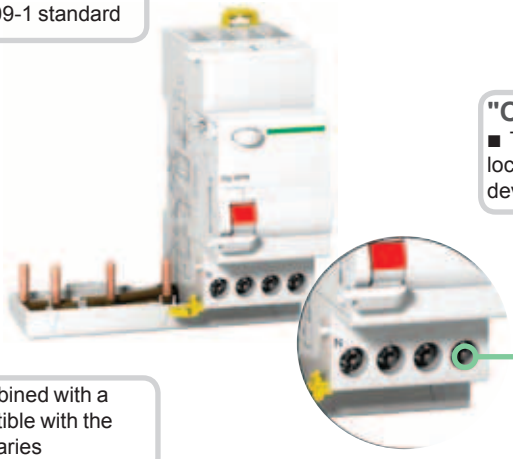
(*) 15 mm for DT40 Vigi K 3P+N (Prodis)

- Where there is a comb busbar tooth, the connection of cables of cross section 16 mm² remains possible.
- Outgoer connection:
  - upstream: direct by comb busbar,
  - downstream: by cables.
- Group Feeder connection:
  - upstream: by cables,
  - downstream: direct by comb busbar.

PB107114-45

■ All Vigi modules that can be combined with circuit breakers have a rating foolproofing element preventing any combination on an inappropriate circuit breaker: in accordance with Annex G of the EN 61009-1 standard

"Group Feeder" Vigi modules
■ The downstream terminals are located in the upper part of the device for direct connection to the comb busbar



"Outgoer" Vigi modules
■ The downstream terminals are located in the lower part of the device

■ Every circuit breaker combined with a Vigi module remains compatible with the indication and tripping auxiliaries

Weight (g)

	Vigi modules	Residual current devices
Type		
1P+N	90	210
3P	165	-
3P+N	210	520
3P+N DT40 Vigi K (Prodis)	-	498
4P	210	-

Residual current devices
DPNa Vigi and DPN N Vigi
Contents

The Schneider Electric residual current device range comprises various offers (A, B) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

Variants

Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

Residual current devices
DPNa Vigi and DPN N Vigi (cont.)

CE

Country approval pictograms

PB107168-35

PB107110-35

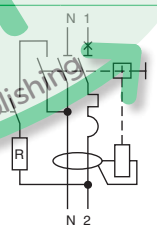
IEC/EN 61009-1

■ The DPN Vigi residual current device provides complete protection for final circuits (against overcurrents and insulation faults):
□ protection for people against electric shocks by direct contacts (30 mA),
□ protection for people against electric shocks by indirect contacts (300 mA),
□ protection of installations against risk of fire (300 mA).

■ The *SI* range has been designed to maintain a network with optimum safety and continuity of service in installations disturbed by:
□ extreme atmospheric conditions,
□ harmonic generating loads,
□ transient switching currents.

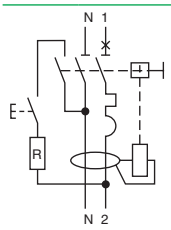
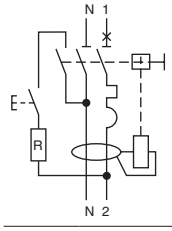
Catalogue numbers

DPNa Vigi 4500

Type			A	Width in 9-mm modules
Auxiliaries			Module CA907013 and CA907008	
1P+N C curve		Sensitivity	10 mA	
DB123871 	Rating (In)	10 A	A9N19304	4
		16 A	A9N19305	
Voltage rating (Ue)			230 V AC	
Operating frequency			50/60 Hz	
Accessories			Module CA907012	

Catalogue numbers

DPN N Vigi 6000

Type			AC		*SI*		Width in 9-mm modules
Auxiliaries			Module CA907013 and CA907008				
1P+N B curve		Sensitivity	30 mA	300 mA	30 mA	300 mA	
DB123871 	Rating (In)	4 A	A9N19650	-	-	-	4
		6 A	A9N19651	A9N19671	-	-	
		10 A	A9N19653	A9N19673	-	-	
		13 A	-	-	-	-	
		16 A	A9N19655	A9N19675	-	-	
		20 A	A9N19656	A9N19676	-	-	
		25 A	A9N19657	A9N19677	-	-	
		32 A	A9N19658	A9N19678	-	-	
		40 A	A9N19659	A9N19679	-	-	
1P+N C curve		Sensitivity	30 mA	300 mA	30 mA	300 mA	
DB123871 	Rating (In)	6 A	A9N19661	A9N19681	A9N19631	A9N19641	4
		10 A	A9N19663	A9N19683	A9N19632	A9N19642	
		13 A	-	-	A9N19633	A9N19643	
		16 A	A9N19665	A9N19685	A9N19634	A9N19644	
		20 A	A9N19666	A9N19686	A9N19635	A9N19645	
		25 A	A9N19667	A9N19687	A9N19636	A9N19646	
		32 A	A9N19668	A9N19688	A9N19637	A9N19647	
		40 A	A9N19669	A9N19689	A9N19638	A9N19648	
Voltage rating (Ue)			230 V AC				
Operating frequency			50/60 Hz				
Accessories			Module CA907013 and CA907012				

Residual current devices
DPNa Vigi and DPN N Vigi (cont.)

DB123854 DB123819

Country approval pictograms

PB107168-35

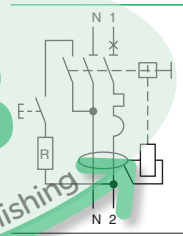
PB107110-35

IEC/EN 61009-1

■ The DPN Vigi residual current device provides complete protection for final circuits (against overcurrents and insulation faults) it ensure the protection for people against electric shocks by direct contacts.

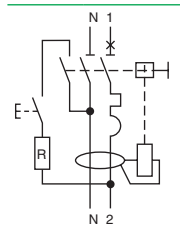
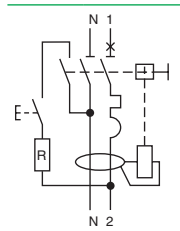
Catalogue numbers

DPNa Vigi 4500

Type			A	Width in 9-mm modules
Auxiliaries			**Module CA907013 and CA907008**	
1P+N C curve		**Sensitivity**	**30 mA**	
DB123871 	Rating (In)	10 A	**A9N19532**	4
		13 A	**A9N19533**	
		16 A	**A9N19534**	
Voltage rating (Ue)			230 V AC	
Operating frequency			50/60 Hz	
Accessories			**Module CA907013 and CA907012**	

Catalogue numbers

DPN N Vigi 6000

Type			A	Width in 9-mm modules
Auxiliaries			**Module CA907013 and CA907008**	
1P+N B curve		**Sensitivity**	**30 mA**	
DB123871 	Rating (In)	6 A	**A9N19753**	4
		10 A	**A9N19754**	
		13 A	**A9N19755**	
		16 A	**A9N19756**	
		20 A	**A9N19757**	
		25 A	**A9N19758**	
		32 A	**A9N19759**	
		40 A	**A9N19760**	
1P+N C curve		**Sensitivity**	**30 mA**	
DB123871 	Rating (In)	6 A	**A9N19771**	4
		10 A	**A9N19772**	
		13 A	**A9N19773**	
		16 A	**A9N19774**	
		20 A	**A9N19775**	
		25 A	**A9N19780**	
		32 A	**A9N19777**	
		40 A	**A9N19778**	
Voltage rating (Ue)			230 V AC	
Operating frequency			50/60 Hz	
Accessories			**Module CA907013 and CA907012**	

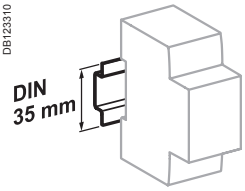
Residual current devices
DPNa Vigi and DPN N Vigi (cont.)

Positive contact indication
■ A green strip on the toggle guarantees opening of all the poles in safety conditions (padlocking possible) for work to be carried out on live parts

■ Fast closing

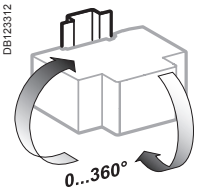
■ Display of earth fault on the front panel by position of toggle

DB123310



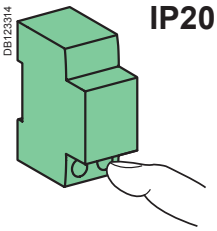
Clip on DIN rail 35 mm.

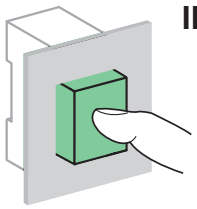
DB123312



Indifferent position of installation.

DB123314



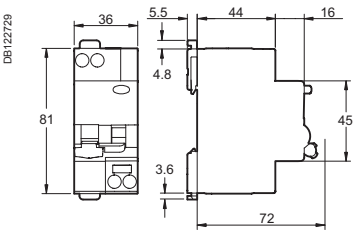


Weight (g)

Residual current device		
Type	**DPNa Vigi**	**DPN N Vigi**
1P+N	125	125

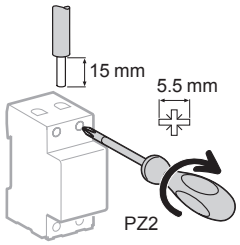
Dimensions (mm)

DB122729



Connection

DB123947



Rating	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946 
4 to 40 A	2 N.m	1 to 16 mm²	1 to 10 mm²

Technical data

Main characteristics				
Type			**DPNa Vigi**	**DPN N Vigi**
Insulation voltage (Ui)			400 V AC	
Pollution degree			3	
Rated impulse withstand voltage (Uimp)			4 kV	
Setting temperature for ratings			30°C	
Earth leakage protection with instantaneous tripping			10, 30 mA	30, 300 mA
Magnetic tripping	B curve		-	Between 3 and 5 In
	C curve		Between 5 and 10 In	Between 5 and 10 In
Utilization category			A	
Insulation class			2	
8/20 µs impulse withstand current	AC type		-	250 Â
	A type		250 Â	250 Â
	SI type		-	3 kÂ
According to IEC/EN 61009-1				
Limitation class			3	
Rated breaking capacity (Icn)			4500 A	6000 A
Rated residual breaking and making capacity (IΔm)			4500 A	6000 A
Behaviour in case of voltage drop			Residual current protection down to 0 V according to IEC/EN 61009-1 § 3.3.8	
Additional characteristics				
Degree of protection (IEC 60529)	Device only		IP20	
	Device in modular enclosure		IP40 Insulation class II	
Endurance (O-C)	Electrical	≤ 20 A	20,000 cycles	
		≥ 25 A	10,000 cycles	
	Mechanical		20,000 cycles	
Overvoltage category (IEC 60364)			IV	
Operating temperature	AC type		-5°C to +60°C	
	A, ***SI*** type		-25°C to +60°C	
Storage temperature			-30°C to +70°C	
Tropicalization (IEC 60068-1)			Treatment 2 (relative humidity of 95% at 55°C)	

Residual current devices
DPN Vigi K

DB116619

Country approval pictograms

IEC/EN 61009-1

PB111552-40

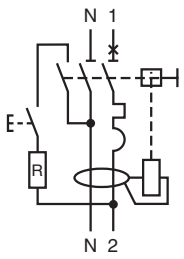
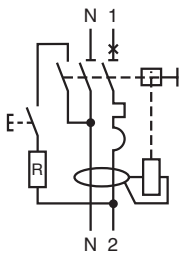
DPN Vigi K

- The residual current devices DPN Vigi K provides complete protection of final circuits (overcurrents and insulation faults) and the protection of people against electric shocks by direct contacts (30 mA).

- Fast closing.
- Positive break indication.
- Display of earth fault on the front panel by position of toggle.

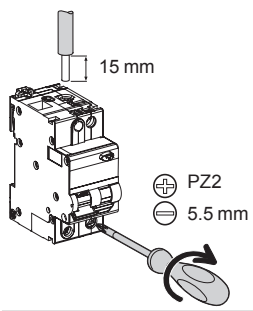
Catalogue numbers

DPN Vigi K

Type			AC ~	A ⎍	Width in 9-mm modules
1P+N	Curve B	Sensitivity	30 mA	30 mA	
DB119073 	Rating 10 A		A9D22610	A9D23610	4
	Rating 16 A		A9D22616	A9D23616	
	Rating 20 A		A9D22620	A9D23620	
1P+N	Curve C	Sensitivity	30 mA	30 mA	
DB119073 	Rating 10 A		A9D20610	A9D21610	4
	Rating 16 A		A9D20616	A9D21616	
	Rating 20 A		A9D20620	A9D21620	
Voltage rating (Ue)	230 V AC				
Operating frequency	50 Hz				

Connection

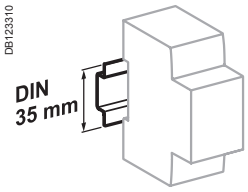
DB405935



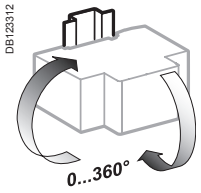
Type	Rating	Tightening torque		Copper cables	
				Rigid	Flexible or with ferrule
				DB122945	DB122946
DPN Vigi K	10 to 20 A	Phase	2 N.m	1 to 25 mm²	1 to 16 mm²
		Neutral	2 N.m	1 to 16 mm²	1 to 10 mm²

Residual current devices
DPN Vigi K (cont.)

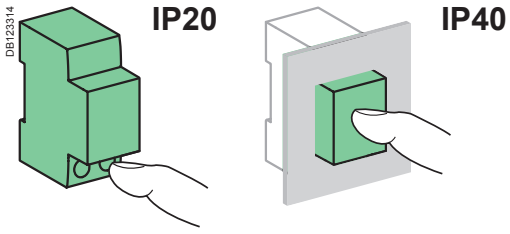
The DPN Vigi K residual current device can be installed in the middle of a line of K60 circuit breakers. The phase can be powered via the biconnect comb busbar, the neutral is powered via a cable.



Clip on DIN rail 35 mm.



Indifferent position of installation.



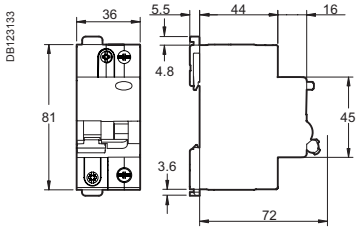
Technical data

Main characteristics		
Insulation voltage (Ui)		400 V
Pollution degree		3
Rated impulse withstand voltage (Uimp)		4 kV
Setting temperature for ratings		30°C
Tripping curve	Curve B	Between 3 and 5 In
	Curve C	Between 5 and 10 In
According to IEC/EN 61009-1		
Limitation class		3
Rated breaking capacity (Icn)		6000 A
Rated residual breaking and making capacity (IΔm)		4500 A
8/20 µs impulse withstand without tripping	AC type	250 Â
	A type	250 Â
Behaviour in case of voltage drop		Residual current protection down to 0 V according to IEC/EN 61009-1 § 3.3.8
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	20000 cycles
	Mechanical	20000 cycles
Overvoltage category (O-C)		III
Service temperature	AC type	-5°C to +40°C
	A type	-25°C to +40°C
Storage temperature		-30°C to +70°C
Tropicalization		Treatment 2 (relative humidity 95 % at 55°C)

Weight (g)

Residual current device	
Type	**DPN Vigi K**
1P+N	125

Dimensions (mm)



DPN Vigi K

SPN N Vigi

30 mA instantaneous, C curve

IEC 61009-2-2, AS/NZS 61009-1: 6000 A

PB107511-60

Standards: IEC 61009-2-2, AS/NZS 61009-1.

- The single-phase SPN N Vigi self-contained residual current device carries out:
  - protection of persons against direct and indirect contacts (30 mA)
  - complete protection of final circuits (overcurrents and insulation faults)
  - safety device to switch both of active and neutral
- A class SPN N Vigi are sensitive to the pulsed type DC component.
- Overload, short circuit and earth fault currents are indicated by location of the handle in the OFF position.
- A push-test button "T" is positioned on the front of the device for testing that product is operational.

Accessories

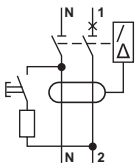
Padlocking device

- Used to lock the toggle in the "open" or "closed" position by 8 mm diameter padlock (not supplied).

1P+N comb busbars

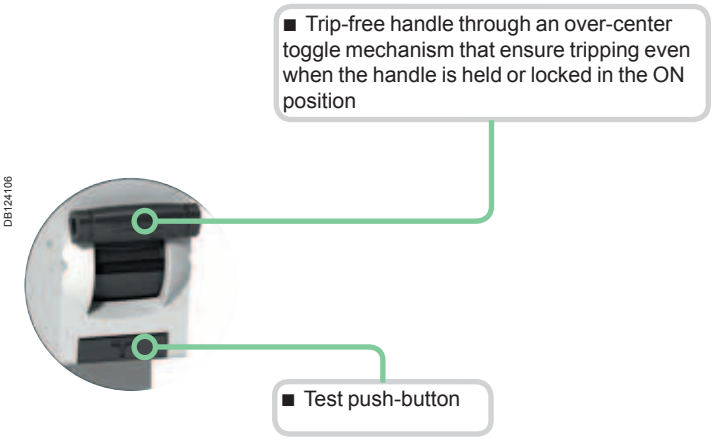
- The comb busbars make it easier to install Schneider Electric products.

Catalogue numbers

SPN N Vigi					
Type				**A**	**Width in 9-mm modules**
C curve	**Voltage rating (V)**		**Sensitivity (IΔn)**	**30 mA**	
DB124108 	240	Rating (In)	10 A	**19583**	2
			16 A	**19584**	
			20 A	**19585**	
			25 A	**19586**	
Operating frequency				50 Hz	

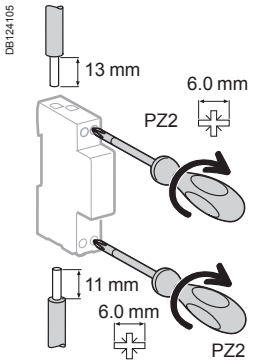
Accessories	
Type	
Padlocking device (bag of 2 pieces)	**26970**
1P+N comb busbar 26 modules of 9-mm	**14880**
1P+N comb busbar 48 modules of 9-mm	**14890**
Side-plates (bag of 40 pieces)	**14886**
Tooth cover end-piece (bag of 40 pieces)	**14888**

DB124106



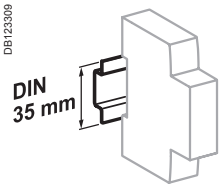
SPN N Vigi
30 mA instantaneous, C curve (cont.)
IEC 61009-2-2, AS/NZS 61009-1: 6000 A

Connection

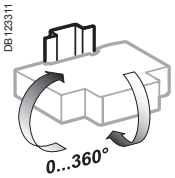


Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible
			 DB122945	 DB122946
L and N upstream	10 to 25 A	2 N.m	1 to 16 mm^2	1 to 16 mm^2
L and N downstream		2 N.m	1 to 10 mm^2	1 to 10 mm^2

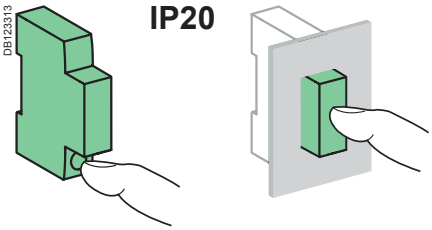
Note: for any case, isolate power before installation. Wire neutral prior to installing active.



Clip on DIN rail 35 mm.



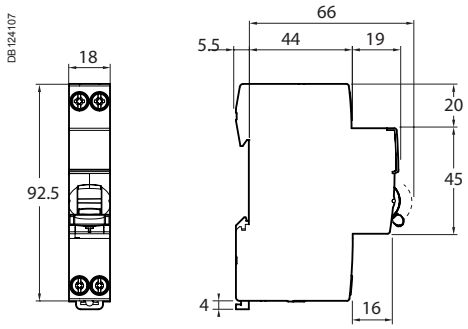
Indifferent position of installation.



Technical data

Main characteristics		
Voltage rating (Ue)		240 V + 10 %, -15 %
Insulation voltage (Ui)		400 V
Rated impulse withstand voltage (Uimp)		4 kV
Rated residual operating current (IΔn)		30 mA
Thermal tripping	Reference temperature	30°C
Magnetic tripping	C curve	Between 5 and 10 In
Limitation class		3
Surge current withstand (8/20 µs) without tripping		3000 A
Rated nominal breaking capacity (Icn)		6000 A
Phase/earth rated residual breaking and making capacity (IΔm)		500 A
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40
Endurance (O-C)	Electrical	10,000 cycles
	Mechanical	20,000 cycles
Operating temperature		-5°C to +40°C
Storage temperature		-25°C to +70°C
Tropicalization		Treatment 2 (relative humidity: 95 % at 55°C)

Dimensions (mm)



Weight (g)

Residual current device	
Type	**SPN N Vigi**
1P+N	136

Residual current devices
DPN N Vigi

DB123430 DB116619

Country approval pictograms

IEC/EN 61009-1

PB112070-40

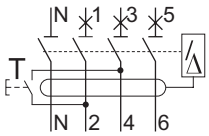
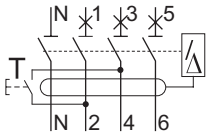
DPN N Vigi

■ The DPN N Vigi residual current device provide complete protection for final circuits (against overcurrents and insulation faults):
- protection for users against electric shocks by direct contacts (30 mA),
- protection for users against electric shocks by indirect contacts (300 mA),
- protection of the installations against fire risks (300 mA).

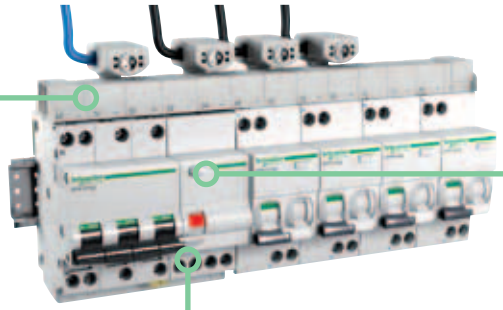
■ The *SI* range has been designed to maintain a network with optimum safety and continuity of service in installations disturbed by:
- extreme atmospheric conditions,
- harmonic generating loads,
- transient operating currents.

Catalogue numbers

DPN N Vigi 6000

Type			AC		A		SI	Width in 9 mm modules
Auxiliaries			**Module CA907013 and CA907008**					
3P+N Curve B		**Sensitivity**	**30 mA**	**300 mA**	**30 mA**	**300 mA**	**30 mA**	
DB406134 	Rating (In)	6 A	**A9D55706**	-	**A9D56706**	-	-	10
		10 A	**A9D55710**	-	**A9D56710**	-	-	
		13 A	-	-	**A9D56713**	-	-	
		16 A	**A9D55716**	-	**A9D56716**	-	-	
		20 A	**A9D55720**	-	**A9D56720**	-	-	
		25 A	**A9D55725**	-	**A9D56725**	-	-	
		32 A	**A9D55732**	-	**A9D56732**	-	-	
		40 A	**A9D55740**	-	**A9D56740**	-	-	
3P+N Curve C		**Sensitivity**	**30 mA**	**300 mA**	**30 mA**	**300 mA**	**30 mA**	
DB406134 	Rating (In)	6 A	**A9D31706**	-	**A9D32706**	-	-	10
		10 A	**A9D31710**	**A9D41710**	**A9D32710**	**A9D42710**	**A9D33710**	
		13 A	-	-	**A9D32713**	-	**A9D33713**	
		16 A	**A9D31716**	**A9D41716**	**A9D32716**	**A9D42716**	**A9D33716**	
		20 A	**A9D31720**	**A9D41720**	**A9D32720**	**A9D42720**	**A9D33720**	
		25 A	**A9D31725**	**A9D41725**	**A9D32725**	**A9D42725**	**A9D33725**	
		32 A	**A9D31732**	**A9D41732**	**A9D32732**	**A9D42732**	**A9D33732**	
		40 A	**A9D31740**	**A9D41740**	**A9D32740**	**A9D42740**	**A9D33740**	
Voltage rating (Ue)			400 V AC					
Operating frequency			50 Hz					
Accessories			**Module CA907013**					

DB405958-40



■ Fast contact closure

■ Possibility of mixing iDPN Vigi 1P+N and DPN Vigi 3P+N devices on the same row and on the same comb busbar.

■ Insulated terminals IP20

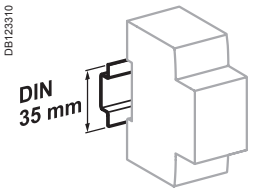
■ Double clip for dismounting with comb busbar in place

■ Test button

Positive contact indication

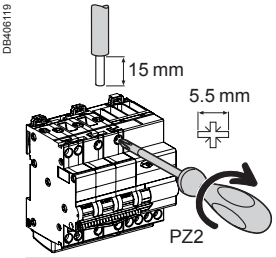
■ A green strip on the toggle guarantees opening of all the poles in safety conditions (padlocking possible) for work to be carried out on live parts

Residual current devices
DPN N Vigi (cont.)

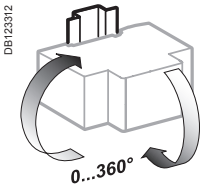


Clip on DIN rail 35 mm.

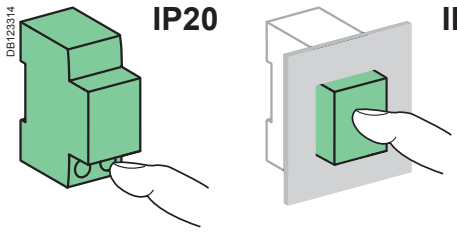
Connection



Rating	Tightening torque	Copper cables	
		Rigid  DB122945	Flexible or with ferrule  DB122946
6 to 40 A	2 N.m	0.75 to 16 mm²	0.33 to 10 mm²



Indifferent position of installation.



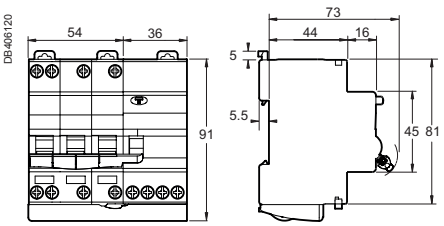
Technical data

Main characteristics			
Type			**DPN N Vigi**
Insulation voltage (Ui)			440 V AC
Pollution degree			3
Rated impulse withstand voltage (Uimp)			4 kV
Setting temperature for ratings			30°C
Magnetic tripping	Curve B		Between 3 and 5 In
	Curve C		Between 5 and 10 In
According to IEC/EN 61009-1			
Limitation class			3
Rated breaking capacity (Icn)			6000 A
Rated residual breaking and making capacity (IΔm)			6000 A
8/20 µs impulse withstand	Type AC		250 Â
	Type A		250 Â
	Type *SI*		-
Behaviour in case of voltage drop			Residual current protection down to 0 V according to IEC/EN 61009-1 § 3.3.8
Additional characteristics			
Earth leakage protection with instantaneous tripping			30, 300 mA
Degree of protection (IEC 60529)	Device only		IP20
	Device in modular enclosure		IP40 Insulation class II
Endurance (O-C)	Electrical	≤ 20 A	20,000 cycles
		≥ 25 A	10,000 cycles
	Mechanical		20,000 cycles
Overvoltage category (IEC 60364)			III
Operating temperature	Type AC		-5°C to +60°C
	Type A, *SI*	-25°C	-25°C to +60°C
Storage temperature			-40°C to +70°C
Tropicalization (IEC 60068-1)			Treatment 2 (relative humidity 95 % to 55°C)

Weight (g)

Residual current device	
Type	**DPN N Vigi**
3P+N	498

Dimensions (mm)



REDs, REDtest

DB122858

IMQ only for REDs, cat. no. 18264, 18265, 18266, 18267, 18268, 18269, 18687 and 18689

Country approval pictogram

PB101780_SE-40

REDs 2P

PB104000_SE-40

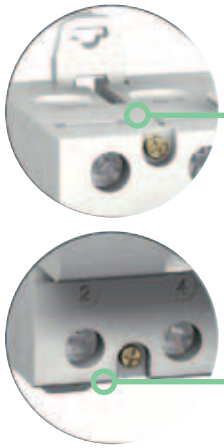
REDs 4P

PB113821-40

REDtest

DB404823

DB404824



■ REDs 2P, 4P: supply from above or below

EN 50557

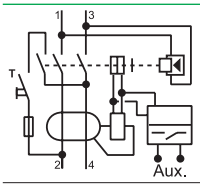
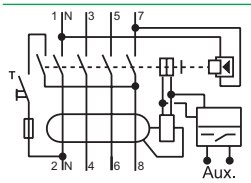
The REDs and the REDtest, **RE**sidual current **D**evice recloser, is made up of a residual current device and a recloser.
The **REDs** and **REDtest** **REsidual current Devices** offer the following functions:
■ protection of people against direct and indirect contacts
■ protection of installations against insulation faults
■ disconnection of on-load electric circuits, already protected against overloads and short-circuits
■ automatic restart after insulation monitoring of the downstream circuit.

REDtest provides the following additional functions:
■ automatic and periodical test of the device, without breaking downstream circuit (REDtest).
Only used on TT and TN-S earthing grounding systems.

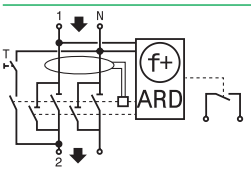
Residual current circuit breakers	2P	4P
Making and breaking capacity, rated residual current (IΔm = Im)	630 A	630 A

Catalogue numbers

REDs residual current circuit breakers REDs

A type				Width in mod. of 9 mm
2P	Sensitivity	30 mA	300 mA	
DB122885 	Rating 25 A	18687	18688	8
	40 A	18689	18690	
	63 A	18691	18692	
Voltage rating (Ue)		230 V		
Frequency rating		50Hz		
4P	Sensitivity	30 mA	300 mA	
DB122885 	Rating 25 A	18264	18265	14
	40 A	18266	18267	
	63 A	18268	18269	
	100 A	-	18270	
Voltage rating (Ue)		400 V		
Frequency rating		50 Hz		

REDtest residual current circuit breakers

A type			Width in mod. of 9 mm
2P	Sensitivity	30 mA	
DB406707 	Rating 25 A	18280	10
	40 A	18281	
Voltage rating (Ue)		230 V	
Frequency rating		50 Hz	

REDs, REDtest

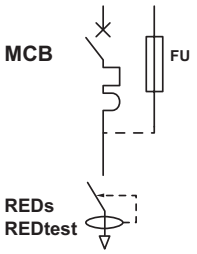
Coordination table, max short-circuit current (kA rms)

Circuit-breakers, fuse / A type REDs, REDtest coordination

Upstream	Circuit-breakers									Fuses			
Downstream	DPN	DPN N	iC60N / C120N			iC60H, L / C120H, L / NG125N, H, L				gG			
Products Ratings (A)	0.5 to 40	0.5 to 40	0.5 to 40	32 - 40	50 - 63	0.5 to 25	32 - 40	50 - 63	80 - 100	gG 25	gG 40	gG 63	gG 100
REDs Type A 2P													
25	6	10	10	-	-	10	-	-	-	10	-	-	-
40	6	10	10	10	-	15	10	-	-	15	10	-	-
63	-	-	10	10	10	15	15	10	-	25	15	10	-
REDs Type A 4P													
25	6	10	10	-	-	10	-	-	-	10	-	-	-
40	6	10	10	10	-	15	10	-	-	15	10	-	-
63	-	-	10	10	10	15	10	10	-	25	15	10	-
100	-	-	10	10	10	15	15	15	10	25	25	15	10
REDtest Type A 2P													
25	6	6	6	-	-	6	-	-	-	6	-	-	-
40	6	6	10	6	-	10	6	-	-	10	6	-	-

DB122893

		Circuit-breaker (MCB) or Fuse (FU)			
		⩽ 25 A	⩽ 40 A	⩽ 63 A	⩽ 100 A
REDs / REDtest	25 A	■	—	—	—
	40 A	■	■	—	—
REDs	63 A	■	■	■	—
	100 A	■	■	■	■



DB404526

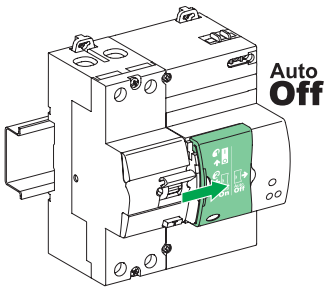


Fig. 1

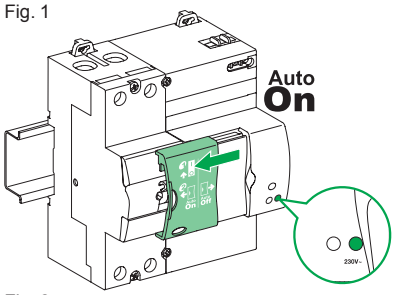


Fig. 2

Operation

REDs

The REDs operates in the residual current device mode, without automatic restart, when the sliding cover is open, i.e. to the right in the Auto Off position (Fig. 1).

The automatic restart mode and the Autotest are activated, when the sliding cover is closed, i.e. to the left in the Auto On position (Fig. 2).

Test

⚠ **This is only possible in manual mode, i.e. sliding cover open in the Auto Off position. You can then manually test the device by pressing the Test key.**
The downstream installation is then temporarily broken. You must then manually reclose the RED by activating the O-I lever to power supply the downstream circuit.

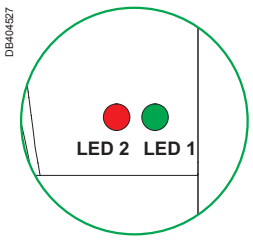
REDtest

■ **The REDtest carries out automatic testing of earth leakage protection every months.**
The test consists in opening and reclosing the REDtest, during which time continuity of supply of the downstream installation is guaranteed.
Autotest: after checking installation insulation, the REDtest monitors its residual current device, without breaking the downstream power supply (bypass by bypass contact).

REDs, REDtest

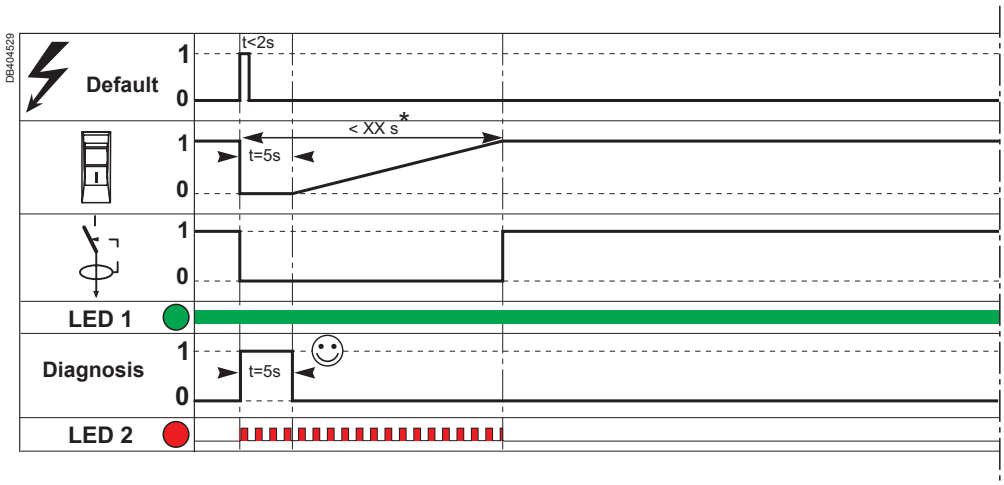
Operation ON mode: temporary network fault

REDs, REDtest



(*) Reclosing time:

REDtest	2P:	10 s
REDs	2P:	90 s
REDs	4P:	10 s



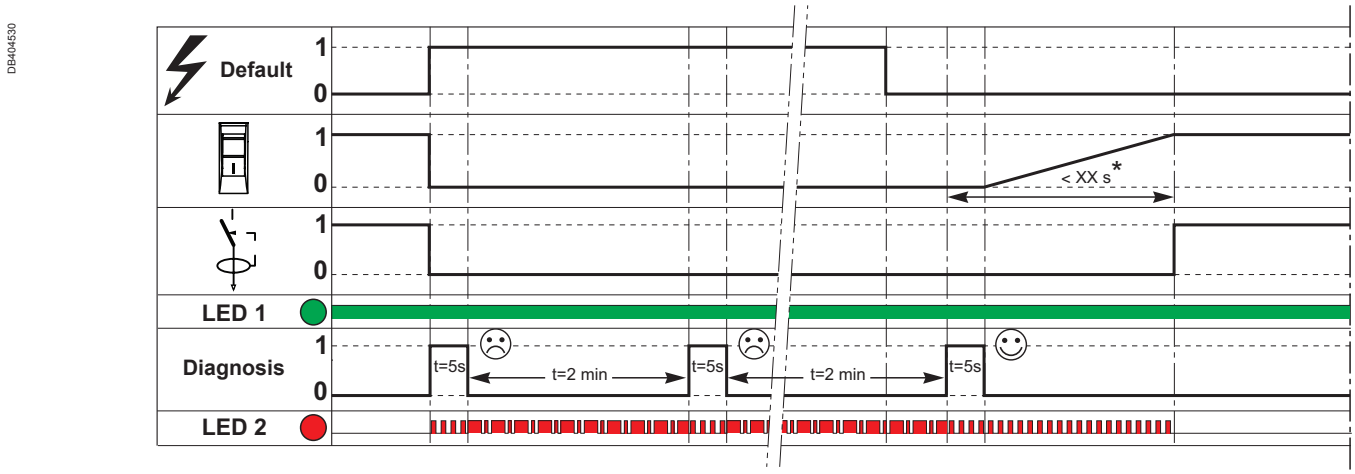
The built-in automatic recloser automatically recloses the residual current device after checking insulation of the downstream circuit.
Rd: lower level of insulation resistance, if R<Rd = no reclose
Rdo: higher level of insulation resistance, if Rd>Rdo = reclose

IΔn	30 mA	300 mA
Rd	8 kΩ	2.5 kΩ
Rdo	16 kΩ	5 kΩ

Operation ON mode: long network fault

REDs

If the circuit is faulty, the switch is prohibited from reclosing. After a time delay of 2 minutes, the downstream circuit insulation is rechecked.
There are then two possibilities:
■ the installation is still faulty (the resistance to earth is lower than Rd): in this case a new check will be carried out in 2 minutes.
■ the fault was temporary and has disappeared (the resistance to earth is higher than Rdo): the recloser automatically recloses the REDs.



(*) Reclosing time:

REDs	2P:	90 s
REDs	4P:	10 s

REDs, REDtest

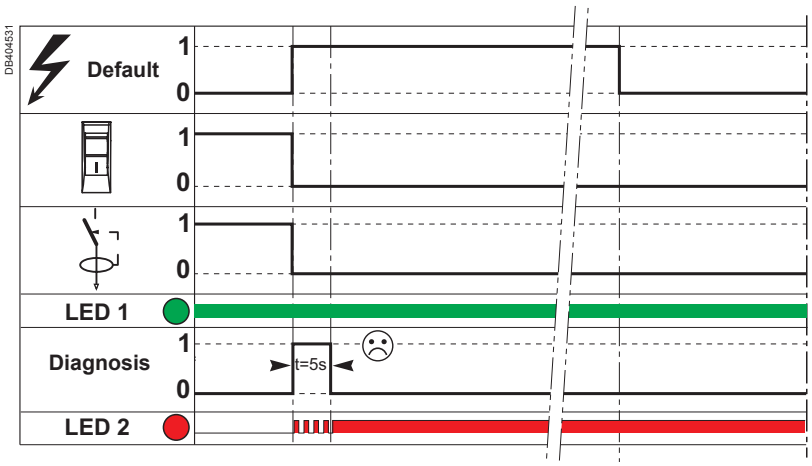
IΔn	30 mA
Rd	20 kΩ
Rdo	70 kΩ

Operation ON mode: long network fault (cont.)

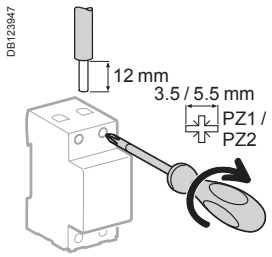
REDtest

If the circuit is faulty for a length of time "greater than 5 seconds", the switch is prohibited from reclosing.

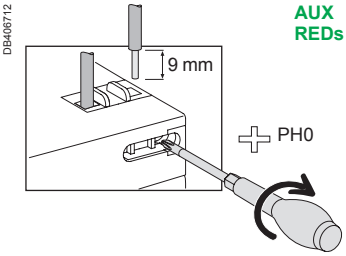
■ The installation is faulty: the earth resistance is lower than Rd.

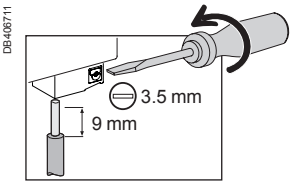


Connection



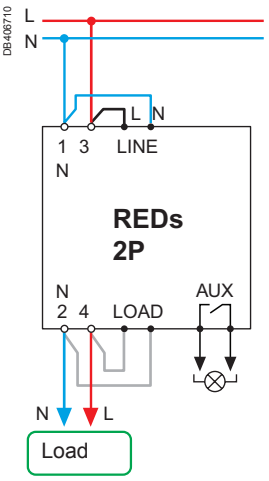
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
N, L	2 N.m	35 mm²	35 mm²
AUX REDs	0.4 N.m	2.5 mm²	2.5 mm²
AUX REDtest	0.4 N.m	2.5 mm²	2.5 mm²



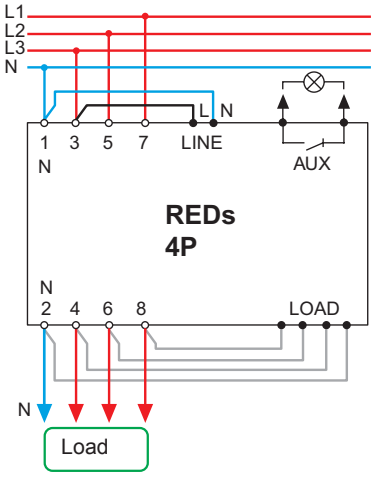


Connection by tunnel terminal with guard

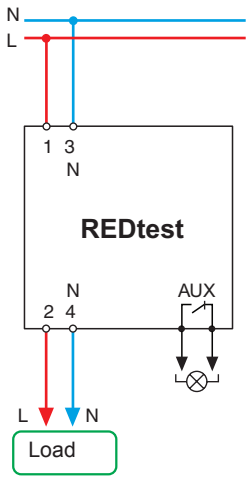
REDs, REDtest

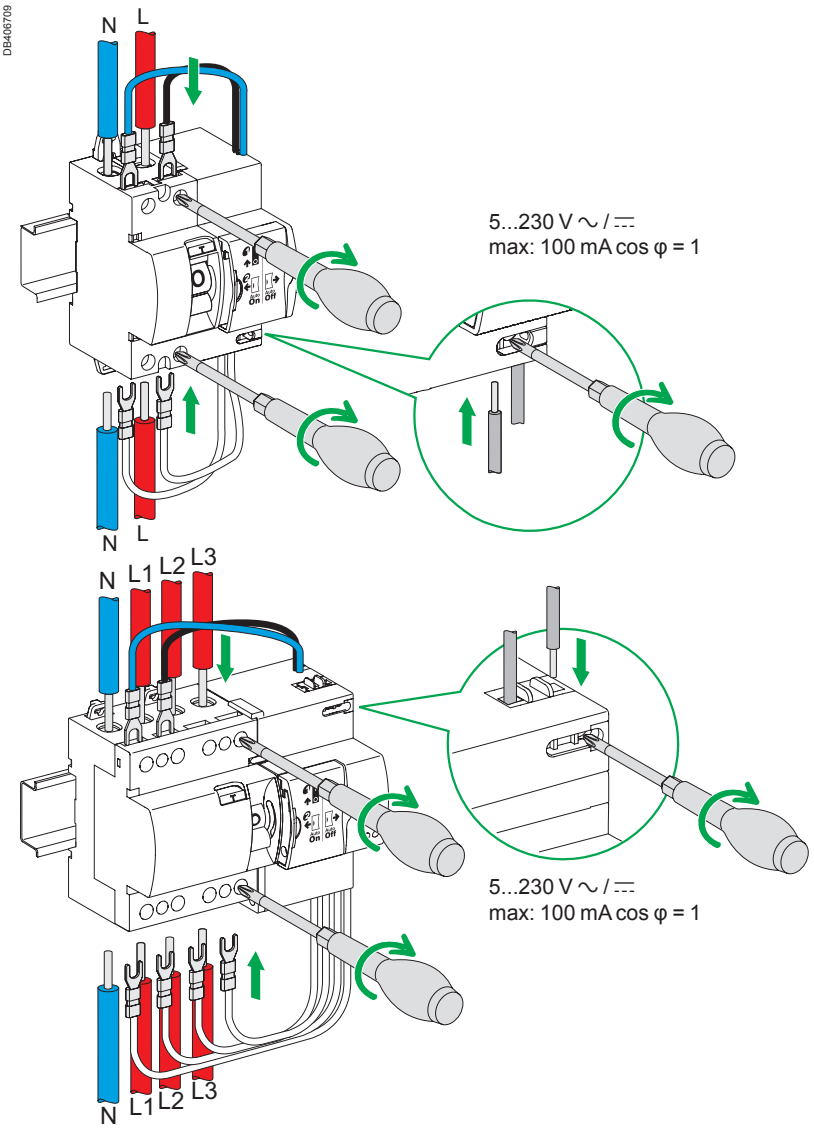


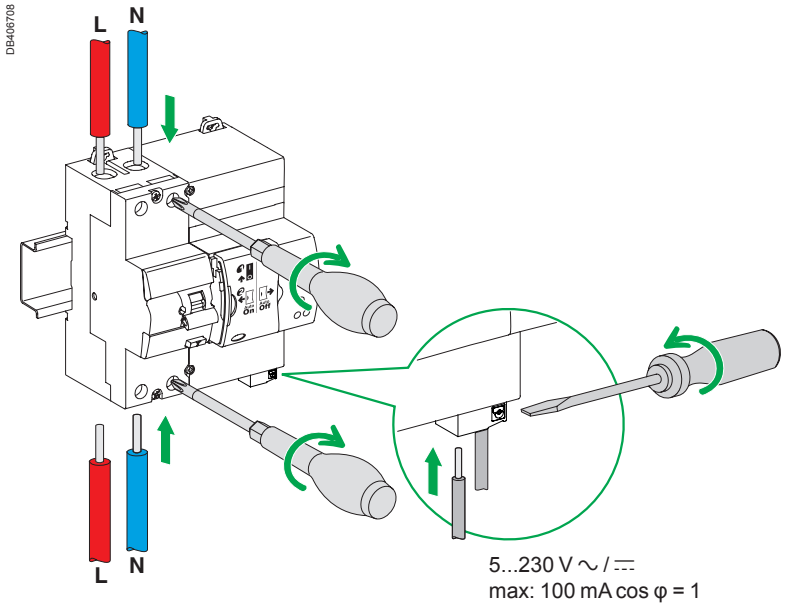
Wiring of non-polarized white wires



Wiring of non-polarized white wires

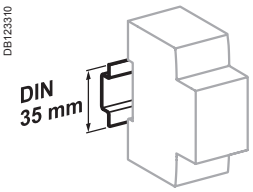






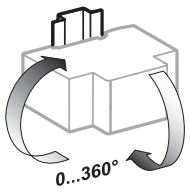
REDs, REDtest

DB123310



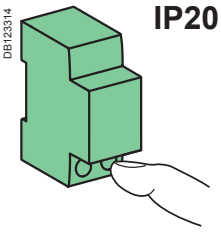
Clip on DIN rail 35 mm.

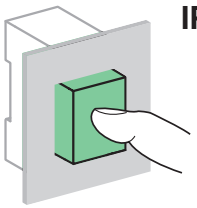
DB123312



Indifferent position of installation.

DB123314





Technical data.

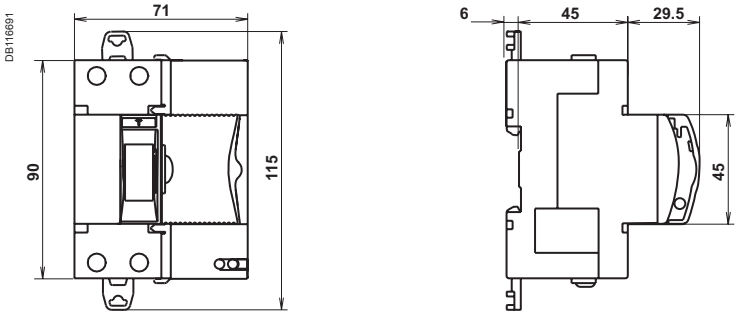
Main characteristics	2P		4P
Common technical data	**REDtest**	**REDs**	**REDs**
Earthing grounding systems	TT and TN-S only		
Impulse withstand voltage (Uimp)	4 kV		
Insulation voltage (Ui)	500 V		
8/20 µs wave immunity level	250 Â		
Tropicalization	Treatment 2 (relative humidity: 95 % at 55°C)		
Operating temperature	-5°C to +40°C		
Storage temperature	-20°C to +60°C		
Protection class	IP20 at terminals		
Additional characteristics			
Residual current device			
Tripping time	IΔn: ≤ 300 ms		
	5 IΔn: ≤ 40 ms		
Number of cycles (O-C)	1 000		4 000
Fixed sensitivity releases for all ratings	Instantaneous release		
Test button min operating voltage	195 V	100 V	170 V
Recloser			
Max duration of a restart cycle	< 10 s	< 90 s	< 10 s
Maximum number of consecutive restart attempts (if no earth fault)	3		
Min interval between 2 closings	180 s		30 s
Insulation fault presence monitoring	Yes		
Insulation fault diagnosis	If fault: stopping of the restart cycle	If fault: diagnosis every 2 minutes with stopping of the restart cycle	
Stopping restart cycle if insulation fault present	Yes	Yes, during 15 minutes	
Not operating resistance to earth (Rd)	20 kΩ	8 kΩ (30 mA), 2.5 kΩ (300 mA)	
Operating resistance to earth (Rdo)	70 kΩ	16 kΩ (30 mA), 5 kΩ (300 mA)	
Power consumed by the electronics	8 VA	0 VA	
Indication			
Status indication	Mechanical: by O-I (open-closed) 2-position lever		
	■ Electrical: by 2 indicator lights on the front panel: □ left: red/yellow LED □ right: green LED		
	Remote: by 1 built-in auxiliary contact		
Auxiliary contact			
Voltage rating (Ue)	5...230 V AC/DC		
Insulation voltage (Ui)	350 V		
Current rating (In)	Min: 0.6 mA		
	Max: 100 mA, power factor = 1		
Type Configurable	NO or NC	Intermittent 1 Hz or NO or NC	
Connection by tunnel terminal	Flexible or rigid cable: max 2.5 mm^2		

REDs, REDtest

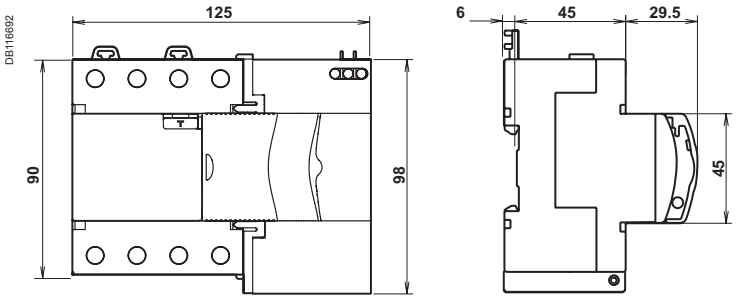
Weight (g)

Reclosers	2P	4P
REDs	360	■ 25/40 A: 670 ■ 63 A: □ 30 mA: 720 □ 300 mA: 680 ■ 100 A: 948
REDtest	370	-

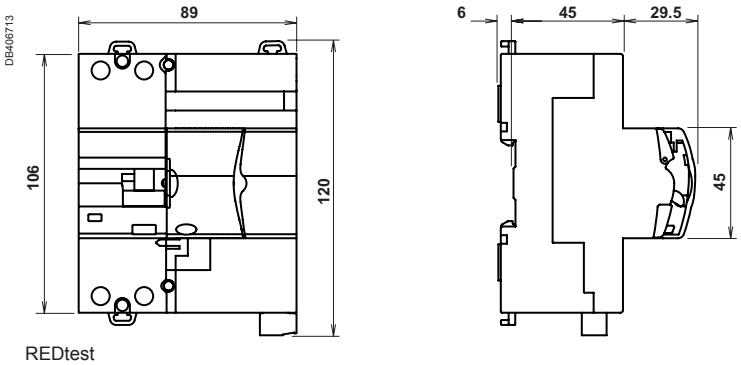
Dimensions (mm)



REDs 2P



REDs 4P



REDtest

Arc fault detection device iARC

Fire prevention

CE

Country approval pictograms

IEC/EN 62606 (europe)
GB/T 31143 (China)

General requirements for arc detection devices.

iARC reduces the risk of electrical fires.
By continuously analysing a large number of electrical parameters, it detects the appearance of electric arcs that are responsible for starting fires.
It automatically isolates the circuit concerned before the first flame appears.
In residential installations, iARC is particularly suitable for protecting circuits where the risk of fire is highest:
- bedroom and living room socket circuits that are live, unattended power outlets
- circuits susceptible to be damaged (surface-mounted, outdoor installation, etc.).

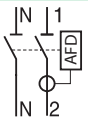
■ iARC monitors electric arcs that occur in cables and connections and cause a fire. These arcs are the result of localised cable deterioration or loose connections
■ It is used for three types of situations that can result in a fire:
□ parallel arc detection: insulation problems between two live conductors that cause a resistive short-circuit, too weak to be detected by a circuit breaker and with no earth leakage that would be detected by an earth-leakage protection device,
□ series arc detection: a damaged conductor or connection that causes part of the current to pass into its carbonised insulation due to a local rise in temperature,
□ overheating of electronic components in loads, when exposed to an overvoltage for several seconds.

■ It combines the following functions:
□ protection against fire hazards by detection of abnormal electric arcs,
□ protection against load fire hazards due to slow overvoltages,
□ circuit opening and positive break indication (green strip),
□ fire hazard tripping indication via the front panel indicator,
□ device self-diagnostics via the test button.

■ Installed in series with a circuit breaker or RCBO (DPN Vigi), max. 25 A, it protects Phase-Neutral or Phase-Phase circuits, in full coordination under short-circuit conditions up to a rated breaking capacity (Inc) of 10,000 A.

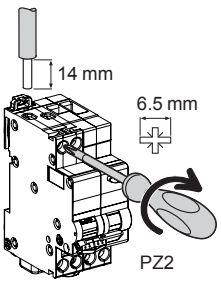
PB111222-50

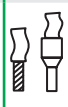
Catalogue numbers

iARC			
Arc Fault Detection Device (AFDD) to IEC/EN 62606			**Width in 9 mm modules**
1P+N			
DB406204 	Rating (In) 25 A	**A9FDD225**	4
Operating voltage	230 V AC		
Operating frequency	50 Hz		

Connection

DB406199



Tightening torque	Copper cables only	
	Rigid	**Flexible or with ferrule**
	DB122945 	DB122946 
2 N.m	1 x 1 to 16 mm² 2 x 1 to 2.5 mm²	1 x 1 to 10 mm² 2 x 1 to 2.5 mm²

Arc fault detection device iARC (cont.)

Fire prevention

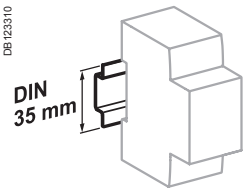
PB111222-50

Test button
■ For device self-diagnostic

Positive break indication
■ A green strip on the handle ensures that all the poles are open for insulation

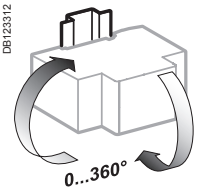
Red square indicator
■ Fire hazard tripping indication via a "red" status indicator

DB123310



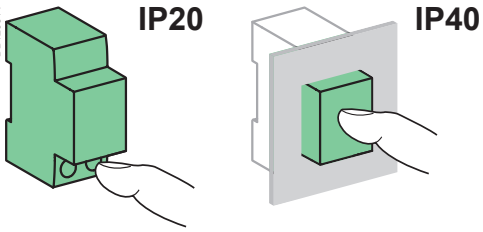
Clip on DIN rail 35 mm.

DB123312



Indifferent position of installation.

DB123314



Technical data

Main characteristics						
Tripping time/arc current value with Un = 230 V AC (to IEC/EN 62606)	Arc current	2.5 A	5 A	10 A	16 A	25 A
	Max. operating time	1 s	0.5 s	0.25 s	0.15 s	0.14 s
Overvoltage tripping time (neutral conductor break)		400 V AC, 200 ms				
Insulation voltage (Ui)		400 V AC				
Degree of pollution		2				
Rated impulse withstand voltage (Uimp)		4 kV				
Rated making and breaking capacity (Im)		500 A				
Overvoltage category		III				
Coordinated with an upstream circuit breaker	Max. rating	25 A				
	Curve	B or C				
	Rated breaking capacity (Inc)	Up to 10,000 A				

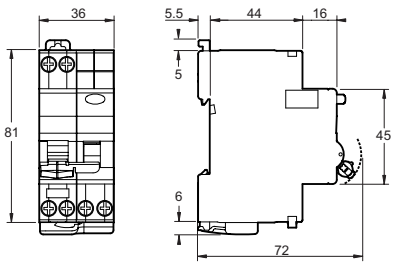
Additional characteristics		
Degree of protection	Device alone	IP20
	Device in a modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical ≤ 20 A	20,000 cycles
	25 A	10,000 cycles
	Mechanical	20,000 cycles
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +85°C
Tropicalization (to IEC/EN 62606)		Severity B (to IEC 60068-2-30) during 28 days

Weight (g)

Arc fault detection device	
Type	**iARC**
1P+N	198

Dimensions (mm)

DB406197



Arc fault detection circuit breaker iDPN N Arc

Fire prevention

DB405571

Country approval pictograms

IEC 60898-1
Circuit breakers for the protection against the overload (residential and similar installations).

IEC/EN 62606
General requirements for arc detection devices.

iDPN N Arc is for residential application only.

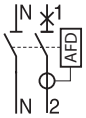
The iDPN N Arc reduces the risk of electrical fires.
By continuously analysing a large number of electrical parameters, it detects the appearance of electric arcs that are responsible for starting fires.
It automatically isolates the circuit concerned before the first flame appears.
The iDPN N Arc is designed for residential use only, to protect circuits where the risk of fire is highest:
- bedroom and living room socket circuits that are live, unattended power outlets
- circuits susceptible to be damaged (surface-mounted, outdoor installation, etc.).

■ In addition to protection against overloads and short circuits, the iDPN N Arc monitors for electric arcs that occur in cables and connections, that may cause a fire in residential application.
These arcs are the result of localised cable deterioration or loose connections.
■ It is used for three types of situations that can result in a fire:
□ parallel arc detection: insulation problems between two live conductors that cause a resistive short-circuit, too weak to be detected by a circuit breaker and with no earth leakage to be detected by a residual current circuit breaker,
□ series arc detection: a damaged conductor or connection that causes part of the current to flow through its carbonised insulation due to a local rise in temperature,
□ overheating of electronic components in loads, when exposed to an overvoltage for several seconds.

■ It combines the following functions:
□ circuit protection against overload and short-circuit currents (circuit breaker function),
□ protection against fire hazards by detection of abnormal electric arcs,
□ protection against load fire hazards due to slow overvoltages (network overvoltage),
□ fire hazard tripping indication via the front panel indicator,
□ device self-diagnostics via the test button,
□ positive contact indication (green strip).

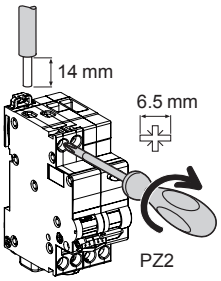
PB115631-50

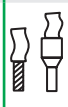
Catalogue numbers

iDPN N Arc 6000				
Arc Fault Detection Devices (AFDD) to IEC/EN 62606				**Width in 9 mm modules**
1P+N			**C curve**	
DB406203 	Rating (In)	6 A	**A9FDB606**	4
		10 A	**A9FDB610**	
		16 A	**A9FDB616**	
		20 A	**A9FDB620**	
		25 A	**A9FDB625**	
Operating voltage	230/240 V AC			
Operating frequency	50 Hz			

Connection

DB406199

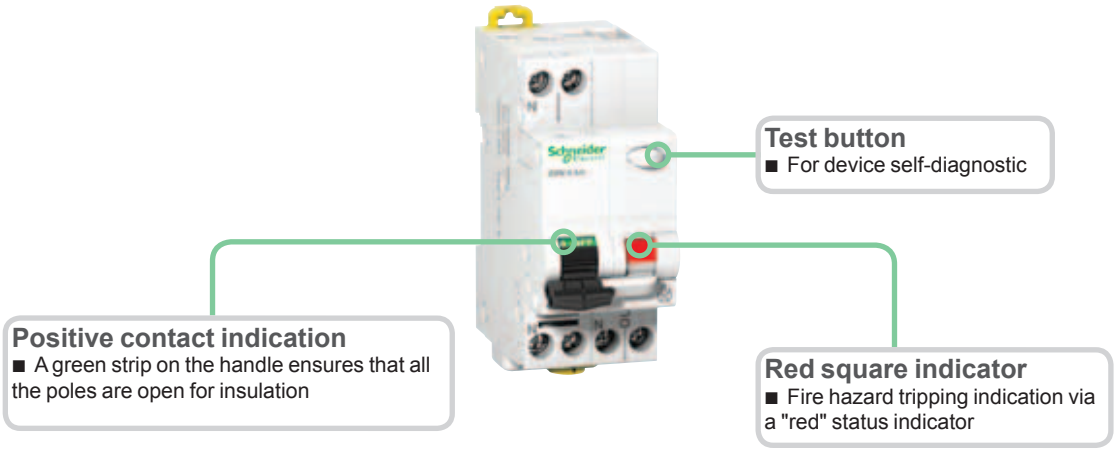


Tightening torque	Copper cables only	
	Rigid	**Flexible or with ferrule**
	DB122945 	DB122946 
2 N.m	1 x 1 to 16 mm² 2 x 1 to 2.5 mm²	1 x 1 to 10 mm² 2 x 1 to 2.5 mm²

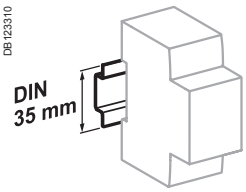
Arc fault detection circuit breaker iDPN N Arc (cont.)

Fire prevention

PB115631-50

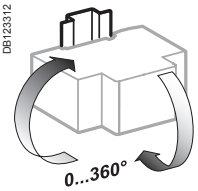


DB123310



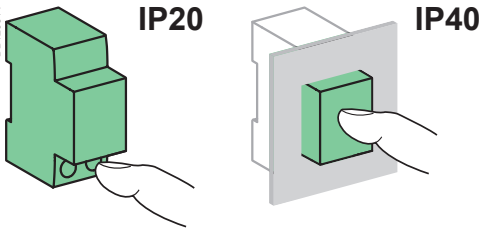
Clip on DIN rail 35 mm.

DB123312



Indifferent position of installation.

DB123314



Technical data

Main characteristics							
Tripping time/arc current value with Un = 230 V AC (to IEC/EN 62606)	Arc current	2.5 A	5 A	10 A	16 A	25 A	
	Max. operating time	1 s	0.5 s	0.25 s	0.15 s	0.14 s	
Overvoltage tripping time (neutral conductor break)		400 V AC, 200 ms					
Insulation voltage (Ui)		400 V AC					
Degree of pollution		2					
Rated impulse withstand voltage (Uimp)		4 kV					
Overvoltage category		III					
Limitation class		3					
Thermal tripping	Reference temperature	30°C					
Magnetic tripping	Curve C	Between 5 and 10 In					
Rated breaking capacity (Inc)		6 000 A					

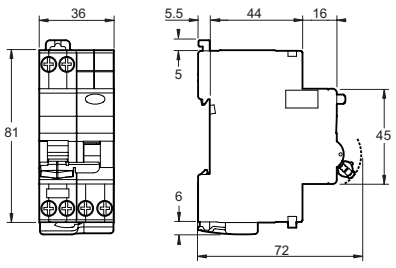
Additional characteristics		
Degree of protection	Device alone	IP20
	Device in a modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical ≤ 20 A	20,000 cycles
	25 A	10,000 cycles
	Mechanical	20,000 cycles
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +85°C
Tropicalization (to IEC/EN 62606)		Severity B (to IEC 60068-2-30) during 28 days

Weight (g)

Arc fault detection circuit breaker	
Type	**iDPN N Arc**
1P+N	198

Dimensions (mm)

DB406197



Arc fault detection circuit breaker iARC DPNN

Fire prevention

Country approval pictograms

IEC 60898-1 and GB10963.1

Circuit breakers for the protection against the overload (residential and similar installations).

IEC/EN 62606

General requirements for arc detection devices.

The iARC DPNN reduces the risk of electrical fires.
By continuously analysing a large number of electrical parameters, it detects the appearance of electric arcs that are responsible for starting fires.
It automatically isolates the circuit concerned before the first flame appears.
The iARC DPNN is designed to protect circuits where the risk of fire is highest:
- bedroom and living room socket circuits that are live, unattended power outlets
- circuits susceptible to be damaged (surface-mounted, outdoor installation, etc.)
- lighting circuits.

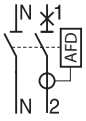
■ In addition to protection against overloads and short circuits, the iARC DPNN monitors for electric arcs that occur in cables and connections, that may cause a fire. These arcs are the result of localised cable deterioration or loose connections.

■ It is used for three types of situations that can result in a fire:
□ parallel arc detection: insulation problems between two live conductors that cause a resistive short-circuit, too weak to be detected by a circuit breaker and with no earth leakage to be detected by a residual current circuit breaker,
□ series arc detection: a damaged conductor or connection that causes part of the current to flow through its carbonised insulation due to a local rise in temperature,
□ overheating of electronic components in loads, when exposed to an overvoltage for several seconds.

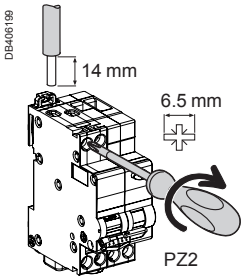
■ It combines the following functions:
□ circuit protection against overload and short-circuit currents (circuit breaker function),
□ protection against fire hazards by detection of abnormal electric arcs,
□ protection against load fire hazards due to slow overvoltages (network overvoltage),
□ fire hazard tripping indication via the front panel indicator,
□ device self-diagnostics via the test button,
□ positive contact indication (green strip).

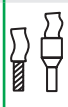
DB409118-50

Catalogue numbers

iARC DPNN 6000				
Arc Fault Detection Devices (AFDD) to IEC/EN 62606				**Width in 9 mm modules**
1P+N			**C curve**	
DB406203 	Rating (In)	10 A	**A9FDN610**	4
		16 A	**A9FDN616**	
		20 A	**A9FDN620**	
		25 A	**A9FDN625**	
Operating voltage	230 V AC			
Operating frequency	50 Hz			

Connection

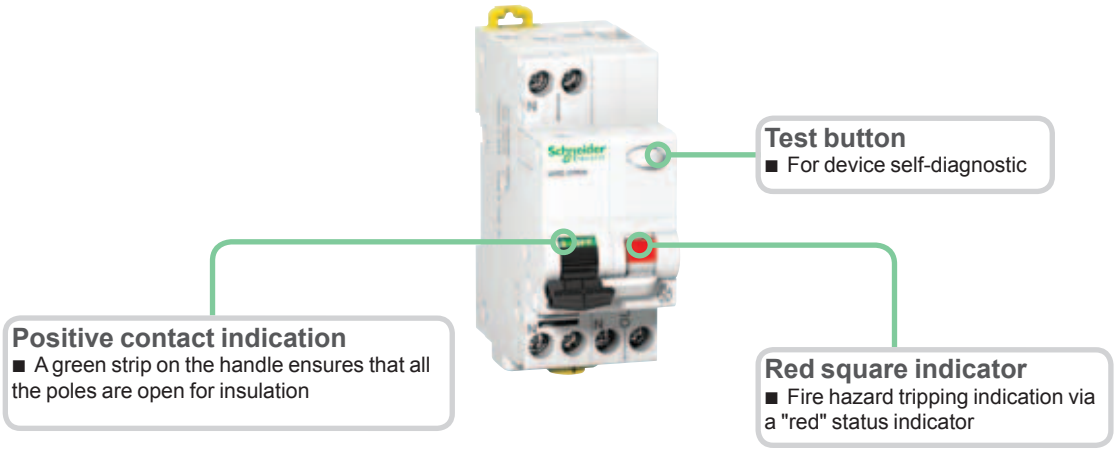


Tightening torque	Copper cables only	
	Rigid	**Flexible or with ferrule**
	DB122945 	DB122946 
2 N.m	1 x 1 to 16 mm² 2 x 1 to 2.5 mm²	1 x 1 to 10 mm² 2 x 1 to 2.5 mm²

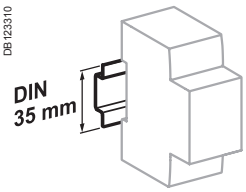
Arc fault detection circuit breaker iARC DPNN (cont.)

Fire prevention

DB409118-50

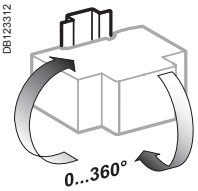


DB123310



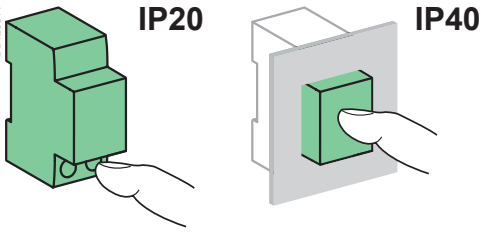
Clip on DIN rail 35 mm.

DB123312



Indifferent position of installation.

DB123314



Technical data

Main characteristics						
Tripping time/arc current value with Un = 230 V AC (to IEC/EN 62606)	Arc current	2.5 A	5 A	10 A	16 A	25 A
	Max. operating time	1 s	0.5 s	0.25 s	0.15 s	0.14 s
Overvoltage tripping time (neutral conductor break)		400 V AC, 200 ms				
Insulation voltage (Ui)		400 V AC				
Degree of pollution		2				
Rated impulse withstand voltage (Uimp)		4 kV				
Overvoltage category		III				
Limitation class		3				
Thermal tripping	Reference temperature	30°C				
Magnetic tripping	Curve C	Between 5 and 10 In				
Rated breaking capacity (Inc)		6 000 A				

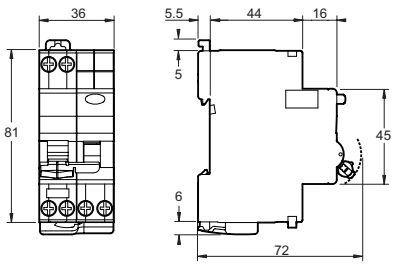
Additional characteristics		
Degree of protection	Device alone	IP20
	Device in a modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical ≤ 20 A	20,000 cycles
	25 A	10,000 cycles
	Mechanical	20,000 cycles
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +85°C
Tropicalization (to IEC/EN 62606)		Severity B (to IEC 60068-2-30) during 28 days

Weight (g)

Arc fault detection circuit breaker	
Type	**iARC DPNN**
1P+N	198

Dimensions (mm)

DB406197



Arc fault detection circuit breaker iDPN N Arc
B curve

Fire prevention

DB116619

Country approval pictograms

IEC 60898-1
Circuit breakers for the protection against the overload (residential and similar installations).

IEC/EN 62606
General requirements for arc detection devices.

iDPN N Arc is for residential application only.

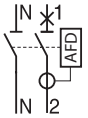
The iDPN N Arc reduces the risk of electrical fires.
By continuously analysing a large number of electrical parameters, it detects the appearance of electric arcs that are responsible for starting fires.
It automatically isolates the circuit concerned before the first flame appears.
The iDPN N Arc is designed for residential use only, to protect circuits where the risk of fire is highest:
- bedroom and living room socket circuits that are live, unattended power outlets
- circuits susceptible to be damaged (surface-mounted, outdoor installation, etc.).

■ In addition to protection against overloads and short circuits, the iDPN N Arc monitors for electric arcs that occur in cables and connections, that may cause a fire in residential application.
These arcs are the result of localised cable deterioration or loose connections.
■ It is used for three types of situations that can result in a fire:
□ parallel arc detection: insulation problems between two live conductors that cause a resistive short-circuit, too weak to be detected by a circuit breaker and with no earth leakage to be detected by a residual current circuit breaker,
□ series arc detection: a damaged conductor or connection that causes part of the current to flow through its carbonised insulation due to a local rise in temperature,
□ overheating of electronic components in loads, when exposed to an overvoltage for several seconds.

■ It combines the following functions:
□ circuit protection against overload and short-circuit currents (circuit breaker function),
□ protection against fire hazards by detection of abnormal electric arcs,
□ protection against load fire hazards due to slow overvoltages (network overvoltage),
□ fire hazard tripping indication via the front panel indicator,
□ device self-diagnostics via the test button,
□ positive contact indication (green strip).

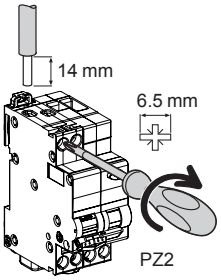
PB117501-50

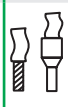
Catalogue numbers

iDPN N Arc 6000			
Arc Fault Detection Devices (AFDD) to IEC/EN 62606			**Width in 9 mm modules**
1P+N		**B curve**	
DB406203 	Rating (In) 10 A	**A9FDB7610**	4
	16 A	**A9FDB7616**	
Operating voltage	230/240 V AC		
Operating frequency	50 Hz		

Connection

DB406199



Tightening torque	Copper cables only	
	Rigid	**Flexible or with ferrule**
	DB122945 	DB122946 
2 N.m	1 x 1 to 16 mm² 2 x 1 to 2.5 mm²	1 x 1 to 10 mm² 2 x 1 to 2.5 mm²

Arc fault detection circuit breaker iDPN N Arc (cont.)
B curve

Fire prevention

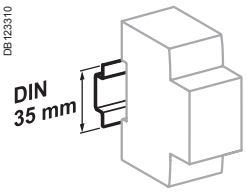
PB117501-50

Test button
■ For device self-diagnostic

Positive contact indication
■ A green strip on the handle ensures that all the poles are open for insulation

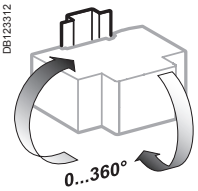
Red square indicator
■ Fire hazard tripping indication via a "red" status indicator

DB123310



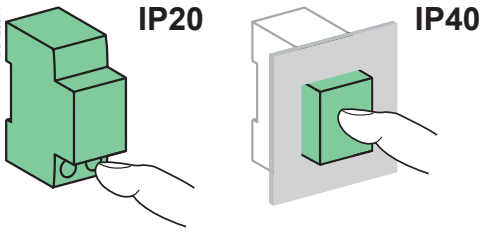
Clip on DIN rail 35 mm.

DB123312



Indifferent position of installation.

DB123314



Technical data

Main characteristics						
Tripping time/arc current value with Un = 230 V AC (to IEC/EN 62606)	Arc current	2.5 A	5 A	10 A	16 A	25 A
	Max. operating time	1 s	0.5 s	0.25 s	0.15 s	0.14 s
Overvoltage tripping time (neutral conductor break)		400 V AC, 200 ms				
Insulation voltage (Ui)		400 V AC				
Degree of pollution		2				
Rated impulse withstand voltage (Uimp)		4 kV				
Overvoltage category		III				
Limitation class		3				
Thermal tripping	Reference temperature	30°C				
Magnetic tripping	B curve	Between 3 and 5 In				
Rated breaking capacity (Inc)		6 000 A				

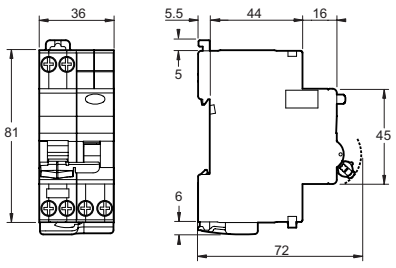
Additional characteristics		
Degree of protection	Device alone	IP20
	Device in a modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	20,000 cycles
	Mechanical	20,000 cycles
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +85°C
Tropicalization (to IEC/EN 62606)		Severity B (to IEC 60068-2-30) during 28 days

Weight (g)

Arc fault detection circuit breaker	
Type	**iDPN N Arc**
1P+N	198

Dimensions (mm)

DB406197



iPRF1 12.5r/PRD1 35r/ PRD1 25r/PRD1 Master

Type 1 and 2 LV surge arresters

The Type 1 range of surge arresters meets the normative withstand capability of current wave type 10/350 µs (8/20 µs for Type 2 surge arresters).
It is suitable for use with TT, TN-S, TN-C and IT earthing connection systems (neutral point connection).
In addition, the PRD1 35r surge arrester covers the 400 V IT system.
iPRF1 12.5r and PRD1 surge arresters are fitted with a remote transfer contact to send "end-of-life indication" information.
PRD1 surge arresters are fitted with easy-to-replace withdrawable cartridges.

iPRF1 12.5r/PRD1 35r/PRD1 25r/PRD1 Master

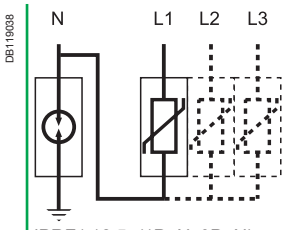
The Type 1 surge arrester is recommended for electrical installations in the service sector and industrial buildings protected by a lightning conductor or by a meshed cage.
It protects electrical installations against direct lightning strikes.
It is used to conduct the direct lightning current, propagating from the earth conductor to the network conductors.
It must be installed with an upstream disconnection device, such as a fuse or circuit-breaker, whose breaking capacity must be at least equal to the maximum prospective short-circuit current at the installation point.
iPRF1 12.5r and PRD1 25r surge arresters also provide Type 2 protection and protect the electrical installation by finely clipping the lightning wave overvoltages.

iPRF1 12.5r (3P+N)

PRD1 35r (1P)

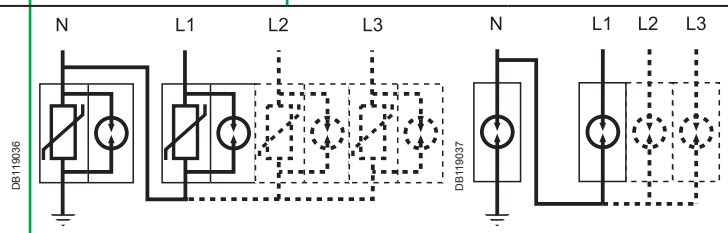
PRD1 25r (3P+N)

PRD1 Master (3P+N)



iPRF1 12.5r (1P+N, 3P+N)

Type	Product solution	
Fixed surge arrester	**1P+N**	**3P+N**
iPRF1 12.5r T1, T2	**A9L16632**	**A9L16634**



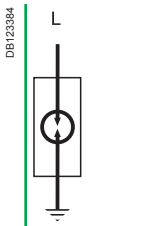
PRD1 25r (1P+N, 3P+N)

PRD1 Master (1P+N, 3P+N)

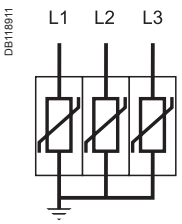
Cartridge surge arrester	1P+N	3P+N
PRD1 25r T1 + T2	**16330**	**16332**
PRD1 Master T1	**16361**	**16363**
PRD1 35r T1		

iPRF1 12.5r/PRD1 35r/ PRD1 25r/PRD1 Master

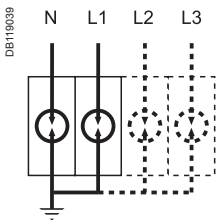
Type 1 and 2 LV surge arresters (cont.)



PRD1 35r (1P)

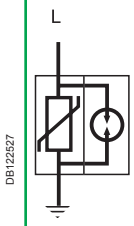


iPRF1 12.5r (3P)

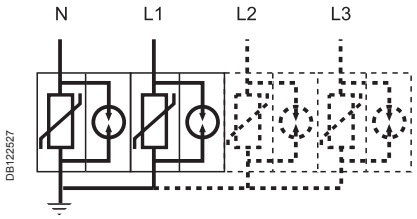


PRD1 35r (2P, 3P, 4P)

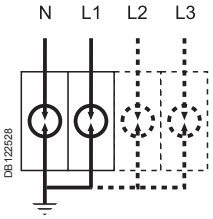
					Earthing system	Recommended accessory
	1P	**2P**	**3P**	**4P**		
					TT, TN-S	
			A9L16633		TN-C	



PRD1 25r (1P)



PRD1 25r (2P, 3P, 4P)



PRD1 Master (2P, 3P, 4P)

	1P	**2P**	**3P**	**4P**		
					TT, TN-S	
	16329	2 x **16329**		4 x **16329**	TT, TN-C	
			16331		TN-C	
					TT, TN-S	
	16360	2 x **16360**		4 x **16360**	TT, TN-C	
			16362		TN-C	
		2 x **16649**			IT distributed neutral, TT, TN-S	**16643**
	16649		3 x **16649**		IT non-distributed neutral, TN-C	**16644**
				4 x **16649**	IT distributed neutral	**16645**

iPRF1 12.5r/PRD1 35r/ PRD1 25r/PRD1 Master

Type 1 and 2 LV surge arresters (cont.)

Type	Nb. of poles	Width	I imp (kA) (10/350) Impulse current	I max (kA) (8/20) Maximum discharge current	In - kA Nominal discharge current	Up - kV Voltage protection level	Un - (V) Rated voltage network	Uc - V Maximum continious operating voltage	Cat. no.
Fixed surge arrester		**9 mm modules**						(L-N)/(N-PE)	
iPRF1 12.5r	**Type** 1 + 2								
	1P+N	4	12.5 (L-N)/50 (N-PE)	50	25	≤ 1.5	230	350/255	**A9L16632**
	3P	8	12.5	50	25	≤ 1.5	230/400	350	**A9L16633**
	3P+N	8	12.5 (L-N)/50 (N-PE)	50	25	≤ 1.5	230/400	350/255	**A9L16634**
Withdrawable surge arrester									
PRD1 25r	**Type** 1 + 2								
	1P	4	25	40	25	≤ 1.5	230	350	**16329**
	1P+N	8	25 (L-N)/100 (N-PE)	40	25	≤ 1.5	230	350/350	**16330**
	3P	12	25	40	25	≤ 1.5	230/400	350	**16331**
	3P+N	16	25 (L-N)/100 (N-PE)	40	25	≤ 1.5	230/400	350/350	**16332**
PRD1 Master	**Type** 1								
	1P	4	25	50	25	≤ 1.5	230	350	**16360**
	1P+N	8	25 (L-N)/100 (N-PE)	50	25	≤ 1.5/2.5	230	350/350	**16361**
	3P	12	25	50	25	≤ 1.5	230/400	350	**16362**
	3P+N	16	25 (L-N)/100 (N-PE)	50	25	≤ 1.5/2.5	230/400	350/350	**16363**
PRD1 35r	**Type** 1								
	1P	4	35	50	35	≤ 2.5	230/400	440	**16649**
Spare cartridge									
C1 Master-350	-	4	-	-	25	≤ 1.5	-	350	**16314**
C1 25-350	-	23 mm	-	-	25	≤ 1.5	-	350	**16315**
C2 40-350	-	12 mm	-	-	20	≤ 1.5	-	350	**16316**
C1 Neutral-350	-	4	-	-	-	-	-	350	**16317**
C1 35-440	-	4		-	35	≤ 2.5	-	440	**16318**

PB104268-30

C1 Neutral-350

Surge arresters	Spare cartridge		
	Phase		Neutral
	Type 1	Type 2	
PRD1 25r			
PRD1 25r 1P	**16315**	**16316**	-
PRD1 25r 1P+N	**16315**	**16316**	**16317**
PRD1 25r 3P	3 x **16315**	3 x **16316**	-
PRD1 25r 3P+N	3 x **16315**	3 x **16316**	**16317**
PRD1 Master			
PRD1 Master 1P	**16314**	-	-
PRD1 Master 1P+N	**16314**	-	**16317**
PRD1 Master 3P	3 x **16314**	-	-
PRD1 Master 3P+N	3 x **16314**	-	**16317**
PRD1 35r			
PRD1 35r 1P	1 x **16318**	-	-
PRD1 35r 2P	2 x **16318**	-	-
PRD1 35r 3P	3 x **16318**	-	-
PRD1 35r 4P	4 x **16318**	-	-

DB123370

Accessories		
Type	**Number of poles (18 mm)**	
Wiring comb busbars for 2 x 1P	4	**16643**
Wiring comb busbars for 3 x 1P	6	**16644**
Wiring comb busbars for 4 x 1P	8	**16645**
200 mm flexible cable	-	**16646**

iPRF1 12.5r/PRD1 35r/ PRD1 25r/PRD1 Master

Type 1 and 2 LV surge arresters (cont.)

Technical data

		iPRF1 12.5r	PRD1 35r	PRD1 25r	PRD1 Master
Operating frequency		50 Hz	50/60 Hz	50 Hz	50 Hz
Degree of protection	Front panel	IP40	IP40	IP40	IP40
	Terminals	IP20	IP20	IP20	IP20
	Impacts	IK05	IK05	IK05	IK05
Response time		≤ 25 ns	≤ 100 ns	≤ 25 ns	≤ 100 ns
Short circuit withstand (Isccr)		50 kA	50 kA	25 kA	50 kA
Temporary overvoltage withstand (U_T)	U_T (L-N)	335 V AC/5 s	580 V AC/5 s	415 V AC/5 s	415 V AC/5 s
	U_T (N-PE)	1200 V AC/200 ms	800 V AC/120 min	1200 V AC/200 ms	1200 V AC/200 ms
Temporary overvoltage **Safe failure mode** (U_T)	U_T (L-N)	440 V AC/120 min	1640 V AC/200 ms	440 V AC/120 min	440 V AC/120 min
Ground residual current (I_{PE})	I_{PE} (N-PE)	0.004 mA	≤ 0.005 mA	≤ 0.01 mA for 1P+N, 3P+N	≤ 0.01 mA for 1P+N, 3P+N
Follow current interrupting rating (I_{fi})	I_{fi} (L-N)	-	50 kA	25 kA/264 V AC 3 kA/350 V AC	50 kA
	I_{fi} (N-PE)	100 A	-	100 A	100 A
End-of-life indication		Green: correct operation	White: correct operation	White: correct operation	White: correct operation
		Red: at end of life	Red: at end of life	Red: at end of life	Red: at end of life
	Remote notification	1.5 A/250 V AC	1 A/250 V AC ≤ 1 A/30 V DC	1 A/250 V AC ≤ 1 A/30 V DC	1 A/250 V AC ≤ 1 A/30 V DC
By tunnel terminal	Rigid cable	10...35 mm²	16...35 mm²	10...35 mm²	10...35 mm²
	Flexible cable	10...25 mm²	10...25 mm²	10...25 mm²	10...25 mm²
Operating temperature		-25°C to +60°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Humidity range		5 % to 95 %	5 % to 95 %	5 % to 95 %	5 % to 95 %
Standards		IEC 61643-11: 2011 T1, T2 EN 61643-11: 2012 Type 1 + Type 2	IEC 61643-11 T1 EN 61643-11 Type 1	IEC 61643-11: 2011 T1, T2 EN 61643-11: 2012 Type 1 + Type 2	IEC 61643-11: 2011 T1 EN 61643-11: 2012 Type 1
Approvals		CE, EAC	CE	CE, KEMA-KEUR	CE, KEMA-KEUR

Choice of disconnector / surge arrester

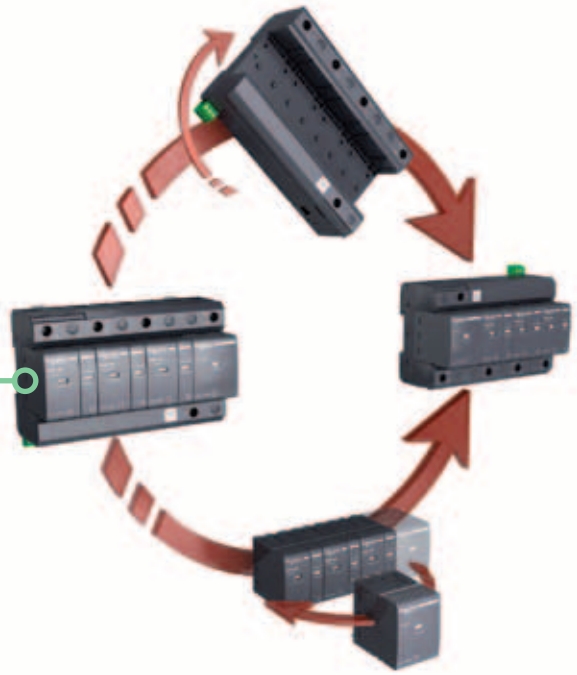
Type	I imp: impulse current	Isc: prospective short-circuit current at the installation point				
		10 kA	15 kA	25 kA	36 kA	50 kA
iPRF1 12.5r	12.5 kA	C120N 80 A curve C or Compact NSX100B 100 A *	C120H 80 A curve C or Compact NSX100B 100 A *	NG125N 80 A curve C or Compact NSX100B 100 A *	NG125H 80 A curve C or Compact NSX100F 100 A *	NG125L 80 A curve C or Compact NSX100N 100 A *
PRD1 35r	35 kA	Compact NSX160B 160 A			Compact NSX160F 160 A	Compact NSX160N 160 A
PRD1 25r	25 kA	Compact NSX100B 100 A			-	
PRD1 Master	25 kA	Compact NSX100B 100 A			Compact NSX100F 100 A	Compact NSX100N 100 A

(*) For lightning impulse current withstand

PB113738-90

PRD1 25r / PRD1 Master / PRD1 35r Reversible

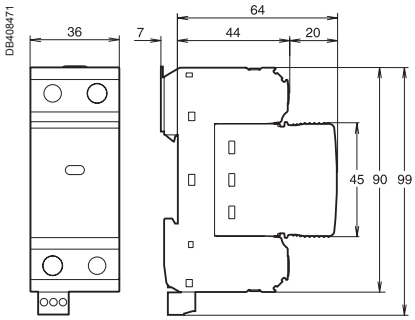
■ The surge arrester base can be turned over to allow the phase/neutral/earth cables to enter through either the top or the bottom



iPRF1 12.5r/PRD1 35r/ PRD1 25r/PRD1 Master

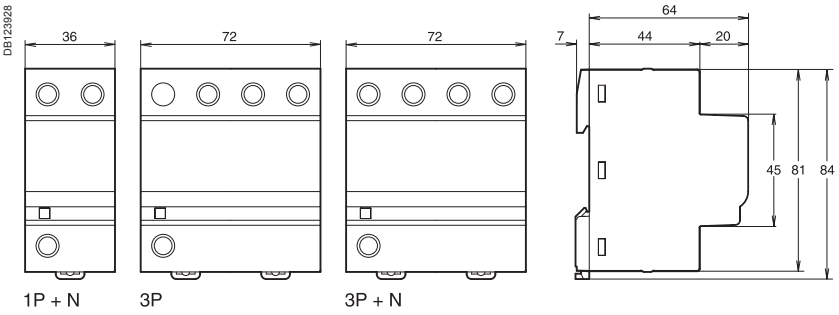
Type 1 and 2 LV surge arresters (cont.)

Dimensions (mm)



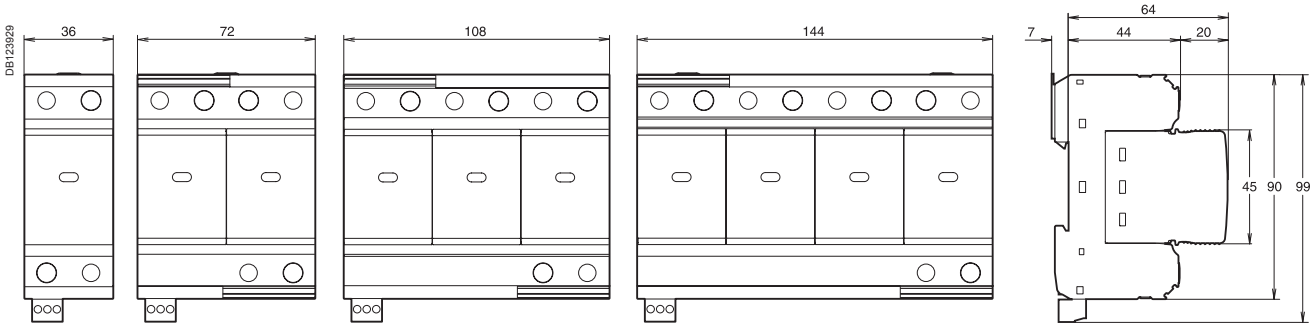
1P

PRD1 35r



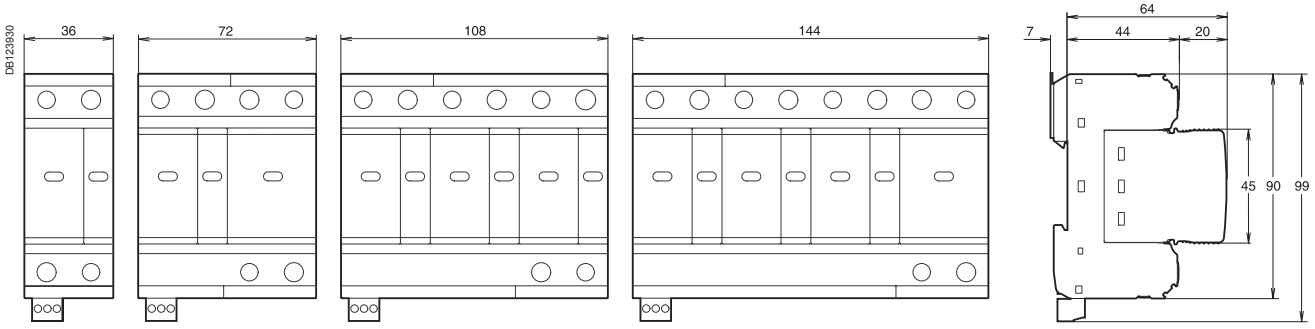
1P + N 3P 3P + N

iPRF1 12.5r



1P 1P + N 3P 3P + N

PRD1 Master



1P 1P + N 3P 3P + N

PRD1 25r

Weight (g)

Surge arresters					
Type		**iPRF1 12,5r**	**PRD1 35r**	**PRD1 25r**	**PRD1 Master**
1P		-	401	334	394
1P+N		290	-	725	774
3P		590	-	1010	1175
3P+N		590	-	1338	1535
Cartridge	Neutral	-	-	229	229
	Phase	-	245	-	242

iPF surge arresters
Type 2 or 3 LV surge arresters

The iPF multi-pole single-piece surge arrester range is adapted for earthing systems: TT, TN-S, TN-C.
Type 2 surge arresters are tested with a 8/20 µs current wave.
Type 3 surge arresters are tested with a 12/50 µs and 8/20 µs combined wave.

Each surge arrester in the range has a specific application:
■ **incoming protection (type 2):**
□ the iPF65(r) is recommended for a very high risk level (strongly exposed site)
□ the iPF40(r) is recommended for a high risk level
□ the iPF20 is recommended for a medium risk level
■ **secondary protection (type 2 or 3):**
□ the iPF8 ensures secondary protection of loads to be protected and is placed in cascade with the incoming surge arresters. This surge arrester is required when the loads to be protected are at a distance of more than 10 m from the incoming surge arrester.

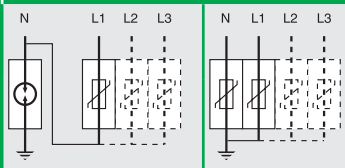
The iPF surge arresters with "r" indication have remote transfer of the information: "surge arrester to be replaced".

PB105278-35

1P+N.

PB105280-35

3P+N.

Rated discharge current (Imax) / Nominal discharge current (In)	Type of protection		Network					
								
	Incoming	Secondary (type 2 or 3)	1P+N	3P+N	1P	2P	3P	4P
65 kA / 20 kA								
Very high risk level	iPF65				A9L15683			
			A9L15684					
						A9L15584		
							A9L15581	
				A9L15685				
				A9L15586				
								A9L15585
40 kA / 15 kA								
High risk level	iPF40				A9L15686			
			A9L15687					
						A9L15587		
							A9L15582	
				A9L15690				
				A9L15688				
								A9L15590
								A9L15588
20 kA / 5 kA								
Medium risk level	iPF20				A9L15691			
			A9L15692					
						A9L15592		
							A9L15597	
				A9L15693				
								A9L15593
8 kA / 2.5 kA								
Secondary protection: placed near the loads to be protected when they are at a distance of more than 10 m from the incoming surge arrester		iPF8			A9L15694			
			A9L15695					
						A9L15595		
							A9L15598	
				A9L15696				
								A9L15596

Surge arrester/circuit breaker association	
Type of surge arrester	**Associated circuit breaker**
iPF65	Curve C 50 A
iPF40	Curve C 40 A
iPF20	Curve C 25 A
iPF8	Curve C 20 A

iPF surge arresters
Type 2 or 3 LV surge arresters (cont.)

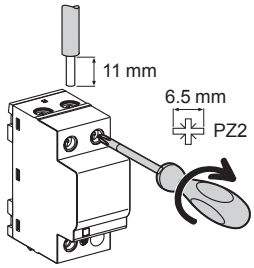
	Earthing system	Transfer	Surge arrester name	Width in mod. of 9 mm	Up - (kV) Voltage protection level			Un - (V) Rated voltage network	Uc - (V) Maximum continuous operating voltage		
					CM*		DM*		CM*		DM*
					L/⏚	N/⏚	L/N		L/⏚	N/⏚	L/N
			iPF65								
	TT & TN		iPF65 1P	2	≤ 1.5	-	-	230	340	-	-
	TT & TN-S		iPF65 1P+N	4	-	≤ 1.5	≤ 1.5		-	260	340
	TN-C		iPF65 2P		≤ 1.5	≤ 1.5	-		340	340	-
	TN-C		iPF65 3P	8	≤ 1.5	-	-	230/400	340	-	-
	TT & TN-S	■	iPF65r 3P+N		-	≤ 1.5	≤ 1.5		-	260	340
	TT & TN-S		iPF65 3P+N		-	≤ 1.5	≤ 1.5		-	260	340
	TN-C	■	iPF65r 4P		≤ 1.5	≤ 1.5	-		340	340	-
			iPF40								
	TT & TN		iPF40 1P	2	≤ 1.5	-	-	230	340	-	-
	TT & TN-S		iPF40 1P+N	4	-	≤ 1.5	≤ 1.5		-	260	340
	TN-C		iPF40 2P		≤ 1.5	≤ 1.5	-		340	340	-
	TN-C		iPF40 3P	8	≤ 1.5	-	-	230/400	340	-	-
	TT & TN-S	■	iPF40r 3P+N		-	≤ 1.5	≤ 1.5		-	260	340
	TT & TN-S		iPF40 3P+N		-	≤ 1.5	≤ 1.5		-	260	340
	TN-C	■	iPF40r 4P		≤ 1.5	≤ 1.5	-		340	340	-
	TN-C		iPF40 4P		≤ 1.5	≤ 1.5	-		340	340	-
			iPF20								
	TT & TN		iPF20 1P	2	≤ 1.1	-	-	230	340	-	-
	TT & TN-S		iPF20 1P+N	4	-	≤ 1.5	≤ 1.1		-	260	340
	TN-C		iPF20 2P		≤ 1.1	≤ 1.1	-		340	340	-
	TN-C		iPF20 3P	8	≤ 1.1	-	-	230/400	340	-	-
	TT & TN-S		iPF20 3P+N		-	≤ 1.5	≤ 1.1		-	260	340
	TN-C		iPF20 4P		≤ 1.1	≤ 1.1	-		340	340	-
			iPF8 (1)		**Type 2 / Type 3**						
	TT & TN		iPF8 1P	2	≤ 1 / ≤ 1.1	-	-	230	340	-	-
	TT & TN-S		iPF8 1P+N	4	-	≤ 1.5 / ≤ 1.2	≤ 1 / ≤ 1.1		-	260	340
	TN-C		iPF8 2P		≤ 1 / ≤ 1.1	≤ 1 / ≤ 1.1	-		340	340	-
	TN-C		iPF8 3P	8	≤ 1 / ≤ 1.1	-	-	230/400	340	-	-
	TT & TN-S		iPF8 3P+N		-	≤ 1.5 / ≤ 1.2	≤ 1 / ≤ 1.1		-	260	340
	TN-C		iPF8 4P		≤ 1 / ≤ 1.1	≤ 1 / ≤ 1.1	-		340	340	-

* **CM**: common mode (phase to earth and neutral to earth). * **DM**: differential mode (phase to neutral). **(1) Uoc**: combinated waveform voltage: 10 kV.

iPF surge arresters
Type 2 or 3 LV surge arresters (cont.)

Connection

DB123129



Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945 	DB122946 
iPF	3.5 N.m	25 mm² max.	16 mm² max.

Technical data

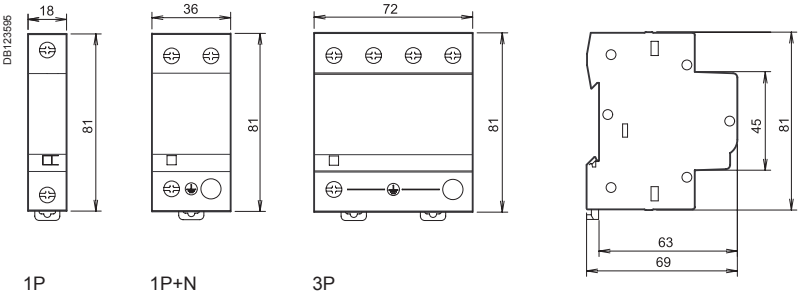
Main characteristics		
Operating frequency		50/60 Hz
Operating voltage (Ue)		230/400 V AC
Permanent operating current (Ic)		< 1 mA
Response time		< 25 ns
End of life indication: by green/red indicator light	Green	In operation
	Red	At end of life
End of life remote indication		By contact NO, NC 250 V / 0.25 A
Additional characteristics		
Operating temperature		-25°C to +60°C
Type of connection terminals		Tunnel terminals, 2.5 to 35 mm²
Standards		IEC 61643-1 T2 and EN 61643-11 Type 2

Weight (g)

Surge arrester	
Type	**iPF**
1P	125
2P	210
3P	335
4P	420

Dimensions (mm)

DB123595



1P

1P+N
2P

3P
3P+N
4P

iPF K surge arresters
Type 2 LV surge arresters

DB406142

Country approval pictograms

The iPF K multi-pole single-piece surge arrester range is adapted for earthing systems: TT, TN-S, TN-C.
Type 2 surge arresters are tested with a 8/20 µs current wave.

Each surge arrester in the range has a specific application:
- **incoming protection (type 2):**
  - the iPF K 65 is recommended for a very high risk level (strongly exposed site),
  - the iPF K 40 is recommended for a high risk level,
  - the iPF K 20 is recommended for a medium risk level.

PB114703-40

1P

PB114702-40

1P+N

PB114701-40

3P

PB114700-40

3P+N

Rated discharge current (Imax) / Nominal discharge current (In)	Type of protection	Network			
		DB122942 N L1 L2 L3		DB407087 L1 L2 L3	
	Incoming	1P+N	3P+N	1P	3P
65 kA / 20 kA					
Very high risk level	iPF K 65		A9L15586		
40 kA / 15 kA					
High risk level	iPF K 40			A9L15686	
		A9L15687			
					A9L15582
			A9L15688		
20 kA / 5 kA					
Medium risk level	iPF K 20			A9L15691	
		A9L15692			
					A9L15597
			A9L15693		

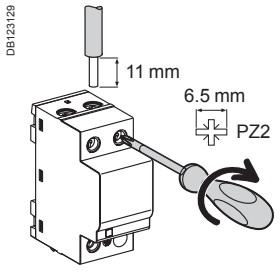
Surge arrester/circuit breaker association	
Type of surge arrester	**Associated circuit breaker (1 to 4 poles protected) (Isc ≤ 6 kA)**
iPF K 65	iK60N Curve C 50 A
iPF K 40	iK60N Curve C 40 A
iPF K 20	iK60N Curve C 20 A

iPF K surge arresters
Type 2 LV surge arresters (cont.)

	Earthing system	Surge arrester name	Width in mod. of 9 mm	Up - (kV) Voltage protection level			Un - (V) Rated voltage network	Uc - (V) Maximum continious operating voltage		
				CM*		DM*		CM*		DM*
				L/⏚	N/⏚	L/N		L/⏚	N/⏚	L/N
		iPF K 65								
	TT & TN-S	iPF K 65 3P+N		-	⩽ 1.5	⩽ 1.5		-	260	340
		iPF K 40								
	TN	iPF K 40 1P	2	⩽ 1.5	-	-	230	340	-	-
	TT & TN-S	iPF K 40 1P+N	4	-	⩽ 1.5	⩽ 1.5		-	260	340
	TN-C	iPF K 40 3P	8	⩽ 1.5	-	-	230/400	340	-	-
	TT & TN-S	iPF K 40 3P+N		-	⩽ 1.5	⩽ 1.5		-	260	340
		iPF K 20								
	TN	iPF K 20 1P	2	⩽ 1.1	-	-	230	340	-	-
	TT & TN-S	iPF K 20 1P+N	4	-	⩽ 1.5	⩽ 1.1		-	260	340
	TN-C	iPF K 20 3P	8	⩽ 1.1	-	-	230/400	340	-	-
	TT & TN-S	iPF K 20 3P+N		-	⩽ 1.5	⩽ 1.1		-	260	340

** **CM**: common mode (phase to earth and neutral to earth). * **DM**: differential mode (phase to neutral). **(1) Uoc**: combinated waveform voltage: 10 kV.*

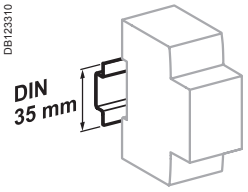
Connection



Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
iPF K	3.5 N.m	25 mm² max.	16 mm² max.

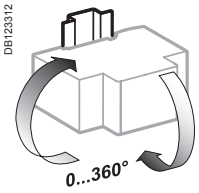
iPF K surge arresters
Type 2 LV surge arresters (cont.)

DB123310



Clip on DIN rail 35 mm.

DB123312

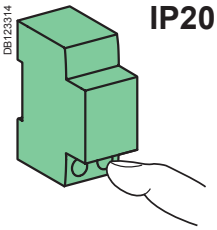


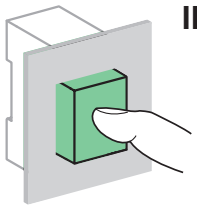
Indifferent position of installation.

Technical data

Main characteristics		
Operating frequency		50/60 Hz
Rated voltage network (Un)		230/400 V AC ±10 %
Permanent operating current (Ic)		< 5 mA
Response time		< 25 ns
Short circuit withstand (I_{SCCR})		25 kA (50 Hz)
Temporary overvoltage withstand (U_T) LV network	U_T (L-N)	337 V AC / 5 s
	U_T (L-PE)	442 V AC / 120 min
Temporary overvoltage withstand (U_T) HV network	U_T (N-PE)	1200 V AC / 200 ms
	U_T (L-PE)	1453 V AC / 200 ms
Ground residual current (I_{PE})	I_{PE} (L-PE)	1P: ⩽ 5 mA
		3P: ⩽ 25 mA
	I_{PE} (N-PE)	3 µA for 1P+N, 3P+N
Operation indication by mechanical indicator	Green	In operation
	Red	At end of life
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20 (built-in)
	Device in modular enclosure	IP40
Operating temperature		-25°C to +60°C
Humidity range		5 % to 95 %
Standards		IEC 61643-11: 2011 T2

DB123314



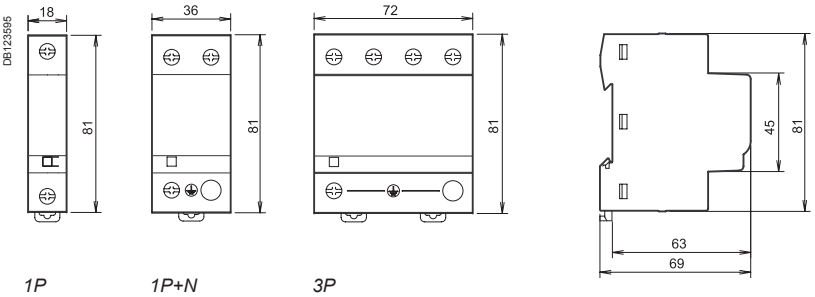


Weight (g)

Surge arrester	
Type	**iPF K**
1P	125
1P+N	210
3P	335
3P+N	420

Dimensions (mm)

DB123595



1P *1P+N* *3P* *3P+N*

iPRD surge arresters
Type 2 or 3 LV withdrawable surge arresters

DB123854 DB106604 DB406142

Country approval pictograms

iPRD withdrawable surge arresters allow quick replacement of damaged cartridges.
Type 2 surge arresters are tested with a 8/20 µs current wave.
Type 3 surge arresters are tested with a 1.2/50 µs and 8/20 µs combined wave.

Each surge arrester in the range has a specific application:
■ **incoming protection (type 2):**
□ the iPRD65r is recommended for a very high risk level (strongly exposed site)
□ the iPRD40(r) is recommended for a high risk level
□ the iPRD20(r) is recommended for a medium risk level
■ **secondary protection (type 2 or 3):**
□ the iPRD8(r) ensures secondary protection of loads to be protected and is placed in cascade with the incoming surge arresters. This surge arrester is required when the loads to be protected are at a distance of more than 10 m from the incoming surge arrester.

The iPRD surge arresters with “r” indication have remote transfer of the information: “cartridge to be replaced”.

PB110274-35

2P

PB110280-35

4P

Catalogue number iPRD surge arresters

Rated discharge current (Imax)	Nominal discharge current (In)	Type of protection		Network					
				DB122942 N L1 L2 L3		DB122943 N L1 L2 L3			
		Incoming	Secondary	1P+N	3P+N	1P	2P	3P	4P
iPRD65									
65 kA Very high risk level (strongly exposed site)	20 kA	iPRD65				A9L65101			
						A9L65121			
				A9L65501					
							A9L65201		
								A9L65301	
								A9L65321	
					A9L65601				
									A9L65401
iPRD40									
40 kA High risk level	15 kA	iPRD40				A9L40101			
						A9L40100			
				A9L40501					
				A9L40500					
							A9L40201		
							A9L40200		
								A9L40301	
								A9L40321	
								A9L40300	
					A9L40601				
					A9L40600				
									A9L40401
									A9L40421
									A9L40400
iPRD20									
20 kA Medium risk level	5 kA	iPRD20				A9L20100			
				A9L20501					
				A9L20500					
							A9L20200		
								A9L20300	
								A9L20321	
					A9L20601				
					A9L20600				
									A9L20400
									A9L20421
iPRD8									
8 kA Secondary protection: placed near the loads to be protected when they are at a distance of more than 10 m from the incoming surge arrester	2.5 kA		iPRD8			A9L08100			
				A9L08501					
				A9L08500					
							A9L08200		
								A9L08300	
								A9L08321	
					A9L08601				
					A9L08600				
									A9L08400
									A9L08421

iPRD surge arresters
Type 2 or 3 LV withdrawable surge arresters (cont.)

Cartridge

Spare cartridges iPRD		
Type	**Spare cartridges for**	**Cat. no**
iPRD 65-350	iPRD65r	**A9L65102**
iPRD 40-350	iPRD40, iPRD40r	**A9L40102**
iPRD 20-350	iPRD20, iPRD20r	**A9L20102**
iPRD 8-350	iPRD8, iPRD8r	**A9L08102**
iPRD Neutral	All products (1P+N, 3P+N)	**A9L00002**

Spare cartridges iPRD IT		
Type	**Spare cartridges for**	**Cat. no**
C 65-460	iPRD65r IT	**A9L65122**
C 40-460	iPRD40r IT	**A9L40122**
C 20-460	iPRD20r IT	**A9L20122**
C 8-460	iPRD8r IT	**A9L08122**

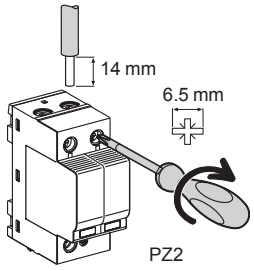
	Earthing system	Transfer	Surge arrester name	Width in mod. of 9 mm	Up - (kV) Voltage protection level			Un - (V) Rated voltage network	Uc - (V) Maximum continuous operating voltage		
					CM*		DM*		CM*		DM*
					L/⏚	N/⏚	L/N		L/⏚	N/⏚	L/N
			iPRD65								
A9L65101	TT & TN	■	iPRD65r 1P	2	≤ 1.5	-	-	230	350	-	-
A9L65121	IT	■	iPRD65r 1P IT		≤ 2.3	-	-		460	-	-
A9L65501	TT & TN-S	■	iPRD65r 1P+N	4	-	≤ 1.4	≤ 1.5		-	260	350
A9L65201	TN-C-S	■	iPRD65r 2P		≤ 1.5	≤ 1.5	-		350	350	-
A9L65301	TN-C	■	iPRD65r 3P	6	≤ 1.5	-	-	230/400	350	-	-
A9L65321	IT	■	iPRD65r 3P IT		≤ 2.3	-	-		460	-	-
A9L65601	TT & TN-S	■	iPRD65r 3P+N	8	-	≤ 1.4	≤ 1.5		-	260	350
A9L65401	TN-C-S	■	iPRD65r 4P		≤ 1.5	≤ 1.5	-		350	350	-
			iPRD40								
A9L40101	TT & TN	■	iPRD40r 1P	2	≤ 1.6	-	-	230	350	-	-
A9L40100	TT & TN		iPRD40 1P		≤ 1.6	-	-		350	-	-
A9L40501	TT & TN-S	■	iPRD40r 1P+N	4	-	≤ 1.4	≤ 1.6		-	260	350
A9L40500	TT & TN-S		iPRD40 1P+N		-	≤ 1.4	≤ 1.6		-	260	350
A9L40201	TN-C-S	■	iPRD40r 2P		≤ 1.6	≤ 1.6	-		350	350	-
A9L40200	TN-C-S		iPRD40 2P		≤ 1.6	≤ 1.6	-		350	350	-
A9L40301	TN-C	■	iPRD40r 3P	6	≤ 1.6	-	-	230/400	350	-	-
A9L40321	IT	■	iPRD40r 3P IT		≤ 2.2	-	-		460	-	-
A9L40300	TN-C		iPRD40 3P		≤ 1.6	-	-		350	-	-
A9L40601	TT & TN-S	■	iPRD40r 3P+N	8	-	≤ 1.4	≤ 1.6		-	260	350
A9L40600	TT & TN-S		iPRD40 3P+N		-	≤ 1.4	≤ 1.6		-	260	350
A9L40401	TN-C-S	■	iPRD40r 4P		≤ 1.6	≤ 1.6	-		350	350	-
A9L40421	IT	■	iPRD40r 4P IT		≤ 2.2	≤ 2.2	-		460	-	-
A9L40400	TN-C-S		iPRD40 4P		≤ 1.6	≤ 1.6	-		350	350	-
			iPRD20								
A9L20100	TT & TN		iPRD20 1P	2	≤ 1.2	-	-	230	350	-	-
A9L20501	TT & TN-S	■	iPRD20r 1P+N	4	-	≤ 1.4	≤ 1.2		-	260	350
A9L20500	TT & TN-S		iPRD20 1P+N		-	≤ 1.4	≤ 1.2		-	260	350
A9L20200	TN-C-S		iPRD20 2P		≤ 1.2	≤ 1.2	-		350	350	-
A9L20300	TN-C		iPRD20 3P	6	≤ 1.2	-	-	230/400	350	-	-
A9L20321	IT	■	iPRD20r 3P IT		≤ 1.8	-	-		460	-	-
A9L20601	TT & TN-S	■	iPRD20r 3P+N	8	-	≤ 1.4	≤ 1.2		-	260	350
A9L20600	TT & TN-S		iPRD20 3P+N		-	≤ 1.4	≤ 1.2		-	260	350
A9L20400	TN-C-S		iPRD20 4P		≤ 1.2	≤ 1.2	-		350	350	-
A9L20421	IT	■	iPRD20r 4P IT		≤ 1.8	≤ 1.8	-		460	-	-
			iPRD8 (1)		**Type 2 / Type 3 (1)**						
A9L08100	TT & TN		iPRD8 1P	2	≤ 1.2	-	-	230	350	-	-
A9L08501	TT & TN-S	■	iPRD8r 1P+N	4	-	≤ 1.4	≤ 1.2		-	260	350
A9L08500	TT & TN-S		iPRD8 1P+N		-	≤ 1.4	≤ 1.2		-	260	350
A9L08200	TN-C-S		iPRD8 2P		≤ 1.2	≤ 1.2	-		350	350	-
A9L08300	TN-C		iPRD8 3P	6	≤ 1.2	-	-	230/400	350	-	-
A9L08321	IT	■	iPRD8r 3P IT		≤ 1.6 / ≤ 1.8	-	-		460	-	-
A9L08601	TT & TN-S	■	iPRD8r 3P+N	8	-	≤ 1.4	≤ 1.2		-	260	350
A9L08600	TT & TN-S		iPRD8 3P+N		-	≤ 1.4	≤ 1.2		-	260	350
A9L08400	TN-C-S		iPRD8 4P		≤ 1.2	≤ 1.2	-		350	350	-
A9L08421	IT	■	iPRD8r 4P IT		≤ 1.6 / ≤ 1.8	≤ 1.6 / ≤ 1.8	-		460	-	-

* **CM**: common mode (phase to earth and neutral to earth). * **DM**: differential mode (phase to neutral). **(1) Uoc**: combinated waveform voltage: 10 kV.

iPRD surge arresters
Type 2 or 3 LV withdrawable surge arresters

Connection iPRD surge arresters

DB123130

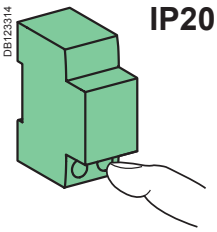


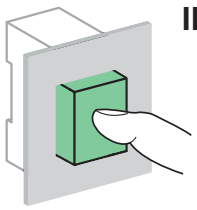
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945 	DB122946 
iPRD	3.5 N.m	2.5 to 25 mm²	4 to 16 mm²

Technical data iPRD surge arresters

Main characteristics		iPRD	iPRD IT
Operating frequency		50/60 Hz	
Operating voltage (Ue)		230/400 V AC ±10 %	
Permanent operating current (Ic)		< 1 mA	
Response time		< 25 ns	
Short circuit current rating (Isccr)		50 kA (50 Hz)	-
Short circuit current rating (Isccr), case of double fault		-	5 kA (50 Hz)
Temporary overvoltage withstand (U_T)	U_T (L-N)	337 V AC / 5 s	337 V AC / 5 s
	U_T (L-PE)	442 V AC / 120 min	-
Temporary overvoltage **Safe failure mode** (U_T)	U_T (N-PE)	1200 V AC / 200 ms	1455 V AC / 200 ms
	U_T (L-PE)	1455 V AC / 200 ms	1455 V AC / 200 ms
Ground residual current (I_{PE})	I_{PE} (L-PE)	600 µA for 1P, 2P, 3P, 4P	
	I_{PE} (N-PE)	3 µA for 1P+N, 3P+N	-
Satisfactory operation indication: by mechanical indicator	White	In operation	
	Red	Cartridge must be replaced	
Remote indication of satisfactory operation		By contact NO, NC 250 V / 0.25 A	
Additional characteristics			
Degree of protection (IEC 60529)	Device only	IP20 (built-in)	
	Device in modular enclosure	IP40	
Operating temperature		-25°C to +60°C	
Storage temperature		-40°C to +85°C	
Humidity range		5 % to 95 %	
Type of connection terminals		Tunnel terminals, 2.5 to 35 mm²	
Standards		IEC 61643-11: 2011 T2, T3 and EN 61643-11: 2012 Type 2, Type 3	

DB123314

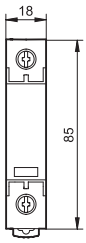




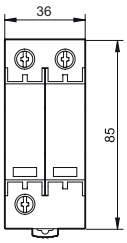
Surge arrester/circuit breaker association			
Surge arrester	**Associated circuit breaker**		
	iPRD		**iPRD IT**
	Isc ⩽ 25 kA	**Isc ⩽ 50 kA**	**Isc (IT 400 V AC) ⩽ 5 kA**
iPRD65	Curve C 50 A	Curve C 63 A	Curve C 25 A
iPRD40	Curve C 40 A	Curve C 63 A	Curve C 20 A
iPRD20	Curve C 20 A	Curve C 63 A	Curve C 10 A
iPRD8	Curve C 10 A	Curve C 63 A	Curve C 10 A

iPRD dimensions (mm)

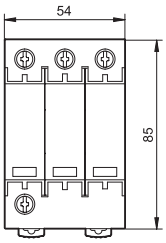
DB404819



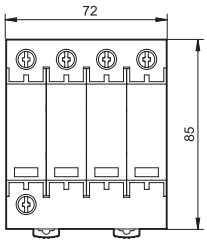
1P



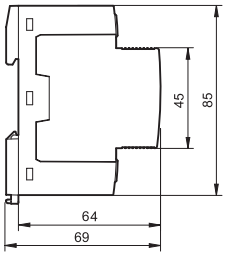
1P+N, 2P



3P



3P+N, 4P



Weight (g)

Surge arrester	
Type	**iPRD**
1P	119
1P+N, 2P	220
3P	340
3P+N, 4P	450

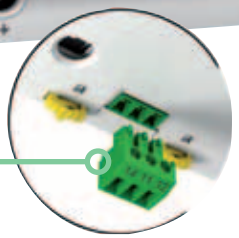
iPRD surge arresters
Type 2 or 3 LV withdrawable surge arresters (cont.)

iPRD surge arresters

PB110281-60

Terminals
■ IP20

Satisfactory operation indication
■ By mechanical indicator
□ white: operating
□ red: cartridge must be replaced



■ Transfer to Acti 9 Smartlink

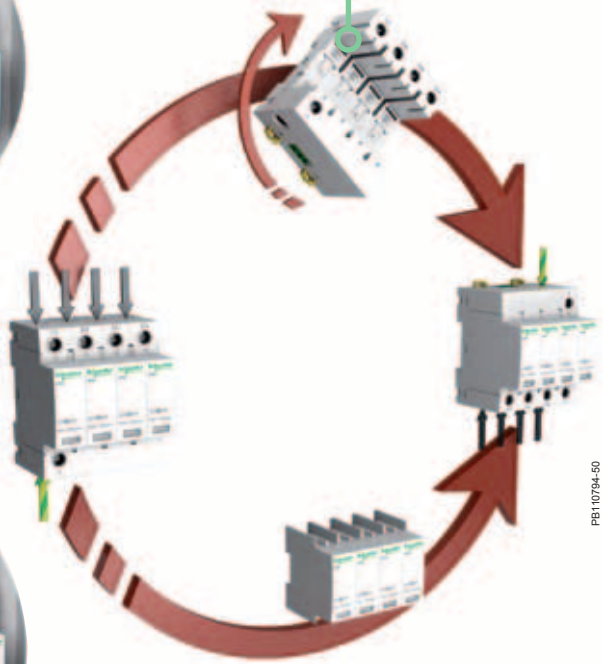
Connection iPRD surge arrester with its short circuit disconnector

TT / TN-S
Power supply through the top
Connection with cables

PB110289-50

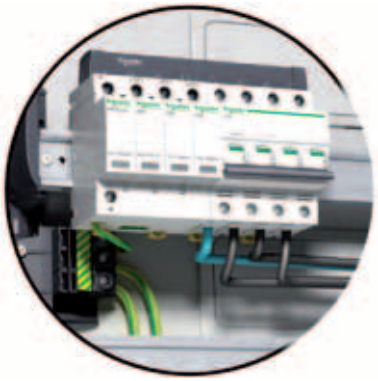
Surge arrester iPRD 3P+N + iC60N 3P+N

Reversible
■ The surge arrester base can be turned over to allow the phase/neutral/earth cables to enter through either the top or the bottom



TT / TN-S
Power supply through the bottom
Connection with comb busbar

PB110793-50



Surge arrester iPRD 3P+N + iC60N 3P+N

PB110287-80

IT/TNC-S with neutral
Power supply through the top
Connection with comb busbar

PB110290-50

Surge arrester iPRD 4P + iC60N 4P

IT/TNC-S with neutral
Power supply through the bottom
Connection with comb busbar

PB110794-50

Surge arrester iPRD 4P + iC60N 4P

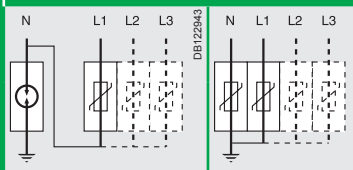
iPRD surge arresters
Type 2 or 3 LV withdrawable surge arresters

iPRD withdrawable surge arresters allow quick replacement of damaged cartridges.

1P+N

3P

3P+N

Rated discharge current (Imax) / Nominal discharge current (In)	Type of protection		Network					
								
	Incoming	Secondary	1P+N	3P+N	1P	2P	3P	4P
65 kA / 20 kA								
Very high risk level (strongly exposed site)	iPRD65				A9L16555			
					A9L16556			
			A9L16557					
						A9L16442		
							A9L16558	
							A9L16443	
				A9L16559				
								A9L16659
40 kA / 15 kA								
High risk level	iPRD40				A9L16561			
					A9L16566			
			A9L16562					
			A9L16567					
						A9L16444		
						A9L16667		
							A9L16445	
							A9L16568	
							A9L16563	
				A9L16564				
				A9L16569				
								A9L16597
								A9L16664
								A9L16669
20 kA / 5 kA								
Medium risk level	iPRD20				A9L16571			
			A9L16672					
			A9L16572					
						A9L16446		
							A9L16447	
							A9L16573	
				A9L16674				
				A9L16574				
								A9L16599
								A9L16673
8 kA / 2.5 kA								
Secondary protection: placed near the loads to be protected when they are at a distance of more than 10 m from the incoming surge arrester		iPRD8			A9L16576			
			A9L16677					
			A9L16577					
						A9L16448		
							A9L16449	
							A9L16578	
				A9L16679				
				A9L16579				
								A9L16678
								A9L16680

Cartridge

Spare cartridges

Type	Spare cartridges for	Cat. no
C 65-460	iPRD65r IT	A9L16682
C 65-340	iPRD65r	A9L16681
C 40-460	iPRD40r IT	A9L16684
C 40-340	iPRD40, iPRD40r	A9L16685
C 20-460	iPRD20r IT	A9L16686
C 20-340	iPRD20, iPRD20r	A9L16687
C 8-460	iPRD8r IT	A9L16688
C 8-340	iPRD8, iPRD8r	A9L16689
C neutral	All products	A9L16691

Surge arrester/circuit breaker association

Surge arrester	Associated circuit breaker		
	iPRD		iPRD IT
	Isc ⩽ 25 kA	Isc ⩽ 50 kA	Isc (IT 400 V AC) ⩽ 5 kA
iPRD65	Curve C 50 A	Curve C 63 A	Curve C 25 A
iPRD40	Curve C 40 A	Curve C 63 A	Curve C 20 A
iPRD20	Curve C 20 A	Curve C 63 A	Curve C 10 A
iPRD8	Curve C 10 A	Curve C 63 A	Curve C 10 A

iPRD surge arresters

Type 2 or 3 LV withdrawable surge arresters (cont.)

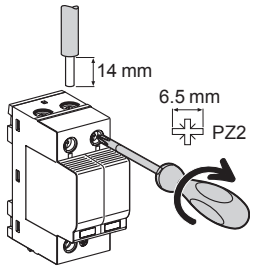
Earthing system	Transfer	Surge arrester name	Width in mod. of 9 mm	Up - (kV) Voltage protection level			Un - (V) Rated voltage network	Uc - (V) Maximum continuous operating voltage		
				CM*		DM*		CM*		DM*
				L/⏚	N/⏚	L/N		L/⏚	N/⏚	L/N
		iPRD65								
IT	■	iPRD65r 1P IT	2	⩽ 2	-	-	230	460	-	-
TT & TN	■	iPRD65r 1P		⩽ 1.5	-	-		340	-	-
TT & TN-S	■	iPRD65r 1P+N	4	-	⩽ 1.5	⩽ 1.5		-	260	340
TN-C	■	iPRD65r 2P		⩽ 1.5	⩽ 1.5	-		340	340	-
IT	■	iPRD65r 3P IT	6	⩽ 2	-	-	230/400	460	-	-
TN-C	■	iPRD65r 3P		⩽ 1.5	-	-		340	-	-
TT & TN-S	■	iPRD65r 3P+N	8	-	⩽ 1.5	⩽ 1.5		-	260	340
TN-C	■	iPRD65r 4P		⩽ 1.5	⩽ 1.5	-		340	340	-
		iPRD40								
TT & TN	■	iPRD40r 1P	2	⩽ 1.4	-	-	230	340	-	-
TT & TN		iPRD40 1P		⩽ 1.4	-	-		340	-	-
TT & TN-S	■	iPRD40r 1P+N	4	-	⩽ 1.4	⩽ 1.4		-	260	340
TT & TN-S		iPRD40 1P+N		-	⩽ 1.4	⩽ 1.4		-	260	340
TN-C	■	iPRD40r 2P		⩽ 1.4	⩽ 1.4	-		340	340	-
TN-C		iPRD40 2P		⩽ 1.4	⩽ 1.4	-		340	340	-
TN-C	■	iPRD40r 3P	6	⩽ 1.4	-	-	230/400	340	-	-
TN-C		iPRD40 3P		⩽ 1.4	-	-		340	-	-
IT	■	iPRD40r 3P IT		⩽ 2	-	-		460	-	-
TT & TN-S	■	iPRD40r 3P+N	8	-	⩽ 1.4	⩽ 1.4		-	260	340
TT & TN-S		iPRD40 3P+N		-	⩽ 1.4	⩽ 1.4		-	260	340
IT	■	iPRD40r 4P IT		⩽ 2	⩽ 2	-		460	460	-
TN-C	■	iPRD40r 4P		⩽ 1.4	⩽ 1.4	-		340	340	-
TN-C		iPRD40 4P		⩽ 1.4	⩽ 1.4	-		340	340	-
		iPRD20								
TT & TN		iPRD20 1P	2	⩽ 1.1	-	-	230	340	-	-
TT & TN-S	■	iPRD20r 1P+N	4	-	⩽ 1.4	⩽ 1.1		-	260	340
TT & TN-S		iPRD20 1P+N		-	⩽ 1.4	⩽ 1.1		-	260	340
TN-C		iPRD20 2P		⩽ 1.1	⩽ 1.1	-		340	340	-
TN-C		iPRD20 3P	6	⩽ 1.1	-	-	230/400	340	-	-
IT	■	iPRD20r 3P IT		⩽ 1.6	-	-		460	-	-
TT & TN-S	■	iPRD20r 3P+N	8	-	⩽ 1.4	⩽ 1.1		-	260	340
TT & TN-S		iPRD20 3P+N		-	⩽ 1.4	⩽ 1.1		-	260	340
IT	■	iPRD20r 4P IT		⩽ 1.6	⩽ 1.6	-		460	460	-
TN-C		iPRD20 4P		⩽ 1.1	⩽ 1.1	-		340	340	-
		iPRD8 (1)		**Type 2 / Type 3**						
TT & TN		iPRD8 1P	2	⩽ 1 / ⩽ 1	-	-	230	340	-	-
TT & TN-S	■	iPRD8r 1P+N	4	-	⩽ 1.4 / ⩽ 1	⩽ 1 / ⩽ 1.1		-	260	340
TT & TN-S		iPRD8 1P+N		-	⩽ 1.4 / ⩽ 1	⩽ 1 / ⩽ 1.1		-	260	340
TN-C		iPRD8 2P		⩽ 1 / ⩽ 1	⩽ 1 / ⩽ 1	-		340	340	-
TN-C		iPRD8 3P	6	⩽ 1 / ⩽ 1	-	-	230/400	340	-	-
IT	■	iPRD8r 3P IT		⩽ 1.4 / ⩽ 1.6	-	-		460	-	-
TT & TN-S	■	iPRD8r 3P+N	8	-	⩽ 1.4 / ⩽ 1	⩽ 1 / ⩽ 1.1		-	260	340
TT & TN-S		iPRD8 3P+N		-	⩽ 1.4 / ⩽ 1	⩽ 1 / ⩽ 1.1		-	260	340
IT	■	iPRD8r 4P IT		⩽ 1.4 / ⩽ 1.6	⩽ 1.4 / ⩽ 1.6	-		460	460	-
TN-C		iPRD8 4P		⩽ 1 / ⩽ 1	⩽ 1 / ⩽ 1	-		340	340	-

* **CM**: common mode (phase to earth and neutral to earth). * **DM**: differential mode (phase to neutral). **(1) Uoc**: combinated waveform voltage: 10 kV.

iPRD surge arresters
Type 2 or 3 LV withdrawable surge arresters (cont.)

Connection

DB123130



Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945 	DB122946 
iPRD	2 N.m	2.5 to 25 mm²	2.5 to 16 mm²

Technical data

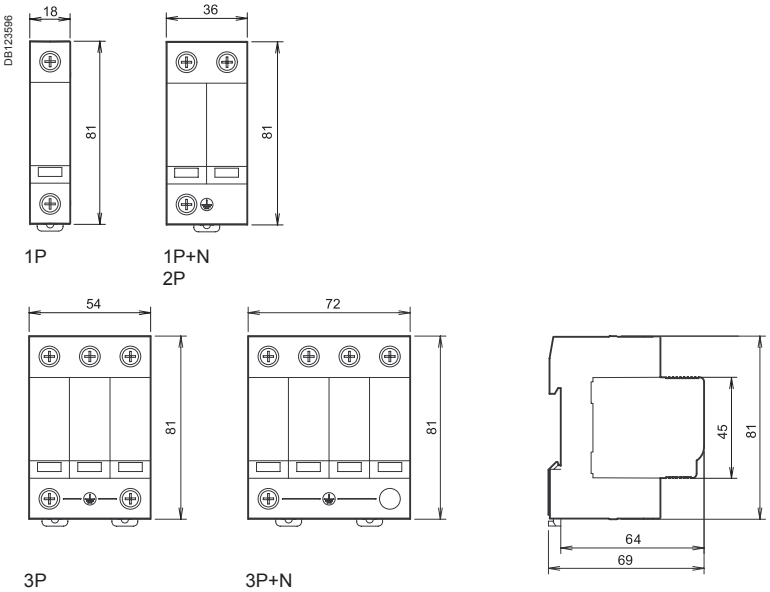
Main characteristics		
Operating frequency		50/60 Hz
Operating voltage (Ue)		230/400 V AC
Permanent operating current (Ic)		< 1 mA
Response time		< 25 ns
End of life indication: by mechanical indicator	White	In operation
	Red	At end of life
End of life remote indication		By contact NO, NC 250 V / 0.25 A
Additional characteristics		
Operating temperature		-25°C to +60°C
Type of connection terminals		Tunnel terminals, 2.5 to 35 mm²
Standards		IEC 61643-1 T2 and EN 61643-11 Type 2

Weight (g)

Surge arrester	
Type	**iPRD**
1P	115
2P	220
3P	340
4P	450

Dimensions (mm)

DB123596



Withdrawable surge arrester iQuick PRD Type 2 or Type 3

Withdrawable surge arrester iQuick PRD allow damaged cartridges to be replaced quickly. They offer remote reporting of the "cartridge must be changed" message.

PB106430-29

EN 61643-11: 2012 Type 2, IEC 61643-11: 2011 T2

They protect electrical and electronic equipment against lightning-induced surges. Withdrawable surge arrester iQuick PRD surge arresters are prewired, incorporating their end-of-life disconnector.
Each surge arrester in the range has a specific use:

■ **incoming protection (type 2):**

□ iQuick PRD40r is recommended for a high risk level

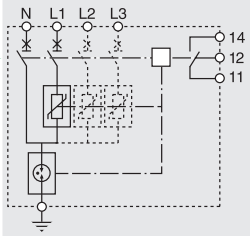
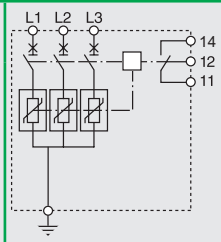
□ iQuick PRD20r is recommended for a moderate risk level

■ **secondary protection (type 2 or 3):**

□ iQuick PRD8r provides secondary protection for the loads to be protected and is cascade-mounted with the incoming surge arresters. This surge arrester is required as close as possible to the loads to be protected when they are located more than 10 metres away from the incoming surge arrester.

PB106429-29

PB106428-29

Maximum discharge current (Imax) / Nominal discharge current (In)	Type of protection		Network		
			DB114409 		DB114410 
	Incoming protection	Secondary protection	1P+N	3P+N	3P
40 kA / 20 kA					
High risk level	iQuick PRD40r		**A9L16292**		
					A9L16293
				A9L16294	
20 kA / 5 kA					
Moderate risk level	iQuick PRD20r		**A9L16295**		
					A9L16296
				A9L16297	
8 kA / 2 kA					
Secondary protection: placed near the loads to be protected when they are at a distance of more than 10 m from the incoming surge arrester		iQuick PRD8r	**A9L16298**		
					A9L16299
				A9L16300	

DB123837

Replacement cartridges.

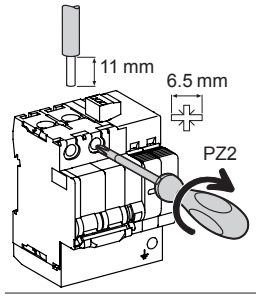
Replacement cartridges

Type	Replacement cartridges for	Cat. no.
C 40-350	iQuick PRD40r	**A9L16310**
C 20-350	iQuick PRD20r	**A9L16311**
C 8-350	iQuick PRD8r	**A9L16312**
C neutral-350	All products	**A9L16313**

Withdrawable surge arrester iQuick PRD Type 2 or Type 3 (cont.)

Connection

DB123888



Type		Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
			DB122945	DB122946
iQuick PRD	Ph / N 8r/20r	2.5 N.m	2.5 to 25 mm²	2.5 to 25 mm²
	Ph / N 40r		2.5 to 35 mm²	2.5 to 35 mm²
	⏚		25 mm² max.	25 mm² max.

	Earthing system	Transfert	Name of surge arrester	Width in 9 mm modules	Up – (kV) Voltage protection level		Un - (V) Rated voltage network	Uc – (V) Maximum continious operating voltage	
					CM*	DM*		CM*	DM*
					N/⏚	L/N		N/⏚	L/N
			iQuick PRD40r						
	TT & TN-S	■	1P+N	8	≤ 1.7	≤ 2.5	230	264	350
	TN-C	■	3P	13	-	≤ 2.5	230/400	-	-
	TT & TN-S	■	3P+N	15	≤ 1.7	≤ 2.5		264	350
			iQuick PRD20r						
	TT & TN-S	■	1P+N	8	≤ 1.7	≤ 1.7	230	264	350
	TN-C	■	3P	13	-	≤ 1.5	230/400	-	-
	TT & TN-S	■	3P+N	15	≤ 1.5	≤ 1.5		264	350
			iQuick PRD8r (2)		Type 2 / Type 3				
	TT & TN-S	■	1P+N	8	≤ 1.7/1,5	≤ 1.2/1.4	230	264	350
	TN-C	■	3P	13	-	≤ 1.2/1.4	230/400	-	-
	TT & TN-S	■	3P+N	15	≤ 1.7/1,5	≤ 1.2/1.4		264	350

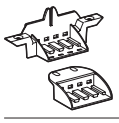
* **CM** common mode (between neutral and earth). * **DM**: differential mode (between phase and neutral).
(1) Up (MCB + SPD): total value measured between Modular Circuit Breaker (MCB) terminal block and PE surge arrester device terminal block (SPD).
(2) Uoc: open-circuit voltage in combined wave: 10 kV.

DB123842

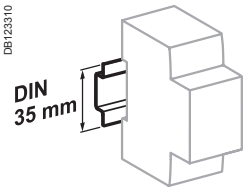
Pragma: the earth terminal block needs 1 support kit and 1 terminal block kit.

Accessories

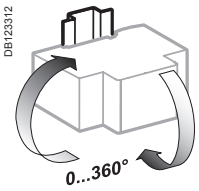
Earth terminal block support

Type			Cat. no.
Support kit	L = 4 blocks	Batch of 1	**PRA90053**
DB107889 			
25 mm² terminal block kit	L = 1 block	Batch of 5	**PRA90046**
DB107884 			

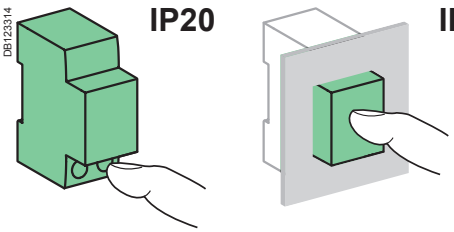
Withdrawable surge arrester iQuick PRD Type 2 or Type 3 (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



Technical data

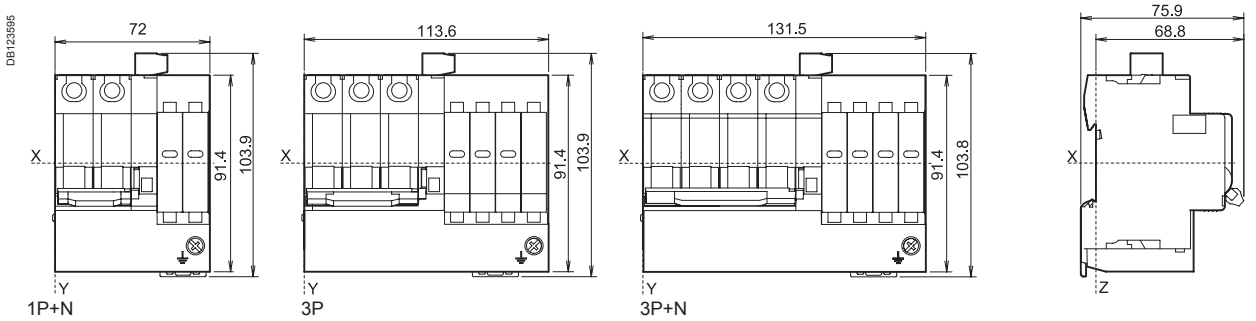
Main characteristics			
Operating frequency		50/60 Hz	
Operating voltage (Ue)		230/400 V AC	
Disconnector short-circuit withstand (Isc)	iQuick PRD 8r/20r	25 kA (50 Hz)	
	iQuick PRD 40r	20 kA (50 Hz)	
Temporary overvoltage withstand (U_T)	U_T (L-N)	415 V AC / 5 s	
	U_T (N-PE)	1200 V AC / 200 ms	
Temporary overvoltage withstand **Safe failure mode** (U_T)	U_T (L-N)	440 V AC / 120 min	
Permanent operating current (Ic)		< 1 mA	
Response time		< 25 ns	
Status indication		By the cartridges	White — Operational
			Red — At end of life
		By white mechanical indicator/ handle ON	Operational
		By red mechanical indicator/ handle OFF	At end of life
Remote indication end of life		By the NO/NC remote indication contact 250 V AC / 2 A	

Additional characteristics		
Degree of protection	Device only	IP20, IK05
	Device in modular enclosure	IP40
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +80°C
Humidity range		5 % to 95 %
Certifications		NF, KEMA KEUR

Weight (g)

Surge arresters		
Type	**iQuick PRD8r/20r**	**iQuick PRD40r**
1P+N	435	445
3P	665	700
3P+N	810	850

Dimensions (mm)



Surge arrester iQuick PF Type 2

DB106604

Country approval pictogram

TheiQuickPFmulti-polesingle-piecesurgearrester range is adapted for earthing systems: TT, TN-S. Type 2 surge arresters are tested with a 8/20 µs current wave.

EN 61643-11: 2012 Type 2, IEC 61643-11: 2011 T2

Protects electrical and electronic equipment against indirect overvoltage due to the lighting effect.

Coordination with selective version "***SI***" and S types.

The iQuick PF is precabled. It incorporates its end of life safety disconnector and an earthing terminal block.

PB107103-35

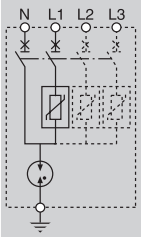
PB107104-35

Accessories supplied

- Terminal and 16 mm² cable for connection to the earth bar of the enclosure (supplied mounted).
- 1 lug to crimp for 16 mm² earthing cable.
- iQuick PF 1P+N: 2 connection accessories for the electrical link between the surge arrester and the incoming residual current circuit breaker:
  - 1 mounted, centre distance between axes: 9 mm,
  - 1 supplied, centre distance between axes: 18 mm.

Maximum discharge current (Imax) / Nominal discharge current (In)	Network		Earthing system	Width in 9 mm modules	Up – (kV) Voltage protection level (*)	Un - (V) Rated voltage network	Uc – (V) Maximum continius operating voltage
	1P+N	3P+N					
10 kA / 5 kA							
iQuick PF	**A9L16617**		TT & TN-S	4	1.5	230	275
		A9L16618	TT & TN-S	10	1.5	230/400	275

DB123843



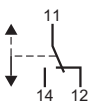
(*) common mode of protection (between phase/earth and neutral/earth) and differential mode of protection (between phase and neutral).

PB107105-40

Remote auxiliary

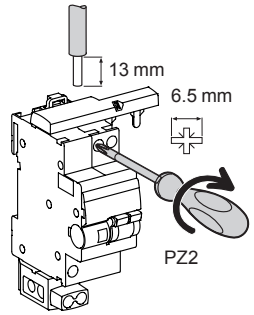
IEC 60947-5-1

The remote auxiliary iSR allows to remote the iQuick PF operating status.

Auxiliary				
Type				Width in mod. of 9 mm
iSR	Contact	Voltage (Ue)		
DB122821 	3 A	415 V CA	**A9L16619**	1

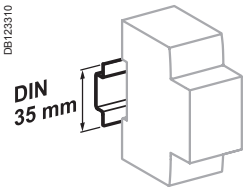
Connection

DB123387

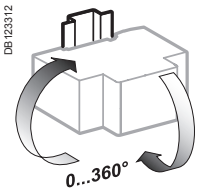


Type		Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
			DB122945 	DB122946 
iQuick PF	Ph / N	2 N.m	1 to 16 mm²	1 to 16 mm²
	⏚		10 to 25 mm²	10 to 25 mm²
iSR		1.2 N.m	16 mm² max.	16 mm² max.

Surge arrester iQuick PF Type 2 (cont.)



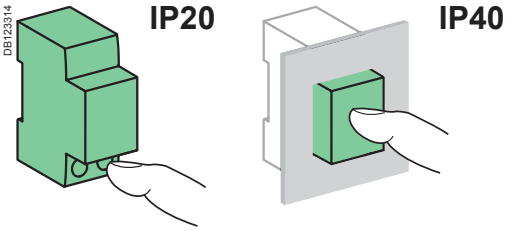
Clip on DIN rail 35 mm.



Indifferent position of installation.

Technical data

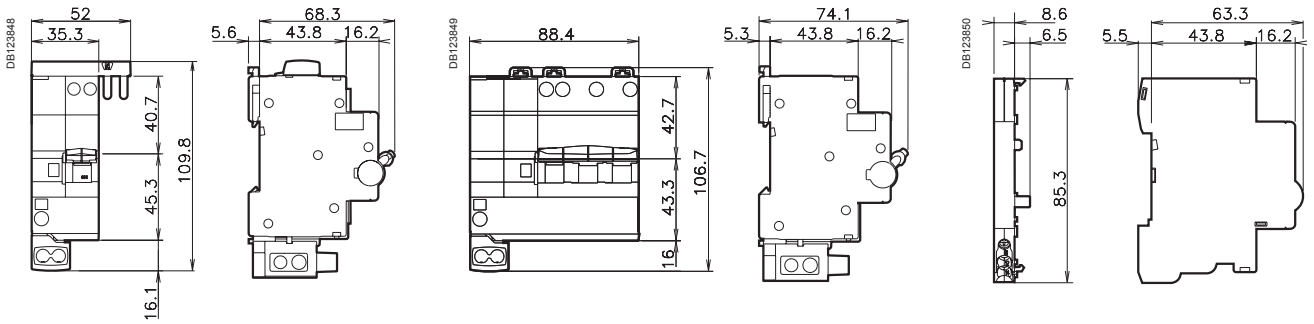
Main characteristics		
Operating frequency		50 Hz
Operating voltage (Ue)		230/400 V AC
Integrated breaking capacity (Isc at 50 Hz)		6 kA
Temporary overvoltage withstand (U_T)	U_T (L-N)	337 V AC / 5 s
	U_T (L-PE)	442 V AC / 5 s
Temporary overvoltage withstand **Safe failure mode** (U_T)	U_T (N-PE)	1200 V AC / 200 ms
Ground residual current (I_{PE})	I_{PE} (N-PE)	30 µA
Status indication:	Mechanical indicator white/ handle ON	Operational
	Mechanical indicator red/ handle OFF	At end of life
Remote indication end of life		By iSR auxiliary
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40
Operating temperature		-25°C to +70°C
Storage temperature		-40°C to +80°C
Humidity range		5 % to 95 %



Weight (g)

Surge arresters	
Type	**iQuick PF**
1P+N	370
3P+N	640

Dimensions (mm)



1P+N *3P+N* *iSR*

iPRC, iPRI surge arresters

Country approval pictograms

Protection against overvoltages related to lightning strikes.

Analogue telephone line protection: the iPRC surge arrester wired in series to the private installation input protects the telephones, the PABX, the modems (including ADSL), etc.

Protection for 2 low-current lines without common potential or 4 lines with common reference potential: the iPRI protects the measuring instrument and PLC "sensor" inputs and the DC power supply inputs up to 53 V and AC power supply inputs up to 37 V.
The input current must not exceed 300 mA.

PB104269-35

A9L16337

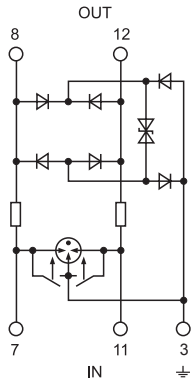
DB122624

DSL

PB104270-35

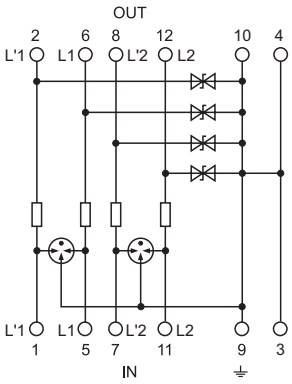
A9L16339

DB122585



Line L1	Cables 7-8
Line L2	Cables 11-12
–	–
–	–
⏚	Cable 3
IN	Ligne side
OUT	Protected side

DB126523



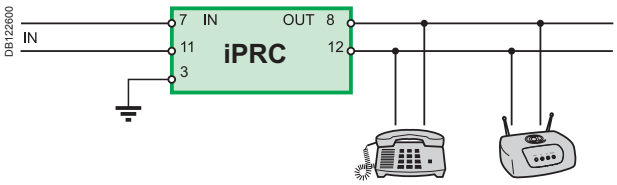
Line L1	Cables 5-6
Line L2	Cables 11-12
Line L'1	Cables 1-2
Line L'2	Cables 7-8
⏚	Cables 3-4-9-10
IN	Ligne side
OUT	Protected side

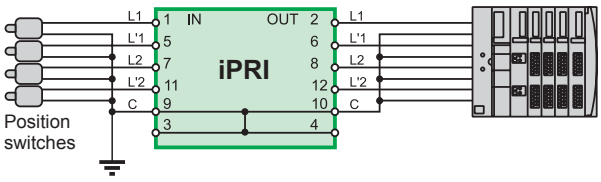
Catalogue numbers

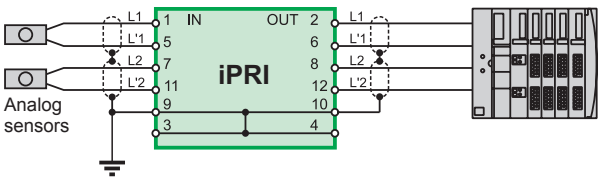
Surge arresters	iPRC	iPRI
Mains voltage (Un)	**<130 V AC**	**48 V DC**
Analogue telephone system	■	–
Telephone transmitter	■	–
Digital telephone system	–	■
Automation network	–	■
VLV load power supply (12…48 V)	–	■
xDSL compatibility	■	–
Cat. no..	**A9L16337**	**A9L16339**
Width in 9 mm modules	2	2

Diagrams

DB122600

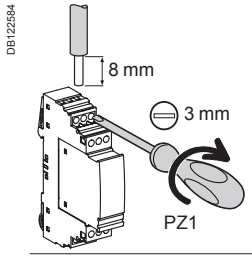




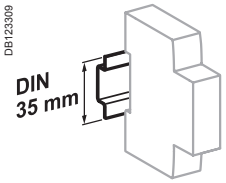


iPRC, iPRI surge arresters (cont.)

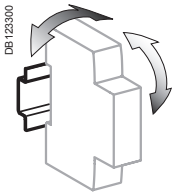
Connection



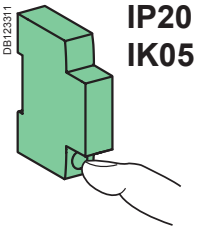
Tightening torque	Copper cables	
	Rigid	Flexible or with ferrule
		
0.8 N.m	0.2 to 4 mm²	0.2 to 2,5 mm²



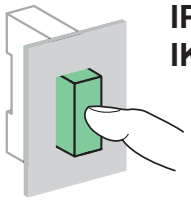
Clip on DIN rail 35 mm.



± 30° vertical.



IP20
IK05



IP40
IK05

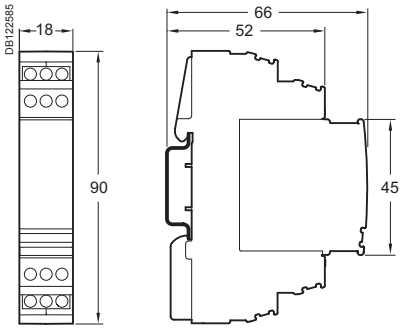
Technical data

Main characteristics			
		iPRC	iPRI
Number of protected lines		2	2
Test category	IEC/EN	C1, C2, C3, D1, B2	C1, C2, C3, D1, B2
Maximum continuous voltage (Uc)		180 V DC, 130 V AC	53 V DC, 37 V AC
Limitation voltage (Up)		300 V	70 V
Rated discharge current (8/20) (In)		10 kA	10 kA
Maximum discharge current (8/20) (Imax)		18 kA	10 kA
Response time		< 500 ns	≤ 1 ns
Nominal impulse current		100 A	70 A
Rated current (I_N)		450 mA (up to 45°C)	300 mA (up to 45°C)
Series resistor		2.2 Ω	4.7 Ω
End-of-life information by		Loss of dialling tone	Loss of transmission
Additional characteristics			
Degree of protection	Device only	IP20	IP20
	Device in modular enclosure	IP40	IP40
	IK	05	05
Operating temperature		-25°C to +60°C	-25°C to +60°C
Storage temperature		-40°C to +85°C	-40°C to +85°C

Weight (g)

Surge arresters		
Type	iPRC	iPRI
	25	65

Dimensions (mm)



iPRD-DC surge arresters

Withdrawable surge arresters type 2 for photovoltaic applications

CE

Country approval pictograms

IEC 61643-1 T2
EN 61643-11 Type 2
UTE C 61740-51 T2
prEN 50539-11 T2

PB107585-40

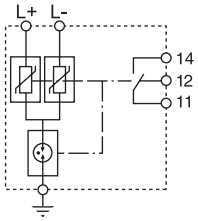
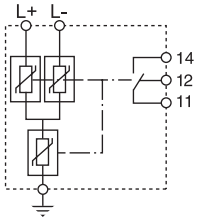
iPRD-DC40r 600PV

iPRD-DC direct current surge arresters are designed to protect against overvoltages due to a lightning strike: of the "DC" input to the inverter and of photovoltaic panels.

It should be installed in a switchboard inside the building. If the switchboard is located outside, it must be weatherproof.

Withdrawable iPRD-DC surge arresters allow damaged cartridges to be replaced quickly.
They offer remote reporting of the "cartridge must be changed" message.

Catalogue numbers

Internal diagram	Imax (kA) Maximum discharge current	In (kA) Nominal discharge current	Up (kV) Protection level			U_{CPV} (V) (1) Maximum steady state voltage			Width in module of 9 mm	Cat. no.
			L+/⏚	L-/⏚	L+/L-	L+/⏚	L-/⏚	L+/L-		
iPRD-DC40r 600PV										
DB124051 	40	15	1.6	1.6	2.8	600	600	840	6	**A9L16434**
iPRD-DC40r 1000PV										
DB124052 	40	15	3.9	3.9	3.9	1000	1000	1000	6	**A9L16436**

(1) Ucpv ≥ 1.2 x Uoc stc (Uoc stc: maximum no-load voltage of the photovoltaic generator "photovoltaic module manufacturer's data")

PB107586-30

PB107587-30

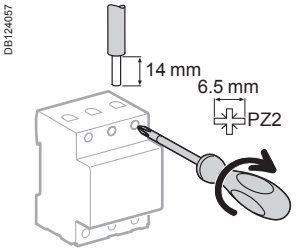
Replacement cartridges

Replacement cartridges		
Type	**Replacement cartridges for**	**Cat. no.**
C 40-600PV	iPRD-DC40r 600PV	**A9L16683**
C 40-1000PV	iPRD-DC40r 1000PV	**A9L16692**
C neutral PV	iPRD-DC40r 600PV	**A9L16690**

iPRD-DC surge arresters

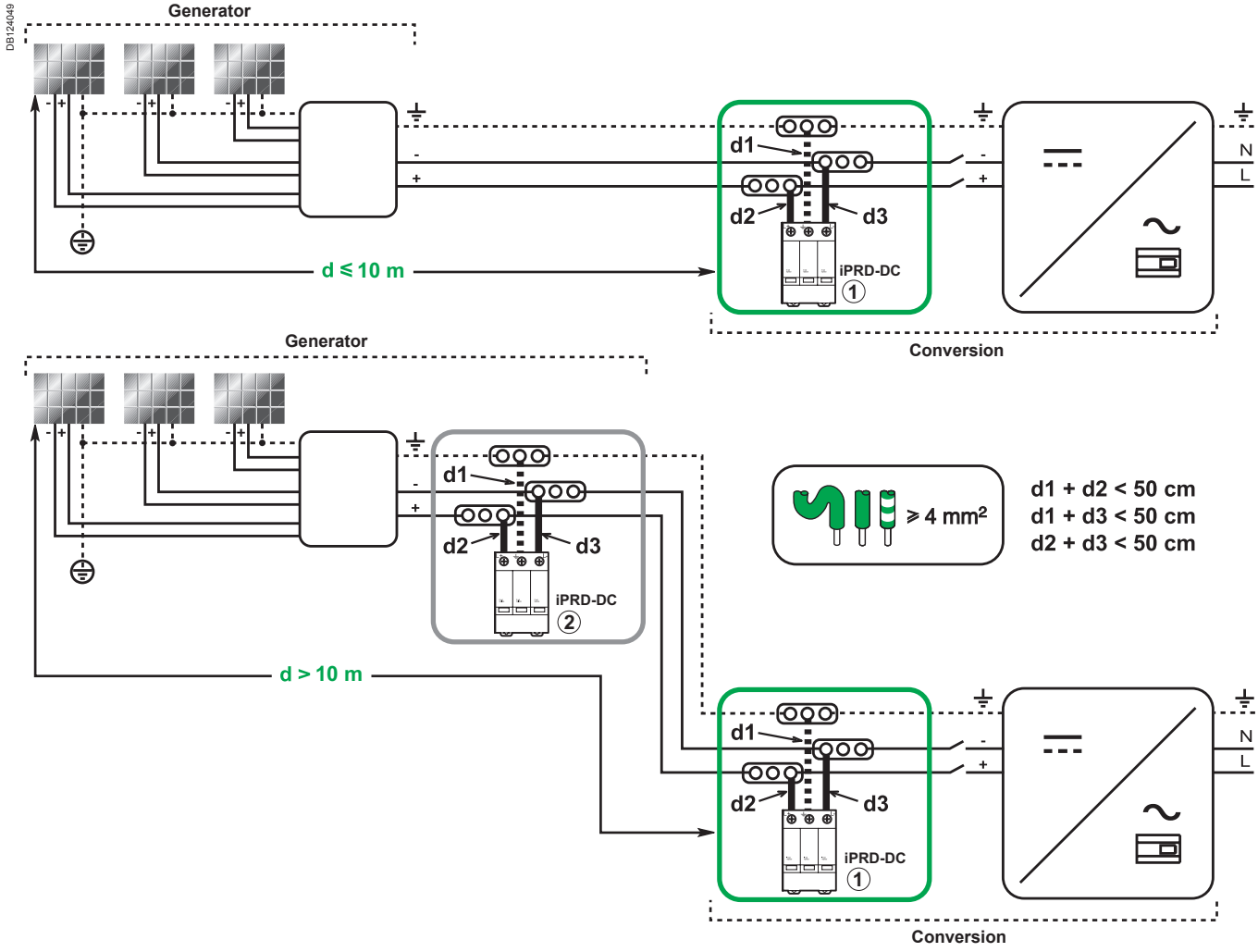
Withdrawable surge arresters type 2 for photovoltaic applications (cont.)

Connection



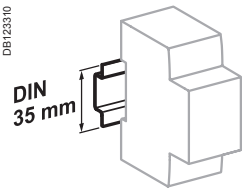
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		 DB122945	 DB122946
iPRD-DC	2 N.m	2.5 to 25 mm²	2.5 to 16 mm²

Depending on the distance between the "generator" part and the "conversion" part, it may be necessary to install two surge arresters or more, to ensure protection of each of the two parts.

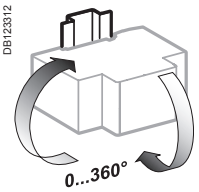


iPRD-DC surge arresters

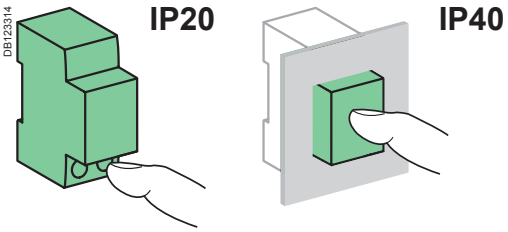
Withdrawable surge arresters type 2 for photovoltaic applications (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



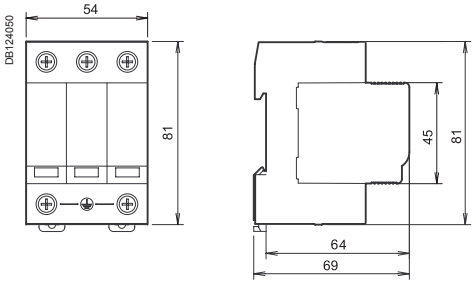
Technical data

Main characteristics			
Type of network		Isolated direct current	
Temps de réponse		< 25 ns	
Short circuit current (I_{SCPV})		30 A	
Type of surge arresters		Type 2	
End-of-life indication mode		Circuit opened by integrated thermal disconnector	
Additional characteristics			
Degree of protection (IEC 60529)	Device only	IP20	
	Device in modular enclosure	IP40	
	Chocs	IK03	
End-of-life indication	By the cartridges	White	Operational
		Red	At end of life
	By the NO/NC remote indication contact 250 V AC / 0.25 A		
Operating temperature		-25°C to +60°C	
Storage temperature		-40°C to +85°C	
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)	

Weight (g)

Surge arresters	
Type	
iPRD-DC40r 600PV	400
iPRD-DC40r 1000PV	400

Dimensions (mm)



iPRD PV-DC surge arresters

Withdrawable surge arresters type 2 for photovoltaic applications

DB123854

Country approval pictograms

UTE C 61740-51 T2
EN 50539-11: 2013 T2

PB110283-40

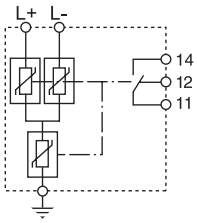
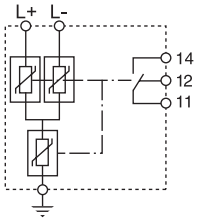
iPRD 40r 800PV

iPRD PV-DC direct current surge arresters are designed to protect against overvoltages due to a lightning strike: of the "DC" input to the inverter and of photovoltaic panels.

It should be installed in a switchboard inside the building. If the switchboard is located outside, it must be weatherproof.

Withdrawable iPRD PV-DC surge arresters allow damaged cartridges to be replaced quickly.
The surge arrester base can be turned over to allow the phase/neutral/earth cables to enter through either the top or the bottom
They offer remote reporting of the "cartridge must be changed" message.

Catalogue numbers

Internal diagram	I_{Total} (kA) Total discharge current	In (kA) Nominal discharge current	Up (kV) Protection level L+/⏚, L-/⏚, L+/L-	U_{CPV} (V) (1) Maximum continuous operating voltage L+/⏚, L-/⏚, L+/L-	Width in module of 9 mm	Cat. no.
iPRD 40r 800PV						
DB124052 	40	15	3	800	6	**A9L40271**
iPRD 40r 1000PV						
DB124052 	40	15	3.9	1000	6	**A9L40281**

(1) Ucpv ≥ 1.2 x Uoc stc (Uoc stc: maximum no-load voltage of the photovoltaic generator "photovoltaic module manufacturer's data")

PB110285-30

Replacement cartridges

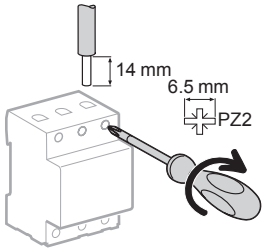
Replacement cartridges		
Type	**Replacement cartridges for**	**Cat. no.**
C 40-800PV	iPRD 40r 800PV	**A9L40172**
C 40-1000PV	iPRD 40r 1000PV	**A9L40182**

iPRD PV-DC surge arresters

Withdrawable surge arresters type 2 for photovoltaic applications (cont.)

Connection

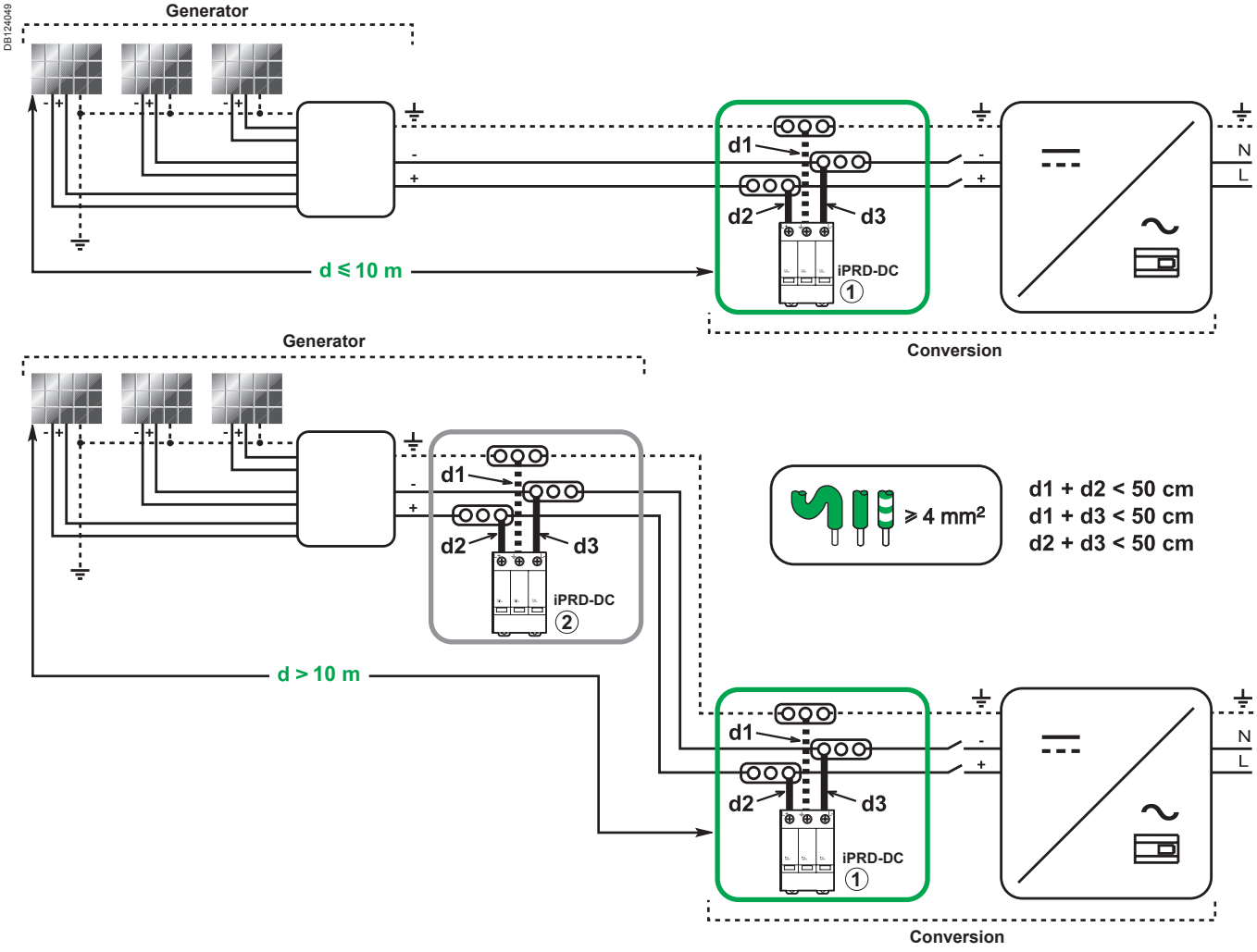
DB124057



Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
iPRD PV-DC	3.5 N.m	2.5 to 25 mm²	2.5 to 16 mm²

Depending on the distance between the "generator" part and the "conversion" part, it may be necessary to install two surge arresters or more, to ensure protection of each of the two parts.

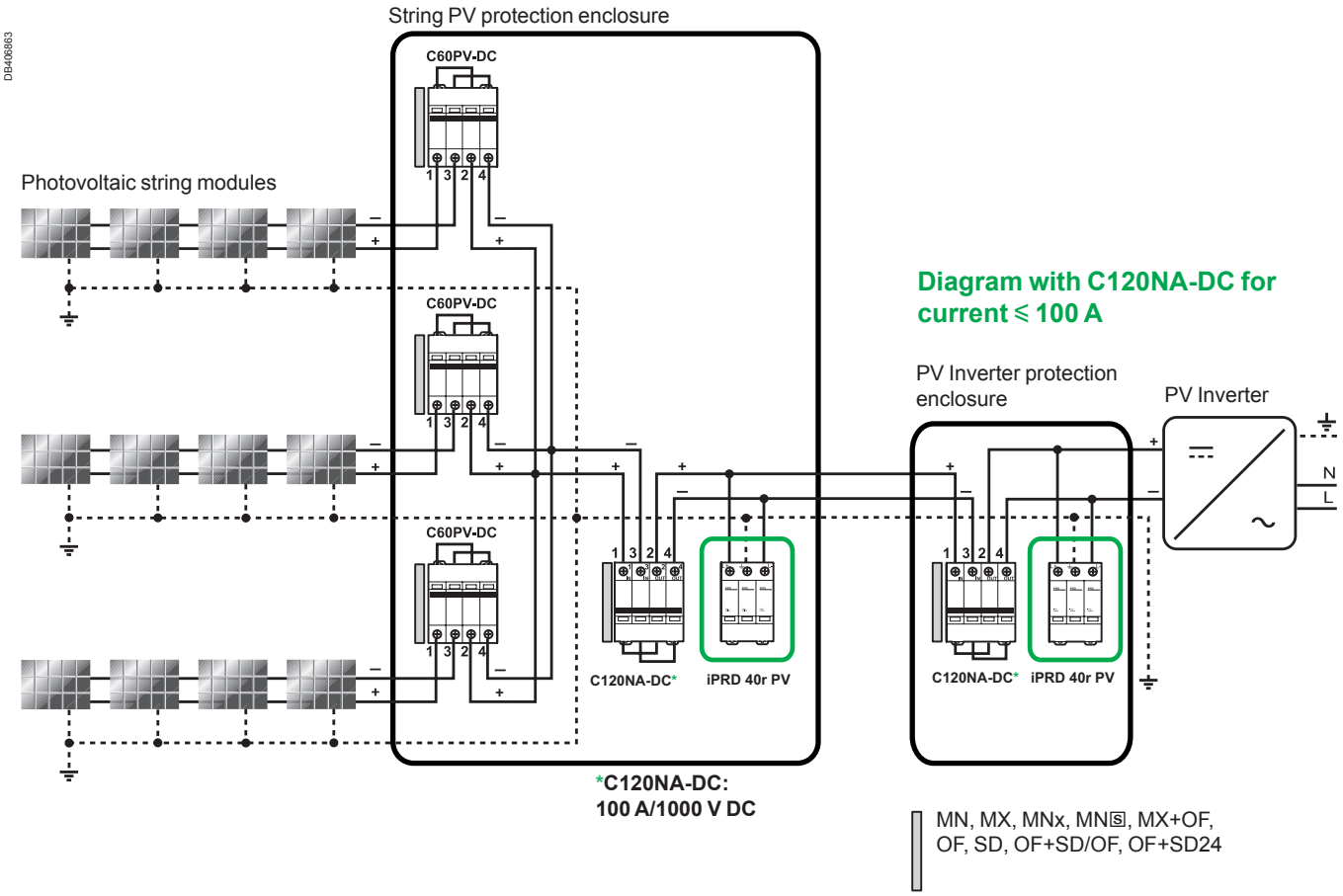
DB124049



iPRD PV-DC surge arresters

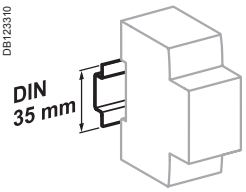
Withdrawable surge arresters type 2 for photovoltaic applications

Application diagram

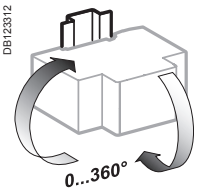


iPRD PV-DC surge arresters

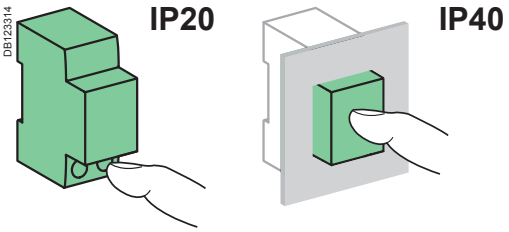
Withdrawable surge arresters type 2 for photovoltaic applications (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



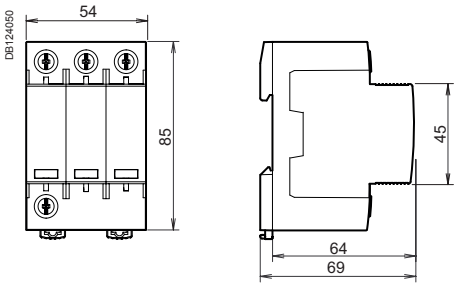
Technical data

Main characteristics			
Type of network		Isolated direct current	
Maximum continuous operating voltage (U_{CPV})	iPRD 40r 800PV	800 V	
	iPRD 40r 1000PV	1000 V	
Response time		< 25 ns	
Permanent operating current (Ic)		< 1 mA	
Short circuit current (I_{SCPV})		200 A	
Type of surge arresters		Type 2	
Ground residual current	I_{PE} (AC)	600 µA	
	I_{PE} (DC)	60 µA	
End-of-life indication mode		Circuit opened by integrated thermal disconnector	
Additional characteristics			
Degree of protection (IEC 60529)	Device only	IP20	
	Device in modular enclosure	IP40	
	Chocs	IK03	
Satisfactory operation indication	By the cartridges	White	Operational
		Red	Cartridge must be replaced
	By the NO/NC remote indication contact 250 V AC / 0.25 A		
Operating temperature		-25°C to +60°C	
Storage temperature		-40°C to +85°C	
Humidity range		5 % to 95 %	
Standards		UTE C 61740-51 T2 EN 50539-11: 2013 T2	

Weight (g)

Surge arresters	
Type	
iPRD 40r 800PV	400
iPRD 40r 1000PV	400

Dimensions (mm)

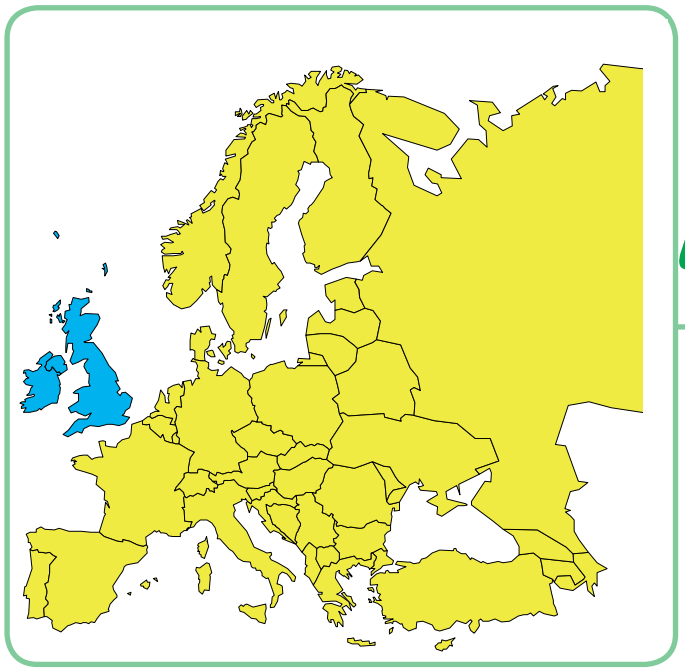


iSW switches
Contents

Offers
This page must be removed before publishing

Schneider Electric's range of switches consists of different products (A, B) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

iSW switches (cont.)

DB116619 DB123430 DB123807 DB404546

Country approval pictograms

IEC/EN 60947-3

The switch-disconnectors combine the following functions:
■ Control (opening and closing of circuits under load).

iOF auxiliary

■ Mounted on the left, it indicates the "open" or "closed" position of the switch and has a normally open (NO) or normally closed (NC) contact.

PB110905

1P

PB110906

2P

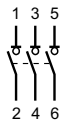
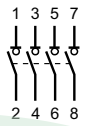
PB110907

3P

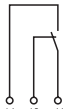
PB110908

4P

Catalogue numbers

40 to 125 A iSW switch-disconnectors				
Type				**Width in 9 mm modules**
1P	**Rating**	**Voltage (Ue)**		
DB118998 	40 A	240 V AC	**A9S65140**	2
	63 A	240 V AC	**A9S65163**	
	100 A	240 V AC	**A9S65191**	
	125 A	240 V AC	**A9S65192**	
2P				
DB118999 	40 A	415 V AC	**A9S65240**	4
	63 A	415 V AC	**A9S65263**	
	100 A	415 V AC	**A9S65291**	
	125 A	415 V AC	**A9S65292**	
3P				
DB119000 	40 A	415 V AC	**A9S65340**	6
	63 A	415 V AC	**A9S65363**	
	100 A	415 V AC	**A9S65391**	
	125 A	415 V AC	**A9S65392**	
4P				
DB119001 	40 A	415 V AC	**A9S65440**	8
	63 A	415 V AC	**A9S65463**	
	100 A	415 V AC	**A9S65491**	
	125 A	415 V AC	**A9S65492**	
Operating frequency		50/60 Hz		
Accessories		**Module CA907000 and CA907001**		

PB104474-35

Auxiliary			
Type			**Width in 9 mm modules**
iOF	**Voltage (Ue)**		
DB118810 	240...415 V AC	**A9A26924**	1
	24...130 V DC		

iSW switches (cont.)

DB116619

RCM

Country approval pictograms

IEC/EN 60947-3
BSEN 60947-3
AS/NZS 60947-3

The switch-disconnectors combine the following functions:
■ Control (opening and closing of circuits under load).

iOF auxiliary
■ Mounted on the left, it indicates the "open" or "closed" position of the switch and has a normally open (NO) or normally closed (NC) contact.

PB110909

1P

PB110910

2P

PB110911

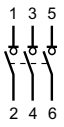
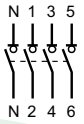
3P

PB110912

4P

Catalogue numbers

40 to 125 A iSW switch-disconnectors

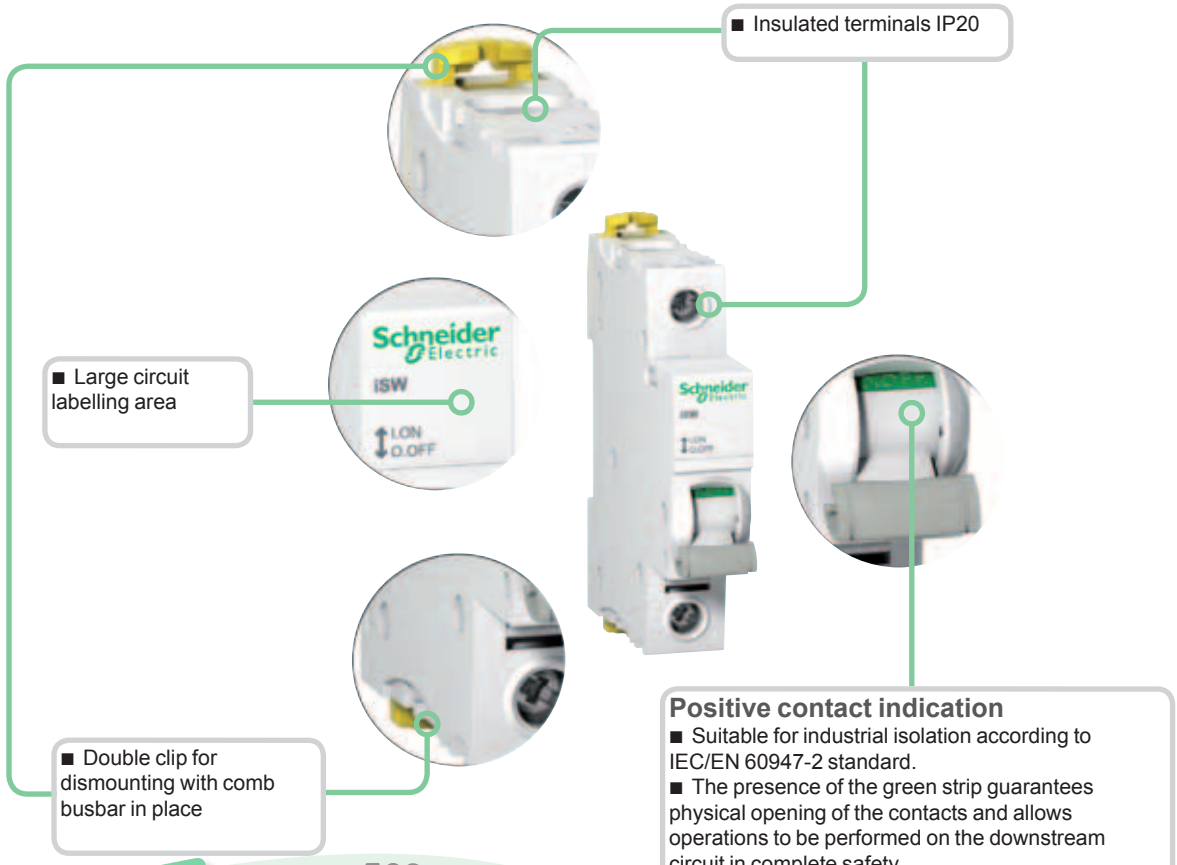
Type				Width in 9 mm modules
1P	**Rating**	**Voltage (Ue)**		
DB118998 	40 A	240 V AC	**A9S66140**	2
	63 A	240 V AC	**A9S66163**	
	100 A	240 V AC	**A9S66191**	
	125 A	240 V AC	**A9S66192**	
2P				
DB118999 	40 A	415 V AC	**A9S66240**	4
	63 A	415 V AC	**A9S66263**	
	100 A	415 V AC	**A9S66291**	
	125 A	415 V AC	**A9S66292**	
3P				
DB119000 	40 A	415 V AC	**A9S66340**	6
	63 A	415 V AC	**A9S66363**	
	100 A	415 V AC	**A9S66391**	
	125 A	415 V AC	**A9S66392**	
3P+N				
DB404563 	125 A	415 V AC	**A9S66792**	8
4P				
DB119001 	40 A	415 V AC	**A9S66440**	8
	63 A	415 V AC	**A9S66463**	
	100 A	415 V AC	**A9S66491**	
	125 A	415 V AC	**A9S66492**	
Operating frequency		50/60 Hz		
Accessories		**Module CA907000 and CA907001**		

Auxiliary

Type			Width in 9 mm modules
iOF	**Voltage (Ue)**		
DB118810 	240...415 V AC	**A9A26924**	1
	24...130 V DC		

PB104474-35

iSW switches (cont.)



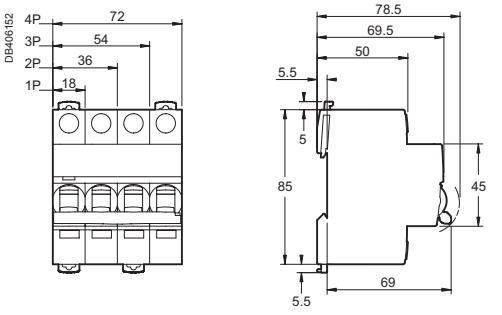
Positive contact indication

- Suitable for industrial isolation according to IEC/EN 60947-2 standard.
- The presence of the green strip guarantees physical opening of the contacts and allows operations to be performed on the downstream circuit in complete safety

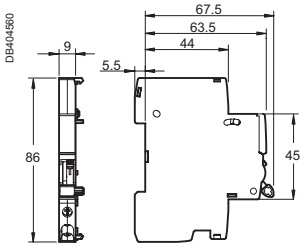
Offer selection see page 320

Offer A

Dimensions (mm)

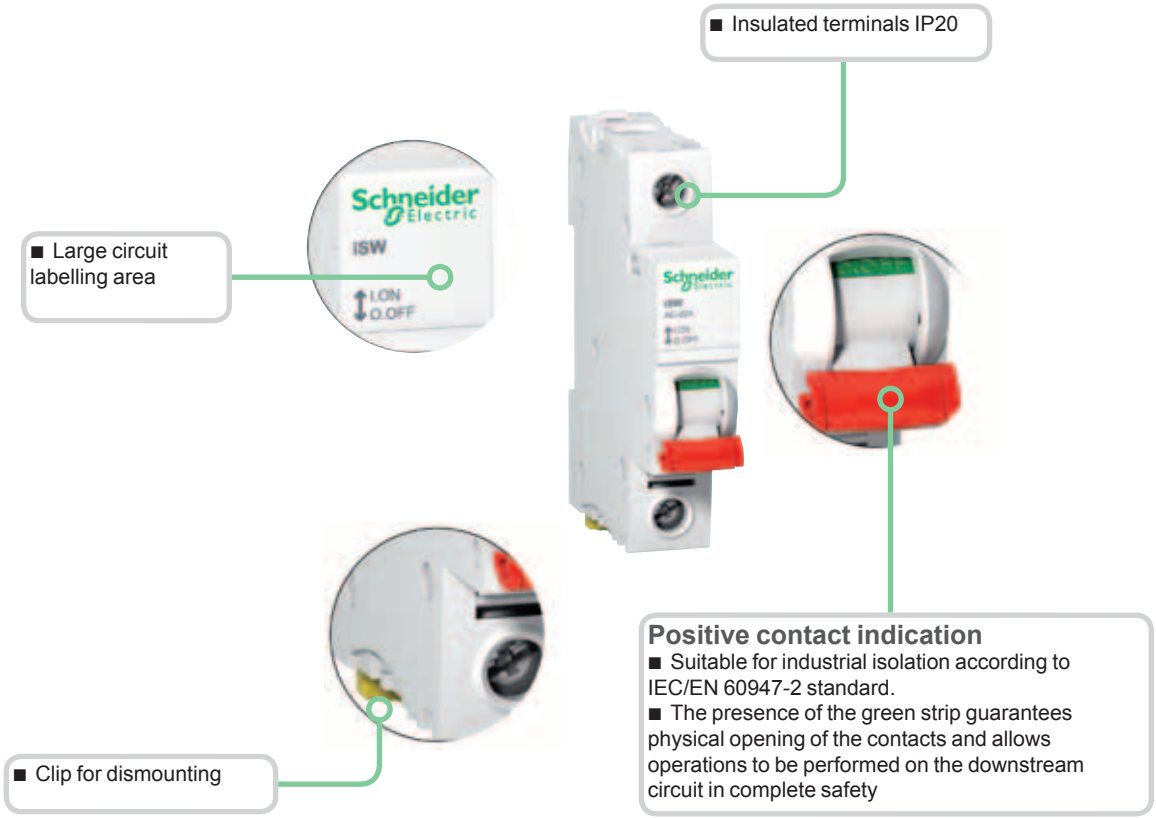


iSW



iOF

iSW switches (cont.)



Offer selection see page 320

Offer B

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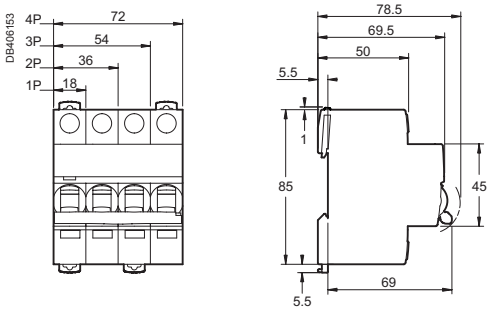
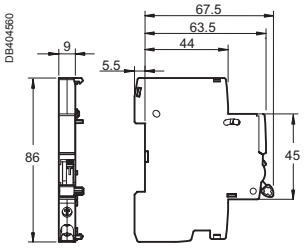
Dimensions (mm)



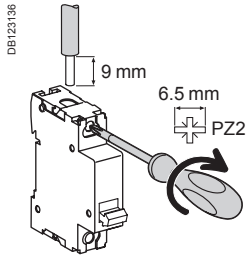
iSW



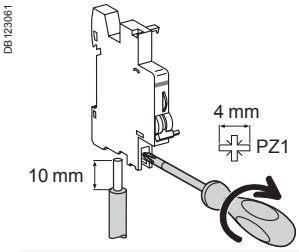
iOF

iSW switches (cont.)

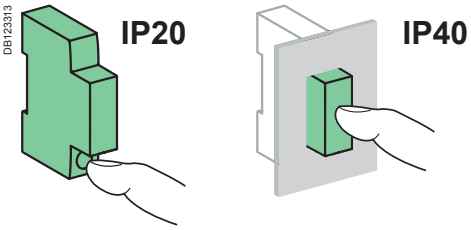
Connection



Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
			DB122945	DB122946
iSW	40 to 125 A	3.5 N.m	≤ 50 mm²	≤ 35 mm²



Type	Tightening torque	Copper cables		Multi-cables terminal	
		Rigid	Flexible	Rigid cables	Cables with ferrule
	DB122945	DB123007	DB123011	DB123008	
iOF	1 N.m	1 to 4 mm²	0.5 to 2.5 mm²	2 x 2.5 mm²	2 x 1.5 mm²



Technical data

Main characteristics			
Insulation voltage (Ui)		1P: 250 V AC 2P, 3P, 4P: 500 V AC	
Pollution degree		3	
Power circuit			
Rated impulse withstand voltage (Uimp)		6 kV	
Operating category		AC - 22 A	
Permissible rated short-time withstand current (Icw)		1500 A	
Conditional rated short-circuit current (Inc)		10 kA according to IEC 60947-3	
Rated short-circuit closing current (Icm)		5 kA	
Additional characteristics			
Degree of protection	Device only	IP20	
	Device in modular enclosure	IP40 Insulation class II	
Endurance (O-C)	Mechanical	20,000 cycles	
	Electrical	40 A - 63 A	15,000 cycles
		80 A - 100 A	10,000 cycles
		125 A	2 500 cycles
Operating temperature		-25°C to +60°C	
Storage temperature		-40°C to +85°C	
Tropicalization		Treatment 2 (relative humidity 95% at 55°C)	

iOF characteristics		
Rated voltage (Ue)	240…415 V AC	
	24…130 V DC	
Operating frequency	50/60 Hz	
Operating current	24 V DC	6 A
	48 V DC	2 A
	60 V DC	1.5 A
	130 V DC	1 A
	240 V AC	6 A
	415 V AC	3 A
Number of contacts	1 NO/NC	
Operating temperature	-35°C to +70°C	
Storage temperature	-40°C to +85°C	

SW Biconnect switches

Offers
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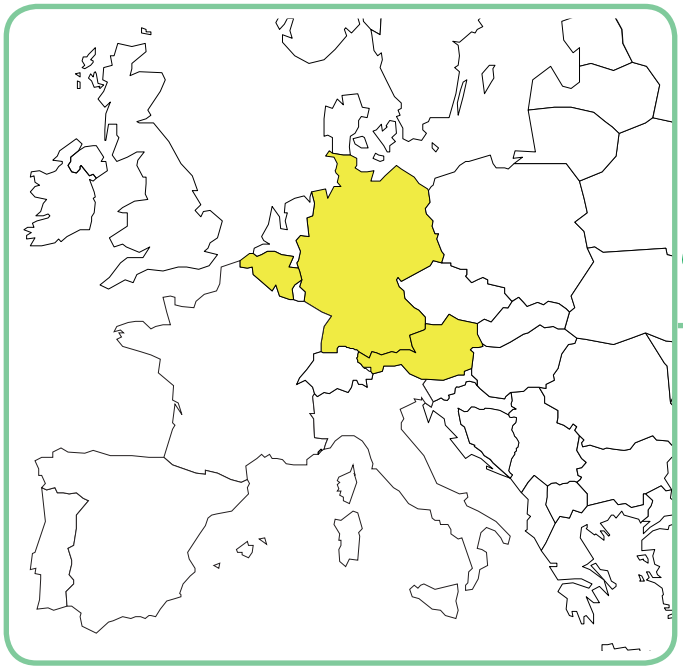
Schneider Electric's range of SW Biconnect switches consists of different products (A, B) to enable it to be the most competitive range possible in each country, allowing for the special characteristics of each market:
- usual installation procedure
- price
- accreditations by local bodies.

Variants

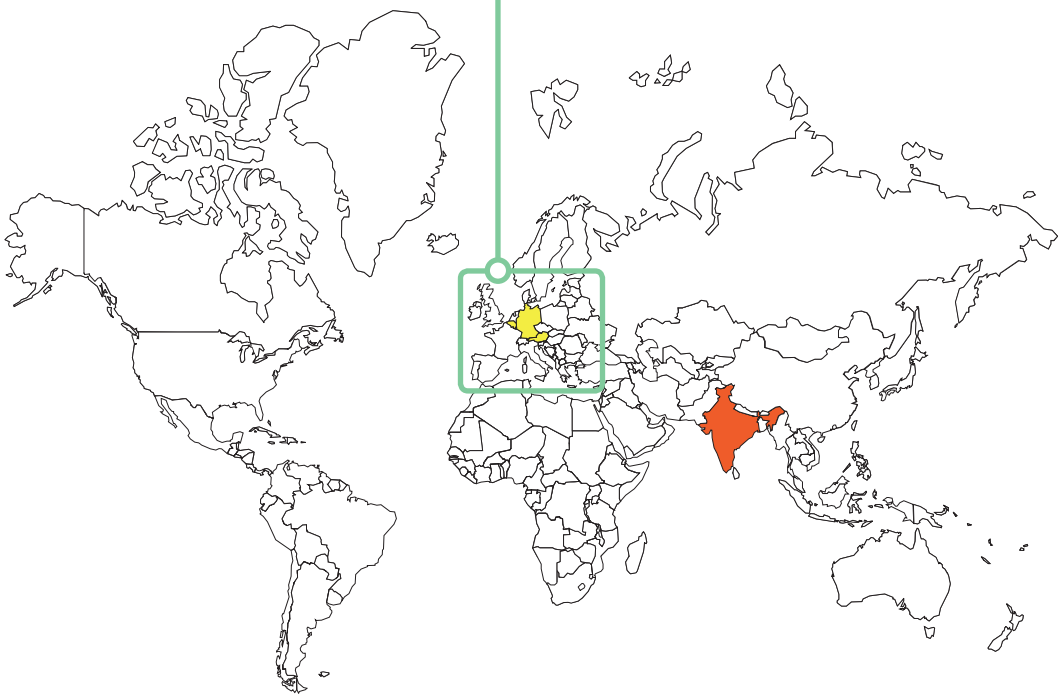
Offers		Pages
Offer A	Catalogue numbers	page 327
Offer B	Catalogue numbers	page 329
India		

DB407236



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

DB407237



SW Biconnect switches

Country approval pictograms

IEC 60947-3

Control and disconnection of on-load electrical circuits already protected against overloads and short-circuits.

PB106799-40

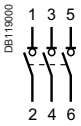
1P

PB106807-40

3P

Catalogue numbers

Biconnect switch-disconnectors

Type				Width in 9 mm modules
1P	**Rating**	**Voltage (Ue)**		
DB118998 	63 A	240 V AC	**A9S62163**	2
3P				
DB118000 	63 A	415 V AC	**A9S62363**	6
Operating frequency			50/60 Hz	

DB404824

■ Cable automatically guided to the correct position: terminals with guard
■ Insulated terminals IP20

PB106807-55

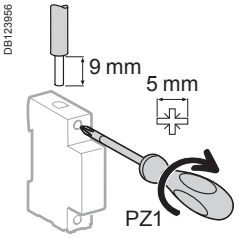
■ Manual control on front face by O-I lever

DB404825

Connection
■ Downstream by Biconnect comb busbar
■ Upstream/downstream by tunnel terminals

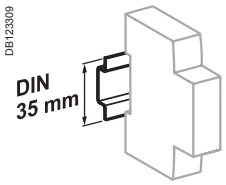
SW Biconnect switches (cont.)

Connection

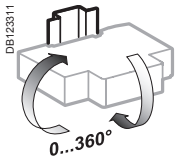


Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
SW Biconnect	3.5 N.m	≤ 50 mm²	≤ 35 mm²

■ Connection by comb busbar or cables (as per EN 50027).



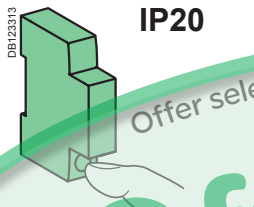
Clip on DIN rail 35 mm.



Indifferent position of installation.

Technical data

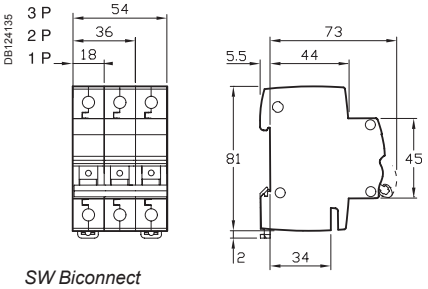
Main characteristics		
Insulation voltage (Ui)		500 V AC
Pollution degree		3
Power circuit		
Rated impulse withstand voltage (Uimp)		6 kV
Operating category		AC-22 A
Permissible rated short-time withstand current (Icw)		1260 A
Conditional rated short-circuit current (Inc)		6 kA according to IEC 60947-3
Rated short-circuit closing current (Icm)		4.2 kA
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40
Endurance (O-C)	Mechanical	50,000 cycles
	Electrical	20,000 cycles
Operating temperature		-20°C to +50°C
Storage temperature		-40°C to +70°C
Tropicalization		Treatment 2 (relative humidity 95% at 55°C)



Weight (g)

Biconnect switch-disconnectors	
Type	**SW Biconnect**
1P	75
3P	230

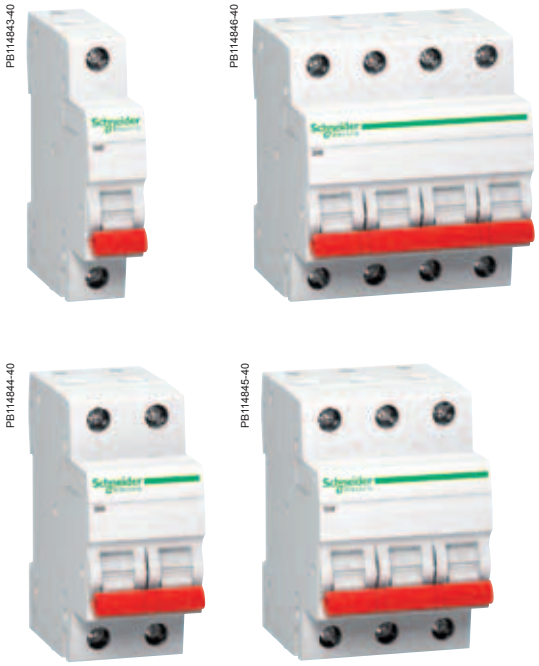
Dimensions (mm)



SW Biconnect

SW Biconnect switches (cont.)

Country approval pictogram

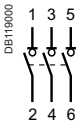
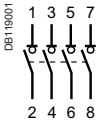


IS/IEC 60947-3

Control and disconnection of on-load electrical circuits already protected against overloads and short-circuits.

Catalogue numbers

Biconnect switch-disconnectors

Type				Width in 9 mm modules
1P	**Rating (In)**	**Voltage (Ue)**		
	40 A	240 V AC	**A9KS15140**	2
	63 A	240 V AC	**A9KS15163**	
2P				
	40 A	415 V AC	**A9KS15240**	4
	63 A	415 V AC	**A9KS15263**	
	80 A	415 V AC	**A9KS15280**	
3P				
	40 A	415 V AC	**A9KS15340**	6
	63 A	415 V AC	**A9KS15363**	
4P				
	40 A	415 V AC	**A9KS15440**	8
	63 A	415 V AC	**A9KS15463**	
	80 A	415 V AC	**A9KS15480**	
Operating frequency			50/60 Hz	

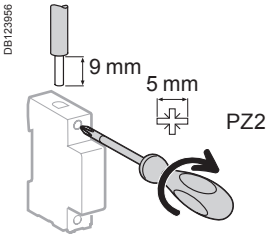
■ Cable automatically guided to the correct position: terminals with guard
■ Insulated terminals IP20

■ Manual control on front face by O-I lever

Connection
■ Downstream by Biconnect comb busbar
■ Upstream/downstream by tunnel terminals

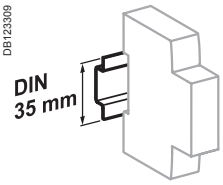
SW Biconnect switches (cont.)

Connection

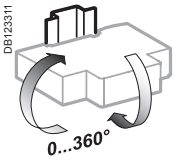


Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
SW Biconnect	3.5 N.m	1 to 35 mm²	1 to 25 mm²

■ Connection by comb busbar or cables (as per EN 50027).



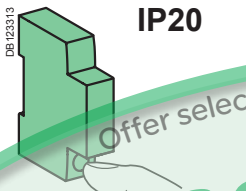
Clip on DIN rail 35 mm.



Indifferent position of installation.

Technical data

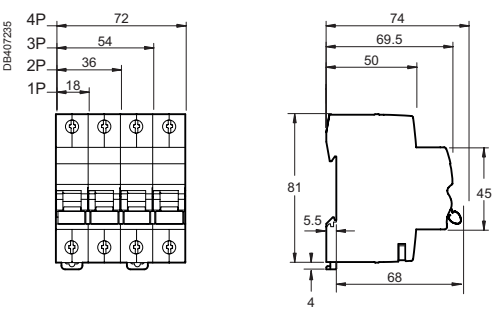
Main characteristics		
Insulation voltage (Ui)		500 V AC
Pollution degree		2
Power circuit		
Rated impulse withstand voltage (Uimp)		4 kV
Operating category		AC-22 A
Permissible rated short-time withstand current (Icw)		12 In for 300 ms
Rated short-circuit closing current (Icm)	40 - 63 A	15 In
	80 A	1 kA
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40
Endurance (O-C)	Mechanical	20,000 cycles
	Electrical	10,000 cycles
Operating temperature		-5°C to +55°C
Storage temperature		-25°C to +85°C
Tropicalization		Treatment 2 (relative humidity 95% at 55°C)



Weight (g)

Biconnect switch-disconnectors	
Type	**SW Biconnect**
1P	120
2P	240
3P	360
3P	480

Dimensions (mm)



SW Biconnect

Switch-disconnectors remote tripping types iSW-NA

DB106604 DB116619

Country approval pictograms

IEC/EN 60947-3

The iSW-NA trip switch-disconnectors combine the following functions:
- control (opening and closing of circuits under load)
- isolation.

They are designed for switchboard or cubicle incoming units in the tertiary and industry sectors, with the possibility of remote tripping via a coil.

Positive break indication

- Suitability for isolation in the industrial sector to IEC/EN 60947-3.
- The presence of the green strip guarantees that the contacts open physically and allows work to be carried out safely on the downstream circuit.

PB107096-40 DB123872

PB107097-40

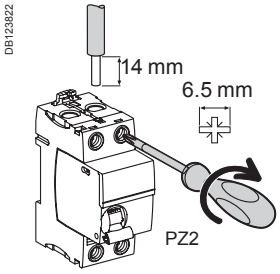
Catalogue numbers

iSW-NA			
Type			**Width in 9 mm modules**
1P+N	**Rating**		
DB118999 1 3 2 4	40 A	**A9S70640**	4
	63 A	**A9S70663**	
	80 A	**A9S70680**	
	100 A	**A9S70690**	
3P+N			
DB119001 1 3 5 7 2 4 6 8	40 A	**A9S70740**	8
	63 A	**A9S70763**	
	80 A	**A9S70780**	
	100 A	**A9S70790**	
Voltage rating (Ue)	1P+N	230-240 V AC	
	3P+N	400-415 V AC	
Operating frequency		50/60 Hz	
Auxiliaries*		**Module CA907000 and CA907002**	
Accessories		**Module CA907000 and CA907001**	

⚠* **Electrical auxiliaries must be installed to the left of the switch-disconnector. The iSD auxiliary contact must be combined with an auxiliary device (iMN, iMX, iMX+OF): it indicates that the switch-disconnector has been tripped open..**

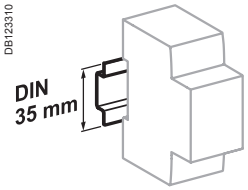
Switch-disconnectors remote tripping types iSW-NA (cont.)

Connection

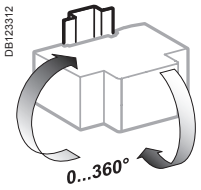


Type	Tightening torque	Without accessory: Copper cables – Rigid	Without accessory: Copper cables – Flexible or with ferrule	With accessories*: 50 mm² Al terminal	With accessories*: Screw-on connection for ring terminal	With accessories*: Multi-cables terminal – Rigid cables	With accessories*: Multi-cables terminal – Flexible cables
		DB122945 / DB122946	DB122935	Al DB118789	Ø DB118787		
iSW-NA	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²	Ø 5 mm	3 x 16 mm²	3 x 10 mm²

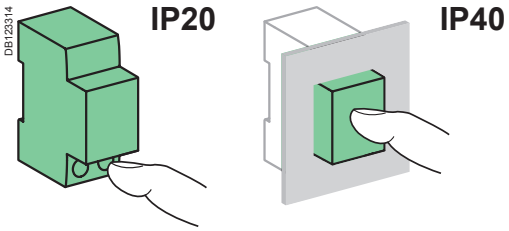
** See module CA907000*



Clip on DIN rail 35 mm.



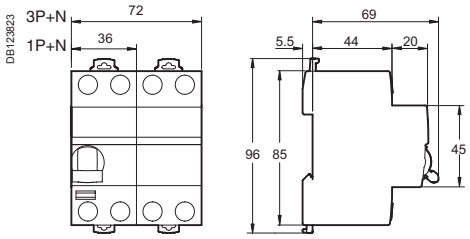
Indifferent position of installation.



Technical data

Main characteristics		iSW-NA 40/63 A	iSW-NA 80/100 A
According to IEC 60947-3			
Insulation voltage (Ui)		500 V AC	
Pollution degree		3	
Rated impulse withstand voltage (Uimp)		6 kV	
Operating category		AC22A	
Permissible rated short-time withstand current (Icw)		20 In/1s	15 In/1s
Rated short-circuit making (Icm)		5 kÂ	
Conditional rated short circuit current (Inc/IΔc)	With iC60N/H/L	Equal to breaking capacity of iC60	
	With fuse	6000 A	
Additional characteristics			
Degree of protection	Device only	IP20	
	Device in modular enclosure	IP40 Insulation class II	
Endurance (O-C)	Electrical	15,000 cycles	10,000 cycles
	Mechanical	20,000 cycles	
Operating temperature		-35°C to +70°C	
Storage temperature		-40°C to +85°C	
Tropicalization		Treatment 2 (relative humidity 95 % at 55°C)	

Dimensions (mm)



Weight (g)

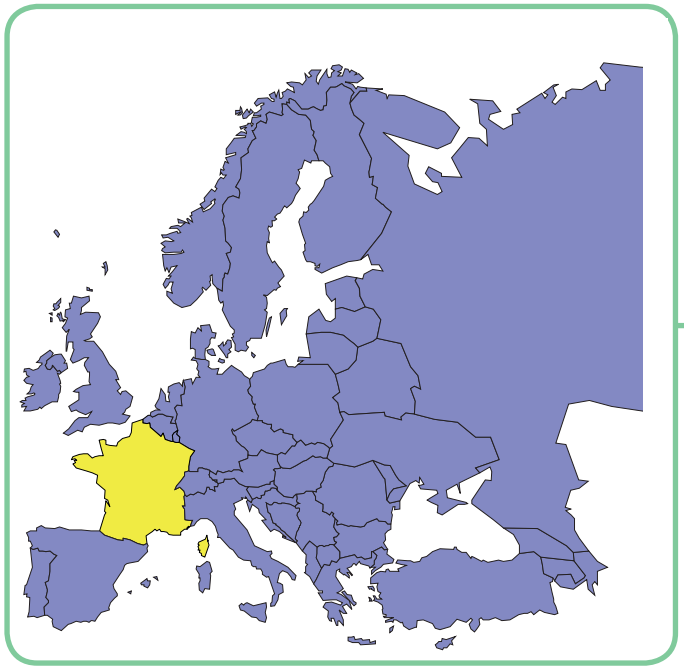
Switch-disconnectors	
Type	**iSW-NA**
1P+N	170
3P+N	300

NG125NA
Table of contents

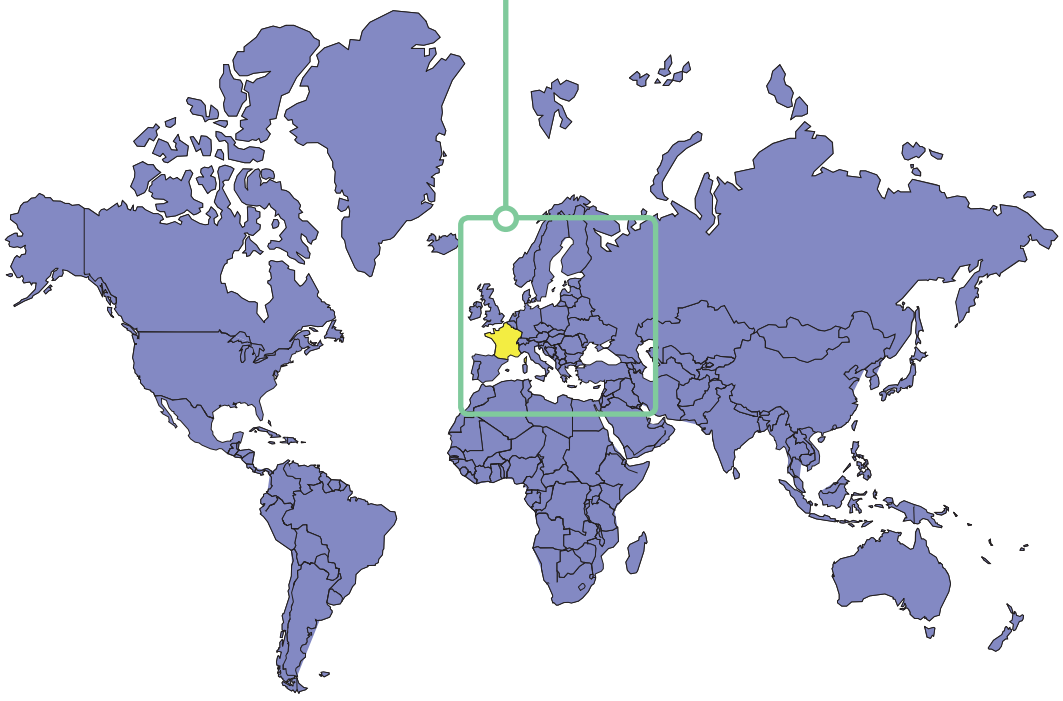
Offers
This page must be removed before publishing

The Schneider Electric range of switches up to 125 A comprises various offers (A, B) so as to be as competitive as possible in each country, taking into account the specific features of each market:
- installation customs
- price
- approval by local organizations.

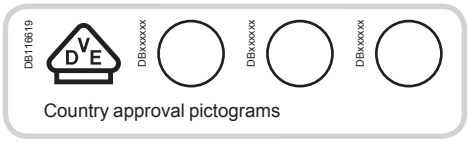
Variants



Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.



NG125NA switches



Country approval pictograms

IEC/EN 60947-3

■ The NG125NA is a switch-disconnector with free tripping for making and breaking under load.
■ It is especially suitable for the modular enclosure incoming feeder with remote breaking (e.g. emergency cutoff).

NG125NA 3P

NG125NA 4P

Offer selection see page 333

Offer A

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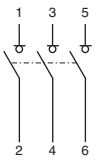
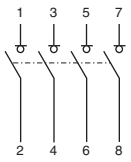
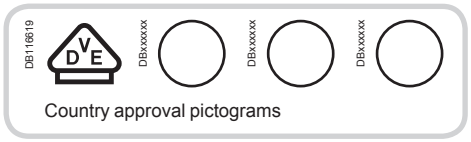
Catalogue numbers

NG125NA switch			
Type		3P	3P+N
			
Auxiliaries		**Remote indication and tripping, module CM907004 and CM907005**	
Rating (In)	**Quality label (1)**		
63 A		**18889**	**18897**
80 A		**18890**	**18898**
100 A		**18891**	**18899**
125 A		**18892**	**18900**
Width in 9 mm modules		9	12
Accessories		**Module CM907004 and CM907006**	

(1) Information to be supplied by the country concerned.

NG125NA switches (cont.)



Country approval pictograms

IEC/EN 60947-3

■ The NG125NA is a switch-disconnector with free tripping for making and breaking under load.
■ It is especially suitable for the modular enclosure incoming feeder with remote breaking (e.g. emergency cutoff).

NG125NA 3P

NG125NA 4P

Offer selection see page 333

Offer B

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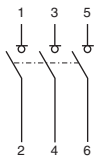
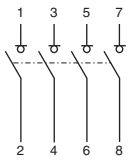
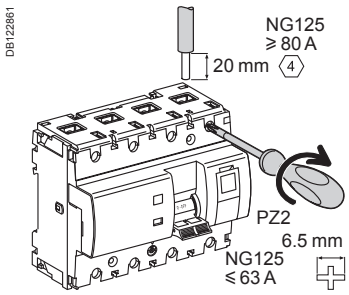
Catalogue numbers

NG125NA switches			
Type		3P	3P+N
			
Auxiliaries		**Remote indication and tripping, module CM907005**	
Rating (In)	**Quality label (1)**		
63 A		**18889**	**18893**
80 A		**18890**	**18894**
100 A		**18891**	**18895**
125 A		**18892**	**18896**
Width in 9 mm modules		9	12
Accessories		**Module CM907006**	

(1) Information to be supplied by the country concerned.

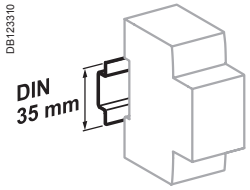
NG125NA switches (cont.)

Connection

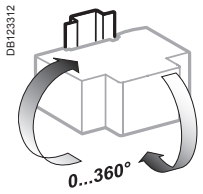


Rating	Tightening torque	Without accessories: Copper cables – Rigid	Without accessories: Copper cables – Flexible or with ferrule	With accessories: 70 mm² Al terminal	With accessories: Screw-on connection for ring terminal	With accessories: Small ring terminal	With accessories: Multi-cable terminal – Rigid cables	With accessories: Multi-cable terminal – Flexible cables
		DB122945 / DB122946	DB123410	DB123488	DB118789	DB118787 Ø 6 mm		
63 A	3.5 N.m	1.5 to 50 mm²	1.5 to 35 mm²	-	-	-	3 x 16 mm²	3 x 10 mm²
80 to 125 A	6 N.m	16 to 70 mm²	10 to 50 mm²	25 to 70 mm²	2 x 35 mm² 1 x 50 mm²	1 x 70 mm²		

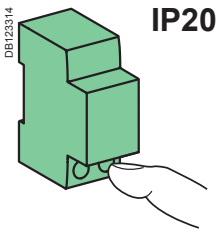
■ For rating ≥ 80 A: upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.

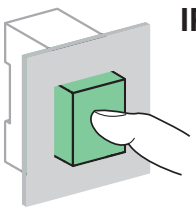


Clips onto 35 mm DIN rail.



Any installation position.





Technical data

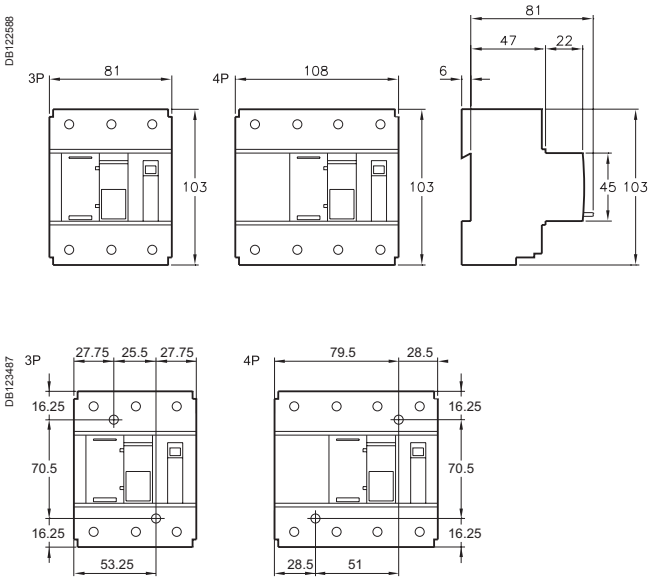
Main characteristics			
According to IEC/EN 60947-3			
Max. voltage rating (Ue)			500 V AC
Insulation voltage (Ui)			690 V AC
Degree of pollution			3
Rated impulse withstand voltage (Uimp)			8 kV
Short time withstand current (50 ms) Icw			1.5 kA
Rated short-circuit closing current (Icm)			2 kA
Utilization category			AC22A/B - AC23B
Additional characteristics			
Degree of protection (IEC 60529)	Device only		IP20
	Device in modular enclosure		IP40
Endurance (O-C)			**Category A** / **Category B**
	Electrical (except AC20 and DC20)	≤ 100 A	1500 cycles / 300 cycles
		125 A	1000 cycles / 200 cycles
	Mechanical		20,000 cycles
Operating temperature			-30°C to +70°C
Storage temperature			-40°C to +70°C
Tropicalization (IEC 60068-1)			Treatment 2 (relative humidity of 95% at 55°C)

NG125NA switches (cont.)

Weight (g)

Switch	
Type	**NG125NA**
3P	720
4P	960

Dimensions (mm)



Spacing for mounting on panel

NG125NA switches (cont.)

For rating ≥ 80 A
■ Voltage taps:
□ auxiliaries power supply
□ measurement
□ emergency stop
□ remote reporting

■ Cable strength:
□ ribbed cage
□ terminal depth
□ tightening by Allen hex key (NG125 ≥ 80 A)

■ Integrated padlocking device

056909N_SE-2011-90

■ Test button to check satisfactory operation of the tripping mechanism

■ Pull-out strength:
□ metallic lock

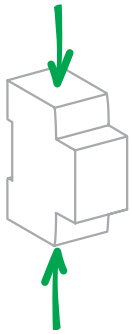
■ Central manual control, 3 positions:
□ ON
□ tripped on fault
□ open

■ Impact and vibration resistance:
□ high-strength enclosure
□ IK 05

■ Circuit breaker tripped indicator

■ Electric power supply through the top or bottom

DB123493



■ Positive contact indication:
□ suitability for isolation in the industrial sector to IEC/EN 60947-3;
□ the presence of the green strip guarantees that the contacts open physically and allows work to be carried out safely on the downstream circuit.

■ Longer product service life due to:
□ good overvoltage withstand capacity;
□ high limitation performances;
□ fast closure independent of the speed of actuation of the toggle.

Accessorisation / Auxiliarisation iC60, iID, Vigi iC60, iSW-NA

Connection accessories

See module CA907001

9	Splitter blocks	Linergy FM	**See module**	**LIN022**
		Linergy DX	**See module**	**LIN003**
10	50 mm² Al terminal			**27060**
11	Screw-on connection for ring terminal			**27053**
12	Multi-cables terminal		4 parts	**19091**
			3 parts	**19096**
13	Comb busbar		**See modules**	**CA907026, CA907027**

Mounting accessories

See module CA907001

14	Sealable terminal shields for top and bottom connection		1P (set of 2)	**A9A26975**
			2P (set of 2)	**A9A26976**
			3P	**1P + 2P**
			4P	**2P + 2P**
15	Interpole barrier		(set of 10)	**A9A27001**
16	Screw shields		4P (set of 20)	**A9A26981**
16"	Screw shields	Vigi iC60	(set of 12)	**A9A26982**
17	Clip-on terminal markers		**See module**	**CA907001**
18	9 mm spacer			**A9A27062**
19	Padlocking device		(set of 10)	**A9A26970**
20	Plug-in base			**A9A27003**
21	**Rotary handle**			
	Black handle			**A9A27005**
	Red handle			**A9A27006**
	No handle			**A9A27008**

Electrical auxiliaries

See module CA907002

Indication

4	iOF/SD+OF auxiliary contact (OF+SD or OF+OF combination switch)	**A9A26929**
5	iSD fault indicating contact	**A9A26927**
6	iOF open/close auxiliary contact	**A9A26924**
7	iOF+SD24 auxiliary contact	**A9A26897**

Control

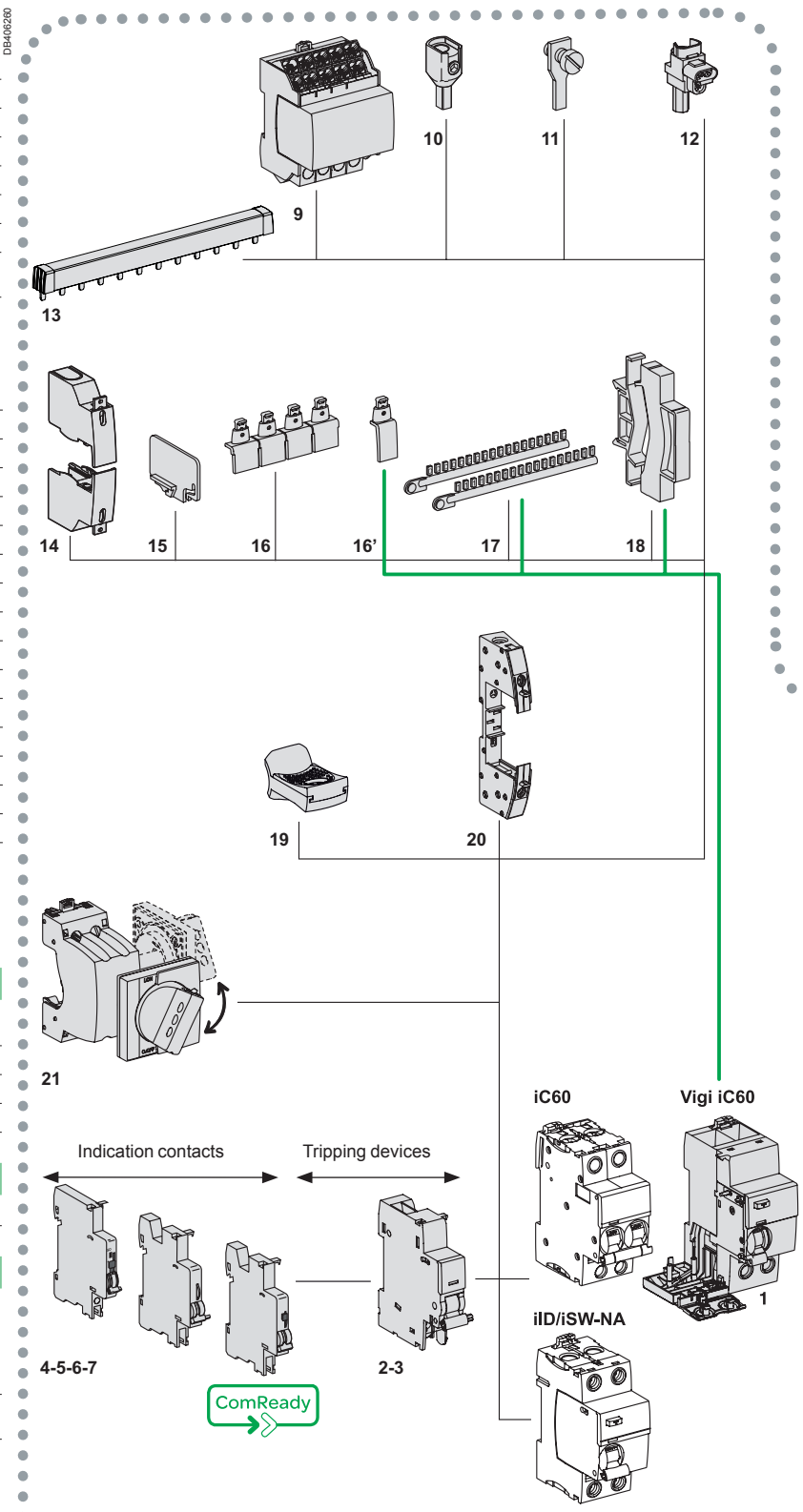
8	iMDU voltage matching auxiliary	**A9C18195**

Tripping devices

2	iMN undervoltage release or iMNs undervoltage release delayed or iMNx undervoltage release with external feeding	**See module**	**CA907002**
3	Shunt release iMX, iMX+OF overvoltage release iMSU	**See module**	**CA907002**

Vigi iC60

1	Vigi iC60 add-on residual current device	**See module**	**CA902005**
	Double terminals Vigi iC60 add-on residual current device	**See module**	**CA902019**



Tripping devices must be installed first.
If two tripping devices are used: the iMN must be installed first
Indication auxiliaries: respect specified position for SD functions.
iSW-NA: when installing a tripping device (iMN, iMX, iMSU...), an iSD auxiliary contact must be associated, which indicates that the iSW-NA has been tripped open.

Accessorisation / Auxiliarisation iC60, iID, Vigi iC60, iSW-NA (cont.)

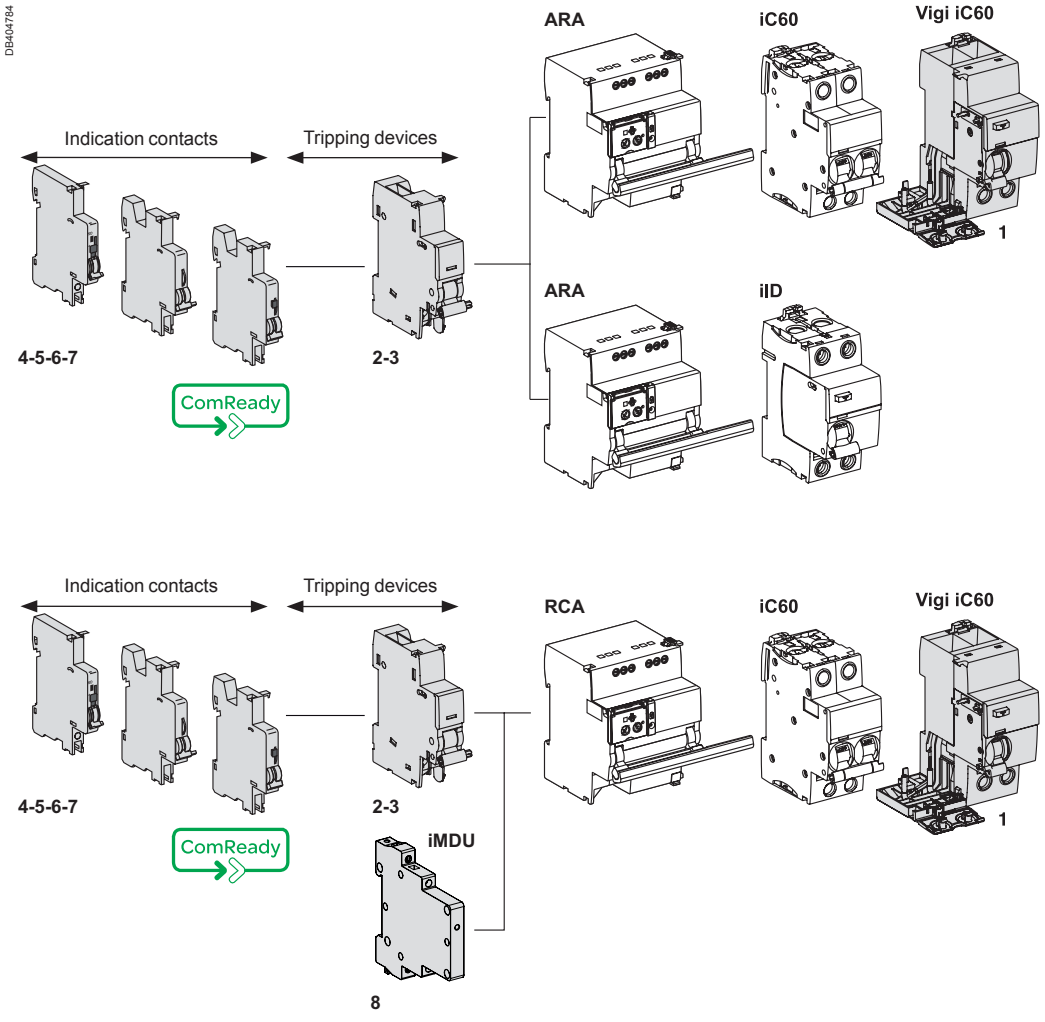
Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.

The tripping auxiliaries iMN, iMX, iMSU...) should be mounted first (1) as close as possible to the main device.

Then at the left, the indicating auxiliaries (iOF, iSD) should be mounted (2) then (3) complying with the following association table.

Indicating auxiliaries		Tripping auxiliaries	Remote control	Device	Vigi iC60
(3)	+(2)	+(1)			
1 (iOF/SD+OF or iOF+SD24 or iSD)	1 iOF/SD+OF	1 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)	–	**iC60, iID, iSW-NA**	*Vigi iC60*
1 iOF	1 (iSD or iOF or iOF/SD+OF)	2 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)			
–	1 iOF+SD24	2 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)			
–	–	3 iMSU			
1 iSD	1 iSD	1 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)			
–	1 (iSD or iOF or iOF/SD+OF or iOF+SD24)	1 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)	**ARA, RCA**	*iC60*	*Vigi iC60*
1 iOF	1 (iSD or iOF or iOF/SD+OF)	–			
–	1 (iSD or iOF or iOF/SD+OF or iOF+SD24)	1 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU) maxi	**ARA**	*iID*	–
1 iOF	1 (iSD or iOF or iOF/SD+OF)	–			



Accessorisation / Auxiliarisation
Reflex iC60

Connection accessories
See module CA907001

3	Splitter blocks	Linergy FM	**See module**	**LIN022**
		Linergy DX	**See module**	**LIN003**
4	50 mm² Al terminal			**27060**
5	Screw-on connection for ring terminal			**27053**
6	Multi-cables terminal		4 parts	**19091**
			3 parts	**19096**
7	Comb busbar		**See modules**	**CA907026, CA907027**

Mounting accessories
See module CA907001

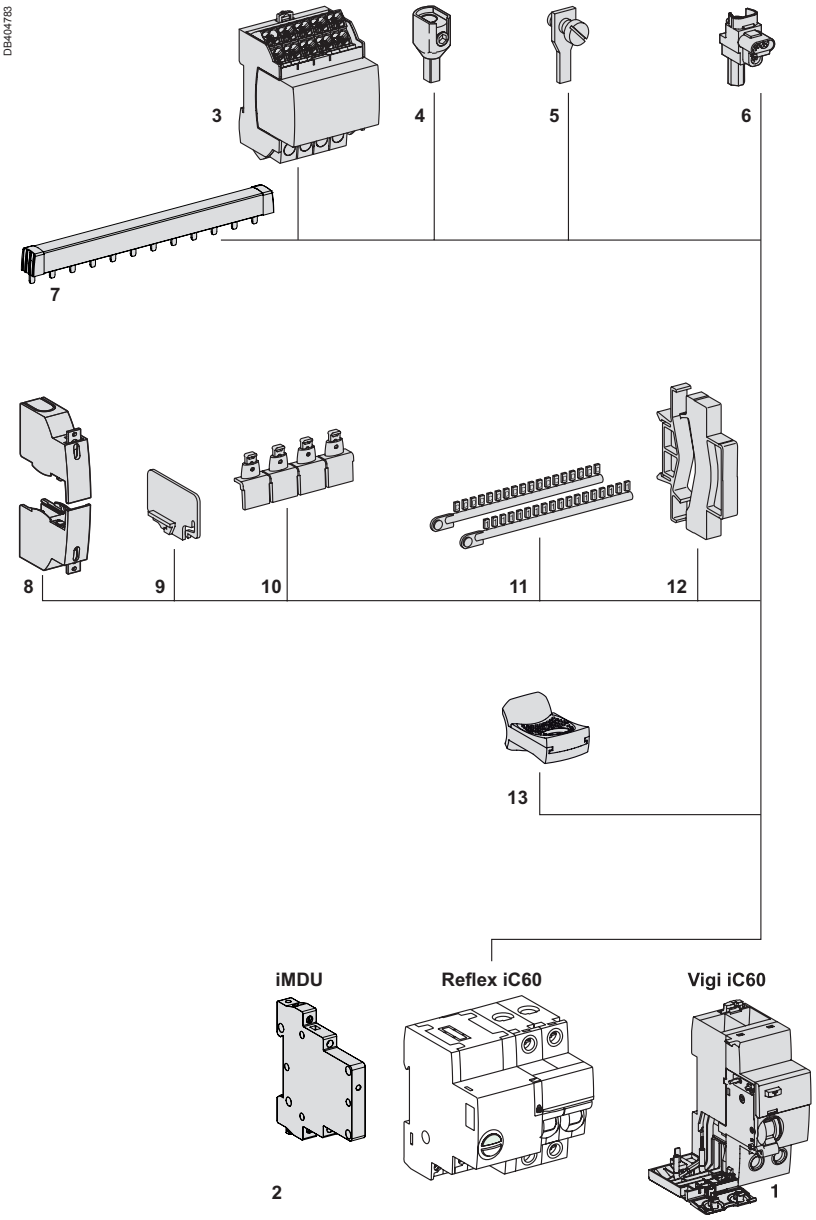
8	Sealable terminal shields for top and bottom connection	1P (set of 2)	**A9A26975**
		2P (set of 2)	**A9A26976**
		3P	**1P + 2P**
		4P	**2P + 2P**
9	Interpole barrier	(set of 10)	**A9A27001**
10	Screw shields	4P (set of 20)	**A9A26981**
11	Clip-on terminal markers	**See module**	**CA907001**
12	9 mm spacer		**A9A27062**
13	Padlocking device	(set of 10)	**A9A26970**

Electrical auxiliary
See module CA907002

Control		
2	iMDU voltage matching auxiliary	**A9C18195**

Vigi iC60
See module CA907005

1	Vigi iC60 add-on residual current device	**See module**	**CA902005**



Accessorisation / Auxiliarisation iSW

Connection accessories
See module CA907001

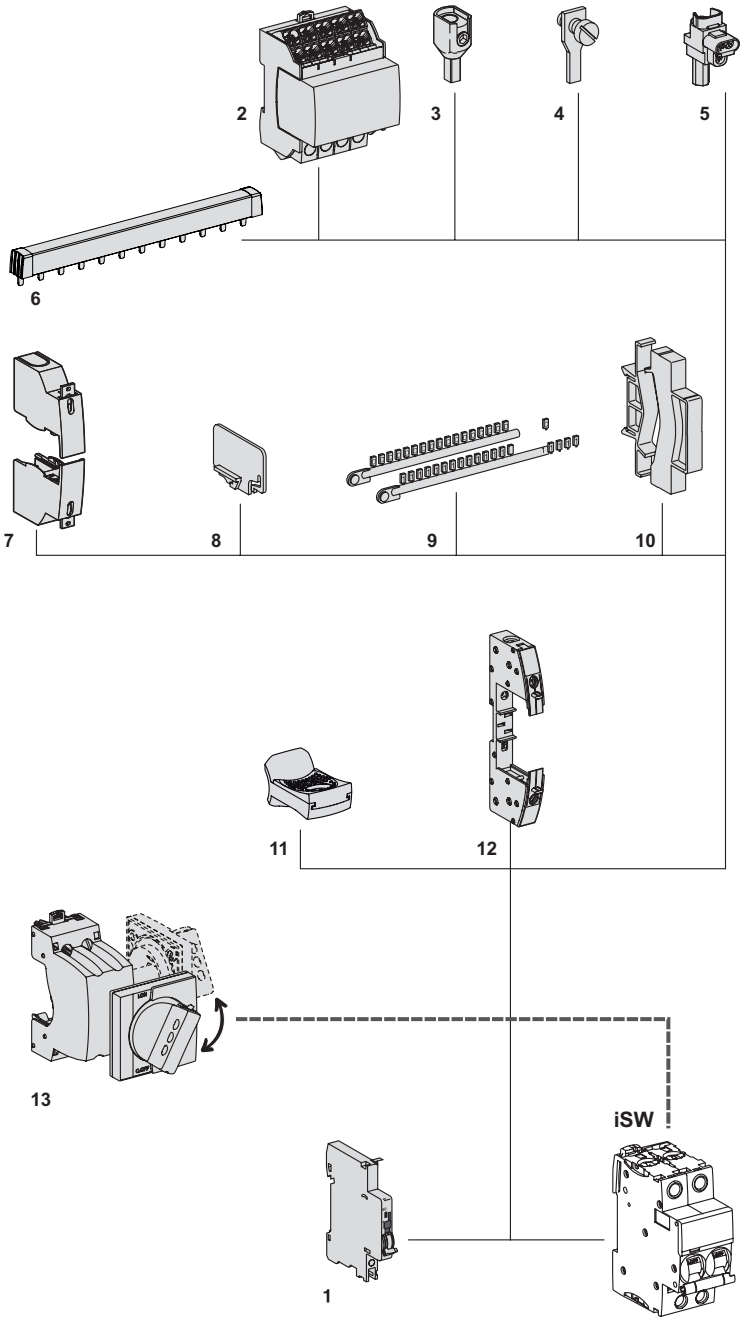
2	Splitter blocks	Linergy FM	**See module**	**LIN022**
		Linergy DX	**See module**	**LIN003**
3	50 mm² Al terminal			**27060**
4	Screw-on connection for ring terminal			**27053**
5	Multi-cables terminal		4 parts	**19091**
			3 parts	**19096**
6	Comb busbar		**See modules**	**CA907026, CA907027**

Mounting accessories
See module CA907001

7	Sealable terminal shields for top and bottom connection	1P (set of 2)	**A9A26975**
		2P (set of 2)	**A9A26976**
		3P	**1P + 2P**
		4P	**2P + 2P**
8	Interpole barrier	(set of 10)	**A9A27001**
9	Clip-on terminal markers	**See module**	**CA907001**
10	9 mm spacer		**A9A27062**
11	Padlocking device	(set of 10)	**A9A26970**
12	Plug-in base		**A9A27003**
13	Rotary handle		
	Black handle		**A9A27005**
	Red handle		**A9A27006**
	No handle		**A9A27008**

Electrical auxiliaries
See module CA907002

Indication		
1	iOF open/close auxiliary contact	**A9A26924**



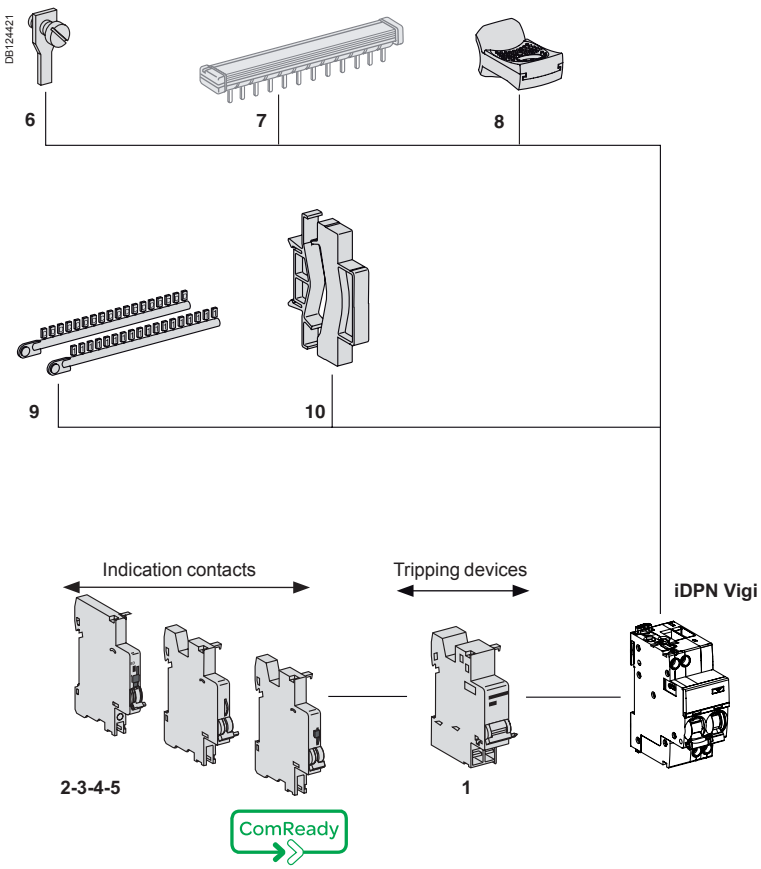
Accessorisation / Auxiliarisation
iDPN Vigi

Connection accessories
See module CA907001

6	Screw-on connection for ring terminal		**27053**
7	Comb busbar	**See modules**	**CA907026, CA907027**

Mounting accessories
See module CA907001

8	Padlocking device	(set of 10)	**A9A26970**
9	Clip-on terminal markers	**See module**	**CA907001**
10	9 mm spacer		**A9A27062**



Electrical auxiliaries
See module CA907002

Indication		
2	iOF/SD+OF auxiliary contact (OF+SD or OF+OF combination switch)	**A9A26929**
3	iSD fault indicating contact	**A9A26927**
4	iOF open/close auxiliary contact	**A9A26924**
5	iOF+SD24 auxiliary contact	**A9A26897**

Tripping devices			
1	iMN undervoltage release or iMNs undervoltage release delayed or iMNx undervoltage release with external feeding or shunt release iMX, iMX+OF overvoltage release iMSU	**See module**	**CA907002**

Tripping devices must be installed first.
If two tripping devices are used: the iMN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.
The tripping auxiliaries iMN, iMX, iMSU...) should be mounted first (1) as close as possible to the main device.
Then at the left, the indicating auxiliaries (iOF, iSD) should be mounted (2) then (3) complying with the following association table.

Indicating auxiliaries (3)	+(2)	Tripping auxiliaries +(1)	Device
1 (iOF/SD+OF or iOF+SD24 or iSD)	1 iOF/SD+OF	1 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)	iDPN Vigi
1 iOF	1 (iSD or iOF or iOF/SD+OF)	2 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)	
–	1 iOF+SD24	2 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)	
–	–	3 iMSU	
1 iSD	1 iSD	1 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)	

Accessorisation / Auxiliarisation iC60 Disbo and iKQ

Connection accessories
See module CA907021

6	50 mm² Al terminal		**27060**
7	Screw-on connection for ring terminal		**27053**
8	Multi-cables terminal	4 parts	**19091**
		3 parts	**19096**

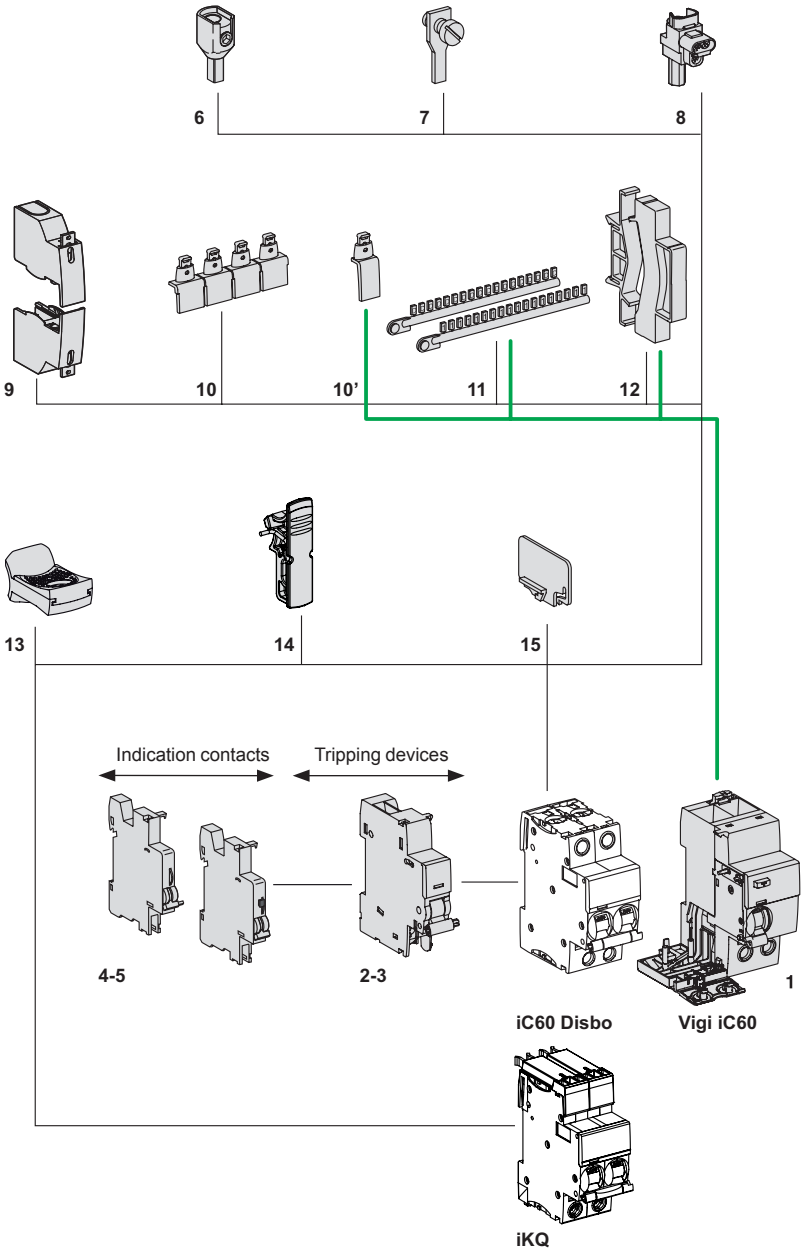
Mounting accessories
See module CA907021

9	Sealable terminal shields for top and bottom connection	1P (set of 2)	**A9A26975**
		2P (set of 2)	**A9A26976**
		3P	**1P + 2P**
		4P	**2P + 2P**
10	Screw shields	4P (set of 20)	**A9A26981**
10"	Screw shields Vigi iC60	(set of 12)	**A9A26982**
11	Clip-on terminal markers	**See module**	**CA907021**
12	9 mm spacer		**A9A27063**
13	Padlocking device	(set of 10)	**A9A26970**
14	Padlocking device for Isobar enclosure	(set of 10)	**A9A26972**
15	Interpole barrier	(set of 10)	**A9A27001**

Electrical auxiliaries
See module CA907002

Indication		
4	iSD fault indicating contact	**A9A26927**
5	iOF open/close auxiliary contact	**A9A26924**

Tripping devices			
2	iMN undervoltage release or iMNs undervoltage release delayed or iMNx undervoltage release with external feeding	**See module**	**CA907002**
3	Shunt release iMX, iMX+OF overvoltage release iMSU	**See module**	**CA907002**



Vigi iC60

1	Vigi iC60 add-on residual current device	**See module**	**CA902005**

Tripping devices must be installed first.
If two tripping devices are used: the iMN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.

The tripping auxiliaries iMN, iMX, iMSU...) should be mounted first (1) as close as possible to the main device.

Then at the left, the indicating auxiliaries (iOF, iSD) should be mounted (2) then (3) complying with the following association table.

Indicating auxiliaries		Tripping auxiliaries	Device	Vigi iC60
(3)	+(2)	+(1)		
1 iOF	1 (iSD or iOF)	2 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)	iC60 Disbo	*Vigi iC60*
–	–	3 iMSU		

Accessorisation / Auxiliarisation iC60 RCBO and iKQE RCBO

Connection accessories
See module CA907021

5	Screw-on connection for ring terminal	**27053**

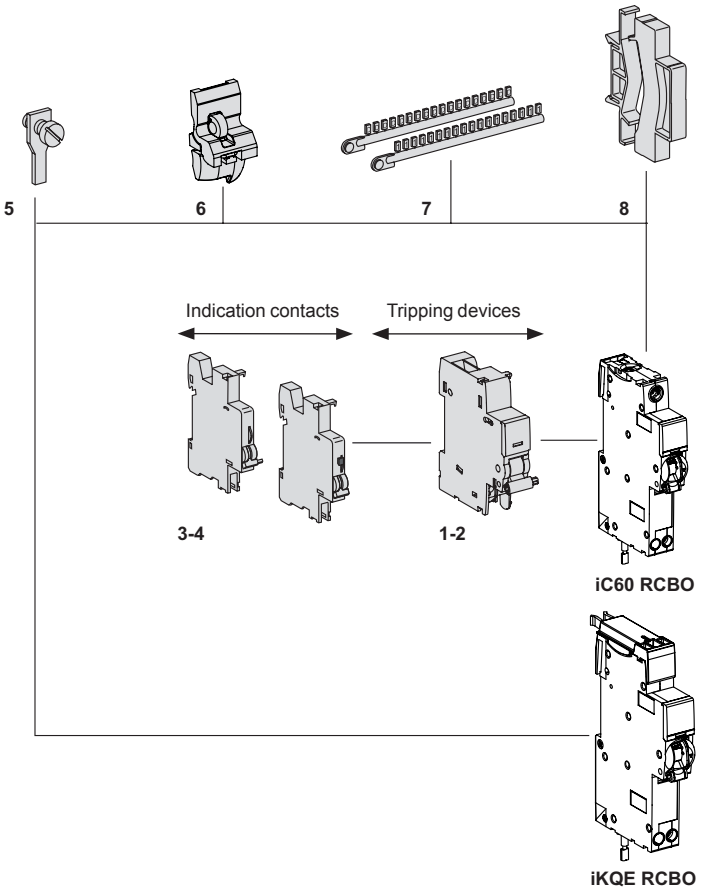
Mounting accessories
See module CA907021

6	Padlocking device	(set of 10)	**A9A27049**
7	Clip-on terminal markers	**See module**	**CA907021**
8	9 mm spacer		**A9A27063**

Electrical auxiliaries
See module CA907002

Indication		
3	iSD fault indicating contact	**A9A26927**
4	iOF open/close auxiliary contact	**A9A26924**

Tripping devices			
1	iMN undervoltage release or iMNs undervoltage release delayed or iMNx undervoltage release with external feeding	**See module**	**CA907002**
2	Shunt release iMX, iMX+OF overvoltage release iMSU	**See module**	**CA907002**



Tripping devices must be installed first.
If two tripping devices are used: the iMN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.

The tripping auxiliaries iMN, iMX, iMSU...) should be mounted first (1) as close as possible to the main device.

Then at the left, the indicating auxiliaries (iOF, iSD) should be mounted (2) then (3) complying with the following association table.

Indicating auxiliaries		Tripping auxiliaries	Device
(3)	+(2)	+(1)	
1 iOF	1 (iSD or iOF)	2 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU)	iC60 Disbo
–	–	1 iMSU	

Accessories and Auxiliaries for C120, Vigi C120 devices

Connection accessories

See module CA907012

7	Multi-cable terminal	4 parts	**19091**
		3 parts	**19096**
8	Screw-on connection for ring terminal	8 parts	**27053**
9	Terminal for rear connector		**18528**
10	50 mm² Al terminal		**27060**
11	Comb busbar	**See module**	**LIN001**

Mounting accessories

See module CA907012

12	Sealable terminal shields for top and bottom connection	1P (set of 2)	**18526**
13	Interpole barrier	(set of 10)	**27001**
14	Screw shields	4P (set of 2)	**18527**
15	Clip-on terminal markers	**See module**	**CA907012**
16	9 mm spacer		**A9N27062**
17	Padlocking device		**27145**
18	Plug-in base (1)		**26997**
19	**Rotary handle**		
	Removable extended handle		**27047**
	Fixed handle		**27048**
	Operating sub-assembly (2)		**27046**

(1) For 1P, centreline between two rows: 200 mm
(2) A complete rotary handle consists of a circuit-breaker operating sub-assembly, cat. no. **27046**, *a handle cat. no.* **27047** *or a handle cat. no.* **27048**.

Electrical auxiliaries

See module CA907008

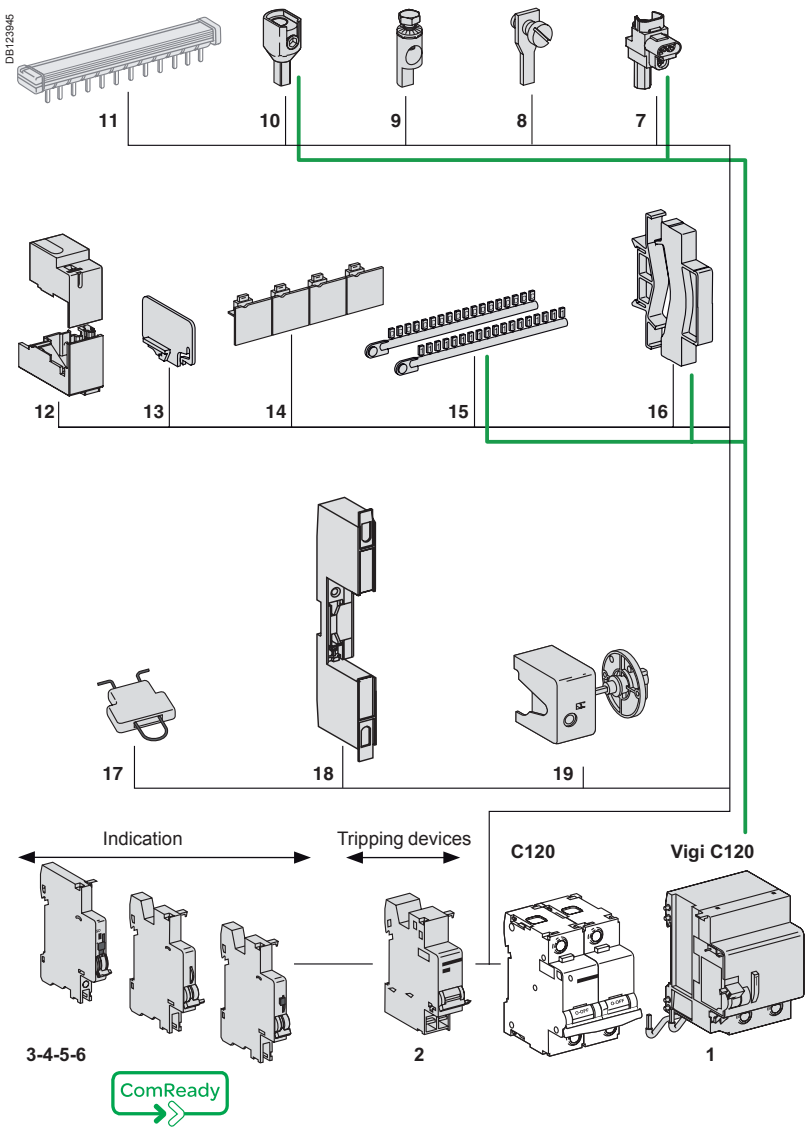
Indication		
3	SD fault indicating contact	**A9N26927**
4	OF+SD24 auxiliary contact	**A9N26899**
5	OF open/close auxiliary contact	**A9N26924**
6	OF+SD/OF auxiliary contact (OF+SD or OF+OF combination switch)	**A9N26929**

Tripping			
2	MN, MNx, MNS undervoltage release, MSU overvoltage release or MX, MX + OF shunt release	**See module**	**CA907008**

Vigi C120

See module CA902016

1	Vigi C120 add-on residual current device	**See module**	**CA902016**



Tripping devices must be installed first.
If two tripping devices are used: the MN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.
The tripping auxiliaries MN, MX, MSU...) should be mounted first 1 as close as possible to the main device.
Then at the left, the indicating auxiliaries (OF, SD) should be mounted 2 then 3 complying with the following association table.

Indicating auxiliaries		Tripping auxiliaries	Device	Vigi C120
3	+2	+1		
1 (OF+SD/OF or OF+SD24)	1 OF+SD/OF	1 (MN, MNx, MNS or MX, MX+OF or MSU)	C120	*Vigi C120*
1 OF	1 (OF+SD/OF or SD or OF)	2 (MN, MNx, MNS or MX, MX+OF or MSU)		
–	1 OF+SD24	2 (MN, MNx, MNS or MX, MX+OF or MSU)		
–	–	3 MSU		

Accessories and Auxiliaries for C120NA-DC devices

Connection accessories

See module CA907012

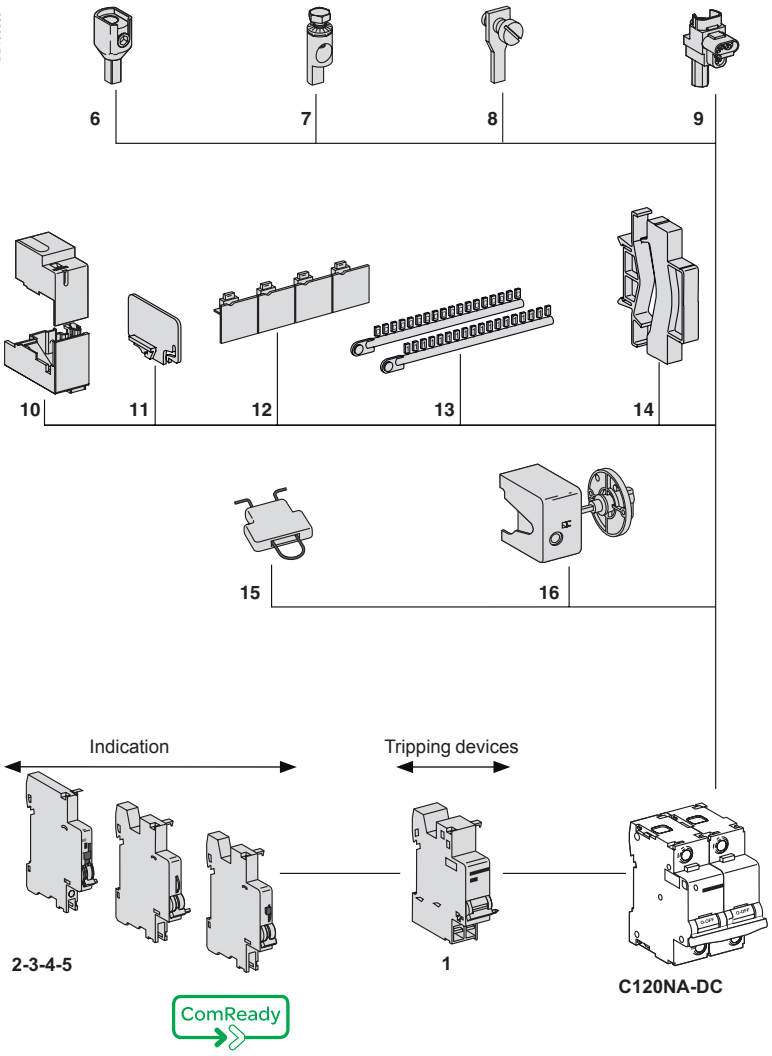
6	50 mm² Al terminal		**27060**
7	Terminal for rear connector		**18528**
8	Screw-on connection for ring terminal	8 parts	**27053**
9	Multi-cable terminal	4 parts	**19091**
		3 parts	**19096**

Mounting accessories

See module CA907012

10	Sealable terminal shields for top and bottom connection	1P (set of 2)	**18526**
11	Interpole barrier	(set of 10)	**27001**
12	Screw shields	4P (set of 2)	**18527**
13	Clip-on terminal markers	**See module**	**CA907012**
14	9 mm spacer		**A9N27062**
15	Padlocking device		**27145**
16	**Rotary handle**		
	Removable extended handle		**27047**
	Fixed handle		**27048**
	Operating sub-assembly (1)		**27046**

(1) A complete rotary handle consists of a circuit-breaker operating sub-assembly, cat. no. **27046**, *a handle cat. no.* **27047** *or a handle cat. no.* **27048**.



Electrical auxiliaries

See module CA907008

Indication		
2	SD fault indicating contact	**A9N26927**
3	OF+SD24 auxiliary contact	**A9N26899**
4	OF open/close auxiliary contact	**A9N26924**
5	OF+SD/OF auxiliary contact (OF+SD or OF+OF combination switch)	**A9N26929**

Tripping			
1	MN, MNx, MNⓈ undervoltage release or MX, MX + OF shunt release	**See module**	**CA907008**

Tripping devices must be installed first.
If two tripping devices are used: the MN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.
The tripping auxiliaries MN, MX...) should be mounted first ❶ as close as possible to the main device.
Then at the left, the indicating auxiliaries (OF, SD) should be mounted ❷ then ❸ complying with the following association table.

Indicating auxiliaries ❸	Indicating auxiliaries +❷	Indicating auxiliaries +❶	Device
1 (OF+SD/OF or OF+SD24)	1 OF+SD/OF	1 (MN, MNx, MNⓈ or MX, MX+OF)	C120NA-DC
1 OF	1 (OF+SD/OF or SD or OF)	2 (MN, MNx, MNⓈ or MX, MX+OF)	
–	1 OF+SD24	2 (MN, MNx, MNⓈ or MX, MX+OF)	

Accessories and Auxiliaries for C60 devices

Connection accessories

See module CA907012

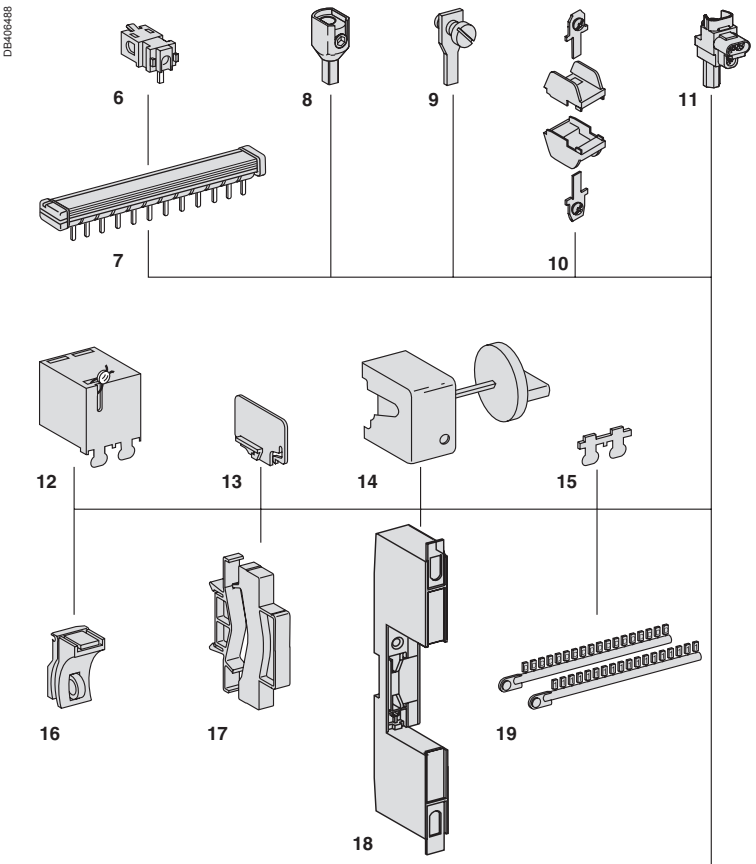
6	Insulated connector	**See module**	**LIN001**
7	Comb busbar	**See module**	**LIN001**
8	50 mm² Al terminal		**27060**
9	Ring tongue terminal screw connection		**27053**
10	Ring tongue terminal connections kit Ø 5 mm, (upstream/downstream)		**17400**
11	Insulated distribution terminal	4 parts	**19091**
		3 parts	**19096**

Mounting accessories

See module CA907012

12	Sealable terminal shield	**See module**	**CA907012**
13	Inter-pole barrier		**27001**
14	**Rotary handle**		
	Switching sub-assembly		**27046**
	Disconnectable handle		**27047**
	Fixed handle		**27048**
15	Screw shield	**See module**	**26981**
16	Padlocking accessory (to be locked in the "open" position)		**26970**
17	Spacer		**A9N27062**
18	Plug-in base		**26996**
19	Marker strip	**See module**	**CA907012**

(1) A complete rotary handle consists of a circuit-breaker operating sub-assembly, cat. no. **27046***, a handle cat. no.* **27047** *or a handle cat. no.* **27048**.

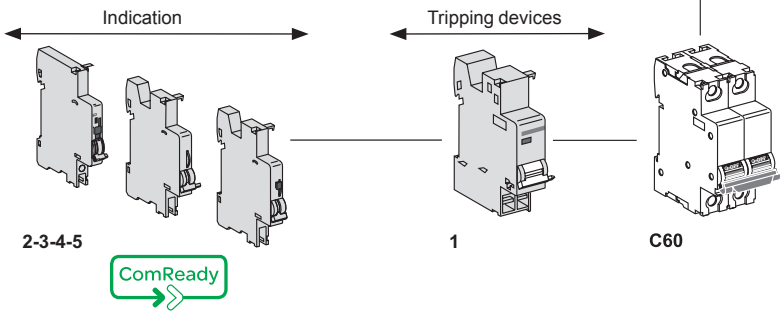


Electrical auxiliaries

See module CA907008

Indication		
2	SD fault indicating contact	**A9N26927**
3	OF+SD24 auxiliary contact	**A9N26899**
4	OF open/close auxiliary contact	**A9N26924**
5	OF+SD/OF auxiliary contact (OF+SD or OF+OF combination switch)	**A9N26929**

Tripping			
1	MN, MNx, MNS undervoltage release, MSU overvoltage release or MX, MX + OF shunt release	**See module**	**CA907008**



Tripping devices must be installed first.
If two tripping devices are used: the MN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.

The tripping auxiliaries MN, MX...) should be mounted first (1) as close as possible to the main device.

Then at the left, the indicating auxiliaries (OF, SD) should be mounted (2) then (3) complying with the following association table.

Indicating auxiliaries (3)	+(2)	Indicating auxiliaries +(1)	Device
1 (OF+SD/OF or OF+SD24)	1 OF+SD/OF	1 (MN, MNx, MNS or MX, MX+OF or MSU)	C60
1 OF	1 (OF+SD/OF or SD or OF)	2 (MN, MNx, MNS or MX, MX+OF or MSU)	
–	1 OF+SD24	2 (MN, MNx, MNS or MX, MX+OF or MSU)	
–	–	3 MSU	

Accessories and Auxiliaries for ID devices

Connection accessories

See module CA907012

7	Insulated connector	**See module**	**LIN001**
8	Comb busbar	**See module**	**LIN001**
9	50 mm² Al terminal		**27060**
10	Ring tongue terminal screw connection		**27053**
11	Ring tongue terminal connections kit Ø 5 mm, (upstream/downstream)		**17400**
12	Insulated distribution terminal	4 parts	**19091**
		3 parts	**19096**

Mounting accessories

See module CA907012

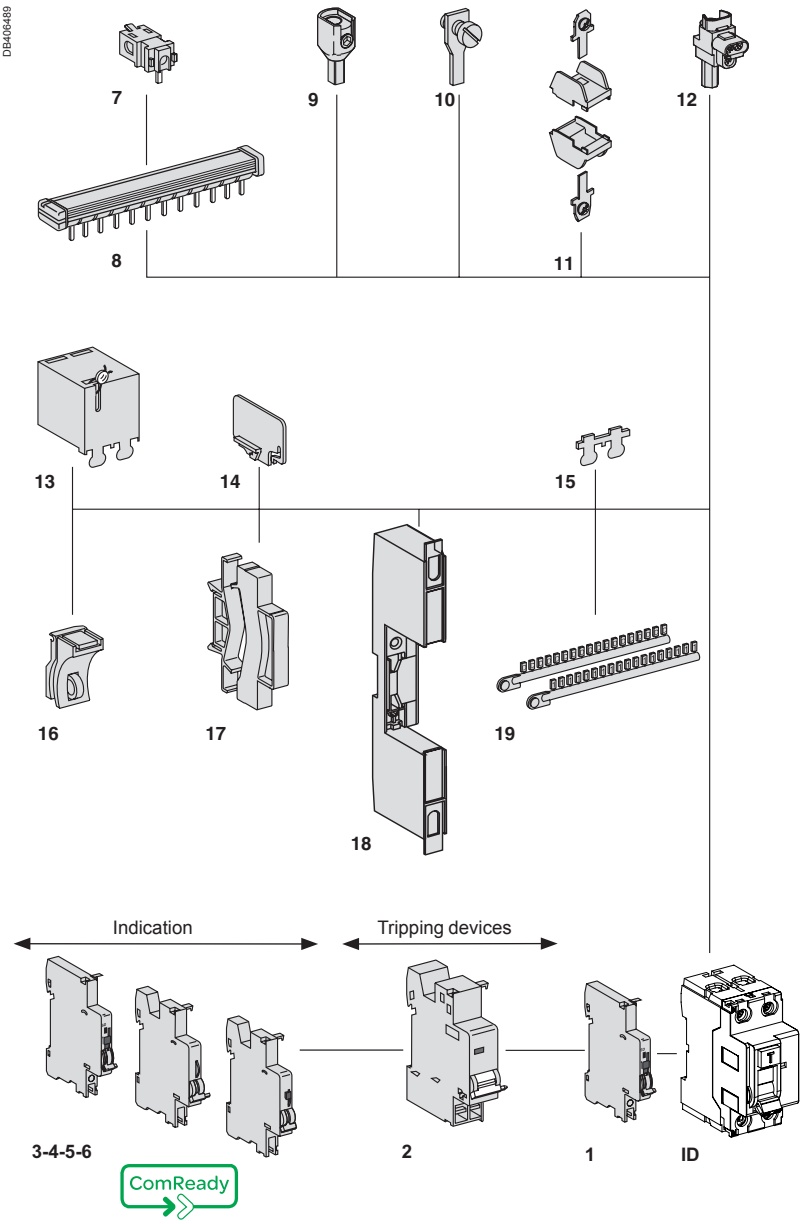
13	Sealable terminal shield	**See module**	**CA907012**
14	Inter-pole barrier		**27001**
15	Screw shield		**26981**
16	Padlocking accessory (to be locked in the "open" position)		**26970**
17	Spacer		**A9N27062**
18	Plug-in base		**26996**
19	Marker strip	**See module**	**CA907012**

Electrical auxiliaries

See module CA907008

Indication		
1	OF.S auxiliary contact	**A9N26923**
3	SD fault indicating contact	**A9N26927**
4	OF+SD24 auxiliary contact	**A9N26899**
5	OF open/close auxiliary contact	**A9N26924**
6	OF+SD/OF auxiliary contact (OF+SD or OF+OF combination switch)	**A9N26929**

Tripping			
2	MN, MNx, MNS undervoltage release, MSU overvoltage release or MX, MX + OF shunt release	**See module**	**CA907008**



Tripping devices must be installed first.
If two tripping devices are used: the MN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.
The tripping auxiliaries MN, MX...) should be mounted first ❶ as close as possible to the main device.
Then at the left, the indicating auxiliaries (OF, SD) should be mounted ❷ then ❸ complying with the following association table.

Indicating auxiliaries		Indicating auxiliaries	Device
❸	+❷	+❶	
–	1 (OF+SD/OF or OF or OF+SD24)	2 (MN, MNx, MNS or MX, MX+OF or MSU)	*OF.S* + **ID**
1 OF	1 OF	1 (MN, MNx, MNS or MX, MX+OF or MSU	

Accessories and Auxiliaries for DPN, DPN Vigi devices

Connection accessories

See module CA907012

6	Screw-on connection for ring terminal	8 parts	**27053**
7	Comb busbar	**See module**	**LIN001**

Mounting accessories

See module CA907012

8	Padlocking device		**26970**
9	Clip-on terminal markers	**See module**	**CA907012**
10	9 mm spacer		**A9N27062**
11	**Rotary handle for DPN, DPN Vigi 3P, 4P**		
	Removable extended handle		**27047**
	Fixed handle		**27048**
	Operating sub-assembly (1)		**27046**

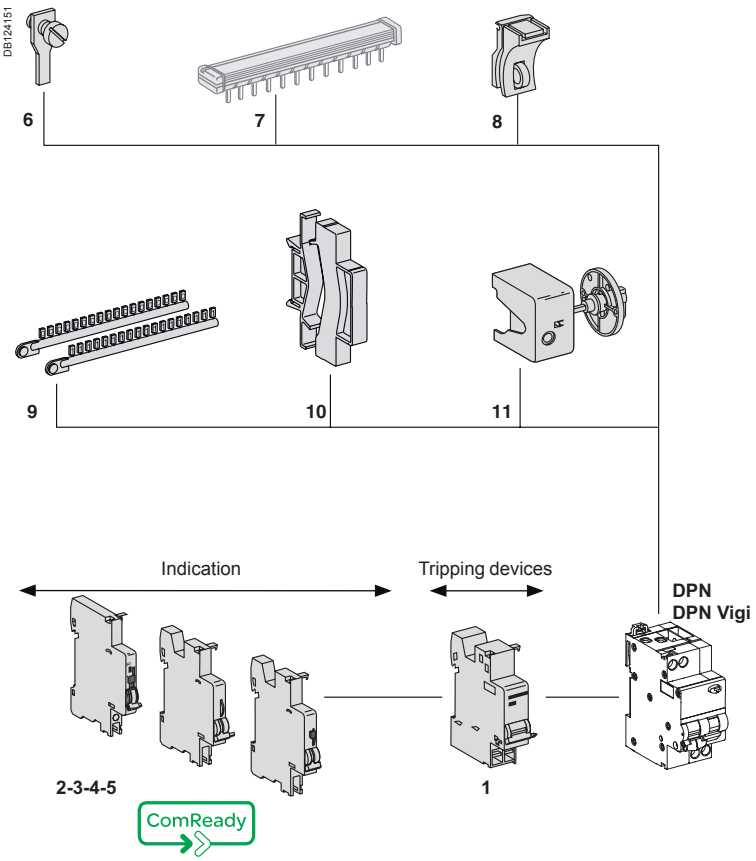
(1) A complete rotary handle consists of a circuit-breaker operating sub-assembly, cat. no. **27046***, a handle cat. no.* **27047** *or a handle cat. no.* **27048**.

Electrical auxiliaries

See module CA907008

Indication		
2	SD fault indicating contact	**A9N26927**
3	OF+SD24 auxiliary contact	**A9N26899**
4	OF open/close auxiliary contact	**A9N26924**
5	OF+SD/OF auxiliary contact (OF+SD or OF+OF combination switch)	**A9N26929**

Tripping			
1	MN, MNx, MNS undervoltage release, MSU overvoltage release or MX, MX + OF shunt release	**See module**	**CA907008**



Tripping devices must be installed first.
If two tripping devices are used: the MN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.

The tripping auxiliaries MN, MX, MSU...) should be mounted first (1) as close as possible to the main device.

Then at the left, the indicating auxiliaries (OF, SD) should be mounted (2) then (3) complying with the following association table.

Indicating auxiliaries (3)	Indicating auxiliaries +(2)	Indicating auxiliaries +(1)	Device
1 (OF+SD/OF or OF+SD24)	1 OF+SD/OF	1 (MN, MNx, MNS or MX, MX+OF or MSU)	DPN, DPN Vigi
1 OF	1 (OF+SD/OF or SD or OF)	2 (MN, MNx, MNS or MX, MX+OF or MSU)	
–	1 OF+SD24	2 (MN, MNx, MNS or MX, MX+OF or MSU)	
–	–	3 MSU	

Accessories and Auxiliaries for C60H-DC devices

Connection accessories

See module CA907012

7	Insulated connector	**See module**	**LIN001**
8	Comb busbar	**See module**	**LIN001**
9	50 mm² Al terminal		**27060**
10	Ring tongue terminal screw connection		**27053**
11	Ring tongue terminal connections kit Ø 5 mm, (upstream/downstream)		**17400**
12	Insulated distribution terminal	4 parts	**19091**
		3 parts	**19096**

Mounting accessories

See module CA907012

13	Sealable terminal shield	**See module**	**CA907012**
14	Inter-pole barrier		**27001**
15	**Rotary handle**		
	Switching sub-assembly		**27046**
	Disconnectable handle		**27047**
	Fixed handle		**27048**
16	Screw shield	**See module**	**CA907012**
17	Padlocking accessory (to be locked in the "open" position)		**26970**
18	Spacer		**A9N27062**
19	Plug-in base		**26996**
20	Marker strip	**See module**	**CA907012**

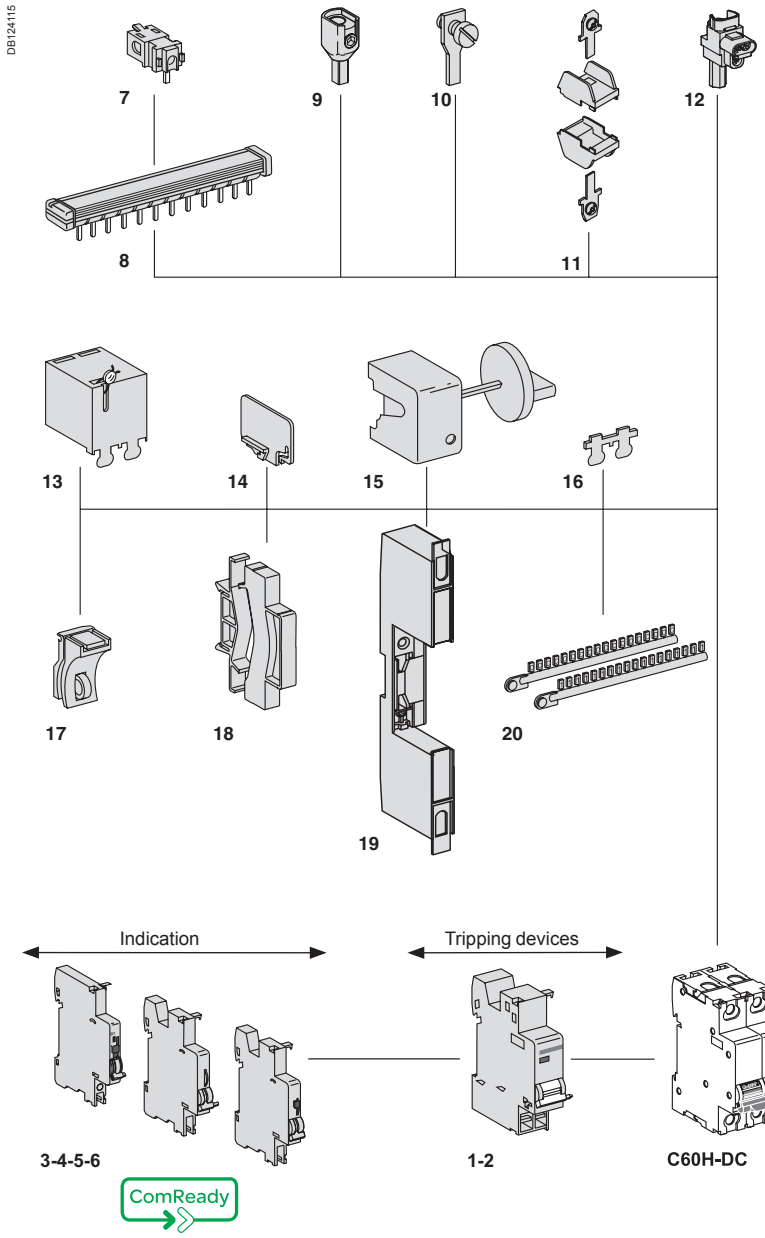
(1) A complete rotary handle consists of a circuit-breaker operating sub-assembly, cat. no. **27046***, a handle cat. no.* **27047** *or a handle cat. no.* **27048**.

Electrical auxiliaries

See module CA907008

Indication		
3	SD fault indicating switch	**A9N26927**
4	OF+SD24 auxiliary contact	**A9N26899**
5	OF open/closed contact	**A9N26924**
6	OF+SD/OF auxiliary contact (OF+SD or OF+OF combination switch)	**A9N26929**

Tripping			
1	MN, MNx, MNS undervoltage release	**See module**	**CA907008**
2	MX, MX + OF shunt release	**See module**	**CA907008**



Tripping devices must be installed first.
If two tripping devices are used: the MN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.

The tripping auxiliaries MN, MX...) should be mounted first ❶ as close as possible to the main device.

Then at the left, the indicating auxiliaries (OF, SD) should be mounted ❷ then ❸ complying with the following association table.

Indicating auxiliaries		Indicating auxiliaries	Device
❸	+❷	+❶	
1 (OF+SD/OF or OF+SD24)	1 OF+SD/OF	1 (MN, MNx, MNS or MX, MX+OF)	C60H-DC
1 OF	1 (OF+SD/OF or SD or OF)	2 (MN, MNx, MNS or MX, MX+OF)	
–	1 OF+SD24	2 (MN, MNx, MNS or MX, MX+OF)	

Accessories and Auxiliaries for iSW devices

Connection accessories

See module CA907012

1	Insulated connector	**See module**	**LIN001**
2	Comb busbar	**See module**	**LIN001**
3	50 mm² Al terminal		**27060**
4	Ring tongue terminal screw connection		**27053**
5	Ring tongue terminal connections kit Ø 5 mm, (upstream/downstream)		**17400**
6	Insulated distribution terminal	4 parts	**19091**
		3 parts	**19096**

Mounting accessories

See module CA907012

7	Sealable terminal shield	**See module**	**CA907012**
8	Inter-pole barrier		**27001**
9	**Rotary handle**		
	Switching sub-assembly		**27046**
	Disconnectable handle		**27047**
	Fixed handle		**27048**
10	Screw shield	**See module**	**CA907012**
11	Padlocking accessory (to be locked in the "open" position)		**26970**
12	Spacer		**A9N27062**
13	Plug-in base		**26996**

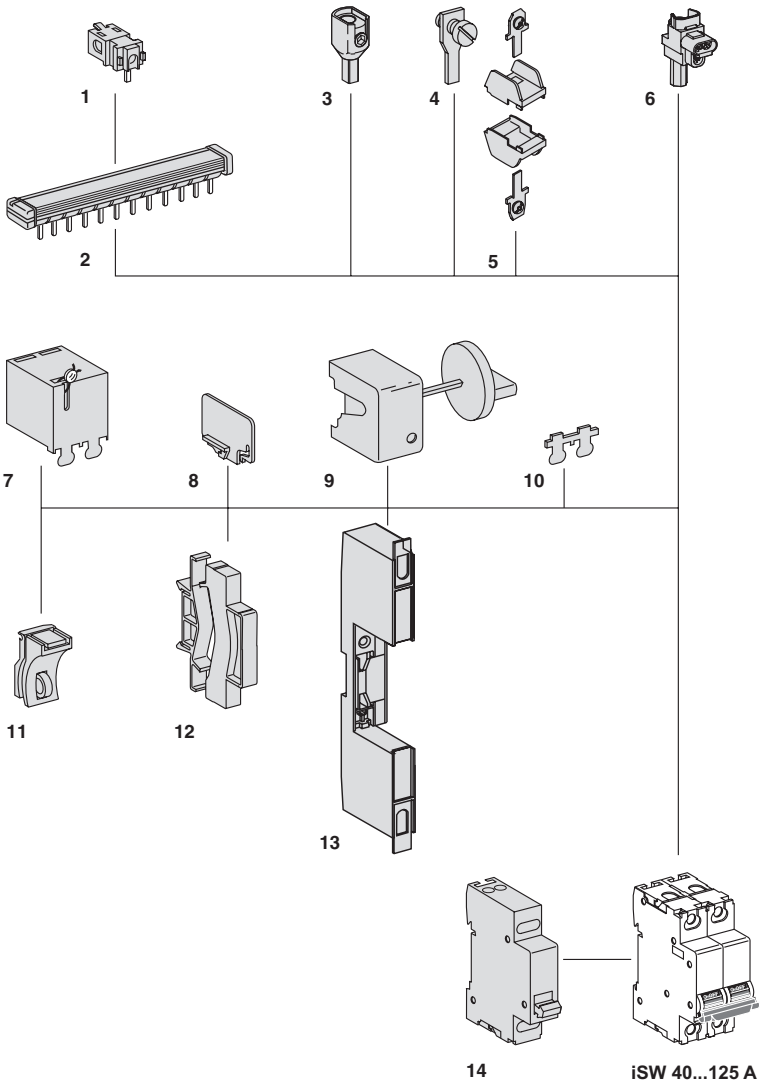
(1) A complete rotary handle consists of a circuit-breaker operating sub-assembly, cat. no. **27046***, a handle cat. no.* **27047** *or a handle cat. no.* **27048**.

Electrical auxiliary

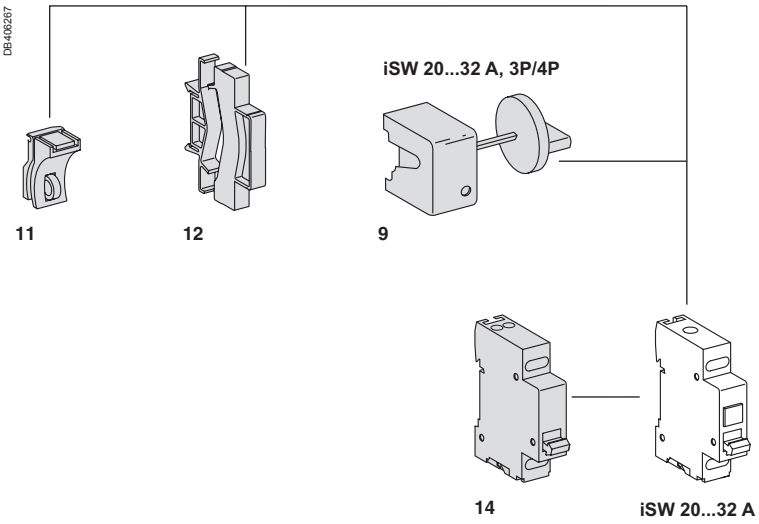
See module iSW CA904005

Indication		
14	OF iSW open/closed contact	**A9A15096**

iSW 40...125 A



iSW 20...32 A



Accessories and Auxiliaries for SW60-DC, C60NA-DC, C60PV-DC devices

Connection accessories

See module CA907012

7	50 mm² Al terminal		27060
8	Ring tongue terminal screw connection		27053
9	Insulated distribution terminal	4 parts	19091
		3 parts	19096

Mounting accessories

See module CA907012

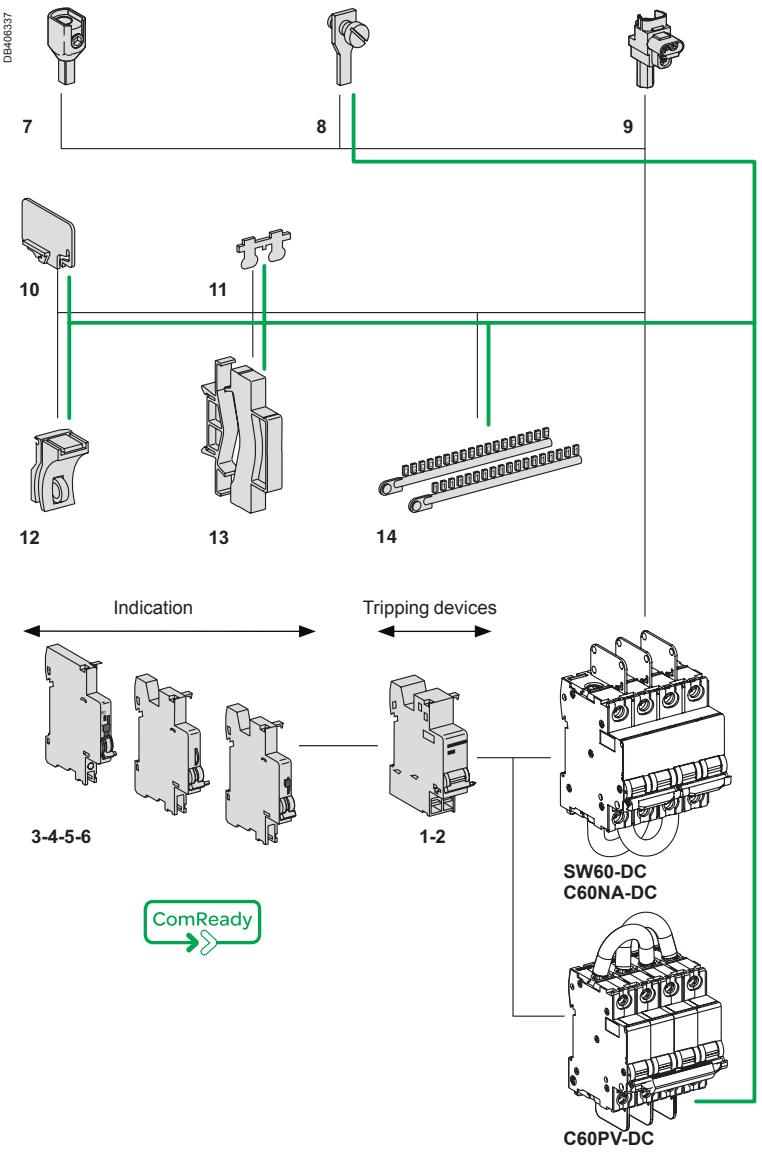
10	Inter-pole barrier		27001
11	Screw shield		26981
12	Padlocking accessory (to be locked in the "open" position)		26970
13	Spacer		A9N27062
14	Marker strip	See module	CA907012

Electrical auxiliaries

See module CA907008

Indication			
3	SD fault indicating switch		A9N26927
4	OF+SD24 auxiliary contact		A9N26899
5	OF open/closed contact		A9N26924
6	OF+SD/OF auxiliary contact (OF+SD or OF+OF combination switch)		A9N26929

Tripping			
1	MN, MNx, MNS undervoltage release	See module	CA907008
2	MX, MX + OF shunt release	See module	CA907008



Tripping devices must be installed first.
If two tripping devices are used: the MN must be installed first
Indication auxiliaries: respect specified position for SD functions.

Assembly rule

The mounting order and the number for the various auxiliaries must be complied with.
The tripping auxiliaries MN, MX...) should be mounted first 1 as close as possible to the main device.
Then at the left, the indicating auxiliaries (OF, SD) should be mounted 2 then 3 complying with the following association table.

Indicating auxiliaries		Indicating auxiliaries	Device
3	+2	+1	
1 (OF+SD/OF or OF+SD24)	1 OF+SD/OF	1 (MN, MNx, MNS or MX, MX+OF)	SW60-DC, C60NA-DC, C60PV-DC
1 OF	1 (OF+SD/OF or SD or OF)	2 (MN, MNx, MNS or MX, MX+OF)	
–	1 OF+SD24	2 (MN, MNx, MNS or MX, MX+OF)	

Accessories and auxiliaries for NG125 devices

Connection

6	Comb busbar		see modules	**CA907026, CA907027**
7	Splitter blocks	Linergy DX 125 A	see module	**LIN003**
8	70 mm² Al terminal			**19095**
9	Multi-cable terminal		4 parts	**19091**
			3 parts	**19096**
10	Screw-on connection for ring	125 A	(pack of 4)	**19093**
11	Small ring terminal		(pack of 4)	**19094**

Mounting accessories

12	Sealable terminal shield (upstream/downstream)		1P	**19080**
			2P	**19081**
			3P	**19082**
			4P	**19083**
13	Residual current device terminal shield (upstream of circuit breaker / downstream of Vigi device)	63 A	2P	**19074**
			3P	**19075**
			3P adjustable	**19077**
			4P	**19076**
			4P adjustable	**19078**
		125 A	3P	**19077**
			4P	**19078**
14	Circuit breaker screw shield		1P (pack of 10)	**19084**
			2P	**19085**
			3P	**19086**
			4P	**19087**
15	Rotary handle			
	Extended standard	Black		**19088**
	Extended safety	Red handle, yellow		**19089**
	Direct standard	Black		**19092**
	Direct safety	Red handle, yellow background		**19097**
16	Padlocking device		(pack of 10)	**19090**
17	White toggle		(pack of 10)	**19099**

Electrical auxiliaries

Indication

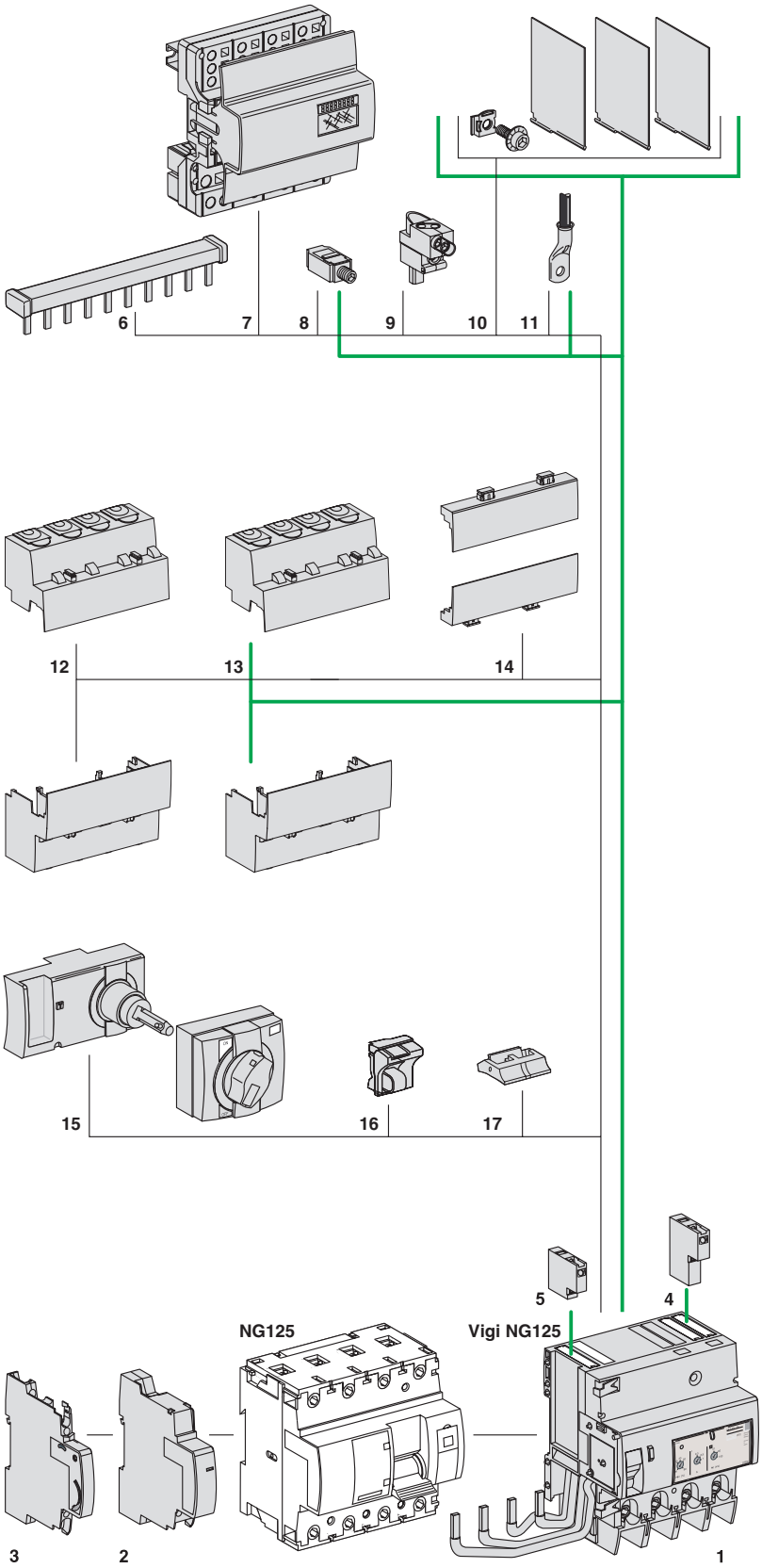
3	Fault indicating auxiliary contact OF+SD		**19071**
	Open/closed auxiliary contact OF+OF		**19072**

Tripping devices

2	Undervoltage release MN or undervoltage release with external power supply MNx	see module	**CM907005**
	Shunt release MX+OF	see module	**CM907005**

Vigi NG125

1	Vigi NG125 add-on residual current device5	see module	**CM902008**
4	MXV	see module	**CM907005**
5	SDV	see module	**CM907005**

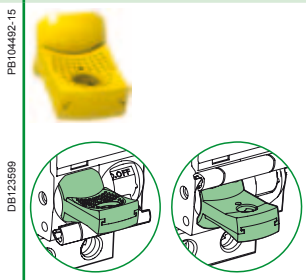
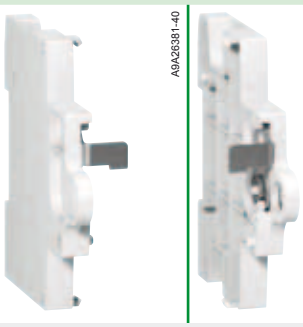


Accessories for iC60, iID, iDPN Vigi, iSW-NA, Reflex iC60, RCA, ARA, iSW

Mounting

Accessories	Rotary handle				Plug-in base	
	PB104509-35 			PB106297_10 	PB104508-35 	
Function						
	Front or side-mounted control ■ Degree of protection: IP55 rotary handle ■ Installation: □ the control mechanism is mounted on the device □ the rotary handle is fixed to the front or side of the enclosure ■ Front-mounted (on door or faceplate) ■ Prevents the door from opening when the device is in the ON position (can be deactivated) ■ Can be padlocked when the device is in the "open" position (can be padlocked with the device in the "closed" position subject to adaptation) ■ Can be locked by padlock of (dia. 5 to 8 mm), not supplied with the device ■ Pushbutton: iID test available in the front face of the rotary handle			■ The Laser Square tool brings the accurency to align the circuit breaker and the rotary handle	**Allows a breaker to be removed or replaced quickly, without handling the connections** ■ Degree of protection: IP20 ■ Consists of: □ a base to be fastened on a rail (or panel) □ 2 "blades" to be fastened in the device's terminals ■ Connection: tunnel terminals for cable up to 35 mm² rigid, 25 mm² flexible, ■ Installation: □ in universal enclosure □ on horizontal rail ■ Height: 178 mm ■ Not compatible with Vigi iC60 and auxiliaries ■ Can be locked by padlock of (dia. 6 mm), not supplied with the device	
Catalogue numbers	**A9A27005**	**A9A27006**	**A9A27008**	**GVAPL01**	**A9A27003** **(1 per pole)**	
	Operating sub-assembly					
	+	**+**				
	Black handle	Red handle	No handle			
Set of	**1**	**1**	**1**	**1**	**1**	
Suitability						
iC60	■ 2P, 3P, 4P				■	
iSW	■ 2P, 3P, 4P				■	
iC60 + Vigi iC60	■ 2P, 3P, 4P				–	
iID	■				■ ⩽ 63 A	
iDPN Vigi	–				–	
Reflex iC60 or RCA+iC60 or ARA+iC60	–				–	
ARA+iID	–				–	
iSW-NA	■				■	

Accessories for iC60, iID, iDPN Vigi, iSW-NA, Reflex iC60, RCA, ARA, iSW (cont.)

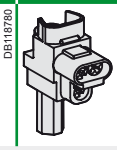
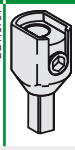
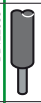
	Padlocking device			Wall mounting	Spare part Locking clips
	Front	Side			
					
	Used to padlock breaker in open or closed position ■ Padlock diameter: 3 to 6 mm ■ Sealable (max. diameter: 1.2 mm) ■ Locking in ON position does not prevent tripping of the breaker in the event of faults ■ Suitable for IEC/EN 60947-2 compliant disconnection	**Can be used to padlock a circuit breaker in open position** ■ Attached directly to the circuit breaker, it cannot be lost ■ Padlock diameter: 6 mm		**Can be used for wall mounted installation of any 18 mm DIN rail devices** ■ Degree of protection: IP40 ■ Sealable: (max. diameter: 1.5 mm)	**Top and bottom locking clips for monoconnect iC60**
	A9A26970	**A9A26380** Left-hand mounting	**A9A26381** Right-hand mounting	**15359**	**A9A27052**
	10	**1**	**1**	**1**	**10**
	■	■	■	■ All products up to 18 mm ■ Except iCT	■
	■	–	–		–
	■	–	–		–
	■	■	–		–
	■	–	–		–
	■	–	–		–
	■	–	–		–
	■	–	–		–

Accessories for iC60, iID, iDPN Vigi, iSW-NA, Reflex iC60, RCA, ARA, iSW (cont.)

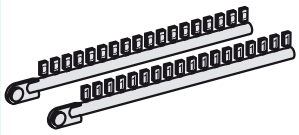
	Security					
Accessories	**Screw shield**		**Terminal shield**		**Inter-pole barrier**	**Spacer**
	PB104489-14 	PB104488-14  PB104502-35	PB104503-35 	PB104494-30 	PB104483-35 	
Function						
	Prevents any contact with the connecting screws ■ Upgrades degree of protection to IP20D ■ Sealable, max. diameter 1.2 mm		**Prevents any contact with the terminals** ■ Upgrades degree of protection to IP20D ■ Sealable, max. diameter 1.2 mm ■ Set of two, for upstream and downstream terminals ■ For 3 poles: **A9A26975** + **A9A26976** ■ For 4 poles: 2 X **A9A26976**		**Enhances insulation between connections: cables, terminals, lugs, etc**	■ Used to: □ complete rows □ separate devices. Width: 1 x 9 mm module ■ Allows cable routing from one row to another, (above and below), up to 6 mm²
Catalogue numbers	**A9A26982**	**A9A26981**	**A9A26975**	**A9A26976**	**A9A27001**	**A9A27062**
Set of	**12 x 1 pole**	**20 x 4 poles (splittable)**	**2 x 1 pole**	**2 x 2 poles**	**10**	**5**
Suitability						
iC60	–	■	■	■	■	■
iSW	–	–	■	■	■	■
Vigi iC60	■	–	–	–	–	■
iID	–	■	–	■	■	■
iDPN Vigi	–	–	–	–	–	■
Reflex iC60 or RCA+iC60 or ARA+iC60	–	■	■	■	■	■
ARA+iID	–	■	–	■	■	■
iSW-NA	–	■	–	■	■	■

Accessories for iC60, iID, iDPN Vigi, iSW-NA, Reflex iC60, RCA, ARA, iSW (cont.)

Connection

Accessories	Multi-cable terminal		50 mm² terminal Al	Screw-on connection for ring terminal
				
Function				
	For 3 copper cables: ■ Rigid up to 16 mm² ■ Flexible up to 10 mm²		**For aluminium cables from 16 to 50 mm²**	**For lug tipped cables, front or rear mounting**
				
Catalogue numbers	**19091**	**19096**	**27060**	**27053**
Set of	**4**	**3**	**1**	**8**
Suitability				
iC60 ≤ 25 A Reflex iC60 ≤ 25 A	–	–	–	■
iC60 >25 A Reflex iC60 40 A, iSW	■	■	■	■
Vigi iC60	–	–	–	–
iID	■	■	■	■
iDPN Vigi	–	–	–	■
iSW-NA	■	■	■	■
Tightening torque	2 N.m		10 N.m	2 N.m
Lenght stripping	11 mm		13 mm	–
Tools to use	Dia. 5 mm or PZ2		Hc 1/5" or 5 mm	Dia. 5mm

Marking

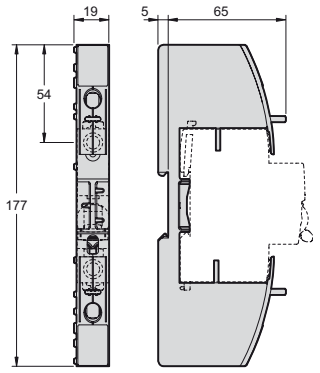
Accessories	Marker strip
	
	Used for connection identification

Catalogue numbers	0: **AB1-R0** 1: **AB1-R1** 2: **AB1-R2** 3: **AB1-R3** 4: **AB1-R4**	5: **AB1-R5** 6: **AB1-R6** 7: **AB1-R7** 8: **AB1-R8** 9: **AB1-R9**	A: **AB1-GA** B: **AB1-GB** C: **AB1-GC** D: **AB1-GD** E: **AB1-GE** F: **AB1-GF** G: **AB1-GG** H: **AB1-GH** I: **AB1-GI**	J: **AB1-GJ** K: **AB1-GK** L: **AB1-GL** M: **AB1-GM** N: **AB1-GN** O: **AB1-GO** P: **AB1-GP** Q: **AB1-GQ** R: **AB1-GR**	S: **AB1-GS** T: **AB1-GT** U: **AB1-GU** V: **AB1-GV** W: **AB1-GW** X: **AB1-GX** Y: **AB1-GY** Z: **AB1-GZ**	+: **AB1-R12** -: **AB1-R13** Blank: **AB1-RV**
Set of	**250**					
Suitability						
iC60, Reflex iC60, iSW	■ 4 markers max. per pole					
Vigi iC60	■ 4 markers max. per device					
iID	■ 4 markers max. per device					
iDPN Vigi	■ 4 markers max. per device					
iSW-NA	■ 4 markers max. per device					

Accessories for iC60, iID, iDPN Vigi, iSW-NA, Reflex iC60, RCA, ARA, iSW (cont.)

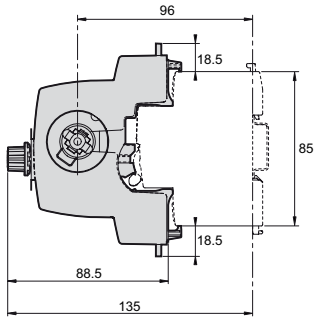
Dimensions (mm)

DB124149

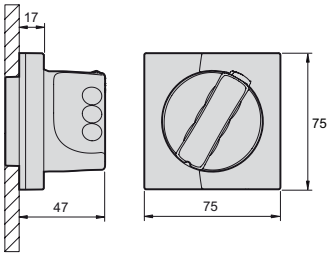


Plug-in base

DB406868



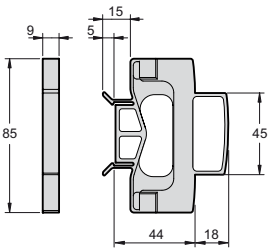
Control mechanism



Handle

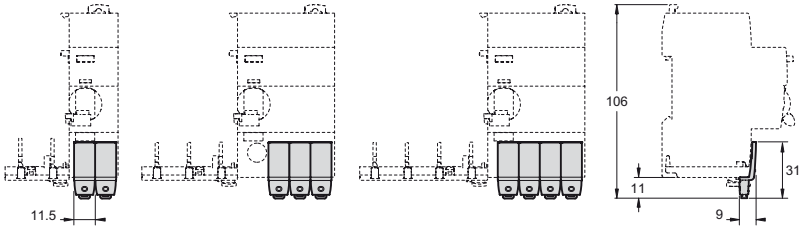
Rotary handle

DB124150



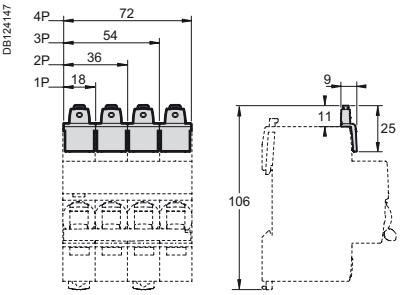
Spacer

DB124146



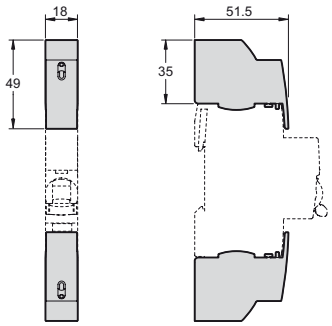
Screw shield 1P (A9A26982)

DB124147



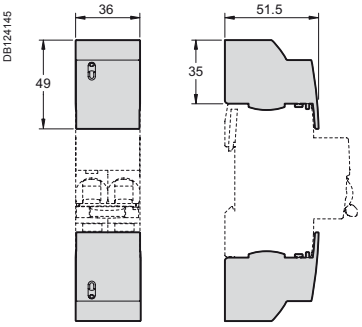
Screw shield 4P (A9A26981)

DB124144



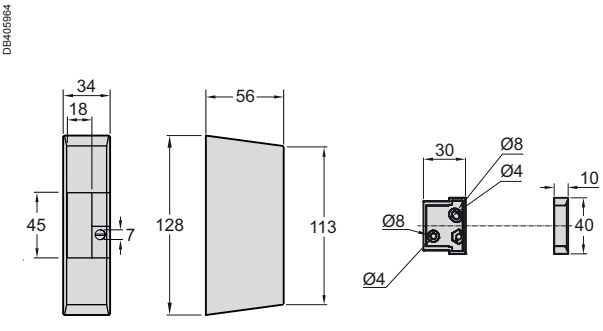
Terminal shield 1P

DB124145



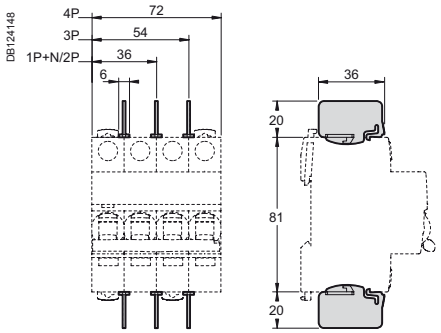
Terminal shield 2P

DB405964



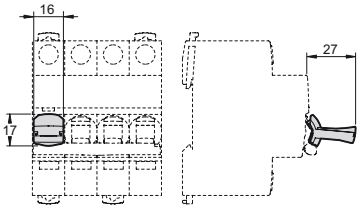
Wall mounted

DB124148



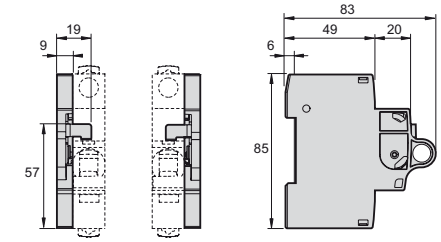
Inter-pole barrier

DB124143



Front padlocking device

DB407756

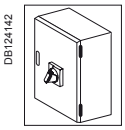


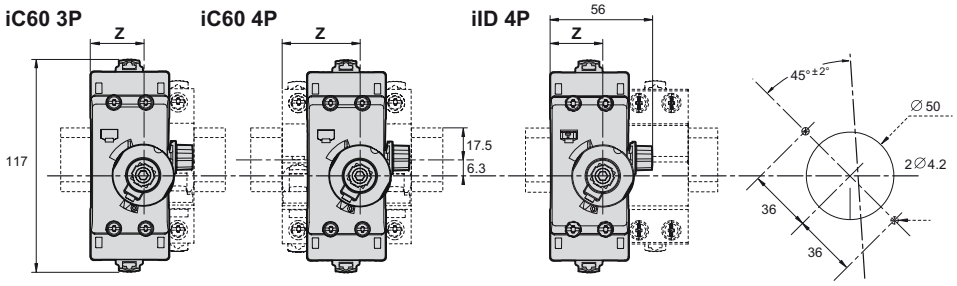
Side padlocking device

Accessories for iC60, iID, iDPN Vigi, iSW-NA, Reflex iC60, RCA, ARA, iSW (cont.)

Rotary handle installation

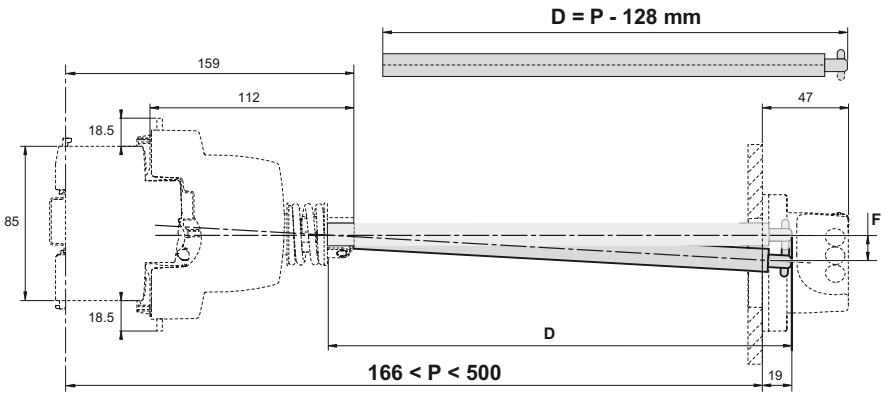
Dimensions (mm)

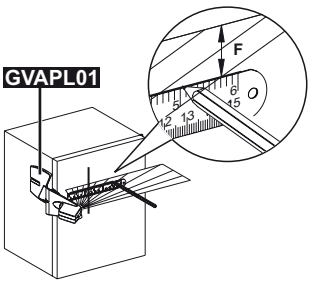




iC60	Z (mm)
2P	25.3
2P + Vigi	25.3
3P	25.3
3P + Vigi	43
4P	43
4P + Vigi	43

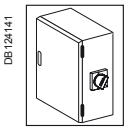
iID	Z (mm)
2P	25.3
4P	25.3

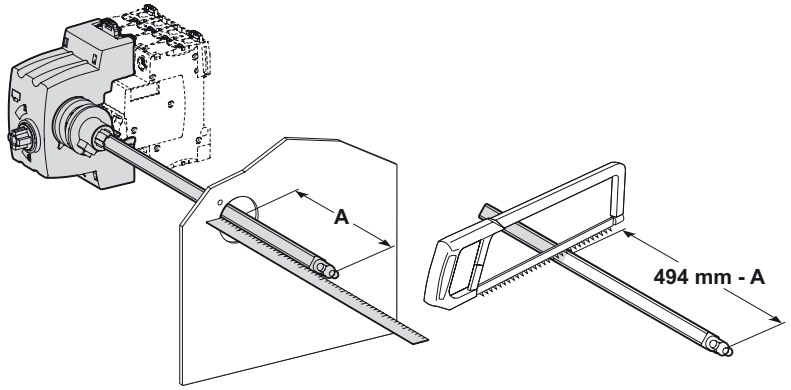


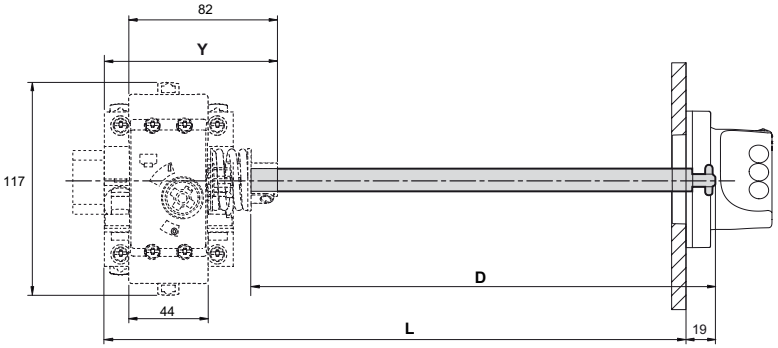


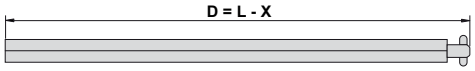
P (mm)	F (mm)
300	5
500	11

Rotary handle: front mounted control









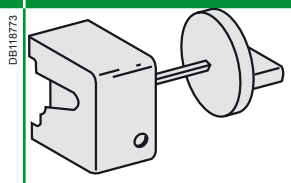
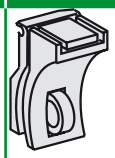
iC60	X (mm)	Y (mm)
2P	44.5	76.8
2P + Vigi	44.5	76.8
3P	44.5	76.8
3P + Vigi	62	94.5
4P	62	94.5
4P + Vigi	62	94.5

iID/iSW-NA	X (mm)	Y (mm)
2P	44.5	76.8
4P	44.5	76.8

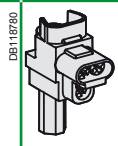
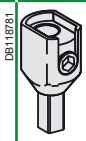
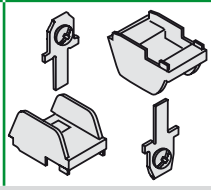
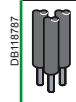
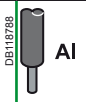
Rotary handle: side mounted control

Accessories for DT60

Installation

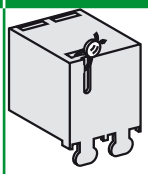
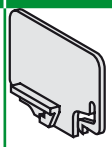
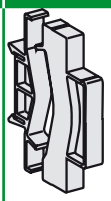
Accessories	Rotary handle			Padlocking device
				
Function				
	Front or side control of circuit breakers ■ Degree of protection: IP40, IK10 ■ A complete rotary handle consists of: □ a circuit-breaker operating sub-assembly, cat. no. **27046**, □ a handle cat. no. **27047** or a handle cat. no. **27048** ■ Installation: □ the circuit-breaker operating sub-assembly cat. no. **27046** is fixed to the circuit breaker □ the removable handle cat. no. **27047** is mounted on the removable front panel or on the enclosure door □ the fixed handle cat. no. **27048** is fixed to the front or side panel of the enclosure			**Used to padlock a circuit breaker in the "open" or "closed" position** ■ Diameter of the padlock: 8 mm max. ■ Locking in the ON position does not prevent the circuit breaker from tripping in the event of a fault ■ Isolation: in conformity with IEC/EN 60947-2
Cat. numbers	**27046**	**27047**	**27048**	**26970**
Set of	**1**	**1**	**1**	**2**
Nomber of pôle	–			–
DT60	■	■	■	■

Connection

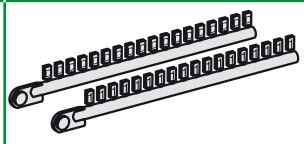
Accessories	Multi-cable terminal		50 mm² Al terminal	Connection kit for ring terminals
				
Function				
	For 3 copper cables: ■ Rigid up to 16 mm² ■ Flexible up to 10 mm²		**For 16 to 50 mm² aluminium cables**	**For terminal up to 63 A, front or rear access (screw Ø 5 mm)** ■ It incorporates a "conductive" part and an "insulating" part which ensures the phase-to-phase clearance
				
Cat. numbers	**19091**	**19096**	**27060**	**17400**
Set of	**4**	**3**	**1**	**2**
DT60	■	■	■	■
Tightening torque	2 N.m		10 N.m	2 N.m
Stripping length	11 mm		13 mm	–
Tools to be used	Diameter 5 mm or PZ2		Hc 1/5" or 5 mm	Diameter 5 mm

Accessories for DT60 (cont.)

Safety

	Screw shield	Terminal shield	Interpole barrier	Spacer
	 DB118776	 DB118777	 DB116729	 DB118779
	Prevents all contact with the fixing screws ■ The degree of protection becomes IP40 ■ Sealable ■ Dividable	**Prevents all contact with the terminals** ■ Degree of protection IP40 ■ Sealable, max. diameter 1.2 mm	**Improves the insulation between the connections: cables, terminals, lugs, etc.**	■ Used to: □ complete the rows □ separate the devices ■ Width: 1 x 9 mm module ■ Allows cables to be routed from one row to another (above and below), up to 6 mm²
	26981	**26978**	**27001**	**A9N27062**
	2	**2**	**10**	**1**
	4P	**4P**	**–**	**–**
	■	■	■	■

Identification

Accessories	Clip-on terminal marker strip					
	 DB118785					
Function	**For connection identification**					
Cat. numbers	0: **AB1-R0** 1: **AB1-R1** 2: **AB1-R2** 3: **AB1-R3** 4: **AB1-R4**	5: **AB1-R5** 6: **AB1-R6** 7: **AB1-R7** 8: **AB1-R8** 9: **AB1-R9**	A: **AB1-GA** B: **AB1-GB** C: **AB1-GC** D: **AB1-GD** E: **AB1-GE** F: **AB1-GF** G: **AB1-GG** H: **AB1-GH** I: **AB1-GI**	J: **AB1-GJ** K: **AB1-GK** L: **AB1-GL** M: **AB1-GM** N: **AB1-GN** O: **AB1-GO** P: **AB1-GP** Q: **AB1-GQ** R: **AB1-GR**	S: **AB1-GS** T: **AB1-GT** U: **AB1-GU** V: **AB1-GV** W: **AB1-GW** X: **AB1-GX** Y: **AB1-GY** Z: **AB1-GZ**	+: **AB1-R12** -: **AB1-R13** Blank: **AB1-RV**
Set of	**250**					
DT60	■ 6 markers max. on front face					

Accessories for C60, C120, DPN, DPN Vigi, C60H-DC, SW60-DC, C60NA-DC , C60PV-DC, ID, iSW devices

Installation

Accessories	Rotary handle			Plug-in base		Padlocking device	
	PB100137_SE-24 PB100138_SE-24 			PB111764-40 		056886_SE  057209J_SE-20 	
Function							
	Front or side control of 2, 3 and 4-pole circuit breakers ■ Degree of protection: IP40 ■ A complete rotary handle consists of: □ a circuit-breaker operating sub-assembly, cat. no. **27046**, □ a handle cat. no. **27047** or a handle cat. no. **27048** ■ Installation: □ the circuit-breaker operating sub-assembly cat. no. **27046** is fixed to the circuit breaker □ the removable handle cat. no. **27047** is mounted on the removable front panel or on the enclosure door □ the fixed handle cat. no. **27048** is fixed to the front or side panel of the enclosure			**Allows a circuit breaker to be quickly removed or replaced, without touching the connections** ■ Degree of protection: IP20 ■ It consists of: □ a base to be fixed to a rail (or panel) □ 2 “blades” to be fixed in the device terminals ■ Connection: tunnel terminals for cables up to 50 mm² (rigid) or 35 mm² (flexible) ■ Installation: □ on backplate □ on a horizontal rail ■ Centreline between two rows: 200 mm ■ Only on the circuit breaker, without a Vigi device or auxiliary ■ Padlocking option (8 mm dia. padlock not supplied)		**Used to padlock a circuit breaker in the "open" or "closed" position** ■ Diameter of the padlock: 8 mm max. ■ Locking in the ON position does not prevent the circuit breaker from tripping in the event of a fault ■ Isolation: in conformity with IEC/EN 60947-2.	
Cat. numbers	**27047** Removable extended handle	**27048** Fixed handle	**27046** Operating sub-assembly	**26996** (1 per pole)	**26997** (1 per pole)	**27145**	**26970**
Set of	**1**	**1**	**1**	**1**	**1**	**4**	**2**
Suitable for the following devices:							
C60	■ 2P, 3P, 4P			■	–	–	■
C120, C120NA-DC	■ 2P, 3P, 4P			–	■ ⩽ 63 A	■	–
C120 + Vigi C120	■ 2P, 3P, 4P			–	–	■	–
DPN, DPN Vigi	■ 3P, 4P			–	–	–	■
C60H-DC	■ 2P			■	–	–	■
SW60-DC, C60NA-DC, C60PV-DC	–			–	–	–	■
ID	–			■ ⩽ 63 A	–	–	■
iSW	■ iSW ⩾ at 4 modules of 9 mm			■ iSW 40 to 63 A	–	–	■

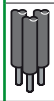
Accessories for C60, C120, DPN, DPN Vigi, C60H-DC, SW60-DC, C60NA-DC , C60PV-DC, ID, iSW devices (cont.)

Safety

Accessories	Screw shield		Terminal shield			Interpole barrier	Spacer
	056870_SE-33 	PB124114 	056869_SE-38 		DB123898	PB104483-35  	
Function							
	Prevents all contact with the fixing screws ■ The degree of protection becomes IP40 ■ Sealable, max. diameter 1.2 mm ■ Dividable		**Prevents all contact with the terminals** ■ Degree of protection becomes IP40 ■ Sealable, max. diameter 1.2 mm			**Improves the insulation between the connections: cables, terminals, lugs, etc.**	■ Used to: □ complete the rows □ separate the devices ■ Width: 1 x 9 mm module ■ Allows that 2 cables are routed from one row to another (above and below), up to 6 mm²
			■ 1P	■ 1P	■ 2P ■ 3P: 1 x 26975 + 1 x 26976 ■ 4P: 2 x 26976		
Cat. numbers	**18527**	**26981**	**18526**	**26975**	**26976**	**27001**	**A9N27062**
Set of	**2 (4P dividable)**		**2 (for upstream/downstream terminal)**			**10**	**1**
Suitable for the following devices:							
C60	–	■	–	■	■	■	■
C120, C120NA-DC	■	–	■	–	–	■	■
Vigi C120	–	–	–	–	–	–	■
DPN, DPN Vigi	–	–	–	–	–	–	■
C60H-DC	–	■	–	■	■	■	■
SW60-DC, C60NA-DC, C60PV-DC	–	■	–	–	–	■	■
ID	–	■	–	■	■	■	■
iSW	–	■ iSW 40 to 125 A	–	■ iSW 40 to 125 A		■ iSW 40 to 125 A	■

Accessories for C60, C120, DPN, DPN Vigi, C60H-DC, SW60-DC, C60NA-DC , C60PV-DC, ID, iSW devices (cont.)

Connection

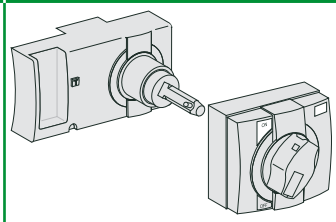
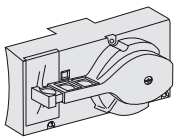
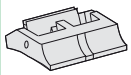
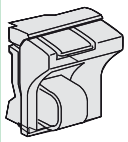
Accessories	Multi-cable terminal		50 mm² Al terminal	Screw-on connection for ring terminal	Connection kit for ring terminals	Terminal for rear connector
	DB118780 		DB118782 	DB123897 	0589671N-23 	DB118784 
Function						
	For 3 copper cables: ■ Rigid up to 16 mm² ■ Flexible up to 10 mm²		**For 16 to 50 mm² aluminium cables**	**For lug tipped cables, front or rear mounting**	**For terminal up to 63 A, front or rear access (screw Ø 5 mm)** ■ It incorporates a "conductive" part and an "insulating" part which ensures the phase-to-phase clearance	**For cable up to 50 mm² or by terminal** ■ Supplied with a 1P terminal shield
	DB118787 		DB122935  Al	DB118789  Ø 5 mm		
Cat. numbers	**19091**	**19096**	**27060**	**27053**	**17400**	**18528**
Set of	**4**	**3**	**1**	**8**	**2**	**2**
Suitable for the following devices:						
C60 ⩽ 25 A	–	–	–	■	■	–
C60 > 25 A	■	■	■	■	■	–
C120, C120NA-DC	■	■	■	■	–	■
Vigi C120	■	■	■	–	–	–
DPN, DPN Vigi	–	–	–	■	–	–
C60H-DC, ID iSW 40 to 125 A	■	■	■	■	■	–
SW60-DC, C60NA-DC	■	■	■	■	–	–
C60PV-DC	–	–	–	■	–	–
Tightening torque	2 N.m		10 N.m	2 N.m	–	–
Stripping length	11 mm		13 mm	–	–	–
Tools to be used	Diameter 5 mm or PZ2		Hc 1/5" or 5 mm	Diameter 5 mm	Diameter 5 mm	13 mm spanner

Identification

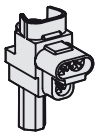
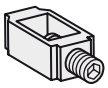
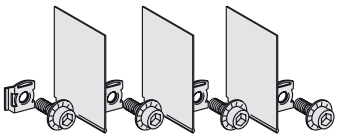
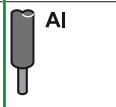
Accessories	Clip-on terminal marker strip			
	0312040_SE-23 			
Function	**For connection identification**			
Cat. numbers	0: **AB1-R0**	A: **AB1-GA**	K: **AB1-GK**	U: **AB1-GU**
	1: **AB1-R1**	B: **AB1-GB**	L: **AB1-GL**	V: **AB1-GV**
	2: **AB1-R2**	C: **AB1-GC**	M: **AB1-GM**	W: **AB1-GW**
	3: **AB1-R3**	D: **AB1-GD**	N: **AB1-GN**	X: **AB1-GX**
	4: **AB1-R4**	E: **AB1-GE**	O: **AB1-GO**	Y: **AB1-GY**
	5: **AB1-R5**	F: **AB1-GF**	P: **AB1-GP**	Z: **AB1-GZ**
	6: **AB1-R6**	G: **AB1-GG**	Q: **AB1-GQ**	+: **AB1-R12**
	7: **AB1-R7**	H: **AB1-GH**	R: **AB1-GR**	-: **AB1-R13**
	8: **AB1-R8**	I: **AB1-GI**	S: **AB1-GS**	Blank : **AB1-RV**
	9: **AB1-R9**	J: **AB1-GJ**	T: **AB1-GT**	
Set of	**250**			
Suitable for the following devices:				
C60, ID	■ 4 markers max. per pole			
C120, C120NA-DC	■ 4 markers max. per pole			
Vigi C120	■ 4 markers max. per device			
DPN, DPN Vigi	■ 4 markers max. per pole			
C60H-DC, SW60-DC, C60NA-DC, C60PV-DC	■ 4 markers max. per pole			

Accessories for NG125 devices

Mounting

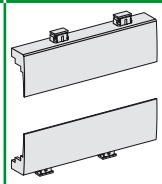
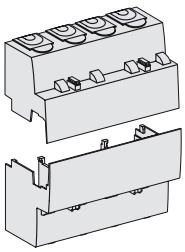
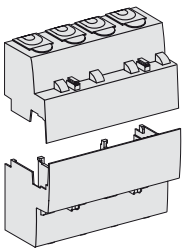
Accessories	Rotary handle				Toggle	Padlocking device
	DB123603 		DB123604 		DB123498 	DB123605 
Function						
	Extended rotary handle ■ Degree of protection: rotary button IP55 ■ Front installation: ■ Prevents door opening when the circuit breaker is in position O ■ Keeps disconnection ■ Padlocking possible when the device is in position O ■ Padlock diameter: 3 to 6 mm		**Direct rotary handle** ■ Front installation ■ Keeps disconnection ■ Padlocking possible when the device is in position O ■ Padlock diameter: 3 to 6 mm ■ Two versions: □ standard black □ red handle and yellow front plate for machine tool control		**White toggle** ■ Allows visual distinction of a switchboard incoming device	**Allows padlocking:** ■ In position I or O of NG125 1P or 2P circuit breakers ■ In position I of NG125 3P or 4P circuit breakers or switches ■ Padlock: dia. 5 to 8 mm (not supplied) Note: NG125 3P/4P circuit breakers and switches are provided with padlocking in position O (disconnected) as original equipment.
Catalogue numbers	**19088** **Extended standard black**	**19089** **Extended safety**	**19092** **Direct standard black**	**19097** **Direct safety red handle yellow background**	**19099** **White toggle**	**19090**
Pack of	**1**		**1**	**1**	**10**	**1**
Suitable for the following devices:						
NG125	■ 3P, 4P		■		■ 3P, 4P	■
Vigi NG125	–		–		–	–

Connection

Accessories	Multi-cable terminal		70 mm² Al terminal	Screw-on connection for ring terminal	Small ring terminal
	DB118780 		DB123426 	DB123427 	DB123428 
Function					
	For 3 copper cables: ■ Rigid up to 16 mm² ■ Flexible up to 10 mm²		**For single rigid aluminium cables from** 25 to 70 mm²	**Installation:** ■ Upstream or downstream ■ Connection ratings 80 to 125 A: □ copper terminal: - flexible cable up to 35 mm² - rigid cable up to 50 mm² □ bars: 16 x 3 mm, 15 x 4 mm, 16 x 4 mm □ small ring terminal ■ Phase-to-phase insulation voltage: Ui = 1000 V	**Connection ratings 80 to 125 A:** ■ Flexible copper cable: 50 mm² ■ Rigid copper cable: 70 mm²
	DB118787 		DB122935 	DB118789 	DB123497 
Cat. nos.	**19091**	**19096**	**19095**	**19093**	**19094**
Pack of	**4**	**3**	**4**	**4**	**4**
NG125	■	■	■ 3P, 3P+N, 4P: 80, 100, 125 A	■ 80, 100, 125 A	■ 80, 100, 125 A
Vigi NG125	–	–	■ 125 A	■ 125 A	■ 125 A
Tightening torque	2 N.m		6 N.m	6 N.m	6 N.m
Stripping length	11 mm		–	–	–
Tools to be used	Diameter 5 mm or PZ2		Hc 4 mm	Hc 4 mm	–

Accessories for NG125 devices (cont.)

Safety

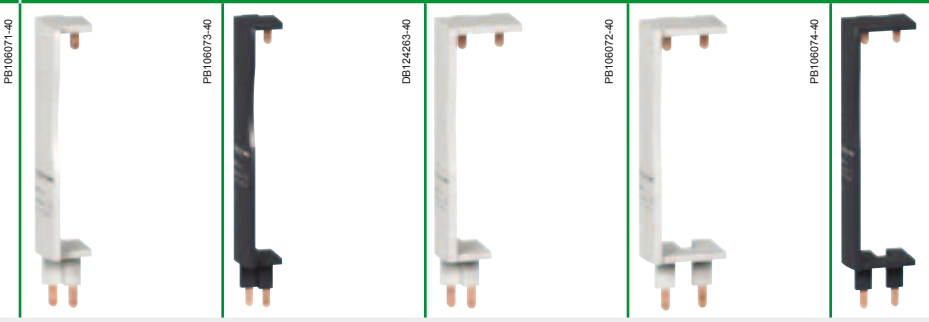
Accessories		Screw shield				Circuit breaker terminal shield				RCD terminal shield						
		DB123606 				DB123607 				DB123607 						
Function																
		■ Prevents any contact with the connection screws ■ Protection against direct contact: □ IP40: on front panel □ IP20: at the connection level ■ Class II in steel or plastic enclosures ■ Sealing possible (max. diameter: 1.2 mm).				■ Prevents any contact with the terminals ■ Installation: mounted upstream and downstream of circuit breaker ■ Phase-to-phase insulation voltage Ui = 1000 V ■ Protection against direct contact IP40 ■ Class II in steel or plastic enclosures (up to 440 V) ■ Sealing possible (max. diameter: 1.2 mm)				■ Installation: is mounted upstream of the circuit breaker and downstream of the Vigi device ■ Phase-to-phase insulation voltage Ui = 1000 V ■ Protection against direct contact: IP40 ■ Class II in steel or plastic enclosures (up to 440 V) ■ Sealing possible (max. diameter: 1.2 mm)						
										63 A					**125 A**	
		1P	2P	3P	4P	1P	2P	3P	4P	2P	3P	3P adjustable	4P	4P adjustable	3P	4P
	Catalogue numbers	**19084**	**19085**	**19086**	**19087**	**19080**	**19081**	**19082**	**19083**	**19074**	**19075**	**19077**	**19076**	**19078**	**19077**	**19078**
	Pack of	**10**				**Set of 1 upstream / 1 downstream**				**Set of 1 upstream / 1 downstream**						
	Suitable for the following devices:															
	NG125	■				■				■					■	
	Vigi NG125	–				–				■					■	

Vertical comb busbars

Comb busbars

Accessories

Vertical comb busbars



Function

Comb busbars make it easier to implement Schneider Electric products.
- ■ They provide a 2P supply to the main incomers from one row to the next:
  - □ centreline between rows: 125 mm or 150 mm, depending on the model
  - □ distances between terminals: 9 mm or 18 mm, depending on the model

Use

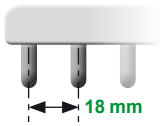
- ■ Direct power supply to circuit breaker or residual current circuit breaker terminals

Catalogue numbers	**14900**	**14901**	**14909**	**14910**	**14911**
Distance between upstream terminals	9 mm		18 mm	18 mm	
Distance between downstream terminals	9 mm		9 mm	18 mm	
Centreline between rows	125 mm	150 mm	125 mm	125 mm	150 mm

Technical specifications

Rated voltage (Ue)	415 V				
Insulation voltage (Ui)	500 V				
Permissible current at 40°C	80 A				
Short-circuit current withstand	Compatible with the breaking capacity of Schneider Electric modular circuit breakers				
Fire resistance to IEC 695-2-1	Self-extinguishing: 850°C 30 s				
Standards	IEC 60664-1				
Colour	RAL 7035 (light grey)	RAL 7016 (anthracite grey)	RAL 7035 (light grey)	RAL 7035 (light grey)	RAL 7016 (anthracite grey)

Horizontal comb busbars 18 mm modules for Acti 9: iC60, iK60

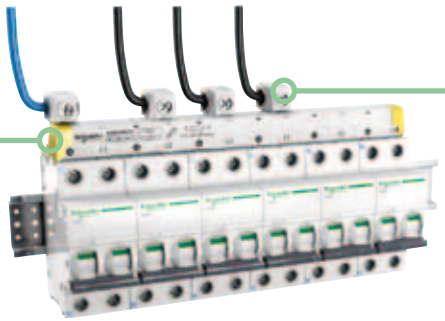


IEC 60947-7-1, IEC 61439-2

Acti 9 iC60, iK60	18 mm poles, cuttable				
Number of poles	**1P**	**2P**	**3P**	**4P**	**3 (N+P)**
	 L1	 L1 L2	 L1 L2 L3	 N L1 L2 L3	 N L1 N L2 N L3
Type	L1, …	L1L2, …	L1L2L3, ...	NL1L2L3, …	NL1NL2NL3, …
Set of	1	1	1	1	1
Catalogue numbers					
6 modules of 18 mm	**A9XPH106**	**A9XPH206**	**A9XPH306**	-	-
8 modules of 18 mm	-	**A9XPH208**	-	**A9XPH408**	-
9 modules of 18 mm	-	-	**A9XPH309**	-	-
10 modules of 18 mm	-	**A9XPH210**	-	-	-
12 modules of 18 mm	**A9XPH112**	**A9XPH212**	**A9XPH312**	**A9XPH412**	**A9XPH512**
16 modules of 18 mm	-	-	**A9XPH316**	**A9XPH416**	-
18 modules of 18 mm	-	**A9XPH218**	**A9XPH318**	-	**A9XPH518**
20 modules of 18 mm	-	-	**A9XPH320**	-	-
24 modules of 18 mm	**A9XPH124**	**A9XPH224**	**A9XPH324**	**A9XPH424**	**A9XPH524**
57 modules of 18 mm	**A9XPH157**	**A9XPH257**	**A9XPH357**	**A9XPH457**	**A9XPH557**

Technical data

Operating current at 40°C	(Ie)	100 A
Short circuit current	(Isc)	Compatible with the breaking capacity of Schneider Electric circuit breakers
Rated insulation voltage	(Ui)	500 V AC
Operating voltage	(Ue)	415 V AC
Pollution degree		3
Fire resistance IEC 695-2-1		Self-extinguishing at 960°C 30 secondes
Color		RAL 9003



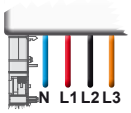
Connectors
■ facilitate comb busbar power supply

End-pieces
■ essential to ensure the correctly comb busbars insulation

Accessories

Number of poles	**1P** **Aux+1P**	**2P** **Aux+2P**	**3P** **Aux+3P** **3 (Aux+1P)**	**4P/3(N+P)** **Aux+4P** **3 (Aux+N+1P)**	-	-
						
	End-pieces				**Tooth covers**	**Connectors** **Monoconnect**
	Lateral end-pieces providing IP20 protection				Insulate teeth that have been left free	Comb busbar power supply. Horizontal incomer on each side. For 35 mm² cable. Tightening torque 4 N.m
Set of	10	10	10	10	20	4
Catalogue numbers	**A9XPE110**	**A9XPE210**	**A9XPE310**	**A9XPE410**	**A9XPT920**	**A9XPCM04**

Cuttable comb busbars, 18 mm modules, with 9 mm auxiliary

	Aux+1P	Aux+2P	Aux+3P	Aux+4P	3 (Aux+1P)	3 (Aux+N+1P)
						
	AuxL1, ...	AuxL1L2, ...	AuxL1L2L3, ...	AuxNL1L2L3, ...	AuxL1AuxL2AuxL3, ...	AuxNL1AuxNL2AuxNL3, ...
	1	1	1	1	1	1
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	A9XAH157	**A9XAH257**	**A9XAH357**	**A9XAH457**	**A9XAH657**	**A9XAH557**

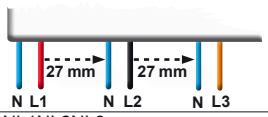
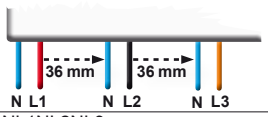
Horizontal comb busbars 18 mm modules for Acti 9: iC60 + Vigi iC60

IEC 60947-7-1, IEC 61439-2

+

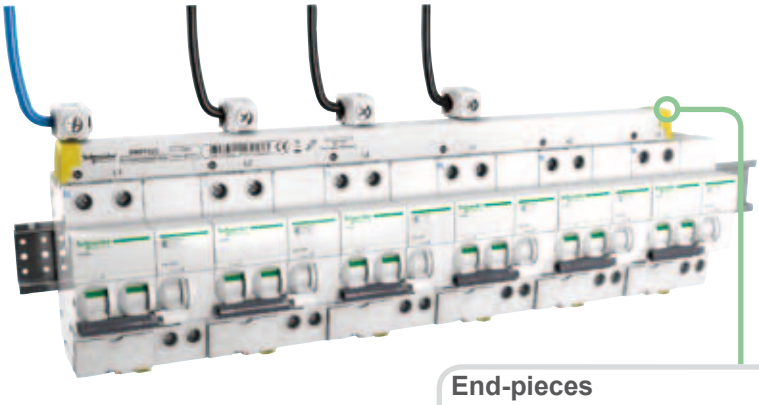
25 A

40 A-63 A

Acti 9 Vigi iC60 1P+N	18 mm poles, cuttable	
Number of poles	3 (N+P)	
		
Type	NL1NL2NL3, …	NL1NL2NL3, …
Set of	1	1
Rating of Vigi	25 A	40 A - 63 A
Catalogue numbers		
21 modules of 18 mm	**A9XPF521**	-
24 modules of 18 mm	-	**A9XPF524**

Technical data

Operating current at 40°C	(Ie)	100 A
Short circuit current	(Isc)	Compatible with the breaking capacity of Schneider Electric circuit breakers
Rated insulation voltage	(Ui)	500 V AC
Operating voltage	(Ue)	415 V AC
Pollution degree		3
Fire resistance IEC 695-2-1		Self-extinguishing at 960°C 30 secondes
Color		RAL9003



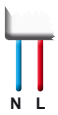
End-pieces
■ essential to ensure the correctly comb busbars insulation

Accessories

Number of poles	**3 (N+P)**	-	-
			
	End-pieces	**Tooth covers**	**Connectors**
			Monoconnect
	Lateral end-pieces providing IP20 protection	Insulate teeth that have been left free	Comb busbar power supply. Horizontal incomer on each side. For 35 mm² cable. Tightening torque 4 N.m
Set of	10	20	4
Catalogue numbers	**A9XPE410**	**A9XPT920**	**A9XPCM04**

Horizontal comb busbars 9 mm modules for Acti 9: iDPN, iDPN Vigi

IEC 60439-1

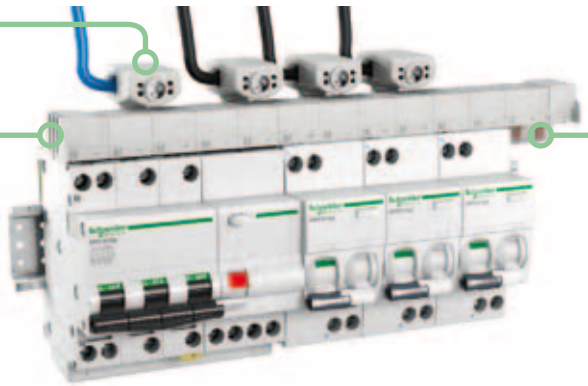
Acti 9 iDPN, iDPN Vigi		9 mm poles, cuttable							
Number of poles		**1P + N**				**3P + N**			
		 N L				 N L1 N L2 N L3			
Number of 18 mm modules		12	18	24	48	12	18	24	48
Supplied accessories	Tooth covers (for 3 modules of 18 mm)	1	1	2	-	1	1	2	-
	End-pieces	4	4	4	-	4	4	4	-
Catalogue numbers		**21501**	**19512**	**21503**	**21089**	**21505**	**19516**	**21507**	**21093**

Technical data

Operating current at 40°C	(Ie)	80 A
Short circuit current	(Isc)	Compatible with the breaking capacity of Schneider Electric circuit breakers
Rated insulation voltage	(Ui)	440 V AC
Operating voltage	(Ue)	230 V AC (P + N) - 400 V AC (3P + N)
Degree of protection		IP20
Pollution degree		3
Fire resistance IEC 695-2-1		Self-extinguishing at 960°C 30 secondes
Color		RAL 7035

Connectors
■ facilitate comb busbar power supply

End-pieces
■ essential to ensure the correctly comb busbars insulation

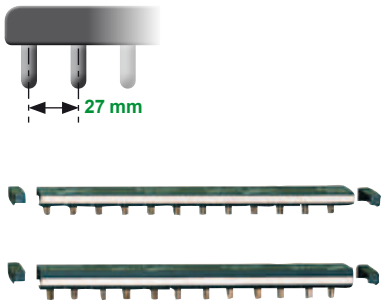


Tooth covers
■ Insulate teeth that have been left free

Accessories

Number of poles	**1P + N**	**3P + N**			
					
	End-pieces		**Tooth covers (3 x 18 mm modules)**	**Tooth covers (1 x 18 mm module)**	**Connectors (grey)**
Set of	40		12	10	4
Catalogue numbers	**021094**	**021095**	**021096**	**010405**	**021098**

Horizontal comb busbars 27 mm modules for C120, NG125



IEC 60664-1

C120, NG125	27 mm poles, cuttable			
Number of poles	**1P**	**2P**	**3P**	**4P**
				
Number of 27 mm modules	16	16	15	16
Set of	1			
Catalogue numbers	**14811**	**14812**	**14813**	**14814**

Technical data

Operating current at 40°C	(Ie)	125 A
Short circuit current	(Isc)	Compatible with the breaking capacity of Schneider Electric circuit breakers
Rated insulation voltage	(Ui)	620 V AC
Operating voltage	(Ue)	500 V AC
Pollution degree		3
Fire resistance IEC 695-2-1		Self-extinguishing at 960°C 30 secondes
Color		RAL 7016 (anthracite grey)

Power supply
■ directly in the circuit breaker terminals

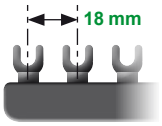
End-pieces
■ essential to ensure the correctly comb busbars insulation

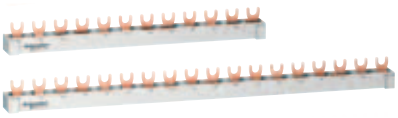
Tooth covers
■ Insulate teeth that have been left free

Accessories

Number of poles	**1P, 2P, 3P, 4P**
	
	Tooth covers
	Insulate teeth that have been left free
Set of	20
Catalogue numbers	**14818**

Biconnect horizontal comb busbars 18 mm modules for K60



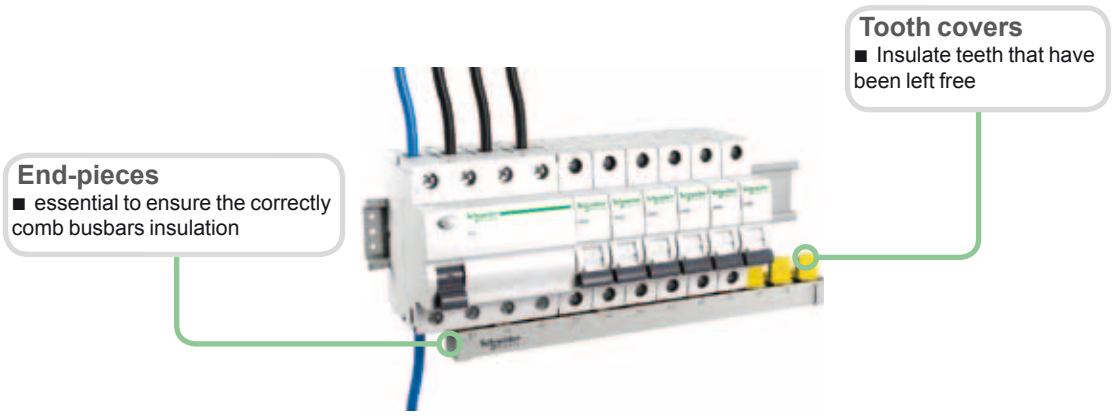


IEC 60664-1

Acti 9 K60 biconnect	18 mm poles, cuttable											
Number of poles	**1P**			**2P**			**3P**			**4P**		
	L1			L1 L2			L1 L2 L3			N L1 L2 L3		
Type	L1			L1L2			L1L2L3			NL1L2L3		
Number of 18 mm modules	12	18	57	12	18	57	12	18	57	12	18	57
Set of	1	1	1	1	1	1	1	1	1	1	1	1
Catalogue numbers	**R9XFH112**	**R9XFH118**	**R9XFH157**	**R9XFH212**	**R9XFH218**	**R9XFH257**	**R9XFH312**	**R9XFH318**	**R9XFH357**	**R9XFH412**	**R9XFH418**	**R9XFH457**

Technical data

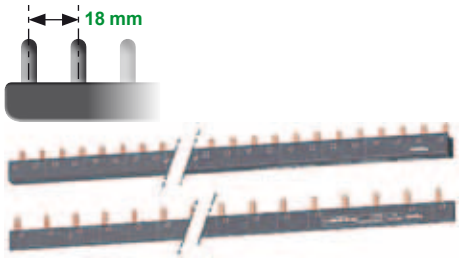
Operating current at 40°C	(Ie)	63 A
Short circuit current	(Isc)	Compatible with the breaking capacity of Schneider Electric circuit breakers
Rated insulation voltage	(Ui)	500 V AC
Operating voltage	(Ue) L/N	230 V AC
	L/L	400 V AC
Pollution degree		3
Fire resistance IEC 695-2-1		Self-extinguishing at 960°C 30 secondes
Color		RAL 7035 (grey)



Accessories

Number of poles	**1P**	**2P**	**3P**	**4P**		
						
	End-pieces				**Tooth covers**	**Connectors**
Set of	10				20	4
Catalogue numbers	**R9XE110**	**R9XE210**	**R9XE310**	**R9XE410**	**R9XT20**	**R9XFC04**

Horizontal comb busbars 18 mm modules for Acti 9: iC60



IEC 60947-7-1, IEC 61439-2

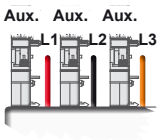
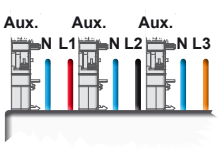
Acti 9 iC60	18 mm poles, cuttable				
Number of poles	**1P**	**2P**	**3P**	**4P**	**3 (N+P)**
	L1	L1 L2	L1 L2 L3	N L1 L2 L3	N L1 N L2 N L3
Type	L1…	L1L2…	L1L2L3...	NL1L2L3...	NL1NL2NL3…
Set of	1	1	1	1	1
Catalogue numbers					
6 modules of 18 mm	**A9XPH106**	**A9XPH206**	**A9XPH306**	-	-
8 modules of 18 mm	-	**A9XPH208**	-	**A9XPH408**	-
9 modules of 18 mm	-	-	**A9XPH309**	-	-
10 modules of 18 mm	-	**A9XPH210**	-	-	-
11 modules of 18 mm	-	-	**A9XPH311**	-	-
12 modules of 18 mm	**A9XPH112**	**A9XPH212**	**A9XPH312**	**A9XPH412**	**A9XPH512**
16 modules of 18 mm	-	-	**A9XPH316**	**A9XPH416**	-
18 modules of 18 mm	-	**A9XPH218**	**A9XPH318**	-	**A9XPH518**
20 modules of 18 mm	-	-	**A9XPH320**	-	-
24 modules of 18 mm	**A9XPH124**	**A9XPH224**	**A9XPH324**	**A9XPH424**	**A9XPH524**
57 modules of 18 mm	**A9XPH157**	**A9XPH257**	**A9XPH357**	**A9XPH457**	**A9XPH557**

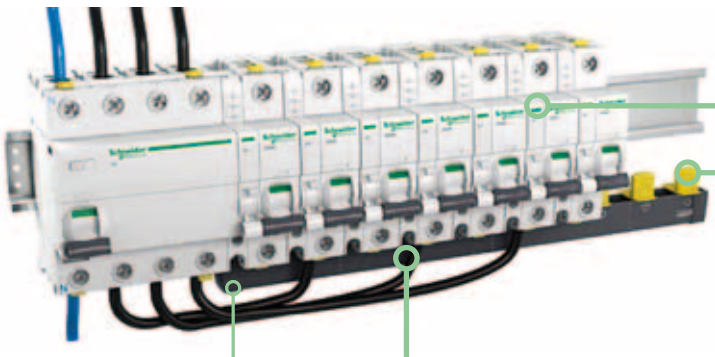
Technical data

Operating current (Ie) at 40°C	100 A
Short circuit current (Isc)	Compatible with the breaking capacity of Schneider Electric circuit breakers
Rated insulation voltage (Ui)	500 V AC
Operating voltage (Ue)	415 V AC
Pollution degree	3
Fire resistance IEC 695-2-1	Self-extinguishing at 960°C 30 secondes
Color	RAL 7016 (anthracite grey)

Accessories

Number of poles	**1P Aux+1P**	**2P Aux+2P**	**3P Aux+3P 3 (Aux+1P)**	**4P Aux+4P 3 (Aux+N+1P)**		
						
	End-pieces				**Tooth covers**	**Connectors**
						Double terminal
	Lateral end-pieces providing IP20 protection				Insulate teeth that have been left free	Comb busbar power supply. Horizontal incomer on each side. For 35 mm² cable. Tightening torque 4 N.m
Set of	10	10	10	10	20	4
Catalogue numbers	**A9XPE110**	**A9XPE210**	**A9XPE310**	**A9XPE410**	**A9XPT920**	**A9XPCD04**

Cuttable comb busbars, 18 mm modules, with 9 mm auxiliary						
	Aux+1P	**Aux+2P**	**Aux+3P**	**Aux+4P**	**3 (Aux+1P)**	**3 (Aux+N+1P)**
						
	AuxL1...	AuxL1L2...	AuxL1L2L3...	AuxNL1L2L3...	AuxL1AuxL2AuxL3...	AuxNL1AuxNL2AuxNL3...
	1	1	1	1	1	1
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	A9XAH157	**A9XAH257**	**A9XAH357**	**A9XAH457**	**A9XAH657**	**A9XAH557**



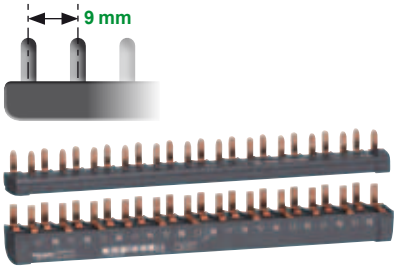
Auxiliaries
■ free space for 9 mm electrical auxiliary

End-pieces
■ essential to ensure the correctly comb busbars insulation

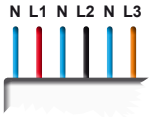
Power supply
■ directly in the circuit breaker terminals

Tooth covers
■ Insulate teeth that have been left free

Horizontal comb busbars 9 mm modules for Acti 9 : iDPN, iDPN Vigi

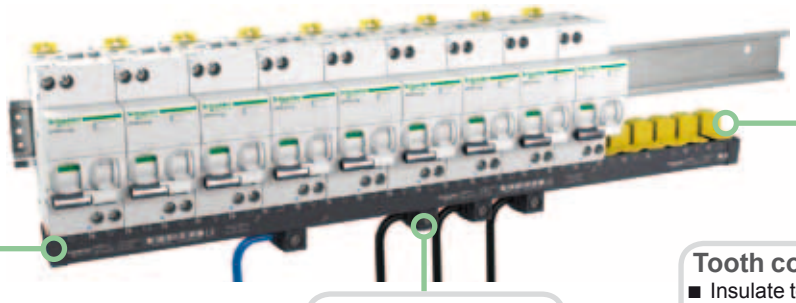


IEC 60947-7-1, IEC 61439-1

Acti 9 iDPN, iDPN Vigi	9 mm poles						
Number of poles	**1P+N**		**3P+N**				
							
Type	N, L1...		N, L1, N, L2, N, L3...				
Set of	1		1	1	1	1	1
Number of 18 mm modules	12	24	8	12	16	20	24
Catalogue numbers	**A9XPH612**	**A9XPH624**	**A9XPH708**	**A9XPH712**	**A9XPH716**	**A9XPH720**	**A9XPH724**

Technical data

Operating current at 40°C	(Ie)	80 A	
Short circuit current	(Isc)	Compatible with the breaking capacity of Schneider Electric circuit breakers	
Rated insulation voltage	(Ui)	500 V AC	
Operating voltage	(Ue)	230 V AC	230 V AC (Ph/N) / 400 V AC (Ph/Ph)
Degree of protection IEC 60529		IP20	
Pollution degree		3	
Fire resistance IEC 695-2-1		Self-extinguishing at 960°C 30 secondes	
Color		RAL 7016 (anthracite grey)	

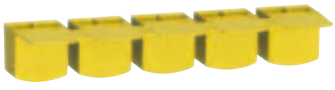


End-pieces
■ essential to ensure the correctly comb busbars insulation

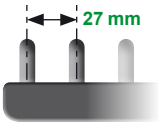
Connectors
■ facilitate comb busbar power supply

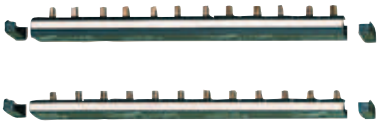
Tooth covers
■ Insulate teeth that have been left free

Accessories

Number of poles	**1P+N**	**3P+N**	**For 1P+N comb busbars**	**For 3P+N comb busbars**	
					
	End-pieces		**Connectors**		**Tooth covers**
	Lateral end-pieces providing IP20 protection		Comb busbar power supply. Horizontal incomer on each side. For 35 mm² cable. Tightening torque 4 N.m		Insulate teeth that have been left free
Color	RAL 7016 (anthracite grey)		RAL 7016 (anthracite grey)		Yellow
Set of	10		4		20
Catalogue numbers	**A9XPE210**	**A9XPE410**	**A9XPC604**	**A9XPCM04**	**A9XPT620**

Horizontal comb busbars 27 mm modules for C120, NG125



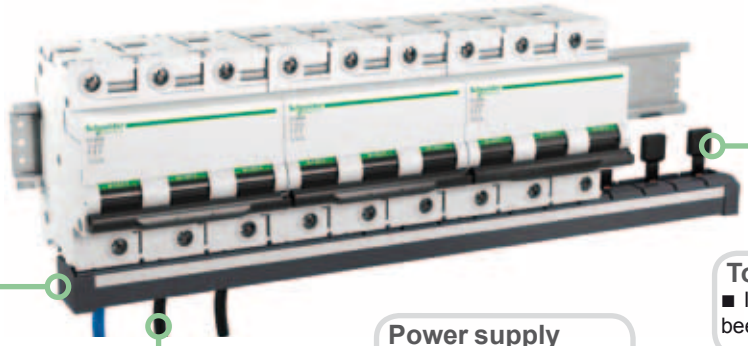


IEC 60664-1

C120, NG125	27 mm poles, cuttable			
Number of poles	**1P**	**2P**	**3P**	**4P**
				
Number of 27 mm modules	16	16	15	16
Set of	1			
Catalogue numbers	**14811**	**14812**	**14813**	**14814**

Technical data

Operating current at 40°C	(Ie)	125 A
Short circuit current	(Isc)	Compatible with the breaking capacity of Schneider Electric circuit breakers
Rated insulation voltage	(Ui)	620 V AC
Operating voltage	(Ue)	500 V AC
Degree of protection		3
Fire resistance IEC 695-2-1		Self-extinguishing at 960°C 30 secondes
Color		RAL 7016 (anthracite grey)



End-pieces
■ essential to ensure the correctly comb busbars insulation

Tooth covers
■ Insulate teeth that have been left free

Power supply
■ directly in the circuit breaker terminals

Accessories

Number of poles	**1P, 2P, 3P, 4P**
	
	Tooth covers
	Insulate teeth that have been left free
Set of	20
Catalogue numbers	**14818**

Linergy DX
Quick distribution blocks

PB104499-7.eps

PB111415-19_r.eps

IEC 60947-7-1, IEC 61439-2

Description

- Downstream circuits are connected from the front, to spring terminals.
- Contact pressure automatically adapts to the size of the conductor.
- Contacts are insensitive to vibrations and thermal variations.
- Only one cable (flexible or rigid) can be inserted per terminal.

Quick distribution blocks

Number of poles		4P, incomers from top	4P, incomers from bottom
		PB104500-6.eps 	PB104499-6.eps 
Rated operational current at 40 °C	(Ie)	63 A	63 A
Rated conditional short-circuit current of an assembly	(Isc)	The reinforced breaking capacity due to cascading in circuit breaker combinations is maintained. The worst-case situations have been tested.	The reinforced breaking capacity due to cascading in circuit breaker combinations is maintained. The worst-case situations have been tested.
Rated insulation voltage	(Ui)	500 V AC	500 V AC
Rated operational voltage	(Ue)	440 V AC	440 V AC
Rated impulse withstand voltage	(Uimp)	6 kV	6 kV
Rated short-time withstand current	(Icw)	-	-
Rated operational frequency		50/60 Hz	50/60 Hz
Degree of protection		IPxxB	IPxxB
Incoming terminals		1 tunnel terminal 25²/phase	1 tunnel terminal 25²/phase
Total connection capacity, outgoing terminals		24 connections: 4 x 6²/phase 12 x 6²/neutral	24 connections: 4 x 6²/phase 12 x 6²/neutral
Dimensions (H x W x D)		96.5 x 72 x 62 8 x 9 mm pitch	96.5 x 72 x 62 8 x 9 mm pitch
Installation		Clipped onto a DIN rail	Clipped onto a DIN rail
Other			
Standard for installation inside Prisma		IEC 61439-2	IEC 61439-2
Glow-wire 60695-2-11		960 °C	960 °C
Degree of pollution		3	3
References		**04040**	**04041**

Accessories

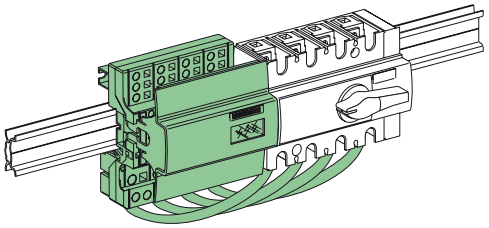
References		-	-

Linergy DX
Quick distribution blocks

Advantages
- A reliable electrical connection, no maintenance required (tightness guaranteed over time).
- Quick connection.
- Easy phase balancing.
- Ease of rewiring if the switchboard is expanded or modified.

	4P		1P
	 PB111415-19_r.eps	 PB111417-15_r.eps	 PB111453-8_r.eps
	125 A	160 A	160 A
	20 kA/60 ms max according to IEC 61439-1	20 kA/60 ms max according to IEC 61439-1	32 kA
	750 V AC	750 V AC	750 V AC
	690 V AC	690 V AC	690 V AC
	8 kV	8 kV	8 kV
	4.5 kA rms/1 s	4.5 kA rms/1 s	
	50/60 Hz	50/60 Hz	50/60 Hz
	IPxxB	IPxxB	IPxxB
	1 tunnel terminal 35²/phase	1 tunnel terminal 35²/phase	1 tunnel terminal 70/phase
	52 connections: 7 x 4²/phase 3 x 6²/phase 2 x 10²/phase 1 x 16²/phase (screw terminal)	52 connections: 7 x 4²/phase 3 x 6²/phase 2 x 10²/phase 1 x 16²/phase (screw terminal)	6 connections: 6 x 16²/phase
	127 x 108 x 48 8 x 9 mm pitch	127 x 108 x 48 8 x 9 mm pitch	95 x 36 x 70 4 x 9 mm pitch
	Screwed to plain or slotted backplate or onto DIN rail	Screwed to plain or slotted backplate or onto DIN rail	Onto DIN rail
	Possible to combine 2 terminal blocks (2nd terminal block supplied from enclosed terminals in the 1st, Imax of 2nd terminal block: 80 A)	Possible to combine 2 terminal blocks (2nd terminal block supplied from enclosed terminals in the 1st, Imax of 2nd terminal block: 80 A)	
	IEC 61439-2	IEC 61439-2	IEC 61439-2
	960 °C	960 °C	960 °C
	3	3	3
	04045	**04046**	**04031**

	125 A flexible connectors (4)		Copper spacer (batch of 4)
	04047	-	**04037**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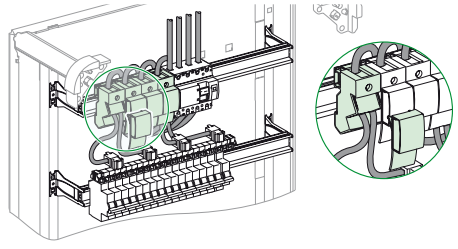
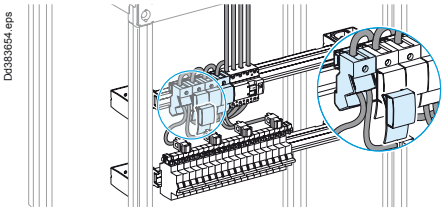
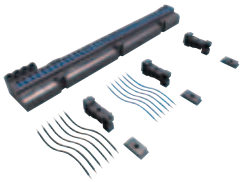

DD383300-LIN.eps


Dd383654.eps

Linergy FM
Quick device feeders

PB104505-30.eps



IEC 60947-7-1, IEC 61439-2

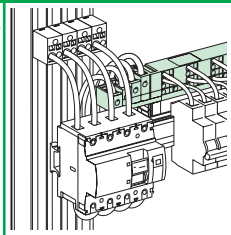
Description

- Distribution over full rows of modular devices.
- The distribution block is generally supplied by busbars in enclosures and cubicles.
- Easy phase balancing.
- Mix of devices and functions in the same row.
- Installation ≥ 160 A: clipped onto the back of a modular rail or screwed onto a solid or pre-slotted plate.

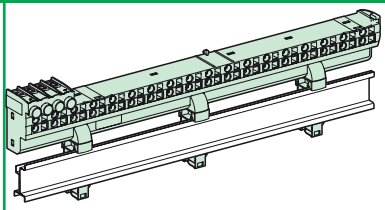
Distribution blocks

Number of poles			4P	4P
			PB502496-31_r.eps 	PB104501-52-r.eps 
			63 A	**80 A**
Rated peak withstand current		(Ipk)	15 kÂ	15 kÂ
Rated conditional short-circuit current of an assembly		(Isc)	The cascading reinforced breaking capacity when combining circuit breakers is maintained. The worst-case scenarios have been tested. The characteristics are exactly right for the connected devices. Circuit breakers and switches still have their temperature derating curves, and their whole performance is maintained.	
Rated insulation voltage		(Ui)	500 V AC	500 V AC
Rated operational voltage		(Ue)	440 V AC	440 V AC
Rated impulse withstand voltage		(Uimp)	6 kV	6 kV
Maximum current		(Imax)	-	-
Rated operational frequency			50/60 Hz	
Degree of protection			IPxxB	IP20
Lenght	In 9 mm modules		24	48
	In 18 mm modules		12	24
Upstream connection capacity			Tunnel terminals for cables up to 25 mm²	Tunnel terminals for cables up to 25 mm²
Downstream connection capacity, cable to be used without ferrules	Max. 4 mm²	Phase	2	-
		Neutral	4	
	Max. 6 mm²	Phase	2	-
		Neutral	4	
	Max. 10 mm²	Phasesw	-	18
		Neutral		18
Accessories included	Pre-stripped copper connections		10 of 4 mm² + 6 of 6 mm² (L = 100 mm)	12 blue + 12 black
	Protective cover			
	Screws and nuts			
References			**04008**	**04000**

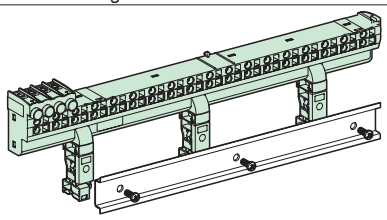
Installation

DD381664-LIN.eps 

Clipped onto the back of a modular rail, or screw fixing

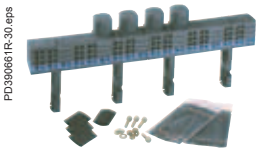
DB124195-LIN.eps 

Clipped onto the back of a modular rail, or screw fixing

DB124196-LIN.eps 

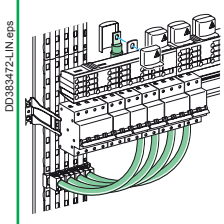
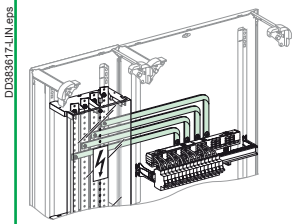
Can be mounted in Pragma Evolution enclosures and in Prisma Pack 160

Linergy FM
Quick device feeders



	4P	**2P**	**3P**	**4P**	**4P**
					
	160 A	**200 A**	**200 A**	**200 A**	**200 A**
	27 kÂ	25 kÂ	25 kÂ	30 kÂ	27 kÂ
	The cascading reinforced breaking capacity when combining circuit breakers is maintained. The worst-case scenarios have been tested.				
	750 V AC	750 V AC	750 V AC		750 V AC
	690 V AC	690 V AC	690 V AC		690 V AC
	8 kV	8 kV	8 kV		8 kV
	50 A for feeder for 10 mm^2 cable/63 A for feeder for 2 cables of 10 mm^2				
	50/60 Hz				
	IPxxB				
	24	48			72
	12	24			36
	Direct on directing pads by 50 mm^2 cables or by 20 x 3 flexible bar with a prefabricated connection from busbar				
	-	-			
	-	-			
	6	12			
	6	18			
	20 of 4 mm^2 + 6 of 6 mm^2 (L = 100 mm)				
	For pads (IPxxB)				
	For pads				
	04018	**04012**	**04013**	**04014**	**04026**

Connections to the distribution block

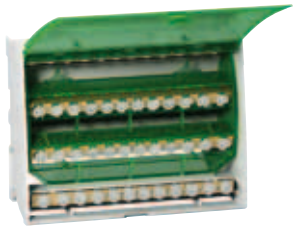
				
	4P 200 A connection (supplied with fixing accessories)	4P 200 A connection (supplied with fixing accessories)	4P 200 A connection (supplied with fixing accessories)	4P 160 A connection for Linergy FM 1/2 row
Allows power supply from	Linergy BW busbar	Linergy BS busbar	Linergy BS rear busbar	Switchgear
References	**04021**	**04024**	**04029**	**04030**

Spare parts

	
	4 covers for 160/200 A Linergy FM rows
Reference	**01202**

Linergy DS
Screw distribution blocks

PB111254-30_1.eps



PB111253-30_1.eps

IEC/EN 60947-7-1, IEC/EN 61439-1 & 2

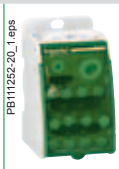
Description

- Single-pole or four-pole distribution block that can be installed on a standard DIN rail or on a mounting plate.
- Compatible with Prisma G and P, Pragma, Mini Pragma and Resbo series switchboards.
- Incomers and feeders are connected to screw terminals that accept rigid or flexible cables with ferrule.
- Optional: additional neutral terminal strip for four-pole distribution block.

Advantages

- Simplified power supply for main incomers.
- Easy phase balancing.
- Easy, effortless cabling due to excellent accessibility.
- Visible cabling.
- Insulation between phases.
- The single-pole distribution blocks are adjacent and bridgeable via the second incoming hole for parallel connection.

Screw distribution blocks

Number of poles	1P			4P
	PB111250-20_1.eps 	PB111251-20_1.eps 	PB111252-20_1.eps 	PB111243-20_1.eps 
Rated operational current	125 A	160 A	250 A	100 A
Total connections capacity	10	13	14	4 x 7
Terminal capacity				
Diameter	2 x Ø 9.5 mm	2 x Ø 12 mm	1 x Ø 15.3 mm	2 x Ø 7.5 mm
	2 x Ø 7.5 mm	3 x Ø 7.5 mm	1 x Ø 10 mm	5 x Ø 5.5 mm
	6 x Ø 5.8 mm	8 x Ø 5.8 mm	4 x Ø 6 mm	-
	-	-	8 x Ø 7.5 mm	-
Rated peak withstand current (Ipk) Ipk/60 ms	25 kÂ	36 kÂ	60 kÂ	14 kÂ
Ipk/6 ms	-	-	-	24 kÂ
Rated short-time withstand current (Icw) (IEC/EN 60947-7-1)	4.2 kA rms/1 s	8.4 kA rms/1 s	14.4 kA rms/1 s	3 kA rms/1 s
Width (number of 9 mm pitches)	3	4	5	8
Dimension (H x W x D)	85 x 27 x 50.5	85 x 36 x 50.5	85 x 45 x 50.5	100 x 71 x 50.5
Weight (g)	125	163	239	210
Neutral terminal strip (optional)	-	-	-	LGYN1007
References	**LGY112510**	**LGY116013**	**LGY125014**	**LGY410028**

Linergy DS
Screw distribution blocks

On LGY412560 and LGY416048 references.
Input cabling facilitated by side terminals.

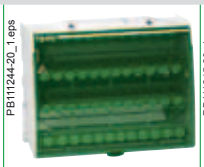
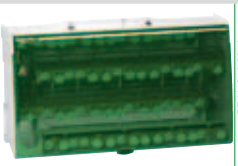
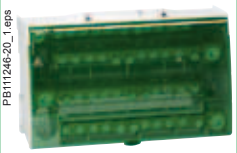
Technical data

Common characteristics

To IEC/EN 60947-7-1 and IEC/EN 61439-1 & 2	
Rated insulation voltage (Ui)	500 V AC
Rated operational voltage (Ue)	230 V AC (Ph/N) 440 V AC (Ph/Ph)
Rated impulse withstand voltage (Uimp)	8 kV
Rated conditional short-circuit current of an assembly	Up to the breaking capacity of Schneider Electric feeder circuit breakers, even in cascading configuration
Network frequency	50/60 Hz
Pollution degree	3
Overvoltage category	III

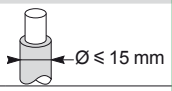
Additional technical characteristics

Reference temperature	40 °C
Operating temperature	-25 °C to 55 °C
Dielectric withstand (IEC/EN 60947-1)	2500 V AC

				Neutral terminal strip		
						
	125 A		160 A	100 A	125 A	
	4 x 12	4 x 15	4 x 12	7	12	15
	1 x Ø 9 mm	1 x Ø 9.5 mm	1 x Ø 12 mm	2 x Ø 7.5 mm	1 x Ø 9 mm	1 x Ø 9.5 mm
	7 x Ø 7.5 mm	3 x Ø 8.5 mm	3 x Ø 9 mm	5 x Ø 5.5 mm	7 x Ø 7.5 mm	3 x Ø 8.5 mm
	4 x Ø 6.5 mm	11 x Ø 6.5 mm	8 x Ø 7.5 mm	-	4 x Ø 6.5 mm	11 x Ø 6.5 mm
	-	-	-	-	-	-
	18 kÂ	18 kÂ	22 kÂ	-	-	-
	26 kÂ	28 kÂ	36 kÂ	-	-	-
	4.2 kA rms/1 s	4.2 kA rms/1 s	8.4 kA rms/1 s	-	-	-
	14	20	18	7	14	17
	100 x 126 x 50.5	100 x 162 x 50.5	100 x 174 x 50.5	20 x 70 x 35	20 x 125 x 35	20 x 155 x 35
	390	559	567	63	111	149
	LGYN12512	LGYN12515	LGYN12512	-	-	-
	LGY412548	**LGY412560**	**LGY416048**	**LGYN1007**	**LGYN12512**	**LGYN12515**

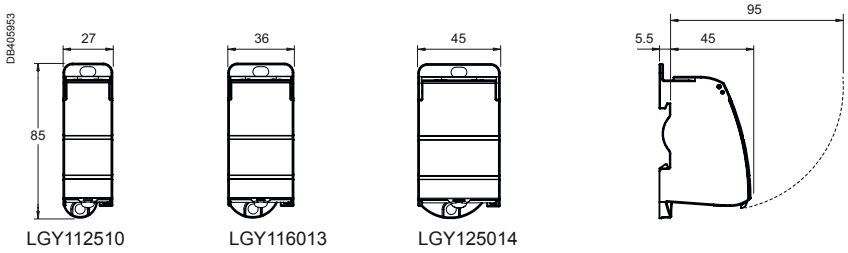
Terminal technical data

Type	**PZ2 screw**							
Diameter	Ø 5.5 mm	Ø 5.8 mm	Ø 6 mm	Ø 6.5 mm	Ø 7.5 mm	Ø 8.5 mm	Ø 9 mm	Ø 9.5 mm
Section rigid cable	1.5 to 16 mm²	1.5 to 16 mm²	1.5 to 16 mm²	1.5 to 16 mm²	2.5 to 25 mm²	6 to 35 mm²	10 to 35 mm²	10 to 35 mm²
Section flexible cable or with ferrule	1.5 to 10 mm²	1.5 to 10 mm²	1.5 to 10 mm²	1.5 to 10 mm²	1.5 to 16 mm²	4 to 25 mm²	4 to 25 mm²	6 to 35 mm²
Tightening torque	2 N.m	2 N.m	2 N.m	2 N.m	2 N.m	2 N.m	2.5 N.m	2.5 N.m

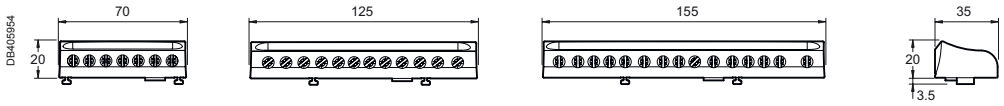
Type	**Hc screw**				
Diameter	Ø 9.5 mm	Ø 10 mm	Ø 12 mm		Ø 15.3 mm
Section rigid cable	10 to 35 mm²	1.5 to 50 mm²	25 to 70 mm²	 Ø ≤ 15 mm	35 to 120 mm²
Section flexible cable or with ferrule	6 to 35 mm²	1.5 to 35 mm²	16 to 50 mm²		25 to 95 mm²
Tightening torque	8 N.m	4 N.m	1P: 9 N.m	4P: 5 N.m	14 N.m

Linergy DS
Dimensions

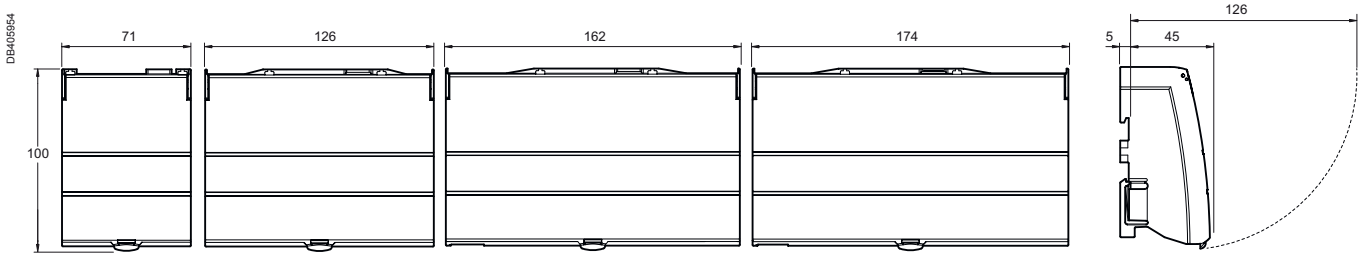
Dimensions (mm)



LGY112510 LGY116013 LGY125014



LGYN1007 LGYN12512 LGYN12515



LGY410028 LGY412548 LGY412560 LGY416048

Acti 9 Smartlink

DB406142

Country approval pictograms

IEC/EN 61131-2

Acti 9 Smartlink Modbus Slave and Acti 9 Smartlink Ethernet are used to transfer data from Acti 9 devices to a PLC or monitoring system via the communication system:
- Modbus serial line for Acti 9 Smartlink Modbus Slave
- Modbus Ethernet TCP/IP or http for Acti 9 Smartlink Ethernet.

PB107797-47

DB404502

ComReady

Functions

Data transmission between the network and Acti 9 devices
- Circuit breakers, residual current circuit breakers, residual current devices:
  - open/closed state
  - tripped state
  - number of opening/closing cycles
  - number of tripping actions.
- Contactors, impulse relays:
  - opening control
  - closing control
  - open/closed state
  - number of opening/closing cycles
  - total period of operation of the load (device closed).
- Remote controlled circuit breaker/Reflex iC60:
  - opening control
  - closing control
  - open/closed state
  - tripped state
  - number of opening/closing cycles
  - total period of operation of the load.
- Power meters:
  - number of pulses recorded
  - pulse value setting (e.g. kWh)
  - total consumption recorded
  - estimate of power consumption.
- Analog sensors only for Acti 9 Smartlink Ethernet:
  - temperature sensor
  - humidity sensor,
  - CO_2 detector,
  - optical detector
  - ...

All the data are stored in memory: number of cycles, consumption, period of operation, even in the event of a power failure.

Acti 9 Smartlink can also exchange data with any device having 24 V DC digital inputs/outputs.
No configuration of the connected products is required.

When Acti 9 Smartlink is switched on, communication automatically adjusts to the Modbus Master or Ethernet (PLC, control station) communication parameters.

DB405140

Acti 9 Smart Test software
- Electrical continuity test
- Functional testing of the devices
- Report printing
- Printing of a simplified diagram
- Project archiving
- Compatible with Windows XP, Windows 7, Windows 8
- To be download on: Schneider Electric web sites:
  - schneider-electric.com or
  - schneider-electric country web site

Installation
- Mounting in switchboards:
  - width 24 modules per row
  - minimum spacing between rails 150 mm.
- Mounting on
  - DIN rail, with mounting kit **A9XMFA04**
  - Linergy FM 80 A, with locking clips supplied
  - Linergy FM 200 A, wtih mounting kit **A9XM2B04.**

DB406513

Test
- The communication and cabling test for the connected devices can be performed using Acti 9 Smart Test software

Acti 9 Smartlink (cont.)

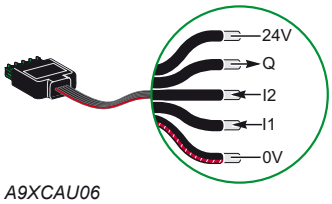
PB107753-68

Acti 9 Smartlink Modbus Slave

PB113286-68

Acti 9 Smartlink Ethernet

DB404941



A9XCAU06

Catalogue numbers

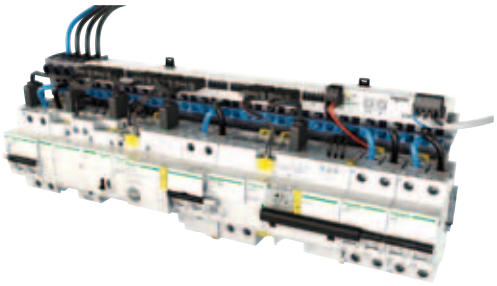
Acti 9 Smartlink			
Type		**Set of**	
Acti 9 Smartlink Modbus Slave		1	**A9XMSB11**
Supplied with	Modbus connector	1	
	24 V DC power supply connector	1	
	Locking clips for mounting on Linergy FM 80	2	
Acti 9 Smartlink Ethernet		1	**A9XMEA08**
Supplied with	Connector for 4-point analog output	1	
	Modbus connector	1	
	24 V DC power supply connector	1	
	Locking clips for mounting on Linergy FM 80	2	
Accessories			
USB cable link / Modbus for Acti 9 Smartlink test		1	**A9XCATM1**
Prefabricated cables			
With 2 connectors	100 mm	6	**A9XCAS06**
	160 mm	6	**A9XCAM06**
	450 mm	6	**A9XCAH06**
	870 mm	6	**A9XCAL06**
With 1 connector	870 mm	6	**A9XCAU06**
	4000 mm	1	**A9XCAC01**
Connectors	5-pin connectors (Ti24)	12	**A9XC2412**
Mounting kit	DIN rail (4 feet, 4 straps, 4 adapters)	1	**A9XMFA04**
	Linergy FM 200 A (4 adapters)	1	**A9XM2B04**
	Back panel (2 angle brackets)	1	**A9XMBP02**
Spare parts	Lock for Linergy FM 80 A (2 clips)	1	**A9XMLA02**

PB107754-12

PB107755-5

PB107756-7

PB107804-43



Connectable devices

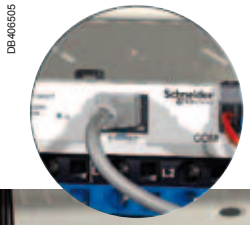
With Ti24 interface		
Type	**Reference**	**Description**
iACT24	A9C15924	Low-level control and indication auxiliary for iCT contactors
iATL24	A9C15424	Low-level control and indication auxiliary for iTL impulse relays
iOF+SD24	A9A26897	Low-level indication auxiliary for iC60, iID, ARA, RCA, iSW-NA
OF+SD24	A9N26899	Low-level indication auxiliary for C60, C120, DPN, RCCB/ID, C60H-DC
RCA	See module CA904011	Remote control with Ti24 interface
Reflex iC60	See module CA904012	Reflex iC60 with Ti24 interface

Without Ti24 interface
Power meters with pulse output, e.g. IEM2000T
Impulse meters complying with the IEC 62053-21 standard
24 V DC indicator lamps, Harmony XVL range
All loads not exceeding 100 mA, 24 V DC
Light sensitive switches: example IC2000
Timers, thermostats, time switches, load shedding devices
All 24 V DC auxiliary contacts, IEC 61131-2 type 1

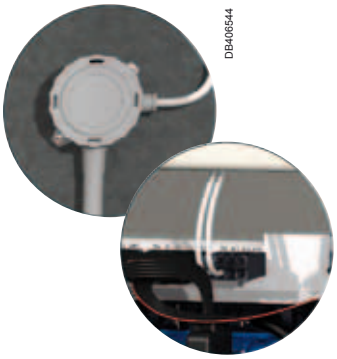
With analog outputs
Temperature and humidity sensors, with a 0-10 V or 4-20 mA output
CO_2 and optical detectors, with a 0-10 V or 4-20 mA output

Acti 9 Smartlink (cont.)

Example of an installation



Ethernet link
- 10/100 MB Ethernet, Modbus TCP server



1 analog input channel
- Example: temperature sensor connection

Prefabricated cables
- Simplified cabling
- Fast and safe

Modbus Communication
- Up to 8 Acti 9 Smartlink Modbus Slave or others slaves Modbus connected

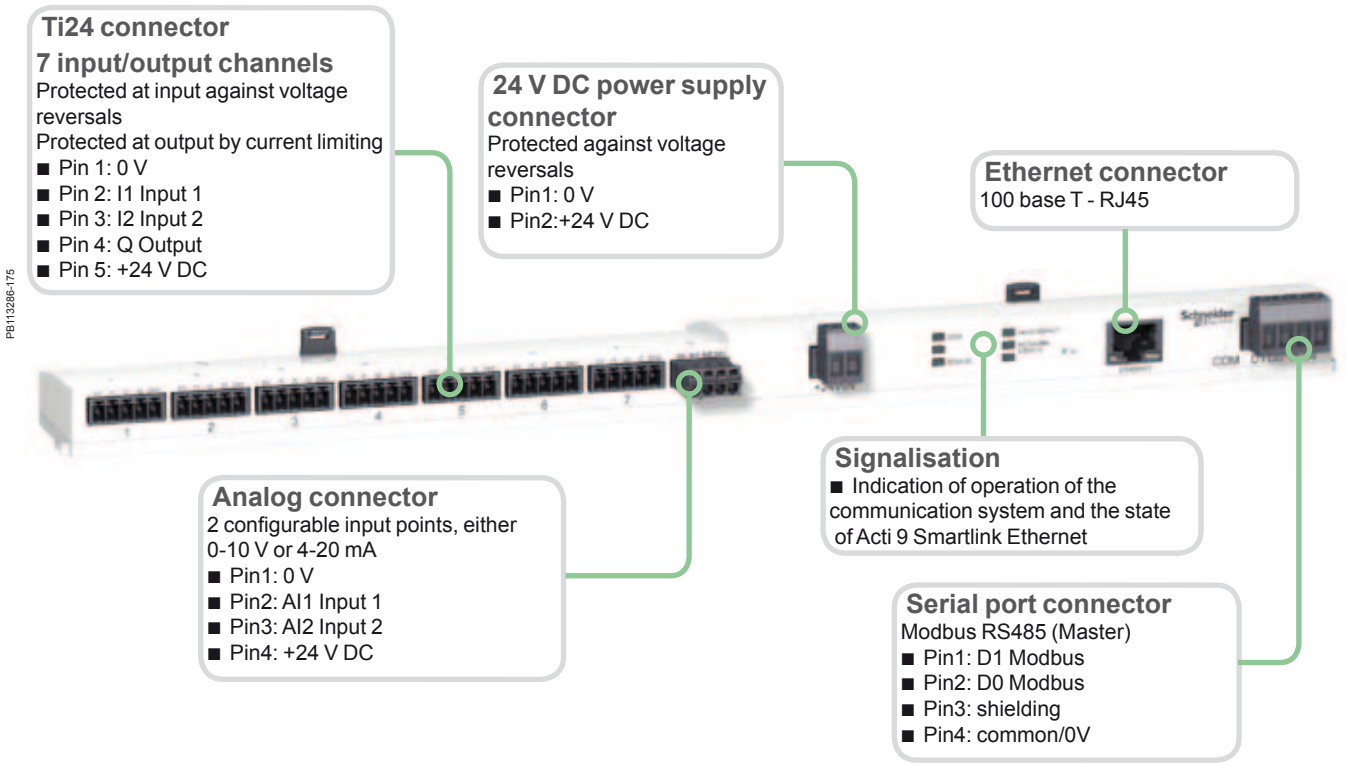
Connection to the Ethernet network

Acti 9 Smartlink Ethernet has an embedded web server that can be used to configure the connection to the Ethernet network

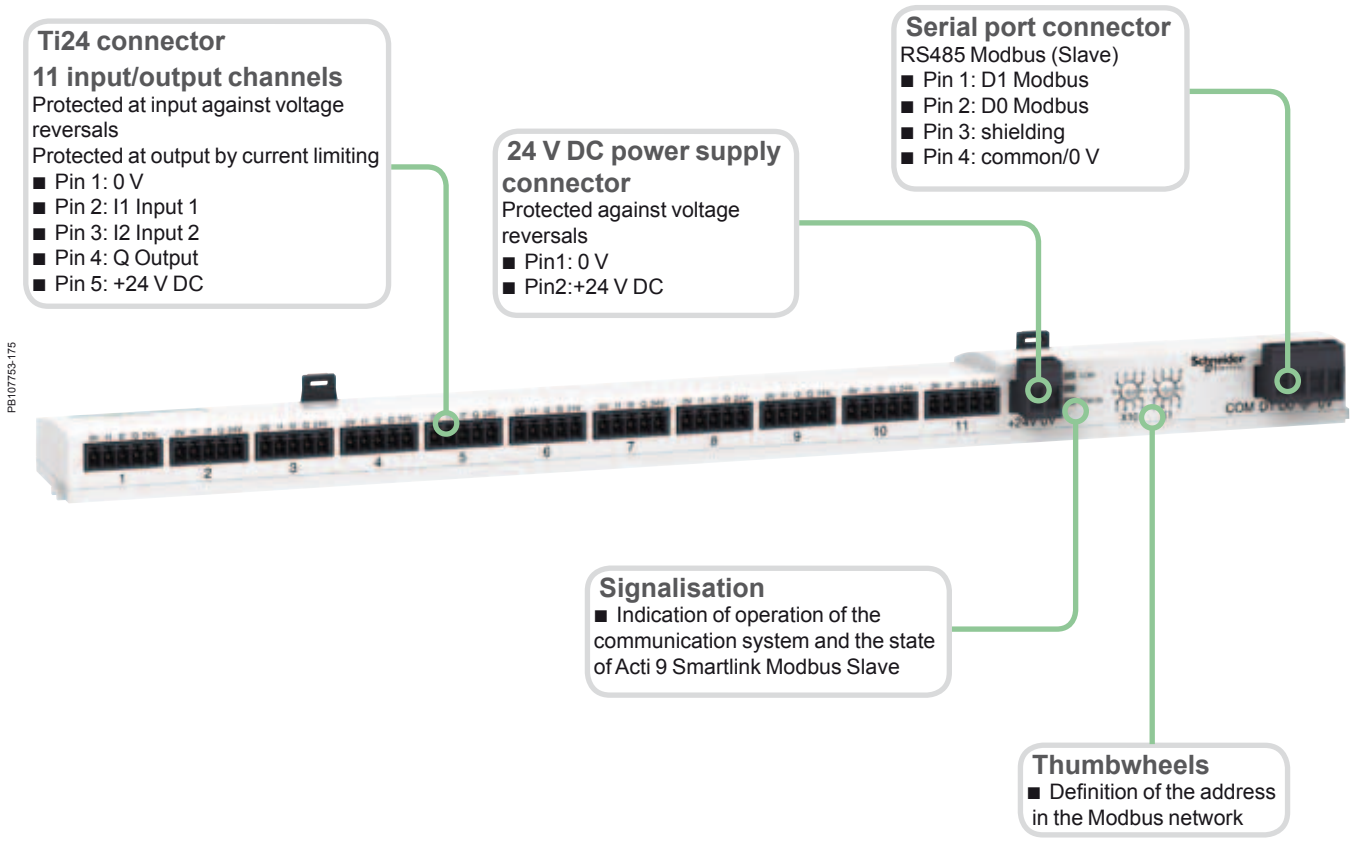
- Web Page available, to configure Acti 9 Smartlink Ethernet communication Ethernet parameter, to visualize or control data

Acti 9 Smartlink (cont.)

Acti 9 Smartlink Ethernet



Acti 9 Smartlink Modbus Slave



Common technical characteristics

Power supply		
Rated		24 V DC ± 20 %
Maximum input current		1.5 A
Maximum inrush current		3 A
Meter		
Capacity		2^{32} pulses per input
Input characteristics		
Number of channels	Acti 9 Smartlink Modbus Slave	11 of 2-input channels
	Acti 9 Smartlink Ethernet	7 of 2-input channels
Type of input		Current collector Type 1 IEC 61131-2
Maximum cable length		500 m
Rated voltage		24 V DC
Voltage limits		24 V DC ± 20 %
Rated current		2.5 mA
Maximum current		5 mA
Filtering time	In state 1	2 ms
	In state 0	2 ms
Isolation		No isolation between channels
Negative sequence voltage protection		Yes
Output characteristics		
Number of output channels	Acti 9 Smartlink Modbus Slave	11
	Acti 9 Smartlink Ethernet	7
Type of output		24 V DC 0.1 A current source
Maximum cable length		500 m
Rated voltage	Voltage	24 V DC
	Maximum current	100 mA
Filtering time	In state 1	2 ms
	In state 0	2 ms
Voltage drop (voltage in state 1)		1 V max
Maximum inrush current		500 mA
Leakage current		0.1 mA
Overvoltage protection		33 V DC
Environmental characteristics		
Temperature	Operating	-25°C ... +60°C (if vertical mounting, limited to 50°C)
	Storage	-40°C…+80°C
Tropicalization		Treatment 2 (relative humidity of 93% at 40°C)
Resistance to voltage dips		10 ms, class 3 as per IEC 61000-4-29
Degree of protection		IP20
Pollution degree		3
Altitude	Operating	0 … 2000 m
Vibration resistance	As per IEC 60068.2.6	1 g / ± 3.5 mm - 5 Hz to 300 Hz - 10 cycles
Shock resistance	As per IEC 60068.2.2 7	15 g / 11 ms
Immunity to electrostatic discharge	As per IEC 61000-4-2	Air: 8 kV Contact: 4 kV
Immunity to radiated magnetic fields	As per IEC 61000-4-3	10 V/m - 80 MHz to 3 GHz
Immunity to fast transients	As per IEC 61000-4-4	1 kV for inputs/outputs and Modbus communication. 2 kV for 24 DC power supply - 5 kHz - 100 kHz
Immunity to conducted magnetic fields	As per IEC 61000-4-6	10 V from 150 kHz to 80 MHz
Immunity to magnetic fields at mains frequency	As per IEC 61000-4-8	30 A/m
Resistance to corrosive atmospheres	As per IEC 60721-3-3	Level 3C2 on H_2S / SO_2/ NO_2 / Cl_2
Fire resistance	For live parts	At 960°C 30 s / 30 s as per IEC 60 695-2-10 and IEC 60 695-2-11
	For other parts	At 650°C 30 s / 30 s as per IEC 60 695-2-10 and IEC 60 695-2-11
Salt spray test	As per IEC 60068.2.52	Severity 2
Environment		In compliance with the RoHS directive
Additional characteristics		
Duration of saving memory		10 years
Prefabricated cables characteristics		
Dielectric resistance		1 kV / 5 min
Minimum draw-out resistance		20 N

Acti 9 Smartlink (cont.)

Acti 9 Smartlink Modbus Slave technical characteristics

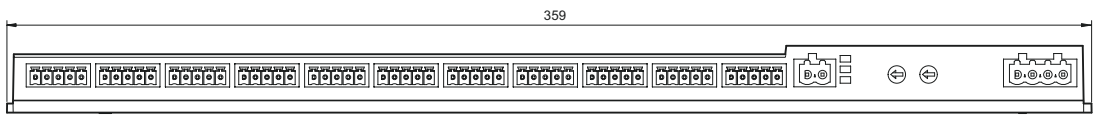
Characteristics of the Modbus link		
Link		Modbus, RTU, RS485 serial connection
Transmission	Transfer rate	9600 baud ... 19200 baud, self-adaptable
	Medium	Shielded cable, double twisted pair
Protocol		Master/Slave
Type of device		Slave
Modbus addressing range		1 to 99
Maximum length of the bus		1000 m
Type of bus connector		4-pin connector

Acti 9 Smartlink Ethernet technical characteristics

Characteristics of the Ethernet link		
Link		10/100 MB Ethernet
Protocol		Modbus TCP server
		http (Web pages)
Address mode		Static and dynamic (supplied, by default, in dynamic mode)
Characteristics of Gateway		
Protocol		Modbus TCP/IP -> Modbus SL
Modbus slave number		8
Modbus addressing range		1 to 247
Characteristics of the Modbus Master link		
Link		Modbus serial connection, RTU, RS485
Transmission	Transfer rate	9600 baud ... 19200 baud, self-adaptable
	Support	Shielded cable, double twisted pair
Maximum length of the bus		1000 m
Type of bus connector		4-pin connector
Characteristics of the analog inputs		
Number		2
Type		Separate configuration for each input, either 0-10 V or 4-20 mA
Measuring accuracy		1/100 full scale
Resolution		12 bits
Acquisition time		500 ms
Isolation		No isolation between channels
Power supply		0-24 V DC
Type of cable		Shielded cable, double twisted pair
Maximum cable length		30 m
Protection		Short-circuit protection

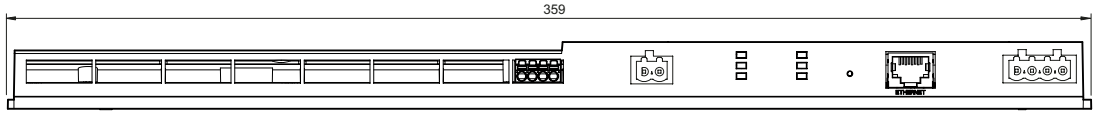
Dimensions (mm)

DB124330



Acti 9 Smartlink Modbus Slave

DB406390



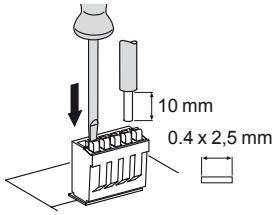
Acti 9 Smartlink Ethernet

Weight (g)

Acti 9 Smartlink	
Type	
Acti 9 Smartlink Modbus Slave	195
Acti 9 Smartlink Ethernet	180

Connection

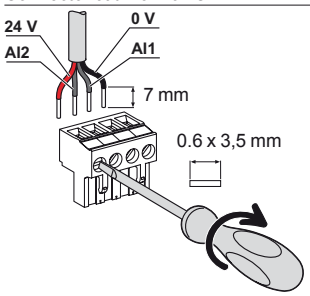
DB123580



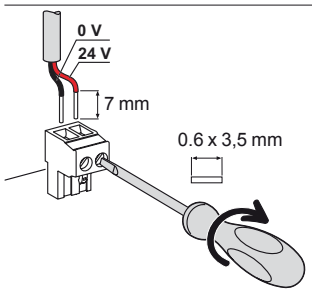
Connector cat. no: A9XC2412

Terminal	Tightening torque	Copper cables		
		Rigid	Flexible	Flexible with ferrule
		DB122945	DB123553	DB123554
Ti24 interface	Spring loaded terminal	0.5 to 1.5 mm²	0.5 to 1.5 mm²	-
Analog connector	0.8 N.m	0.1 to 1.5 mm²	0.1 to 1.5 mm²	0.1 to 1.5 mm²
Power supply connector	0.8 N.m	0.2 to 1.5 mm²	0.2 to 1.5 mm²	0.2 to 1.5 mm²
Modbus connector	0.8 N.m	0.25 mm²	0.25 mm²	0.25 mm²

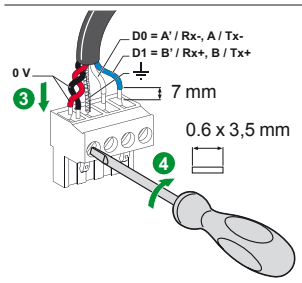
DB406517



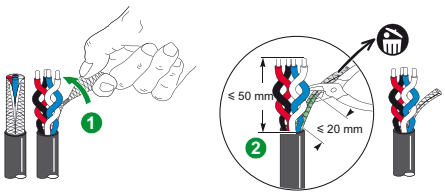
DB124331



DB405141



DB405142



Acti 9 Smartlink EL B
(Smartlink ELEC)

CE

Country approval pictograms

PB107797-44

DB404502

ComReady

IEC/EN 61131-2

Smartlink EL B is the core product of Smartlink ELEC system to connect with auxiliaries and perform the communication with Cloud.
Smartlink ELEC is a connected solution for Extra Small building via Cloud connection and Smartphone apps.

Functions

A gateway to transmit data between Cloud and Acti 9 devices

- ■ Circuit breakers, residual current circuit breakers, residual current devices:
  - □ open/closed state,
  - □ tripped state.
- ■ Contactors, impulse relays:
  - □ opening control,
  - □ closing control,
  - □ open/closed state.
- ■ RCA remote controls:
  - □ reclosing control after tripping
  - □ open/closed state,
  - □ tripped state.
- ■ Pulse power meters:
  - □ number of pulses recorded,
  - □ pulse value setting (e.g. kWh),
  - □ Year to date monthly consumption recorded.
- ■ Analog sensors
  - □ temperature sensor,
  - □ humidity sensor,
  - □ CO_2 detector,
  - □ ...

Data stored in "Cloud": number of cycles, consumption, period of operation, the event of a power failure.

Data stored in memory: scheduled opening/closing program of contactors and impusle relays.

When Smartlink EL B communication is switched on and the internet connection is available, communication automatically adjusts to ethernet (Cloud) communication parameters.

Installation

- ■ Mounting in switchboards:
  - □ width 24 modules per row,
  - □ minimum spacing between rails 150 mm.
- ■ Mounting on: DIN rail, with mounting kit **A9XMFA04.**

Commissionning and test

- ■ The communication and cabling test for the connected devices is performed by using "Config ELEC" application.

DB408446

Acti 9 Smartlink EL B
(Smartlink ELEC) (cont.)

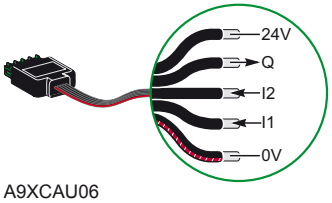
PB113286-modifie-68

Acti 9 Smartlink EL B

PF140402B-20

Wifer

DB404941



A9XCAU06

ABL8MEM24003-30

Power supply 24 V DC

PB107751-34

iACT24

PB107752-34

iATL24

PB107750-35

iOF+SD24

PB106253-35

RCA

PB108412-35

iEM3110

PB110836-35

iEM2000T

Catalogue numbers

Smartlink EL B			
Type		**Set of**	
Acti 9 Smartlink EL B		1	**A9XELC08**
Supplied with	Connector for 4-point analog output	1	
	24 V DC power supply connector	1	
Mounting kit	DIN rail (4 feet, 4 straps, 4 adapters)	1	**A9XMFA04**
	Back panel (2 angle brackets)	1	**A9XMBP02**
Accessories			
Wifer, wifi adaptor for commissionning if wifi is not available on site		1	**TCSEGWB13FA0**
Prefabricated cables			
With 2 connectors	100 mm	6	**A9XCAS06**
	160 mm	6	**A9XCAM06**
	450 mm	6	**A9XCAH06**
	870 mm	6	**A9XCAL06**
With 1 connector	870 mm	6	**A9XCAU06**
	4000 mm	1	**A9XCAC01**
Connectors	5-pin connectors (Ti24)	12	**A9XC2412**
Power supply 24 V DC Smartlink EL B	With iATL, iACT or RCA	1	**ABL8MEM24012**
	Without iATL, iACT or RCA	1	**ABL8MEM24003**

PB107754-12

PB107755-5

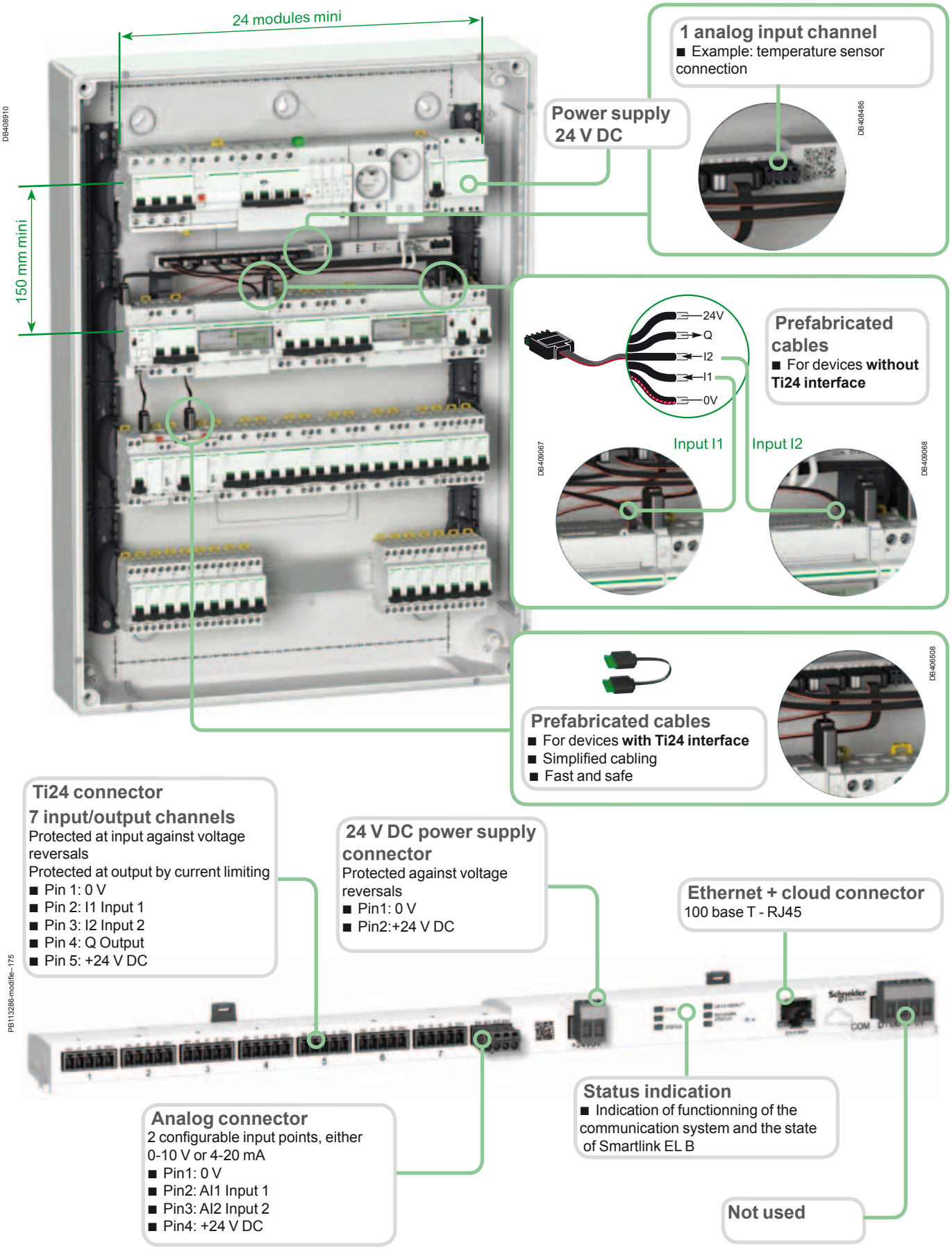
PB107756-7

Connectable devices

With Ti24 interface		
Type	**Reference**	**Description**
iACT24	A9C15924	Low-level control and indication auxiliary for iCT contactors
iATL24	A9C15424	Low-level control and indication auxiliary for iTL impulse relays
iOF+SD24	A9A26897	Low-level indication auxiliary for iC60, iID, ARA, RCA, iSW-NA
OF+SD24	A9N26899	Low-level indication auxiliary for C60, C120, DPN, RCCB/ID, C60H-DC
RCA	See module CA904011	Remote control with Ti24 interface
Without Ti24 interface		
Power meters with pulse output, e.g. IEM2000T		
Impulse meters complying with the IEC 62053-21 standard		
With analog outputs		
Temperature and humidity sensors, with a 0-10 V or 4-20 mA output		
CO_2 with a 0-10 V or 4-20 mA output		

Acti 9 Smartlink EL B
(Smartlink ELEC) (cont.)

Example of an installation

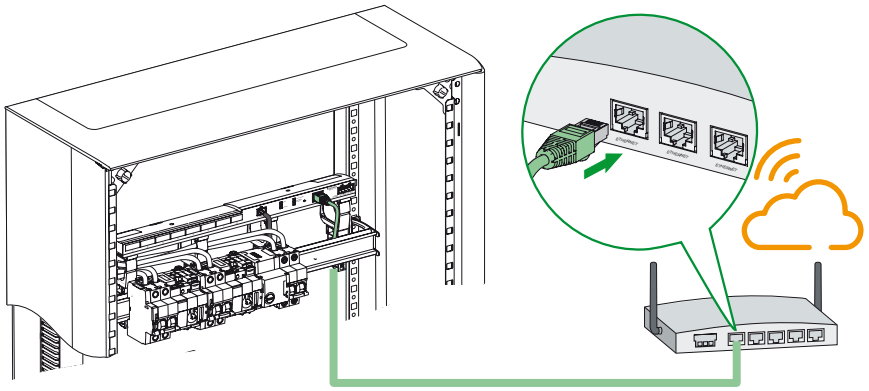


Acti 9 Smartlink EL B
(Smartlink ELEC) (cont.)

Option for internet connection to ADSL modem

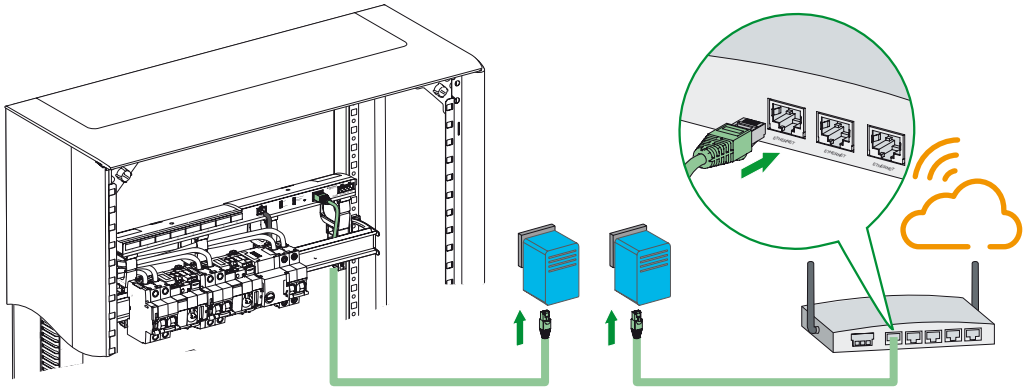
RJ45 cable

DB409065



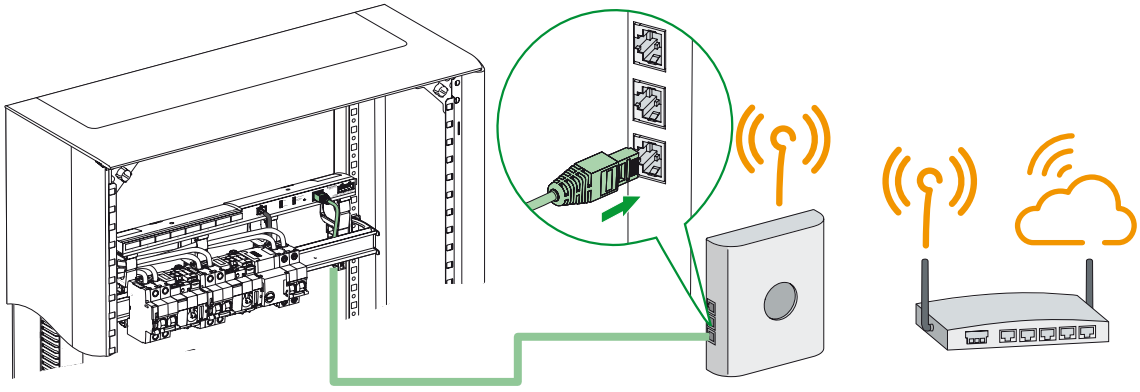
PLC

DB408481



Wifi router

DB409066



Acti 9 Smartlink EL B
(Smartlink ELEC) (cont.)

Smartlink EL B technical characteristics

Power supply		
Rated		24 V DC ± 20 %
Maximum input current		1.5 A
Maximum inrush current		3 A
Meter		
Capacity		2^{32} pulses per input
Input characteristics		
Number of channels		7 of 2-input channels **Device with Ti24 interface:** 1 channel, 2-inputs used **Device without TI 24 interface:** (power meter, impulse meter) 1-input used
Type of input		Current collector Type 1 IEC 61131-2
Maximum cable length		500 m
Rated voltage		24 V DC
Voltage limits		24 V DC ± 20 %
Rated current		2.5 mA
Maximum current		5 mA
Filtering time	In state 1	2 ms
	In state 0	2 ms
Isolation		No isolation between channels
Negative sequence voltage protection		Yes
Output characteristics		
Number of output channels		7
Type of output		24 V DC 0.1 A current source
Maximum cable length		500 m
Rated voltage	Voltage	24 V DC
	Maximum current	100 mA
Filtering time	In state 1	2 ms
	In state 0	2 ms
Voltage drop (voltage in state 1)		1 V max
Maximum inrush current		500 mA
Leakage current		0.1 mA
Overvoltage protection		33 V DC
Environmental characteristics		
Temperature	Operating	-25°C ... +60°C (if vertical mounting, limited to 50°C)
	Storage	-40°C…+80°C
Tropicalization		Treatment 2 (relative humidity of 93 % at 40°C)
Resistance to voltage dips		10 ms, class 3 as per IEC 61000-4-29
Degree of protection		IP20
Pollution degree		3
Altitude	Operating	0 … 2000 m
Vibration resistance	As per IEC 60068.2.6	1 g / ± 3.5 mm - 5 Hz to 300 Hz - 10 cycles
Shock resistance	As per IEC 60068.2.2 7	15 g / 11 ms
Immunity to electrostatic discharge	As per IEC 61000-4-2	Air: 8 kV Contact: 4 kV
Immunity to radiated magnetic fields	As per IEC 61000-4-3	10 V/m - 80 MHz to 3 GHz
Immunity to fast transients	As per IEC 61000-4-4	1 kV for inputs/outputs 2 kV for 24 DC power supply - 5 kHz - 100 kHz
Immunity to conducted magnetic fields	As per IEC 61000-4-6	10 V from 150 kHz to 80 MHz
Immunity to magnetic fields at mains frequency	As per IEC 61000-4-8	30 A/m
Resistance to corrosive atmospheres	As per IEC 60721-3-3	Level 3C2 on H_2S / SO_2/ NO_2 / Cl_2
Fire resistance	For live parts	At 960°C 30 s / 30 s as per IEC 60 695-2-10 and IEC 60 695-2-11
	For other parts	At 650°C 30 s / 30 s as per IEC 60 695-2-10 and IEC 60 695-2-11
Salt spray test	As per IEC 60068.2.52	Severity 2
Environment		In compliance with the RoHS directive
Additional characteristics		
Duration of saving memory		10 years
Prefabricated cables characteristics		
Dielectric resistance		1 kV / 5 min
Minimum draw-out resistance		20 N

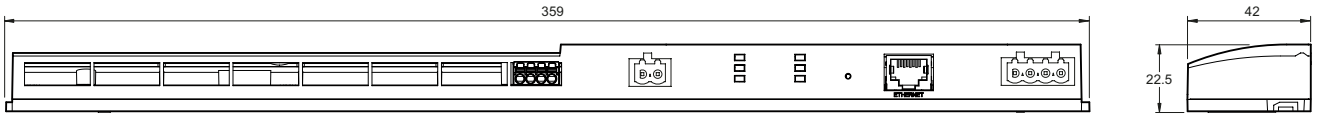
Acti 9 Smartlink EL B
(Smartlink ELEC) (cont.)

Smartlink EL B technical characteristics (cont.)

Characteristics of the Ethernet link	
Link Ethernet + cloud	10/100 MB Ethernet
Protocol	http
Address mode	Static and dynamic (supplied, by default, in dynamic mode)
Characteristics of the analog inputs	
Number	2
Type	Separate configuration for each input, either 0-10 V or 4-20 mA
Measuring accuracy	1/100 full scale
Resolution	12 bits
Acquisition time	500 ms
Isolation	No isolation between channels
Power supply	0-24 V DC
Type of cable	Shielded cable, double twisted pair
Maximum cable length	30 m
Protection	Short-circuit protection

Dimensions (mm)

DB406390



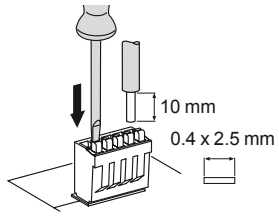
Smartlink EL B

Weight (g)

Smartlink EL B	
Type	
Smartlink EL B	180

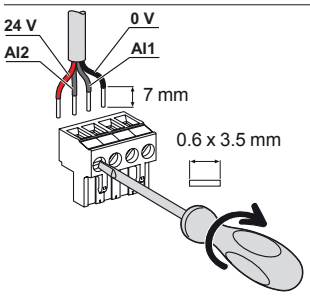
Connection

DB123580

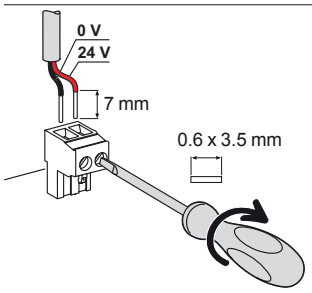


Connector cat. no: A9XC2412

DB406517



DB124331



Terminal	Tightening torque	Copper cables		
		Rigid	Flexible	Flexible with ferrule
	DB122945	DB123553	DB123554	
Ti24 interface	Spring loaded terminal	0.5 to 1.5 mm^2	0.5 to 1.5 mm^2	-
Analog connector	0.8 N.m	0.1 to 1.5 mm^2	0.1 to 1.5 mm^2	0.1 to 1.5 mm^2
Power supply connector	0.8 N.m	0.2 to 1.5 mm^2	0.2 to 1.5 mm^2	0.2 to 1.5 mm^2

Acti 9 Smartlink

CE

Country approval pictograms

IEC/EN 61131-2

The Acti 9 Smartlink is an open system that remotely measures, balances, monitors and controls final distribution. It consists of:
■ a Modbus Slave version (Acti 9 Smartlink Modbus Slave)
■ a Modbus Master version (Acti 9 Smartlink SI B Ethernet) with the following functions: radio hub, Modbus gateway and embedded web server: this provides web pages for configuring the system, and real-time monitoring of values (status of circuit breakers, energy meters, alarms and monitoring and control).
■ These modules transmit data to a PLC or monitoring system.

PB107797-47

The system supports
■ Alarm monitoring on current, voltage, power factor, tripping, power, consumption thresholds and their transmission by email.
■ Integration with facility Hero.com, which allows all the alarms from the facility to be received in a single notification centre on a smartphone application, as well as web facility maintenance management (CAMM).
■ Monitoring and control via web pages of loads, energy and power by zone and by consumption.
■ Single access point for a full analysis of the status of switchboard power distribution (measurements, protection status, temperature, consumption, alarms, control and monitoring).
■ Real-time transmission via the Modbus protocol (Ethernet or RS485) of all the information and commands.

DB404502

ComReady

Functions

Transmission of data collected by Acti 9 switchgear assemblies
■ Circuit breakers, residual current circuit breakers and residual current devices:
□ open/closed state, tripped state,
□ number of opening/closing cycles,
□ number of tripping actions.
■ Contactors, impulse relays, Reflex iC60:
□ opening and closing control,
□ open/closed state,
□ number of opening/closing cycles,
□ total period of operation of the load (device closed).
■ Remote controlled circuit breaker/Reflex iC60:
□ opening control ,
□ closing control ,
□ contactor open/closed state,
□ circuit breaker open/closed state,
□ number of opening/closing cycles,
□ total period of operation of the load.
■ Pulse meters (energy, water, gas, etc.):
□ number of pulses recorded,
□ pulse value setting (default: 10 Wh),
□ total consumption recorded,
□ possibility of resetting energy meters.
■ Digital inputs/outputs.

Acti 9 Smartlink

DB408571

Functions (cont.)

Transmission of additional data collected by Acti 9 Smartlink SI B Ethernet

■ Modbus slave power meters: Acti 9 Smartlink SI B Ethernet acts as a Modbus gateway.
■ Analog sensors:
□ CO_2 sensor,
□ light sensor,
□ humidity sensor,
□ temperature sensor,
□ any 0..10 V or 4..20 mA compatible sensor.
■ PowerTag wireless power meters:
□ total and partial energy,
□ active power, phase-to-phase voltage, phase-to-neutral,
□ currents I1, I2, I3,
□ power factor,
□ voltage loss and overload information.

All the data are stored in memory: number of cycles, consumption, period of operation, even in the event of a power failure.

Acti 9 Smartlink can also exchange data with any device having 24 VDC digital inputs/outputs (e.g. low-level contacts 29452 for position of the Compact NSX). No configuration of the products connected to the Ti24 channels is required.

At power up, Acti 9 Smartlink Modbus Slave adapts automatically to the communication parameters of the Modbus master (PLC, supervisor, etc.).

Installation

■ Assembly in switchboards:
□ width 24 modules per row,
□ minimum spacing between rails 150 mm.
■ Mounting on:
□ DIN rail with mounting kit **A9XMFA04**,
□ Linergy FM 80 A, with bolts provided,
□ Linergy FM 200 A, with mounting kit **A9XM2B04**,
□ back of enclosure with mounting kit **A9XMBP02**.

Test

■ The communication and cabling test on the connected devices can be performed using the Acti 9 Smart Test software.

DB405140

Test software: Acti 9 Smart Test

■ Electrical continuity test (cabling of connected devices)
■ Communication Testing of wired, wireless devices, analog and Modbus devices..
■ Editing of a complete test report (Excel, pdf) with the Modbus communication registers for easy integration into a supervision system
■ Windows XP, Windows 7, Windows 8 and Windows 10 compatible
■ Downloadable from: schneider-electric.com

Acti 9 Smartlink (cont.)

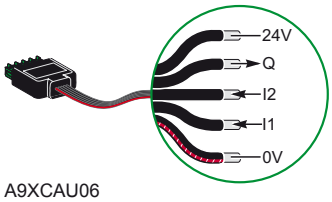
PB113286-68

Acti 9 Smartlink SI B Ethernet

PB107753-68

Acti 9 Smartlink Modbus Slave

DB404941



A9XCAU06

Catalogue numbers

Acti 9 Smartlink			
Type		**Set of**	
Acti 9 Smartlink SI B Ethernet		1	**A9XMZA08**
Supplied with	4-pin connector for analog inputs	1	
	Modbus connector	1	
	24 V DC power supply connector	1	
	Bolts for mounting on Linergy FM 80	2	
Acti 9 Smartlink Modbus Slave		1	**A9XMSB11**
Supplied with	Modbus connector	1	
	24 V DC power supply connector	1	
	Bolts for mounting on Linergy FM 80	2	
Accessories			
USB/Modbus connecting cables for Acti 9 Smartlink test		1	**A9XCATM1**
Prefabricated cables			
With 2 connectors	100 mm	6	**A9XCAS06**
	160 mm	6	**A9XCAM06**
	450 mm	6	**A9XCAH06**
	870 mm	6	**A9XCAL06**
With 1 connector	870 mm	6	**A9XCAU06**
	4000 mm	1	**A9XCAC01**
Connectors	5-pin connectors (Ti24)	12	**A9XC2412**
Mounting kit	DIN rail (4 feet, 4 earthing straps, 4 adapters)	1	**A9XMFA04**
	Linergy FM 200 A (4 adapters)	1	**A9XM2B04**
	Back of enclosure (2 brackets)	1	**A9XMBP02**
Spare parts	Bolts for Linergy FM 80 A (2 bolts)	1	**A9XMLA02**

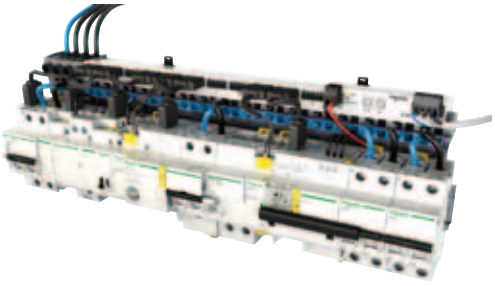
PB107754-12

PB107755-5

PB107756-7

Connectable devices

PB107804-43



With Ti24 interface		
Type	**Reference**	**Description**
iACT24	A9C15924	Low-level control and indication auxiliary for iCT contactors
iATL24	A9C15424	Low-level control and indication auxiliary for iTL impulse relays
iOF+SD24	A9A26897	Low-level indication auxiliary for iC60, iID, ARA, RCA, iSW-NA
OF+SD24	A9N26899	Low-level indication auxiliary for C60, C120, DPN, RCCB/ID, C60H-DC
RCA iC60	See module CA904011	Remote control with Ti24 interface
Reflex iC60	See module CA904012	Reflex iC60 with Ti24 interface

Without Ti24 interface
Power meters with pulse output, e.g. iEM2000T
Pulse meters complying with the IEC 62053-21 standard
24 V DC indicator lamps, Harmony range type XVL
All loads not exceeding 100 mA, 24 V DC
Timers, thermostats, time switches, load shedding devices
All 24 V DC auxiliary contacts, IEC 61131-2 type 1

With Modbus connector systems
Power meters: iEM3150, iEM3250, iEM3350, iEM3155, iEM3255, iEM3355, all Modbus slave RS485 equipment

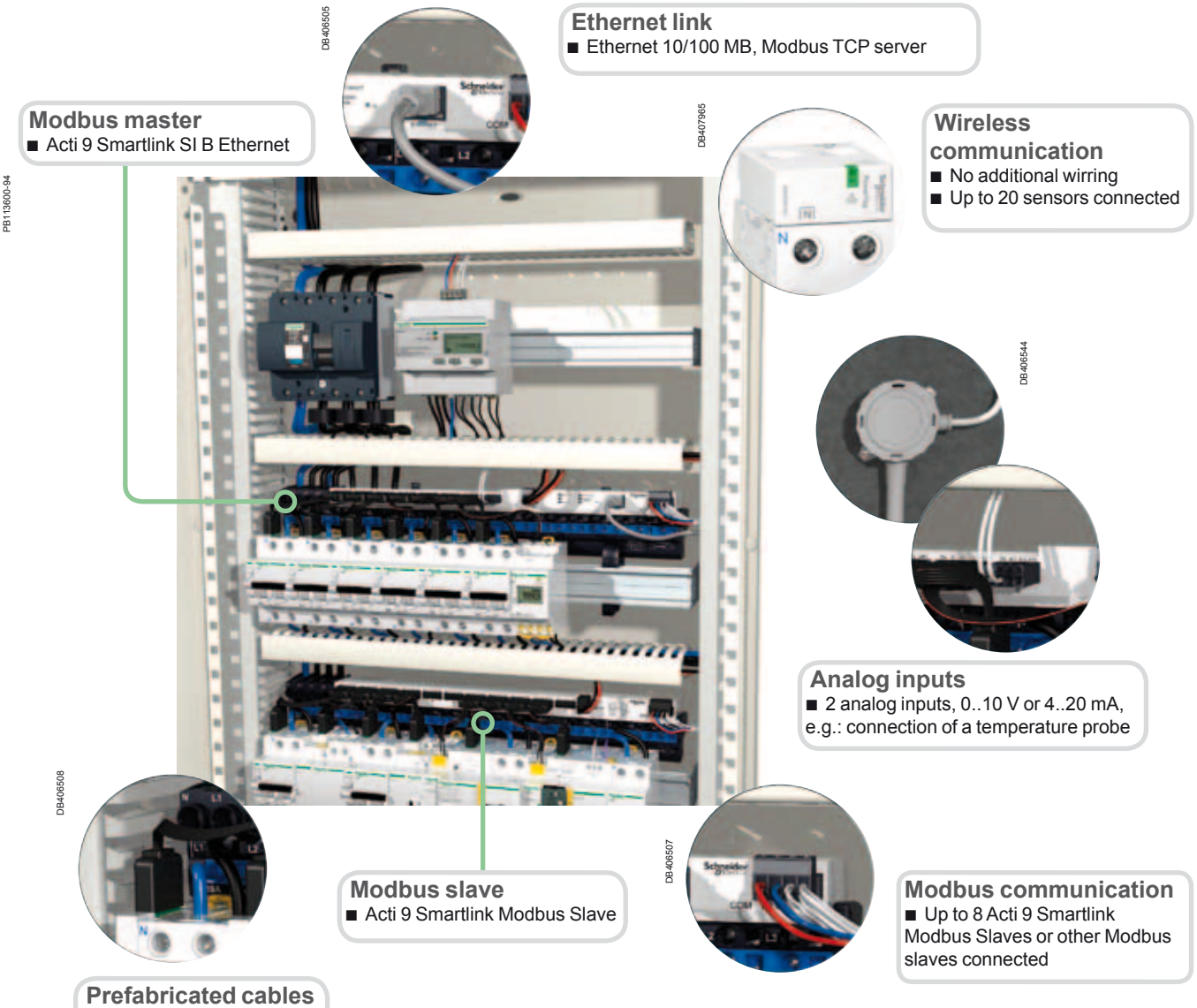
With wireless connector systems
PowerTag wireless energy sensors. See module CA907029

With analog outputs
Any 0...10 V and 4...20 mA compatible sensor (temperature, humidity, luminosity, etc.)

PB115448-40

Acti 9 Smartlink (cont.)

Example of an installation



Ethernet link
- Ethernet 10/100 MB, Modbus TCP server

Modbus master
- Acti 9 Smartlink SI B Ethernet

Wireless communication
- No additional wirring
- Up to 20 sensors connected

Analog inputs
- 2 analog inputs, 0..10 V or 4..20 mA, e.g.: connection of a temperature probe

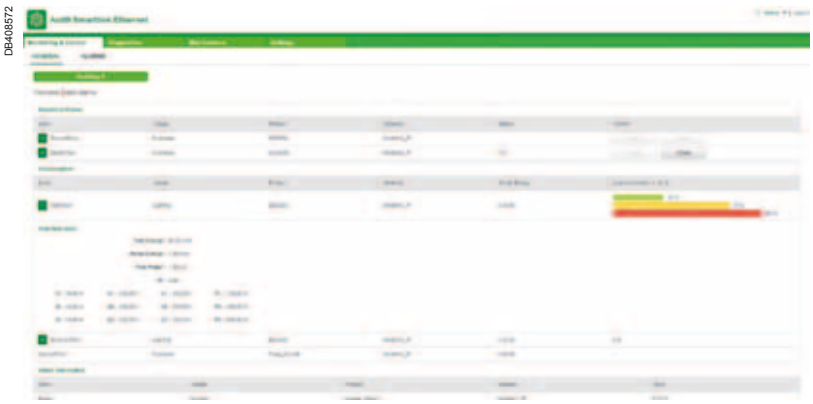
Modbus slave
- Acti 9 Smartlink Modbus Slave

Modbus communication
- Up to 8 Acti 9 Smartlink Modbus Slaves or other Modbus slaves connected

Prefabricated cables
- Simplified cabling
- Fast and safe

Ethernet network connection

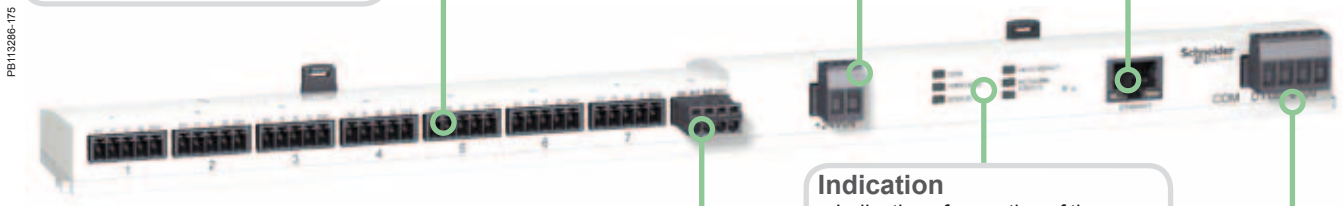
Acti 9 Smartlink SI B has an embedded Web server used to display data showing the state of circuit breakers, energy meters, power data and current alarms.
Manual control is also possible via the Web page.



- The Web server sets the parameters of the connection to the network servers (SNTP, SMTP), as well as the parameters of user emails and of the connection to the Facility Hero.com service

Acti 9 Smartlink (cont.)

Acti 9 Smartlink SI B Ethernet (A9XMZA08)



Ti24 connector
7 input/output channels
Protected at input against voltage reversals
Protected at output by current limiting
- Pin 1: 0 V
- Pin 2: I1 Input 1
- Pin 3: I2 Input 2
- Pin 4: Q Output
- Pin 5: +24 V DC

24 V DC power supply connector
Protected against voltage reversals
- Pin1: 0 V
- Pin2:+24 V DC

Ethernet connector
100 Base T - RJ45

Indication
- Indication of operation of the communication system and the state of the Acti 9 Smartlink Ethernet

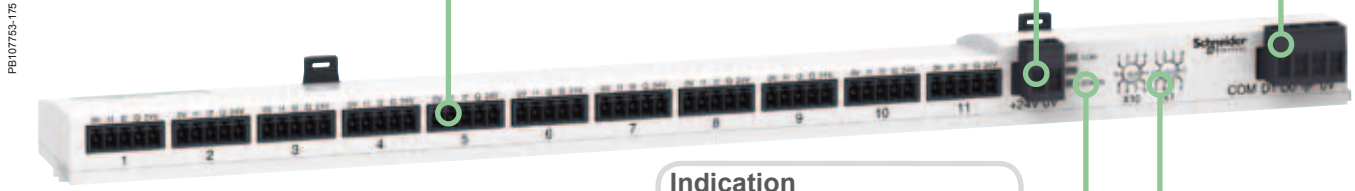
Analog connector
2 configurable input points, either 0-10 V or 4-20 mA
- Pin 1: 0 V
- Pin 2: AI1 Input 1
- Pin 3: AI2 Input 2
- Pin 4: +24 V DC

Serial port connector
Modbus (Master) RS485
- Pin 1: D1 Modbus
- Pin 2: D0 Modbus
- Pin 3: shielding
- Pin 4: common/0 V

20 wireless energy sensors
Radio-frequency communication
- ISM band 2.4 GHz (2.4 GHz to 2.4835 GHz)
- Channels 11 to 16 as per IEEE 802.15.4

Note: Acti9 Smartlink SI B Ethernet and the PowerTags must be installed in the same switchboard

Acti 9 Smartlink Modbus Slave (A9XMSB11)



Ti24 connector
11 input/output channels
Protected at input against voltage reversals
Protected at output by current limiting
- Pin 1: 0 V
- Pin 2: I1 Input 1
- Pin 3: I2 Input 2
- Pin 4: Q Output
- Pin 5: +24 V DC

24 V DC power supply connector
Protected against voltage reversals
- Pin1: 0 V
- Pin2:+24 V DC

Serial port connector
Modbus (Master) RS485
- Pin 1: D1 Modbus
- Pin 2: D0 Modbus
- Pin 3: shielding
- Pin 4: common/0 V

Indication
- indication of operation of the communication system and the state of the Acti 9 Smartlink Modbus Slave

Thumbwheels
- Definition of the address in the Modbus network

Acti 9 Smartlink (cont.)

Common technical characteristics

Power supply		
Nominal		24 V DC ± 20 %
Maximum input current		1.5 A
Maximum inrush current		3 A
Meter		
Capacity		2^{32} pulses per input
Input characteristics		
Number of channels	Acti 9 Smartlink Modbus Slave (A9XMSB11)	11 2-input channels
	Acti 9 Smartlink SI B Ethernet (A9XMZA08)	7 2-input channels
Type of input		Current collector Type 1 IEC 61131-2
Maximum cable length		500 m
Rated voltage		24 V DC
Voltage limits		24 V DC ± 20 %
Rated current		2.5 mA
Maximum current		5 mA
Filtering time	A l'état 1	2 ms
	A l'état 0	2 ms
Isolation		No isolation between channels
Negative sequence voltage protection		Yes
Output characteristics		
Number of output channels	Acti 9 Smartlink Modbus Slave (A9XMSB11)	11
	Acti 9 Smartlink SI B Ethernet (A9XMZA08)	7
Type of output		24 V DC - 0.1 A current source
Maximum cable length		500 m
Rated voltage	Voltage	24 V DC
	Maximum current	100 mA
Filtering time	In state 1	2 ms
	In state 0	2 ms
Voltage drop (voltage in state 1)		1 V max
Maximum inrush current		500 mA
Leakage current		0.1 mA
Overvoltage protection		33 V DC
Environmental characteristics		
Temperature	Operating	-25°C ... +60°C (if vertical mounting, limited to 50°C)
	Storage	-40°C ... +80°C
Tropicalization		Treatment 2 (relative humidity of 93 % at 40°C)
Resistance to voltage dips		10 ms, class 3 as per IEC 61000-4-29
Degree of protection		IP20
Pollution degree		3
Altitude	Operating	0 … 2000 m
Vibration resistance	As per IEC 60068.2.6	1 g / ± 3.5 mm - 5 Hz to 300 Hz - 10 cycles
Shock resistance	As per IEC 60068.2.27	15 g / 11 ms
Immunity to electrostatic discharge	As per IEC 61000-4-2	Air: 8 kV Contact: 4 kV
Immunity to radiated magnetic fields	As per IEC 61000-4-3	10 V/m - 80 MHz to 3 GHz
Immunity to fast transients	As per IEC 61000-4-4	1 kV for inputs/outputs and Modbus communication. 2 kV for 24 V DC power supply - 5 kHz - 100 kHz
Immunity to conducted magnetic fields	As per IEC 61000-4-6	10 V from 150 kHz to 80 MHz
Immunity to magnetic fields at mains frequency	As per IEC 61000-4-8	30 A/m
Resistance to corrosive atmospheres	As per IEC 60721-3-3	Level 3C2 on H_2S / SO_2/ NO_2 / Cl_2
Fire resistance	For live parts	At 960°C 30 s / 30 s as per IEC 60 695-2-10 and IEC 60 695-2-11
	For other parts	At 650°C 30 s / 30 s as per IEC 60 695-2-10 and IEC 60 695-2-11
Salt spray test	As per IEC 60068.2.52	Severity 2
Environment		In compliance with the RoHS directive
Prefabricated cable characteristics		
Dielectric strength		1 kV / 5 min
Minimum draw-out resistance		20 N
Electromagnetic compatibility		
Reference standards	Immunity	EN 55024
	Emissions	EN 55022
	Electromagnetic compatibility and Radio spectrum Matters (ERM)	EN 300328 EN 301489-1 EN 301489-17

Acti 9 Smartlink (cont.)

Acti 9 Smartlink Modbus Slave (A9XMSB11) technical characteristics

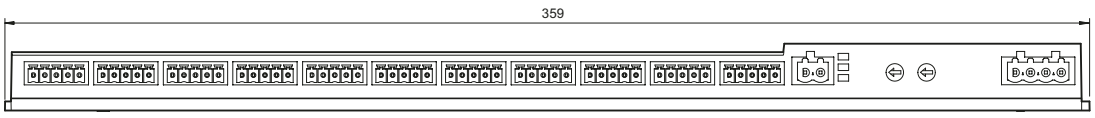
Characteristics of the Modbus link		
Link		Modbus, RTU, RS485 serial connection
Transmission	Transfer rate	9600 baud ... 19200 baud, self-adaptable
	Medium	Shielded cable, double twisted pair
Protocol		Master/Slave
Type of device		Slave
Modbus addressing range		1 to 99
Maximum length of the bus		1000 m
Type of bus connector		4-pin connector

Acti 9 Smartlink SI B Ethernet (A9XMZA08) technical characteristics

Characteristics of the Ethernet link		
Link		Ethernet 10/100 MB
Protocol		Modbus TCP server
		http (web pages)
Addressing mode		Static and dynamic (supplied, by default, in dynamic mode)
Gateway characteristics		
Protocol		Modbus TCP/IP -> Modbus SL
Number of Modbus slaves		8
Modbus addressing range		1 to 247
Characteristics of the Modbus Master link		
Link		Modbus, RTU, RS485 serial connection
Transmission	Transfer rate	9600 baud ... 19200 baud, self-adaptable
	Medium	Shielded cable, double twisted pair
Maximum length of the bus		1000 m
Type of bus connector		4-pin connector
Characteristics of analog inputs		
Number		2
Type		Independent settings for each input, either 0-10 V or 4-20 mA
Measuring accuracy		1/100 full scale
Resolution		12 bits
Acquisition time		500 ms
Isolation		No isolation between channels
Power supply		0-24 V DC
Cable type		Shielded cable, twisted pair
Maximum cable length		30 m
Protection		Short-circuit protection
Characteristics of the wireless link of the Acti 9 Smartlink SI B Ethernet (A9XMZA08)		
Compatible devices		PowerTag energy sensors
Maximum number of sensors		20
Radio-frequency communication		2.4 GHz to 2.4835 GHz at 0 dBm

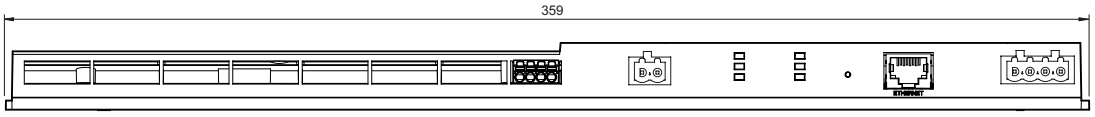
Dimensions (mm)

DB124330



Acti 9 Smartlink Modbus Slave (A9XMSB11)

DB406390



Acti 9 Smartlink SI B Ethernet (A9XMZA08)

Weight (g)

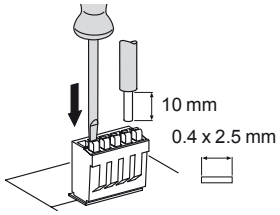
Acti 9 Smartlink	
Type	
Acti 9 Smartlink Modbus Slave (A9XMSB11)	195
Acti 9 Smartlink SI B Ethernet (A9XMZA08)	180

Acti 9 Smartlink (cont.)

Connection

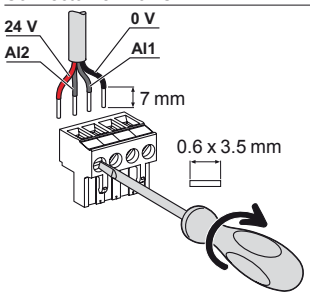
Terminal	Tightening torque	Copper cables		
		Rigid	Flexible	Flexible with ferrule
	DB122945	DB123553	DB123554	
Ti24 interface	Spring-loaded terminals	0.5 to 1.5 mm²	0.5 to 1.5 mm²	-
Analog connector	0.8 N.m	0.1 to 1.5 mm²	0.1 to 1.5 mm²	0.1 to 1.5 mm²
Power supply connector	0.8 N.m	0.2 to 1.5 mm²	0.2 to 1.5 mm²	0.2 to 1.5 mm²
Modbus connector	0.8 N.m	0.25 mm²	0.25 mm²	0.25 mm²

DB123580

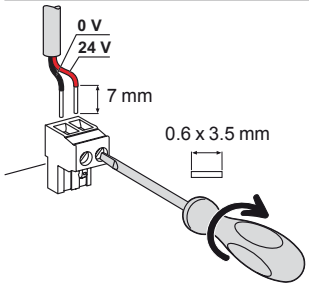


Connector ref: A9XC2412

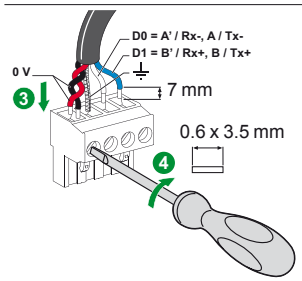
DB406517



DB124331



DB405141



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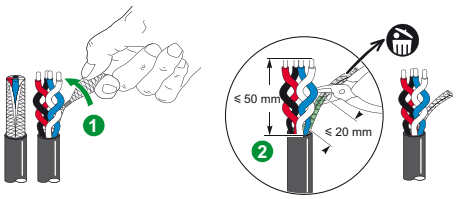


PowerTag

IEC 61557-12 PMD/DD/K55/1

PowerTags are energy sensor modules for 1P, 1P+N, 3P and 3P+N networks. They are mounted directly on equipment of the Acti 9 or Multi 9 range at intervals of 18 mm up to 63 A.

A9MEM1520-18

A9MEM1520

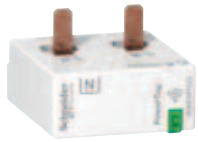
A9MEM1521-18

A9MEM1521

A9MEM1540-18

A9MEM1540

A9MEM1522-18

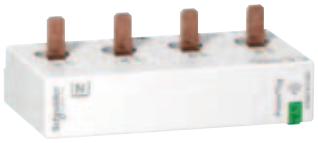


A9MEM1522

A9MEM1541-18

A9MEM1541

A9MEM1542-18



A9MEM1542

Functions

Combined with Acti 9 Smartlink SI B (Ethernet) or Acti 9 Smartlink SI D (Ethernet) by radio-frequency communication, PowerTag sensors measure the following values in accordance with the IEC 61557-12 standard

- Cumulative active energy, total and partial (kWh).
- Rms values:
  - phase-to-neutral and phase-to-phase voltages (V),
  - currents per phase (A),
  - total active power and active power per phase (W),
  - power factor.

Installed upstream or downstream of a protective device, they measure useful data for diagnosis of the associated circuit.

Configuration

- Recognition of the device in the Acti 9 Smart Test configuration software: the product flashes in the switchboard during configuration for easy recognition.
- Addition of context-related information to Acti 9 Smart Test (name of the load, energy usage, single-line circuit label).
- Partial energy counter can be reset or preset to a special value via the software.

Integration in Acti 9 Smartlink

- Use of a wireless concentrator to report data:
  - Acti 9 Smartlink SI B (Ethernet) for a complete metering, monitoring and control solution,
  - Acti 9 Smartlink SI D (Ethernet) for a metering and monitoring solution only.
- Native display, in Smartlink's embedded web pages, of the quantities measured by the PowerTag sensors.
- Load monitoring
  - alarm sent by the sensor in the event of a voltage loss,
  - pre-alarms on predefined thresholds (50 %, 80 %) or customized thresholds (thresholds on currents, power, voltages and cumulative energies).
- Alarm management on current/voltage/load level thresholds by e-mail.
- Display of alarms and pre-alarms on Smartlink embedded web pages.
- Easy integration into system with Com'X200, Com'X 510 and other Schneider Electric software and third-party Building Management Systems (BMS's) thanks to the Acti 9 Smart Test report in Excel format. This report provides dynamically all the Modbus registers, including bits and meanings associated, for an easy integration into the software.
- Remote metering possible using the Smartlink monitoring page.

Test software: Acti 9 Smart Test

DB405140

- Electrical continuity test (cabling of connected devices)
- Communication Testing of wired, wireless devices, analog and Modbus devices..
- Editing of a complete test report (Excel, pdf) with the Modbus communication registers for easy integration into a supervision system
- Windows XP, Windows 7, Windows 8 and Windows 10 compatible
- Downloadable from: schneider-electric.com

DB408571

Catalogue numbers

PowerTag		
Type	**Type of mounting**	**Cat. no.**
1P	Top and bottom	**A9MEM1520**
1P+N	Top	**A9MEM1521**
	Bottom	**A9MEM1522**
3P	Top and bottom	**A9MEM1540**
3P+N	Top	**A9MEM1541**
	Bottom	**A9MEM1542**

PowerTag (cont.)

Metering and monitoring and control

Acti 9 Smartlink SI B (Ethernet)

Embedded web pages
- Monitoring display
- Alarm management and display
- E-mail sending

Integrated Modbus gateway

Channels for monitoring/ control
- Contactors, OF/SD devices, analog sensors

Compatible products
"Single terminal" circuit breakers and switches at intervals of 18 mm, ratings less than or equal to 63 A:
- Acti 9 : iC60/iID/iID K/iSW (< 63 A)/iSW-NA/ Reflex iC60/iK60/i65N-K
- Multi9 : C32/C45/C60/K60/ID/ISW/I-NA
- DT60

See catalogue module CA908058

PowerTag
- Radio frequency communication
- Up to 20 sensors connected

Metering and monitoring only

Acti 9 Smartlink SI D (Ethernet)

Embedded web pages
- Monitoring display
- Alarm management and display
- E-mail sending

PowerTag
- Radio frequency communication
- Up to 20 sensors connected

- Installation on DIN rail
- 230 V AC power supply

Compatible products
"Single terminal" circuit breakers and switches at intervals of 18 mm, ratings less than or equal to 63 A:
- Acti 9 : iC60/iID/iID K/iSW (< 63 A)/iSW-NA/Reflex iC60/iK60/i65N-K
- Multi9 : C32/C45/C60/K60/ID/ISW/I-NA
- DT60

See catalogue module CA908058

PowerTag (cont.)

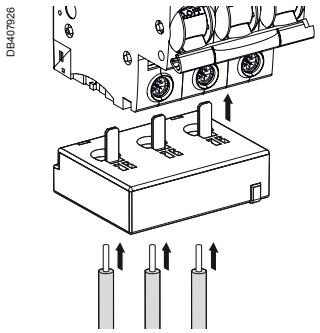
PB115448-40

Technical characteristics

Main characteristics			
Rated voltage	Un	Phase-to-neutral	230 V AC ± 20 %
		Phase-to-phase	400 V AC ± 20 %
Frequency			50/60 Hz
Maximum operating current	Imax		63 A
Saturation current			130 A
Maximum consumption			≤ 2 VA
Starting current	Ist		40 mA
Base current	Ib		10 A
Additional characteristics			
Operating temperature			-25°C to +60°C
Storage temperature			-40°C to +85°C
Overvoltage category		As per IEC 61010-1	Cat. III
Measuring category		As per IEC 61010-2-30	Cat. III
Pollution degree			3
Altitude			≤ 2000 m
Degree of protection		Device only	IP20
		IK	05
Radio-frequency communication			
ISM band 2.4 GHz			2.4 GHz to 2.4835 GHz
Channels		As per IEEE 802.15.4	11 to 26
Isotropic Radiated Power		Equivalent (EIRP)	0 dBm
Maximum transmission time			< 5ms
Channel occupancy		For 1 device	Messages sent every 5 seconds
Characteristics of measuring functions			
Function		**Performance category as per IEC 61557-12**	
Active power	P	1	9 W to 63 kW
Active energy	Ea	1	Total and partial 0 to 99999999.9 kWh
Current	I	1	2 A to 63 A
Voltage	U	0.5	Un ± 20 %
Power factor	PFA	1	0 to 1

PowerTag (cont.)

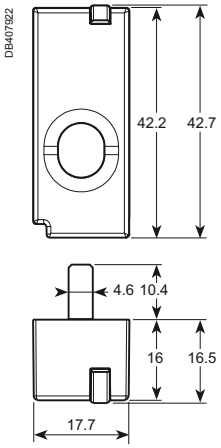
Connection



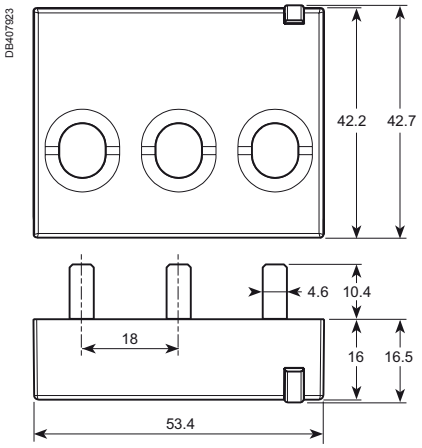
Stripping length	Copper cables					
	Rigid		Flexible		Flexible with ferrule	
	DB122945	DB112804 DB123553	DB112805	DB123554	DB123008	
18 mm(*)	1.5 to 16 mm²	2 x 1.5 to 2.5 mm²	1.5 to 16 mm²	2 x 1.5 to 2.5 mm²	-	-
18 mm	-	-	-	-	1.5 to 16 mm²	2 x 1.5 to 2.5 mm²

- Mounting with 18 mm ferrule recommended.
- (*) Without ferrule/cable ends, respect the stripping length stated on the associated products.

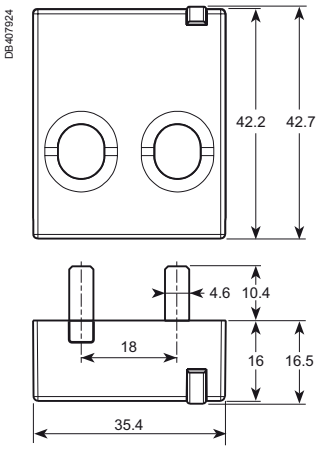
Dimensions (mm)



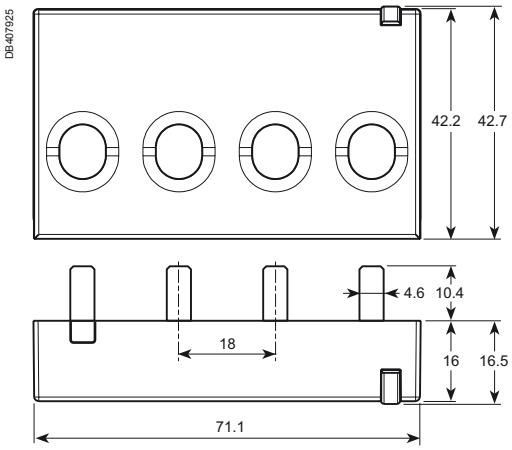
1P



3P



1P+N



3P+N

Weight (g)

PowerTag	
Type	
1P	16.4
1P+N	17.5
3P	28
3P+N	35

Electrical auxiliaries for iC60, iID, iDPN Vigi, iSW-NA

■ The electrical auxiliaries are combined with iC60 circuit breakers, iID residual current circuit breakers, remote tripping switch disconnector iSW-NA; they enable tripping or remote indication of their position (open/closed/tripped) upon a fault.
■ They are fastened by clips (without tools) to the left side of the breaker.
■ The iOF/SD+OF auxiliary is a 2-in-1 product: via a mechanical selector switch, it provides two contacts, OF+SD or OF+OF.
■ The iOF+SD24 auxiliary can report open/closed (OF) status information and intentional or fault tripping of the associated device (SD) to the Acti 9 Smartlink or a programmable logic controller via the TI24 interface (24 V DC).

Tripping auxiliaries:

IEC/EN 60947-1

■ iMN: undervoltage release
■ iMNs: delayed undervoltage release
■ iMNx: undervoltage release, independant from supply voltage
■ iMX: shunt release
■ iMX+OF: shunt release with open/close contact.

EN 50550

■ iMSU: overvoltage release.

Indication auxiliaries:

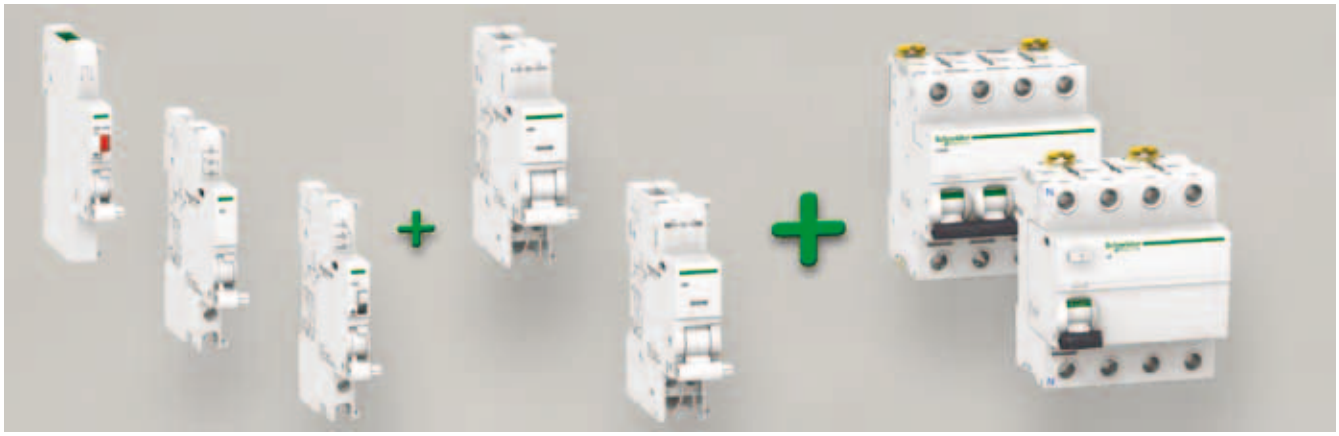
IEC/EN 60947-5-1

■ iOF: open/close contact
■ iSD: fault indicating contact
■ iOF/SD+OF: open/close contact and switchable OF or SD contact
■ iOF+SD24: open/close contact OF and default indicating contact SD with Ti24 interface.

IEC/EN 60947-5-4

■ iOF+SD24: open/close contact OF and default indicating contact SD with Ti24 interface.

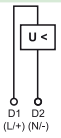
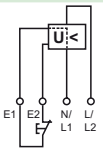
DB404939



DB404940

Electrical auxiliaries for iC60, iID, iDPN Vigi, iSW-NA (cont.)

Tripping

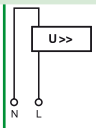
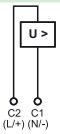
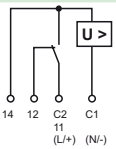
Auxiliaries	iMN				iMNs	iMNx	
Type	**Undervoltage release**						
	Instantaneous				Delayed	Independent of the supply voltage	
	PB104477-35 				PB104478-35 	PB104480-35 	
Function							
	■ Trips the device with which it is combined when its input voltage decreases (between 70 % and 35 % Un). Prevents device closing again until its input voltage is restored					■ Tripping of the associated device by opening of the control circuit (e.g. push-button, dry contact)	
					■ Not tripping on transient voltage dip (up to 0.2 s)	■ A drop in the supply voltage does not trip the associated device ■ A locking push-button control allows the circuit protected (e.g. machine control) to be placed in safety configuration	
Wiring diagrams							
	DB118804 					DB406947 	
Use							
	■ Emergency stoppage by normally closed push button ■ Ensures the safety of power supply circuits for several machines by preventing "uncontrolled" restarting					■ Emergency stoppage with fail-safe principle ■ Insensitive to control circuit voltage variation to increase service continuity **Important: Before any servicing operation switch off the mains power supply (voltage presence at terminals E1/E2)**	
Catalogue numbers	**A9A26960**	**A9A27108**	**A9A26961**	**A9A26959**	**A9A26963**	**A9A26969**	**A9A26971**
iC60, iID, iDPN Vigi, iSW-NA	■	■	■	■	■	■	■
iC60, iID double terminals	■	■	■	■	■	■	■

Technical specifications

Rated voltage (Ue)	V AC	220…240	24	48	115	220…240	220…240	380…415
	V DC	–	24	48		–	–	
Standardised operating and non-response to voltage times (Ua)*		–	–	–	–	–	–	–
Maximum operating time		–	–	–	–	–	–	–
Minimum non-response time		–	–	–	–	–	–	–
Operating frequency	Hz	50/60			400	50/60	50/60	
Red mechanical indicator		On front face				On front face	On front face	
Test function		–				–	–	
Width in 9 mm modules		2				2	2	
Operating current		–				–	–	
Number of contacts		–				–	–	
Operating temperature	°C	-35…+70				-35…+70	-35…+70	
Storage temperature	°C	-40…+85				-40…+85	-40…+85	

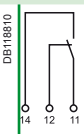
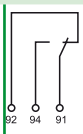
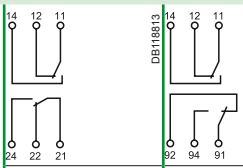
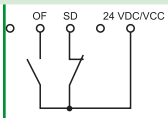
*(Ua)
Voltages measured between the phase and the neutral conductor, at which the iMSU device must control the associated protective device.

Electrical auxiliaries for iC60, iID, iDPN Vigi, iSW-NA (cont.)

	iMSU	iMX	iMX+OF
	Overvoltage release	**Shunt release**	
			With Open/Close auxiliary contact
	PB104479-35 	PB104496-35 	PB104481-35 
	■ Switches off the power supply by opening the breaker with which it is combined, in the event that the phase/ neutral voltage is exceeded (loss of neutral). For a four-phase network, use three iMSU tripping auxiliaries	■ Trips the breaker when powered	
			■ Includes an open/close contact (OF) to indicate the "open" or "closed" position of the breaker
	DB118806 	DB123012 	DB406929 
	■ Protection of equipment against overvoltages on the electrical network (neutral conductor break) ■ Voltage monitoring between phase and neutral conductors	■ Emergency stoppage by normally open push button	■ Emergency stoppage by normally open push button ■ Remote indication of the position of the associated breaker
	A9A26500	**A9A26476** / **A9A26477** / **A9A26478**	**A9A26946** / **A9A26947** / **A9A26948**
	■	■ / ■ / ■	■ / ■ / ■
	■	■ / ■ / ■	■ / ■ / ■
	230	100…415 / 48 / 12…24	100…415 / 48 / 12…24
	–	110…130 / 48 / 12…24	110…130 / 48 / 12…24
	255 V AC / 275 V AC / 300 V AC / 350 V AC / 400 V AC	– / – / –	– / – / –
	No tripping / 15 s / 5 s / 0.75 s / 0.20 s	– / – / –	– / – / –
	3 s / 1 s / 0.25 s / 0.07 s	– / – / –	– / – / –
	50/60	50/60	50/60
	On front face	On front face	On front face
	–	–	–
	2	2	2
	–	–	10 mA mini, 6 A maxi ≤ 24 V DC 6 A 48 V DC 2 A ≤ 130 V DC 1 A ≤ 240 V AC 6 A 415 V AC 3 A
	–	–	1 NO/NC
	-35…+70	-35…+70	-35…+70
	-40…+85	-40…+85	-40…+85

Electrical auxiliaries for iC60, iID, iDPN Vigi, iSW-NA (cont.)

Indication

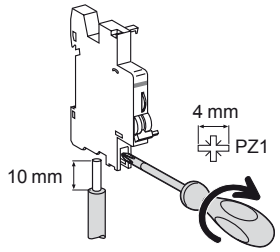
Auxiliaries	iOF		iSD		iOF/SD+OF	iOF+SD24
Type	**Open/close auxiliary contact**		**Fault indicating contact**		**Double open/close or fault indicating contact**	**Double open/close and fault indicating contact**
	PB104474-35	PB104476-35			PB104475-35	PB107750-35
						
Function						
	■ Changeover contact indicates "open" or "closed" position of the breaker		■ Changeover contact indicates position of the breaker; upon: □ electrical fault □ action on tripping auxiliary ■ Same indication as VISI-TRIP		■ The iOF/SD+OF auxiliary is a 2-in-1 product: via a mechanical selector switch, it provides two contacts, OF+SD or OF+OF	■ 2 contacts (1 NO + 1 NC) can report the signalling information of the associated device to the Acti 9 Smartlink or a programmable logic controller: □ electrical fault □ actuation of the tripping auxiliary □ "Open" or "Closed" position of the associated device
Wiring diagrams						
	DB118810		DB118811		DB118812 / DB118813	DB124318
						
					OF position	SD position	
Use						
	■ Remote indication of the position of the associated breaker		■ Remote indication of tripping upon a fault of the associated breaker		■ Remote indication of position and/or tripping upon a fault of the associated breaker	■ Remote indication of position and tripping upon a fault of the associated breaker
Catalogue numbers	**A9A26924**	**A9A26869**	**A9A26927**	**A9A26855**	**A9A26929**	**A9A26897**
iC60, iID, iDPN Vigi, iSW-NA	■	–	■	–	■	■
iC60, iID double terminals	–	■	–	■	■	■

Technical specifications						
Rated voltage (Ue)	V AC	24…415		24…415	24…415	-
	V DC	24…130		24…130	24…130	24
Operating frequency	Hz	50/60		50/60	50/60	-
Red mechanical indicator		–		On front face	On front face	On front face
Test function		On toggle		On toggle	On toggle	On toggle
Width in 9 mm modules		1		1	1	1
Operating current		10 mA mini, 6 A maxi				2 mA mini, 100 mA maxi
		24 V DC 6 A				
		48 V DC 2 A				-
		60 V DC 1.5 A				-
		130 V DC 1 A				-
		24...240 V AC 6 A				-
		415 V AC 3 A				-
Number of contacts		1 NO/NC		1 NO/NC	1 NO/NC + 1 NO/NC	1 NO/NC
Operating temperature	°C	-35…+70		-35…+70	-35…+70	-25…+70
Storage temperature	°C	-40…+85		-40…+85	-40…+85	-40…+85

Electrical auxiliaries for iC60, iID, iDPN Vigi, iSW-NA (cont.)

Connection

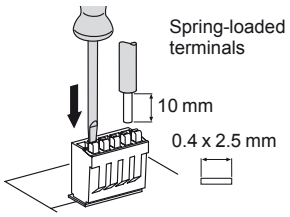
DB123061



Type	Tightening torque	Copper cables		Multi-cables	
		Rigid	Flexible	Rigid	Cables with ferrule
		DB122945 DB123007		DB123011	DB123008
Indication auxiliaries	1 N.m	1 to 4 mm²	0.5 to 2.5 mm²	2 x 2.5 mm²	2 x 1.5 mm²
Tripping auxiliaries	1 N.m	1 to 6 mm²	0.5 to 4 mm²	2 x 2.5 mm²	2 x 2.5 mm²

Ti24 connector connection

DB123580



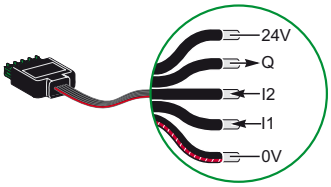
Type	Catalogue numbers	Copper cables	
		Rigid	Flexible
		DB122945	DB123553
Ti24 interface	**A9XC2412**	1 x 0.5 to 1.5 mm²	1 x 0.5 to 1.5 mm²

Ti24 prefabricated cables connection

PB107754-10

PB107755-14

DB404941

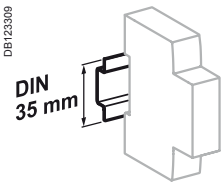


PB107756-7

Type	Catalogue numbers	Length
Connection for Acti 9 Smartlink		
6 prefabricated	**A9XCAS06**	100 mm
	A9XCAM06	160 mm
	A9XCAH06	450 mm
	A9XCAL06	870 mm
Connection for PLC type terminals		
6 long prefabricated on a single side	**A9XCAU06**	870 mm
1 long prefabricated on a single side	**A9XCAC01**	4000 mm
12 connectors, 5-pins (Ti24)	**A9XC2412**	-

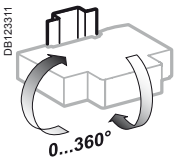
Electrical auxiliaries for iC60, iID, iDPN Vigi, iSW-NA (cont.)

DB123309



Clip on DIN rail 35 mm.

DB123311



Indifferent position of installation.

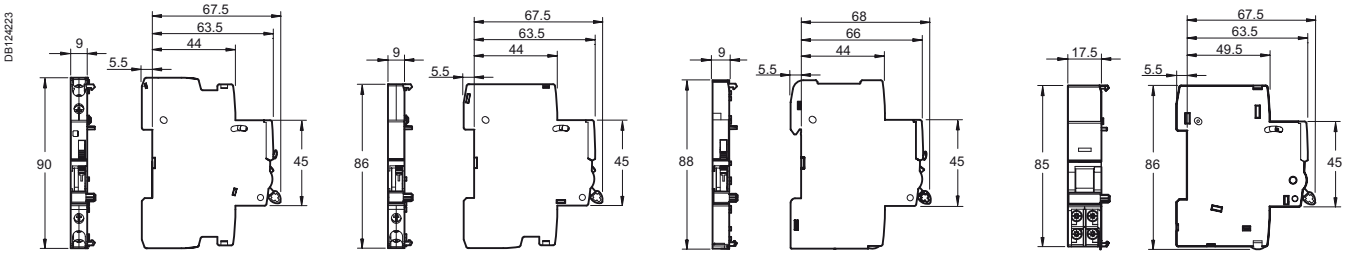
Technical data

Weight (g)

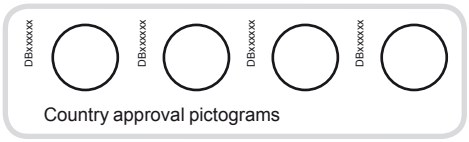
Electrical auxiliaries	
Type	
iMN	69
iMNs	72
iMNx	79
iMSU	68
iMX	64
iMX+OF	68
iOF	32
iSD	33
iOF/SD+OF	43
iOF+SD24	25

Dimensions (mm)

DB124223



iMDU electrical auxiliary for Reflex iC60



Country approval pictograms

The voltage matching module allows safety voltages of 24 and 48 V AC/DC to be used on the control inputs.

- Only connects to the Reflex iC60 circuit breakers remote controlled by a 220-240 V control voltage
- Galvanic isolation 6000 V
- Maximum combined power between terminals P and Y1/Y2: 100 mA at 230 V and 25°C.

PB106245-40


A9C18195

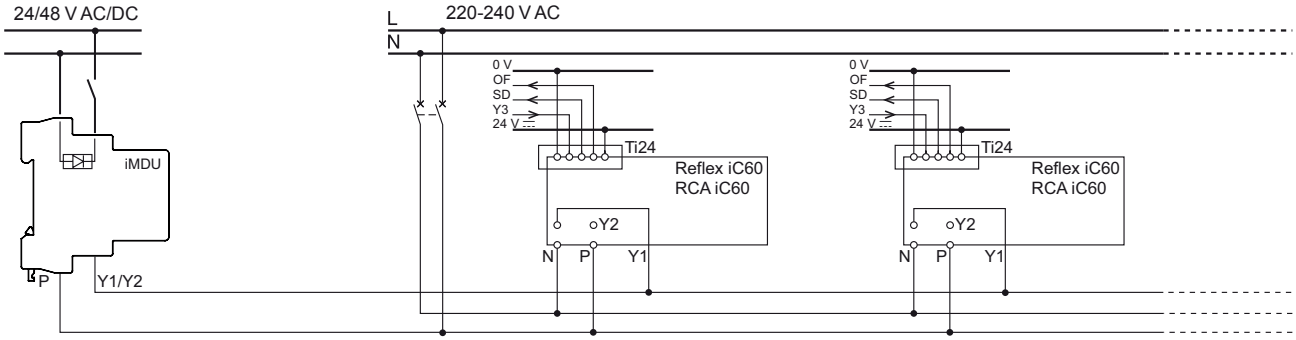
Catalogue numbers

Electrical auxiliary for Reflex iC60		
Type		**Width in 9 mm modules**
iMDU	**A9C18195**	1

Diagram

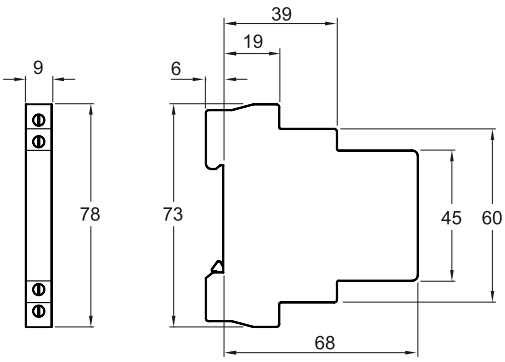
An iMDU electrical auxiliary allows up to a maximum of five Reflex iC60 to be controlled simultaneously at the same input Y1 or Y2.

DB124310



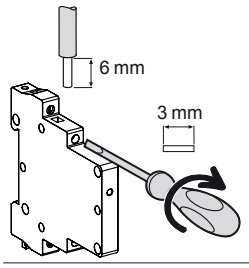
Dimensions (mm)

DB124311



Connection

DB124312

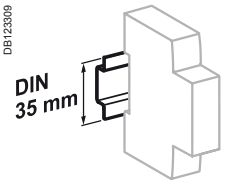


Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
iMDU	1 N.m	1.5 mm²	1.5 mm²

Technical data

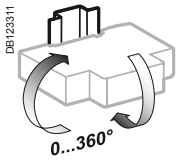
Main characteristics		
Control circuit voltage		24…48 V AC/DC
Insulation voltage (Ui)		500 V
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Operating temperature		-20°C to +60°C
Storage temperature		-40°C to +80°C
Tropicalization		Treatment 2 (relative humidity 95 % at 55°C)
Weight		53 g

DB123309



Clip on DIN rail 35 mm.

DB123311



Indifferent position of installation.

Electrical auxiliaries for C60, C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC, C120NA-DC

■ The electrical auxiliaries provide the remote tripping or position (open/closed/tripped) indication functions of these devices in the event of a fault.
■ They clip on (no tool required) to the left-hand side of the associated device.
■ The OF+SD/OF auxiliary is a two-in-one product: a mechanical selector switch is used to select one of two contacts: OF+SD or OF+OF.
■ The OF+SD24 auxiliary can report open/closed (OF) status information and intentional or fault tripping of the associated device (SD) to the Acti 9 Smartlink or a programmable logic controller via the TI24 interface (24 V DC).

⚠
■ The electrical auxiliaries are not compatible with ID residual current circuit breakers of type B.

Tripping auxiliaries:

IEC/EN 60947-1
■ MN: undervoltage release
■ MNⓈ: delayed undervoltage release
■ MNx: undervoltage release, independent of the supply voltage
■ MX: shunt release
■ MX+OF: shunt release with open/closed contact.

EN 50550
■ MSU: overvoltage release.

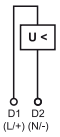
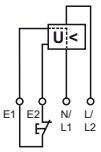
Indication auxiliaries:

IEC/EN 60947-5-1
■ OF.S: open/closed contact for ID
■ OF: open/closed contact
■ SD: fault indicating contact
■ OF+SD/OF: choice of open/closed contact and OF or SD contact via the selector switch
■ OF+SD24: open/close contact OF and cfault indicating contact SD with Ti24 interface.

IEC/EN 60947-5-4
■ OF+SD24: open/close contact OF and cfault indicating contact SD with Ti24 interface.

Electrical auxiliaries for C60, C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC, C120NA-DC

Tripping

Auxiliaries	MN	MNS	MNx
Type	**Undervoltage release**		
	Instantaneous	Delayed	Independent of the supply voltage
	PB107151-30 	PB107152-30 	PB107149-30 
Function			
	■ Causes the device with which it is associated to trip when its input voltage decreases (between 70 % and 35 % of Un). Prevents the device from closing until its input voltage has been restored		■ Tripping of the associated device by opening of the control circuit (e.g. push-button, dry contact)
		■ No tripping in the event of transient voltage dips (up to 0.2 s)	■ A drop in the supply voltage does not trip the associated device ■ A locking push-button control allows the circuit protected (e.g. machine control) to be placed in safety configuration
Wiring diagrams			
	DB118804 		DB408947 
Utilization			
	■ Emergency stop via a normally-closed pushbutton ■ Ensures the safety of the power supply circuits of several machines by preventing accidental startups		■ Fail-safe emergency stop ■ Insensitive to the variation in the control circuit voltage to improve continuity of service **Important: Before any servicing operation switch off the mains power supply (voltage presence at terminals E1/E2)**

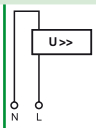
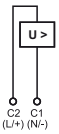
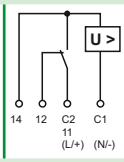
Catalogue numbers	A9N26960	A9N26961	A9N26959	A9N26963	A9N26969	A9N26971
C60, C120, DPN, DPN Vigi, ID	■	■	■	■	■	■
C60H-DC, SW60-DC, C60PV-DC, C60NA-DC, C120NA-DC	■	■	■	■	■	■

Technical specifications							
Rated voltage (Ue)	V AC	220…240	48	115	220…240	230	400
	V DC	–	48	–	–	–	
Standardised operating and non-response to voltage times (Ua)*		–	–	–	–	–	–
Maximum operating time		–	–	–	–	–	–
Minimum non-response time		–	–	–	–	–	–
Operating frequency	Hz	50/60		400	50/60	50/60	
Mechanical state indicator light, red		On front face			On front face	On front face	
Test function		–			–	–	
Width in 9 mm modules		2			2	2	
Operating current		–			–	–	
Number of contacts		–			–	–	
Operating temperature	°C	-25…+50			-25…+50	-25…+50	
Storage temperature	°C	-40…+85			-40…+85	-40…+85	

Standards							
IEC/EN 60947-1		■			■	■	
IEC/EN 60947-5-1		–			–	–	
EN 60947-2		■			■	–	
EN 62019-2(1)		–			–	–	

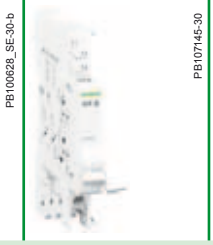
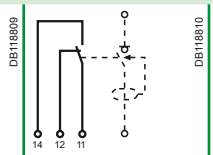
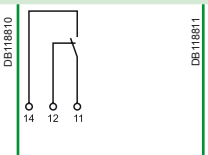
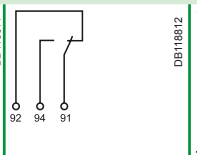
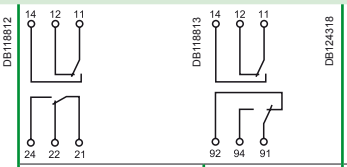
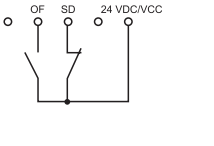
(1) For C120, DPN.
*(Ua): Voltages measured between the phase and the neutral conductor, at which the MSU device must control the associated protective device.

Electrical auxiliaries for C60, C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC, C120NA-DC

	MSU	MX			MX+OF		
	Voltage threshold release	**Shunt release**					
					With Open/Close auxiliary contact		
	PB107153-30 	PB107150-30 			PB107148-30 		
	■ Cuts off the power supply by opening the device with which it is associated when the phase/neutral voltage is exceeded (loss of neutral). For a four-phase network, use three MSU tripping auxiliaries	■ Trips the associated device when it is powered on					
					■ Includes an open/close contact (OF) to indicate the "open" or "closed" position of the breaker		
	DB118806 	DB123012 			DB406929 		
	■ Protection of the devices against overvoltages on the electrical network (break in the neutral conductor) ■ Monitoring the voltage between the phase conductor and the neutral conductor	■ Emergency stop via a normally-open pushbutton.			■ Emergency stop via a normally-open pushbutton ■ Remote indication of the position of the associated device		
	A9N26500	**A9N26476**	**A9N26477**	**A9N26478**	**A9N26946**	**A9N26947**	**A9N26948**
	■	■	■	■	■	■	■
	–	■	■	■	■	■	■
	230	100…415	48	12…24	100…415	48	12…24
	–	110…130	48	12…24	110…130	48	12…24
	255 V AC / 275 V AC / 300 V AC / 350 V AC / 400 V AC	–	–	–	–	–	–
	No tripping / 15 s / 5 s / 0.75 s / 0.20 s	–	–	–	–	–	–
	3 s / 1 s / 0.25 s / 0.07 s	–	–	–	–	–	–
	50/60	50/60			50/60		
	On front face	On front face			On front face		
	–	–			–		
	2	2			2		
	–	–			10 mA mini, 6 A maxi ≤ 24 V DC 6 A 48 V DC 2 A ≤ 130 V DC 1 A ≤ 240 V AC 6 A 415 V AC 3 A		
	–	–			1 NO/NC		
	-25…+50	-25…+50			-25…+50		
	-40…+85	-40…+85			-40…+85		
	■	■			■		
	–	–			–		
	–	–			–		
	–	–			–		

Electrical auxiliaries for C60, C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC, C120NA-DC

Indication

Auxiliaries	OF.S	OF	SD	OF+SD/OF	OF+SD24
Type	**Open/closed auxiliary contact**	**Open/closed auxiliary contact**	**Fault indicating contact**	**Double open/closed or fault indicating contact**	**Double open/close and fault indicating contact**
	 PB100628_SE-30-b PB107145-30	 PB107146-30	 PB100625_SE-30-b	 PB107760-35	
Function					
	■ Changeover contact indicating the "open" or "closed" position of the associated device ⚠ **Compulsory for the addition of tripping or indication auxiliaries on a residual current circuit breaker ID**	■ Changeover contact indicating the "open" or "closed" position of the associated device	■ Changeover contact indicating the position of the associated device in the event of: □ electrical fault □ action on the tripping auxiliary ⚠ **Not compatible with a ID residual current circuit breaker, use an OF+SD/OF in the SD position**	■ The OF+SD/OF auxiliary is a two-in-one product: choice of OF + SD or OF + OF contact via the selector switch	■ 2 contacts (1 NO + 1 NC) can report the signalling information of the associated device to the Acti 9 Smartlink or a programmable logic controller: □ electrical fault □ actuation of the tripping auxiliary □ "Open" or "Closed" position of the associated device
Wiring diagrams					
	 DB118809	 DB118810	 DB118811	 DB118812 DB118813 OF position SD position	 DB124318
Utilization					
	■ Remote indication of the position of the associated device	■ Remote indication of the position of the associated device	■ Remote fault tripping indication of the associated device	■ Remote position and/or fault tripping indication of the associated device	■ Remote indication of position and tripping upon a fault of the associated breaker
Catalogue numbers	**A9N26923**	**A9N26924**	**A9N26927**	**A9N26929**	**A9N26899**
ID	■	■	■	■	■
C60, C120, DPN, DPN Vigi, C60H-DC, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC, C120NA-DC	–	■	■	■	■

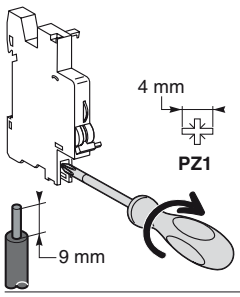
Technical specifications						
Rated voltage (Ue)	V AC	24…415	24…415	24…415	24…415	–
	V DC	24…130	24…130	24…130	24…130	24
Operating frequency	Hz	50/60	50/60	50/60	50/60	–
Mechanical state indicator		–	–	On front face	On front face	On front face
Test function		–	On front face	On front face	On front face	On toggle
Width in 9 mm modules		1	1	1	1	1
Operating current		10 mA mini, 6 A maxi				2 mA mini, 100 mA maxi
		24 V DC	6 A			
		48 V DC	2 A			-
		60 V DC	1.5 A			-
		130 V DC	1 A			-
		24...240 V AC	6 A			-
		415 V AC	3 A			-
Number of contacts		1 NO/NC	1 NO/NC	1 NO/NC	1 NO/NC + 1 NO/NC	1 NO + 1 NC
Operating temperature	°C	-25…+50	-25…+50	-25…+50	-25…+50	-25…+70
Storage temperature	°C	-40…+85	-40…+85	-40…+85	-40…+85	-40…+85
Standards						
IEC/EN 60947-1		–	–	–	–	–
IEC/EN 60947-5-1		■	■	■	■	■ IEC 60947-5-4
EN 60947-2		–	–	–	–	–
EN 62019-2(1)		■	■	■	■	–

(1) For C120, DPN.

Electrical auxiliaries for C60, C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC, C120NA-DC

Connection

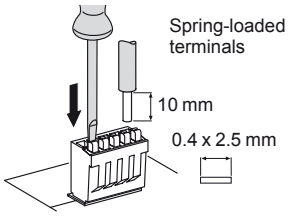
DB1261475



Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945 	DB122946 
Indication and tripping auxiliaries	1 N.m	0.5 to 2.5 mm²	2 x 1.5 mm²

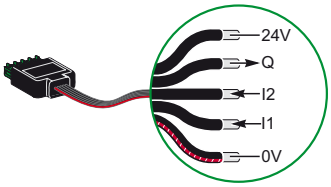
Ti24 connector connection

DB123580



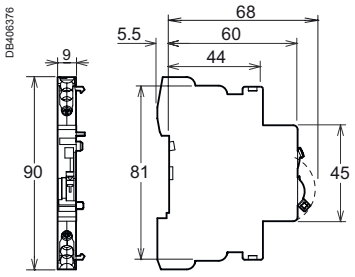
Type	Catalogue numbers	Copper cables	
		Rigid	Flexible
		DB122945 	DB123553 
Ti24 interface	**A9XC2412**	1 x 0.5 to 1.5 mm²	1 x 0.5 to 1.5 mm²

Ti24 prefabricated cables connection

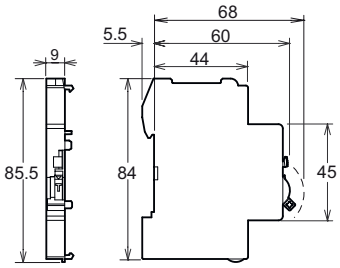
	Type	Catalogue numbers	Length
PB107754-10 	**Connection for Acti 9 Smartlink**		
	6 prefabricated	**A9XCAS06**	100 mm
		A9XCAM06	160 mm
		A9XCAH06	450 mm
		A9XCAL06	870 mm
PB107755-14 	**Connection for PLC type terminals**		
	6 long prefabricated on a single side	**A9XCAU06**	870 mm
	1 long prefabricated on a single side	**A9XCAC01**	4000 mm
DB404941 			
PB107756-7 	12 connectors, 5-pins (Ti24)	**A9XC2412**	-

Electrical auxiliaries for C60, C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC, C120NA-DC

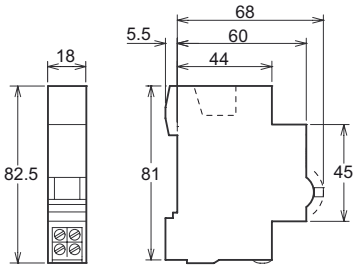
Dimensions



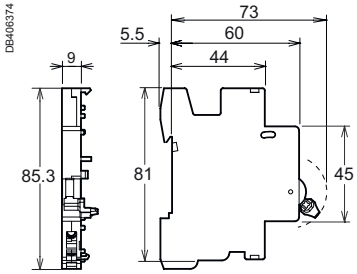
OF+SD/OF



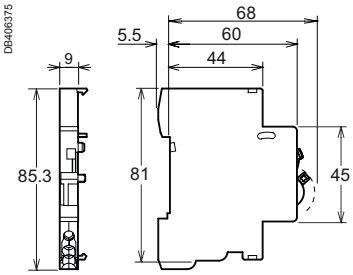
OF+SD24



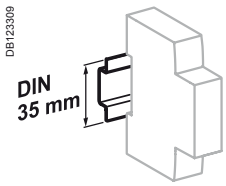
MX, MN, MNS, MSU, MX+OF, MNx



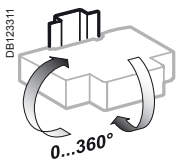
OF.S



OF, SD



Clip on DIN rail 35 mm.



Indifferent position of installation.

Weight (g)

Electrical auxiliaries	
Type	
MN	66
MNS	66
MNx	73
MSU	66
MX	60
MX+OF	65
OF.S	33
OF	30
SD	30
OF+SD/OF	38
OF+SD24	28

Electrical auxiliaries for NG125 devices

■ The electrical auxiliaries are combined with NG125 circuit breakers and NG125 switch-disconnectors; they provide the remote tripping or position (open/closed/tripped) indication functions of these devices in the event of a fault.
■ They clip on (no tool required) to the left-hand side of the associated device.

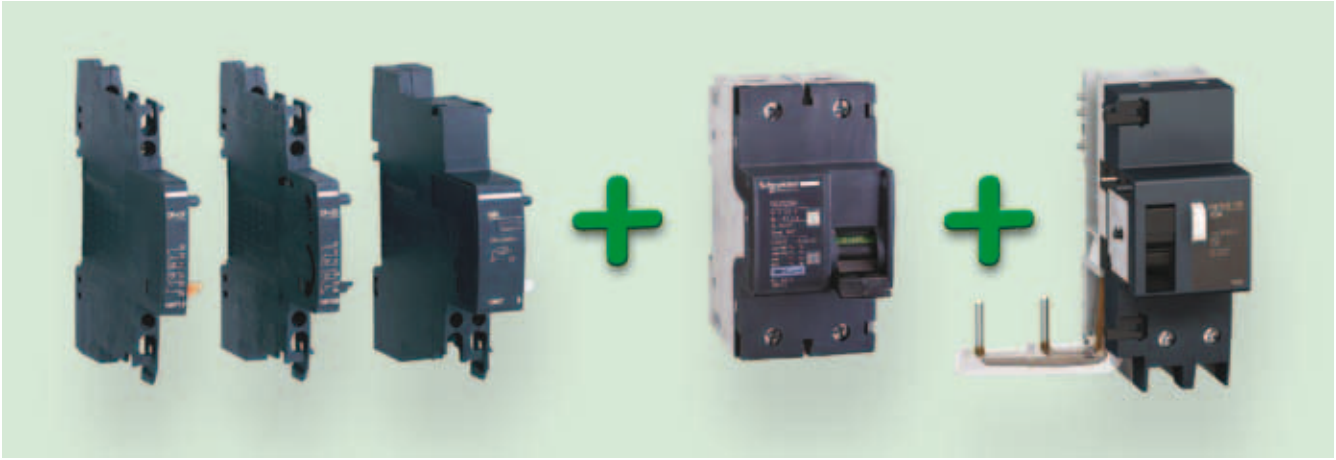
IEC/EN 60947-2

■ Tripping auxiliaries:
□ MN: undervoltage release
□ MNx: undervoltage release, independent of the supply voltage
□ **MX**+OF: shunt release with open/closed contact
□ MXV: shunt release for Vigi add-on residual current device.

IEC/EN 60947-5-1

■ Indication contacts:
□ OF+OF: open/closed contact
□ OF+SD: fault indicating contact
□ MX+**OF**: shunt release with open/closed contact.

DB123424

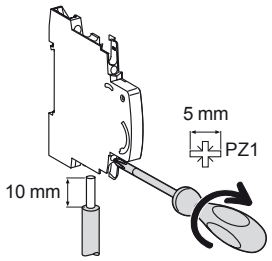


Combination table

Electrical auxiliaries			Device
Indication auxiliaries		Tripping auxiliaries	
		Max. quantity	
2 (OF+OF or OF+SD)	+	+ 1 (MX+OF or MN or MNx)	 NG125

DB123413

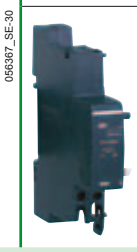
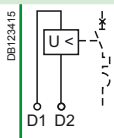
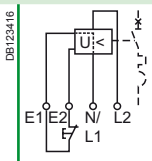
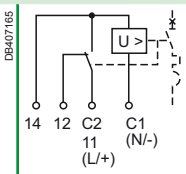
Connection



Type	Tightening torque	Copper cables		Multi-cable terminal	
		Rigid	Flexible or with ferrule	Flexible or rigid cables	Cables with ferrule
	DB122945	DB123411	DB123011	DB123412	
Indication contacts	1 N.m	0.5 to 2.5 mm²	0.5 to 1.5 mm²	2 x 2.5 mm²	2 x 1.5 mm²
Tripping auxiliaries	1 N.m	0.5 to 2.5 mm²	0.5 to 1.5 mm²	2 x 2.5 mm²	2 x 1.5 mm²

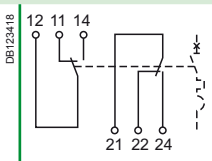
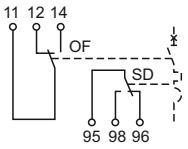
Electrical auxiliaries for NG125 devices and for Vigi NG125 add-on residual current devices (cont.)

Tripping

Auxiliaries	MN			MNx	MX+OF			
Type	**Undervoltage release**				**Shunt release**			
	Instantaneous			Independent of the supply voltage	With open/closed auxiliary contact			
								
Function								
	■ Causes tripping of the device with which it is combined when its input voltage decreases (between 70% and 35% of Un). Prevents closing of the device until its input voltage has been restored			■ Tripping of the associated device by opening of the control circuit (e.g. push-button, dry contact)	■ Causes tripping of the associated device when powered			
				■ A drop in the supply voltage does not trip the associated device ■ A locking push-button control allows the circuit protected (e.g. machine control) to be placed in safety configuration	■ Includes an open/closed contact (OF) to indicate the "open" or "closed" position of the associated device			
Wiring diagrams								
								
Utilization								
	■ Emergency stop by normally-closed pushbutton ■ Ensures safety of the power supply circuits for several machines by preventing untimely restarting			■ Fail-safe emergency stop ■ Insensitive to variations in the control circuit voltage for improved continuity of service **Important: Before any servicing operation switch off the mains power supply (voltage presence at terminals E1/E2)**	■ Provided with a self-interrupting contact			
Catalogue numbers	**19067**	**19069**	**19070**	**19061**	**19064**	**19065**	**19066**	**19063**
Technical specifications								
Rated voltage (Ue) V AC	230…240	48	–	220…240	230…415	48…130	24	12
V DC	–	–	48	–	110…130	48	24	12
Operating frequency Hz	50/60			50/60	50/60			
Mechanical state indicator light, red	On front face			On front face	On front face			
Width in 9 mm modules	2			4	2			
Current rating	–			–	415 V AC	3 A		
					≤ 240 V AC	6 A		
					130 V DC	1 A		
					≤ 48 V DC	3 A		
Number of contacts	–			–	–			
Operating temperature °C	-25…+60			-25…+60	-25…+60			
Storage temperature °C	-40…+85			-40…+85	-40…+85			

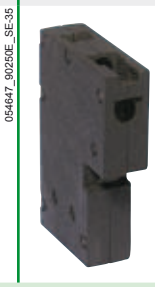
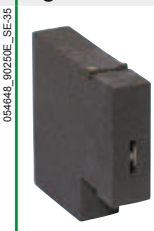
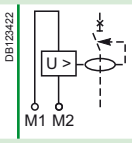
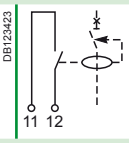
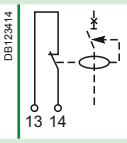
Electrical auxiliaries for NG125 devices and for Vigi NG125 add-on residual current devices (cont.)

Indication

	OF+OF	OF+SD
	Auxiliary contact	**Fault indicating contact**
	056368_SE-30 	056368_SE-30 
	■ Double changeover contact indicating "open" or "closed" position of the associated device	■ Double changeover contact indicating: □ the position of the associated device in the event of: - electrical fault - actuation of the tripping auxiliary □ the "open" or "closed" position of the associated device
	DB123418 	DB123419 
	■ Remote indication of the position of the associated device	■ Remote indication of tripping upon a fault of the associated device
	19071	**19072**
	–	–
	–	–
	50/60	50/60
	–	–
	1	1
	415 V AC 3 A	415 V AC 3 A
	≤ 240 V AC 6 A	≤ 240 V AC 6 A
	130 V DC 1 A	130 V DC 1 A
	≤ 48 V DC 3 A	≤ 48 V DC 3 A
	2 NO/NC	2 NO/NC
	-25…+60	-25…+60
	-40…+85	-40…+85

Electrical auxiliaries for NG125 devices and for Vigi NG125 add-on residual current devices (cont.)

Indication

Auxiliaries	MXV	SDV	
Type	**Shunt release**	**Vigi fault indicating contact**	
			
Function			
	■ At power up, actuates tripping of a circuit breaker or residual current circuit breaker ■ It is provided with a self-interrupting contact	■ Normally-closed or normally-open contact indicating tripping upon an earth fault (including tripped by MXV)	
Wiring diagrams			
			
Utilization			
	■ Adaptable to 125 A Vigi add-on residual current device, all types, and to 63 A Vigi add-on residual current device, adjustable		
	■ Impulse withstand voltage: 6 kV ■ High-impedance input: use an iACTp if the leakage current in the control unit exceeds 1 mA (e.g. illuminated pushbutton)		
Catalogue numbers	**19060**	**19058**	**19059**
Suitable for the following devices:			
NG125	–	–	
Vigi NG125	■	■	

Technical specifications				
Rated voltage (Ue)	V AC	110…240	250	
	V DC	110	–	
Operating frequency	Hz	50/60	50/60	
Number of contacts		–	1 NO	1 NC
Current rating		–	0.1 to 1 A (AC14)	
Operating temperature	°C	-25…+60	-25…+60	
Storage temperature	°C	-40…+85	-40…+85	

RCA remote controls
For iC60 circuit breakers

PB106253-40

PB106251-40

The RCA remote control system allows:
- Remote electrical control (opening and closing) of circuit breakers with or without Vigi add-on RCD, with or without auxiliary.
- Circuit-breaker resetting after tripping, in accordance with safety principles and the regulations in force.
- Local control by operating handle.
- Circuit placing in safety configuration by padlocking.

2 choices of operation after tripping:
- A: Enabling of remote circuit-breaker resetting;
- B: Inhibition of remote resetting.

The version with Ti24 interface allows:
- Direct interfacing of remote control with a programmable logic controller (PLC), a supervision system and any other communication device, having inputs/outputs in 24 V DC (control, OF and SD indications).
- Fast, reliable connection of the remote control to the Acti 9 Smartlink thanks to the prefabricated cables.
- Remote indication by "OF" potential-free contact.
- Provision of 2 operating modes, "1 and 3".

The iMDU auxiliary allows RCA control in 24/48 V AC/DC.

Catalogue numbers

RCA remote control			
Type			**Width in 9 mm modules**
For circuit breakers 1P, 1P+N, 2P	**Voltage**		
Without Ti24 interface	230 V AC, 50/60 Hz	**A9C70112**	7
With Ti24 interface	230 V AC, 50/60 Hz	**A9C70122**	7
For 3P, 4P circuit breakers			
Without Ti24 interface	230 V AC, 50/60 Hz	**A9C70114**	7
With Ti24 interface	230 V AC, 50/60 Hz	**A9C70124**	7
Auxiliaries		**See module CA907000 and CA907002**	

DB123813

Without Ti24 interface

DB123572

DB123573

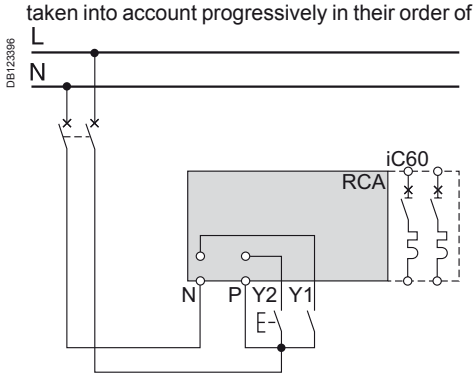
With Ti24 interface

Legend		
Type		**Application**
OFF		All remote control inhibited
auto	**A**	Circuit breaker remote reclosing after tripping allowed
	B	Circuit breaker remote reclosing after tripping inhibited
Green indicator lamp		Remote control possible
Orange indicator lamp		Remote control impossible
1 (Ti24)		Mode 1
3 (Ti24)		Mode 3
Y1		Latched order local control
Y2		Impulse-type or latched order local control (depending on mode)
Y3		Latched order centralized control

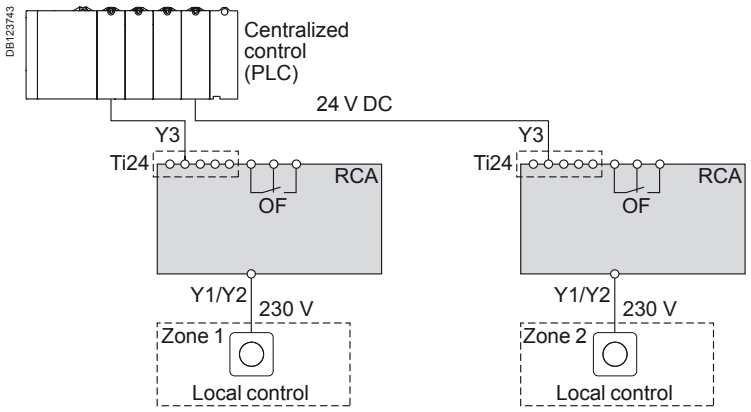
RCA remote controls (cont.)
For iC60 circuit breakers

Standard RCA

■ The orders received on terminals Y1 and Y2 are taken into account progressively in their order of arrival.



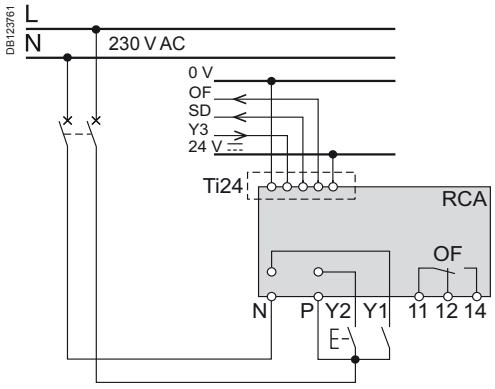
RCA Ti24



RCA Ti24 mode 1

Mode 1: Locally or centrally controlled circuit-breaker opening/closing

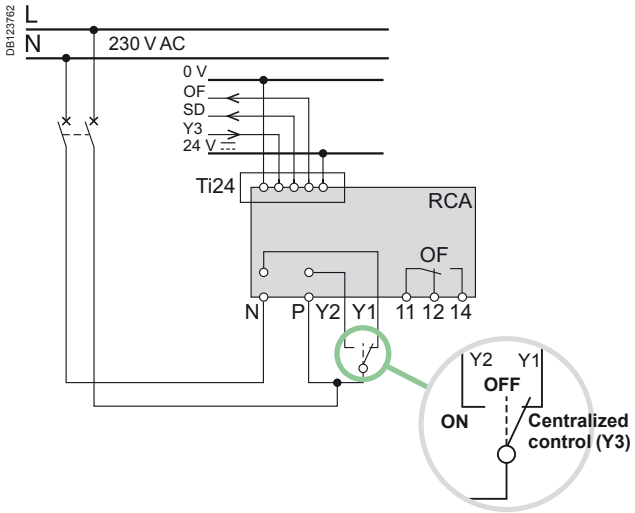
■ The orders come from various control points, and they are taken into account in their order of arrival
■ Y1: Latched order local control
■ Y2: Impulse-type local control
■ Y3: Latched order centralized control



RCA Ti24 mode 3

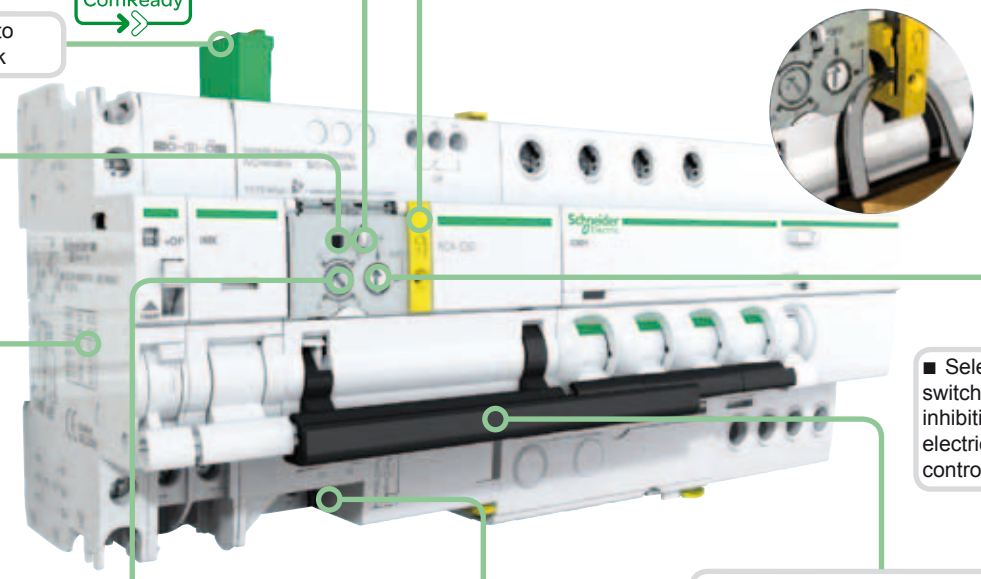
Mode 3: Centrally controlled opening/closing + local override

■ 3 positions allowing a choice between override and centralized control:
■ Y1: Latched order local control
■ Y2: Latched order local control
■ Y3: Latched order centralized control



RCA remote controls (cont.)
For iC60 circuit breakers

DB123576



DB123763

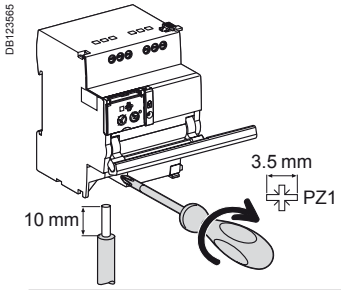
DB123578

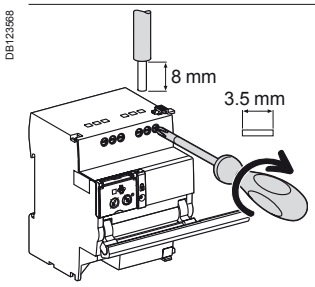
DB123579

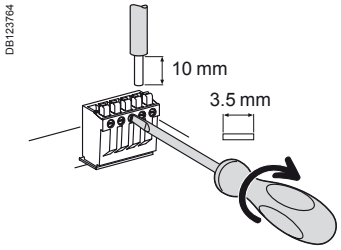
Legend	
Type	**Application**
+24VDC	V DC power supply
Y3	Latched order centralized control
SD	Circuit-breaker tripping information
OF	Control circuit state information (open/closed)
0 V	V DC power supply
Y1	Latched order local control
Y2	Impulse-type or latched order local control (depending on mode)
N	230 V AC power supply
P	
OF  11 12 14	Circuit-breaker state indication contact (open/closed)

RCA remote controls (cont.)
For iC60 circuit breakers

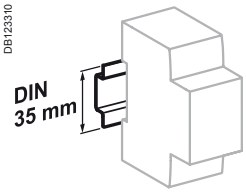
Connection



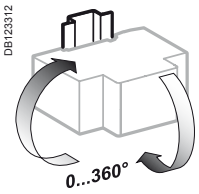




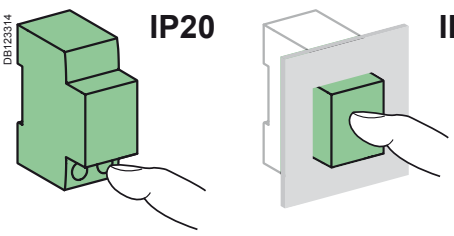
Terminal	Tightening torque	Without accessories – Copper cables		
		Rigid	Flexible	Flexible with ferrule
		 DB122945	 DB123553	 DB123554
Power supply (N/P) Inputs (Y1/Y2)	1 N.m	0.5 to 10 mm² 2 x 0.5 to 2 x 2.5 mm²	0.5 to 6 mm² 2 x 0.5 to 2 x 2.5 mm²	0.5 to 4 mm² 2 x 0.5 to 2 x 2.5 mm²
Outputs (OF)	0.7 N.m	0.5 to 2.5 mm² 2 x 0.5 to 2 x 1.5 mm²	0.5 to 2.5 mm² 2 x 0.5 to 2 x 1.5 mm²	0.5 to 1.5 mm² 2 x 0.5 to 2 x 1.5 mm²
Ti24 interface	Spring-loaded terminals	0.5 to 1.5 mm²	0.5 to 1.5 mm²	-



Clip on DIN rail 35 mm.



Indifferent position of installation.



Technical data

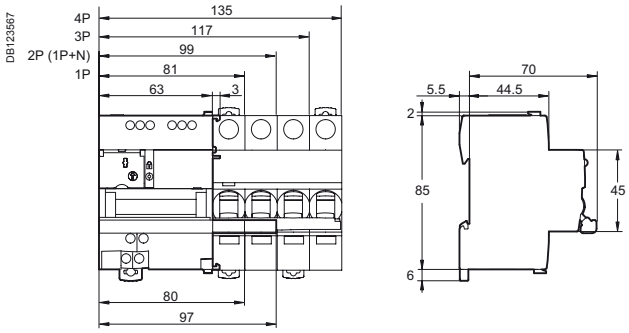
Control circuit		
Supply voltage (Ue) (N/P)		230 V AC, 50/60 Hz
Control voltage (Uc)	Type 1 inputs (Y1/Y2)	230 V AC (as per IEC 61131-2)
Min. duration of control order (Y2)		≥ 200 ms
Response time (Y2)		< 500 ms
Consumption		≤ 1 W
Thermal self-protection with automatic Reset against overheating of the control circuit due to an abnormal number of operations		
Endurance (O-C) (RCA combined with a circuit breaker)		
Electrical/Mechanical		10,000 cycles
Indication / Remote control		
Potential free changeover contact output (OF)	Min.	24 V AC/DC, 10 mA
	Max.	230 V AC ,1 A
Input (Y1/Y2)	230 V AC	5 mA
Ti24 interface (as per IEC 61131)		
Type 1 input (Y3)	24 V DC	5.5 mA
Output (OF and SD)	24 V DC	In max.: 100 mA
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in a modular enclosure	IP40 Insulation class II
Insulation voltage (Ui)		400 V
Degree of pollution (IEC 60947)		3
Rated impulse withstand voltage (Uimp)		6 kV
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +70°C
Tropicalization		Treatment 2 (relative humidity of 93 % at +40°C)

RCA remote controls (cont.)
For iC60 circuit breakers

Weight (g)

Remote controls	
Type	**RCA**
For 1P, 1P+N, 2P circuit breakers	400
For 3P, 3P+N, 4P circuit breakers	430

Dimensions (mm)



ARA automatic reclosers
For iC60 circuit breakers and iID residual current circuit breakers

PB106254-40

ARA iC60

PB106257-40

ARA iID

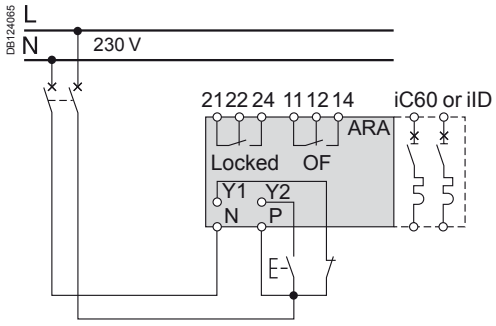
The ARA reclosing auxiliary can:
- Perform automatic reclosing of the associated protection device, after tripping.
- Increase the availability of installations without supervision, isolated, hard of access and demanding very great availability (mobile telephony systems, motorways, pumping stations, airports, railways, meteorological stations, service stations, automatic teller machines, public lighting, tunnels, etc.), by restoring them to operation without intervention by personnel in the event of a transient fault (atmospheric disturbances, industrial overvoltages, etc.).
- For the ARA iC60, the operator can choose predefined reclosing program which allows the safety and availability of facilities to be reconciled taking into account the facility's environment.
- The circuit is placed in safety configuration by the padlocking device.

Catalogue numbers

ARA iC60				
For circuit breaker				**Width in 9 mm modules**
1P, 1P+N, 2P	**Number of programs**	**Voltage**		
	4	230 V AC, 50/60 Hz	**A9C70132**	7
3P, 4P				
	4	230 V AC, 50/60 Hz	**A9C70134**	7
ARA iID				
For residual current circuit breaker				**Width in 9 mm modules**
2P	**Number of programs**	**Voltage**		
	1	230 V AC, 50/60 Hz	**A9C70342**	7
4P				
	1	230 V AC, 50/60 Hz	**A9C70344**	7
Auxiliaries		**See module CA907000 and CA907002**		

Diagram

DB124065



DB124060

DB123582

ARA iC60

DB123583

DB406179

ARA iID

Legend		
Type		**Application**
DB124061 		Choice of program (ARA iC60)
Y1		"Remote" inhibition of automatic reclosing
Y2		Remote control of final reclosing
N		230 V power supply
P		
Locked		Automatic recloser inhibition indication contact
OF		Indicates the state of the circuit breaker or residual current circuit breaker (opened or closed)
Indicator lamp	Flashing green	ARA automatic recloser operational
	Flashing red	Reclosing cycle in progress
	Fixed red	ARA automatic recloser locked at end of reclosing cycle: circuit breaker or residual current circuit breaker tripped (open)
	Flashing orange	ARA automatic recloser not operational

ARA automatic reclosers (cont.)
For iC60 circuit breakers and iID residual current circuit breakers

Operating principle

The ARA automatic recloser makes a number of attempts at reclosing depending on the program chosen by the user.
The program includes the following settings:
- A time delay before reclosing (TA).
- A reinitialization time delay (TB).
- A maximum number of reclosing attempts.

If, following these attempts, the fault is still present, the device places itself in waiting for manual reclosing, or final remote reclosing (Y2).

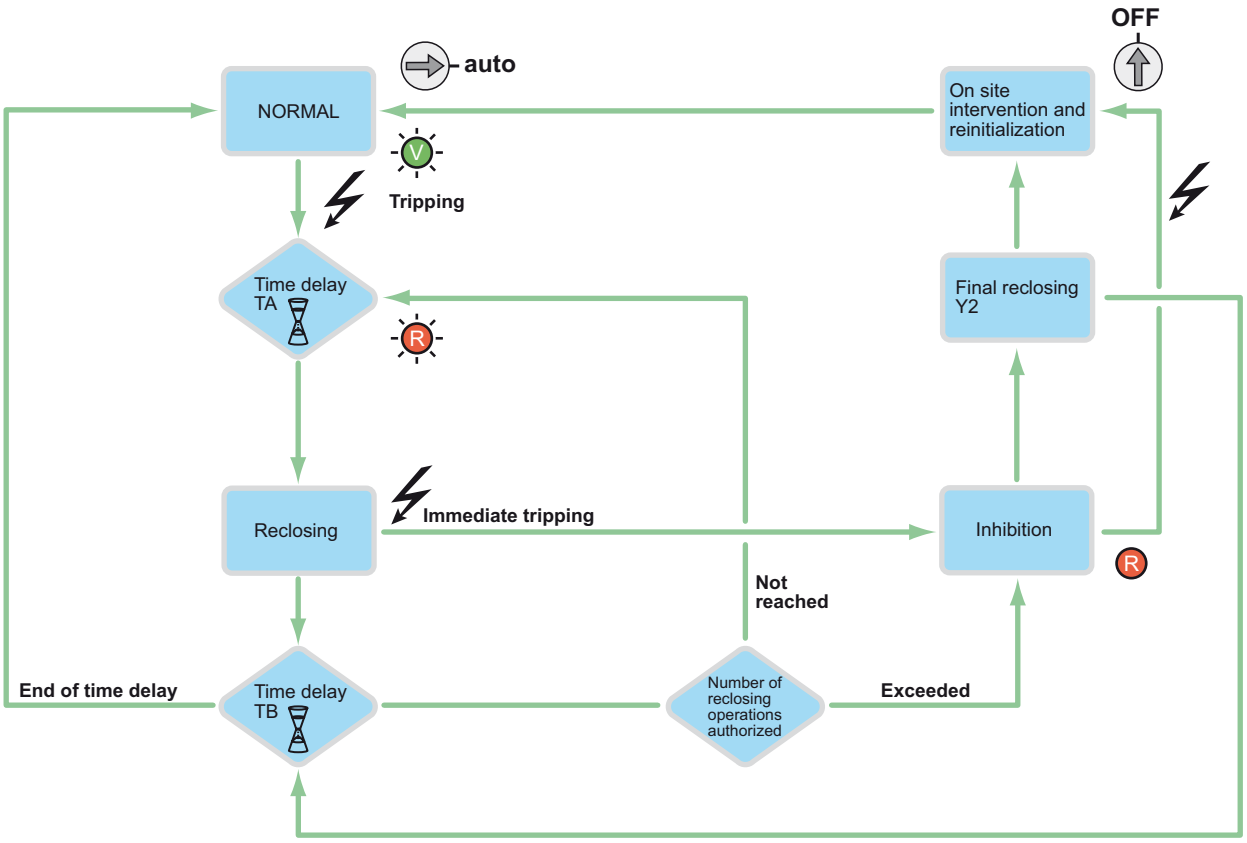
ARA iC60	Number of reclosing attempts	Delay before reclosing	Check time	Final reclosing Y2
		TA	TB	
Program				
DB124061 1 2 4 3	1	10 s	6 min.	Once after inhibition
DB124062 1 2 4 3	3	10 s 1 min. 3 min.	2 min. 6 min. 6 min.	
DB124063 1 2 4 3	5	10 s 1 min. 3 min. 3 min. 3 min.	2 min. 6 min. 6 min. 6 min. 6 min.	
DB124064 1 2 4 3	5	10 s 1 min. 3 min. 4 min. 5 min.	2 min. 6 min. 8 min. 10 min. 12 min.	

ARA iID	Number of reclosing attempts	Delay before reclosing	Check time	Final reclosing Y2
		TA	TB	
Only 1 program available	15	10 s 20 s 40 s 3 min. ...	30 min. 30 min. ...	Once per cycle

ARA automatic reclosers (cont.)
For iC60 circuit breakers and iID residual current circuit breakers

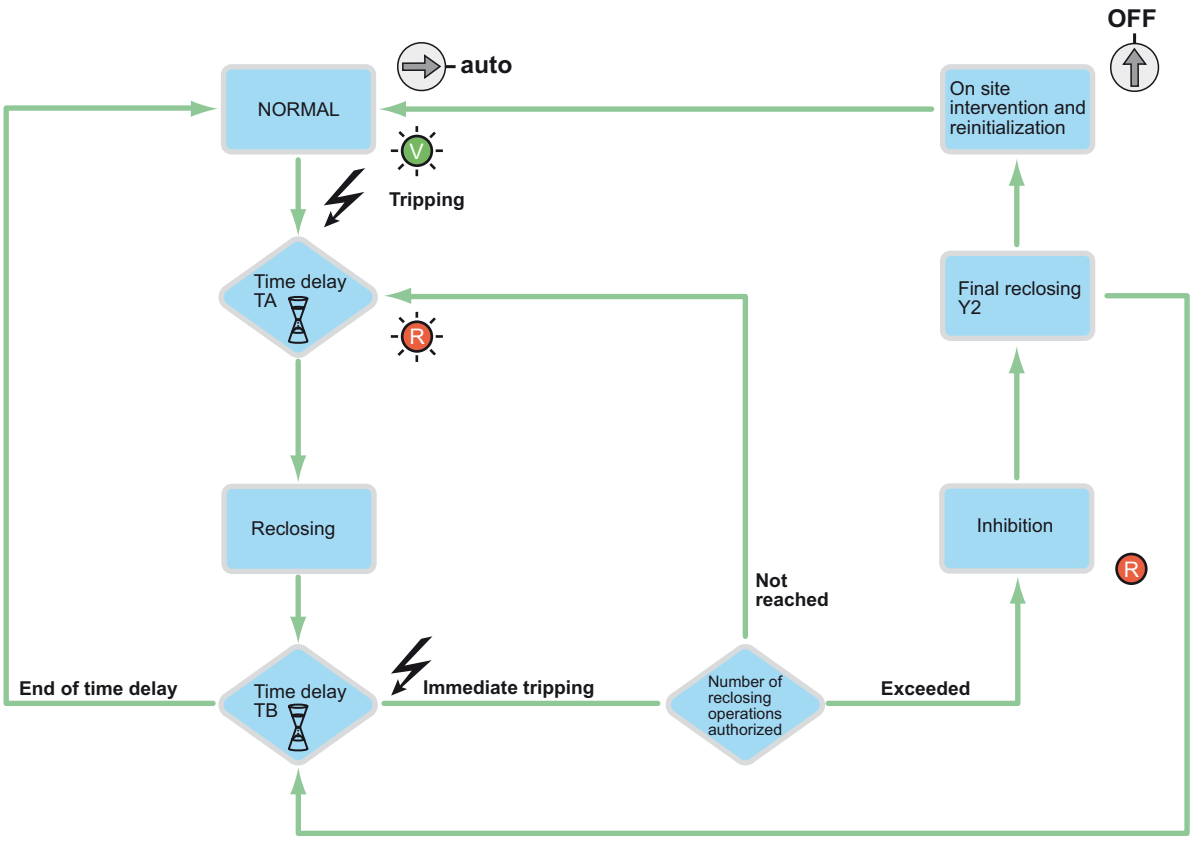
ARA iC60 operating diagram

DB404539

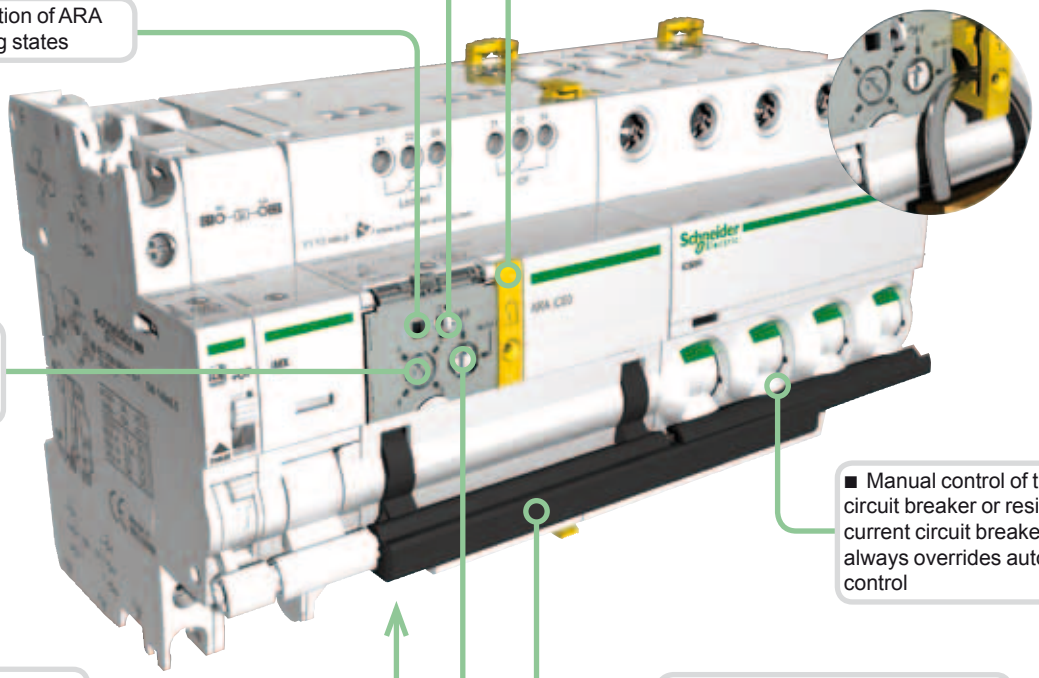


ARA iID operating diagram

DB404538



ARA automatic reclosers (cont.)
For iC60 circuit breakers and iID residual current circuit breakers

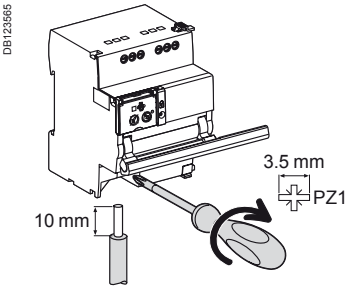


PB106055-104

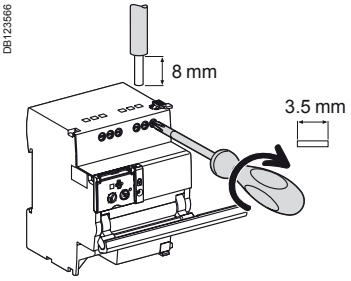
ARA automatic reclosers (cont.)
For iC60 circuit breakers and iID residual current circuit breakers

Connection

DB123565

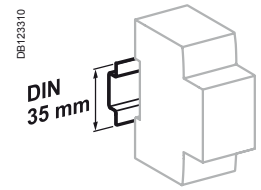


DB123566



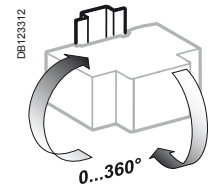
Terminal	Tightening torque	Copper cables		
		Rigid	Flexible	Flexible with ferrule
		DB122945	DB123553	DB123554
Power supply (N/P) Inputs (Y1/Y2)	1 N.m	0.5 to 10 mm² 2 x 0.5 to 2 x 2.5 mm²	0.5 to 6 mm² 2 x 0.5 to 2 x 2.5 mm²	0.5 to 4 mm² 2 x 0.5 to 2 x 2.5 mm²
Outputs (OF/Locked)	0.7 N.m	0.5 to 2.5 mm² 2 x 0.5 to 2 x 1.5 mm²	0.5 to 2.5 mm² 2 x 0.5 to 2 x 1.5 mm²	0.5 to 1.5 mm² 2 x 0.5 to 2 x 1.5 mm²

DB123310



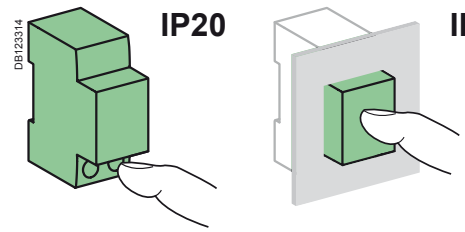
Clip on DIN rail 35 mm.

DB123312



Indifferent position of installation.

DB123314



Technical data

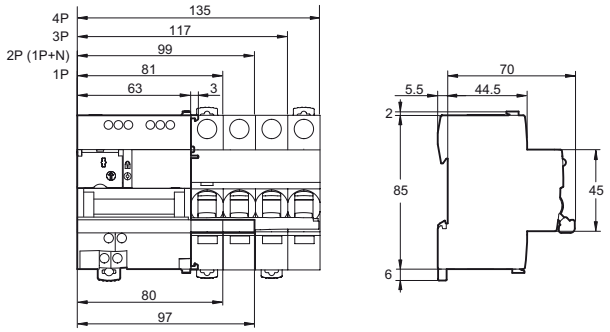
Control circuit		
Supply voltage (Ue) (N/P)		230 V AC, 50/60 Hz
Control voltage (Uc)	Type 1 inputs (Y1/Y2)	230 V AC (as per IEC 61131-2)
Min. duration of control order (Y2)		≥ 200 ms
Response time (Y2)		< 500 ms
Consumption		< 2 W
Endurance (O-C) (ARA combined with a circuit breaker)		
Electrical		5000 cycles
Indication / Remote control		
Potential-free changeover contact output (OF/Locked)	Min.	24 V AC/DC, 10 mA
	Max.	230 V AC, 1 A
Input (Y1/Y2)	230 V AC	5 mA
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in a modular enclosure	IP40 Insulation class II
Insulation voltage (Ui)		400 V
Degree of pollution (IEC 60947)		3
Rated impulse withstand voltage (Uimp)		6 kV
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +70°C
Tropicalization		Treatment 2 (relative humidity of 93 % at +40°C)

Weight (g)

Automatic reclosers	
Type	**ARA**
For 1P, 1P+N, 2P circuit breakers or iID residual current circuit breaker	440
For 3P, 4P circuit breakers	470

Dimensions (mm)

DB123567



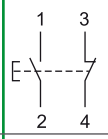
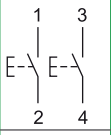
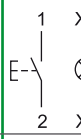
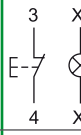
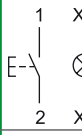
iPB pushbuttons

IEC 60669-1 and IEC 60947-5-1

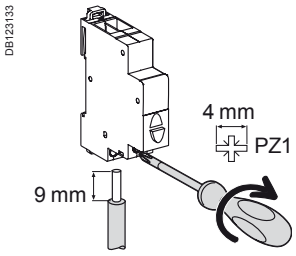
■ iPB pushbuttons are used to control electric circuits by means of pulses.

Catalogue numbers

iPB pushbuttons

Type		Single				Double		Single + indicator light			
											
Diagram		1 NC 		1 NO 	1 NO + 1 NC 	1 NO / 1 NC 	1 NO / 1 NO 	1 NO 	1 NC 	1 NO 	1 NC 
Pushbutton	Colour	Grey	Red	Grey	Grey	Green/red	Grey/grey	Grey	Grey	Grey	Grey
Indicator light	Power supply	-	-	-	-	-	-	110…230 V AC		12…48 V AC/DC	
	Colour	-	-	-	-	-	-	Green	Red	Green	Red
Cat. no.		**A9E18030**	**A9E18031**	**A9E18032**	**A9E18033**	**A9E18034**	**A9E18035**	**A9E18036**	**A9E18037**	**A9E18038**	**A9E18039**
Width in 9 mm modules		2				2		2			

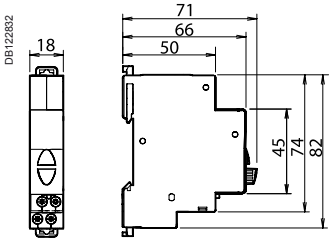
Connection



Tightening torque	Copper cables	
	Rigid	Flexible or with ferrule
		
1 N.m	0.5 mm^2 min. 2 x 2.5 mm^2 max.	0.5 mm^2 min. 2 x 2.5 mm^2 max.

■ Phase-separated wall that can be divided to allow the teeth of all types of comb busbar to pass through.
■ Staggered terminals to simplify connection.

Dimensions (mm)



Technical data

Main characteristics	
Pollution degree	3
Power circuit	
Voltage rating (Ue)	250 V AC
Current rating (Ie)	20 A
Additional characteristics	
Endurance (O-C)	30,000 operations AC22 (cos φ = 0.8)
Operating temperature	-35°C... +70°C
Storage temperature	-40°C... +80°C
Tropicalization	Treatment 2 (relative humidity 95 % at 55°C)
LED indicator light	Consumption: 0.3 W
	Service life: 100,000 hours of constant lighting efficiency
	Maintenance-free indicator light (non-interchangeable LEDs)

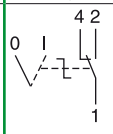
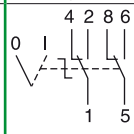
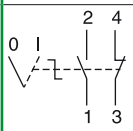
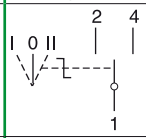
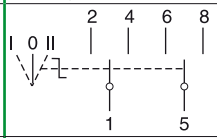
iSSW linear switches

IEC 60669-1 and IEC 60947-5-1

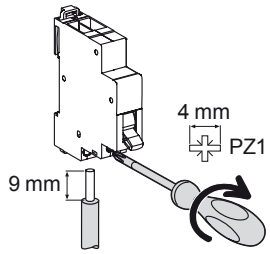
■ iSSW linear switches are used for the manual control of electric circuits.

Catalogue numbers

iSSW linear switches

Type	2 positions			3 positions	
	PB105262-40 			PB105263-40 	
Contact	1 changeover switch	2 changeover switches	1 NO + 1NC	1 changeover switch	2 changeover switches
Diagram					
Cat. no.	**A9E18070**	**A9E18071**	**A9E18072**	**A9E18073**	**A9E18074**
Width in 9 mm modules	2	4	2	2	4

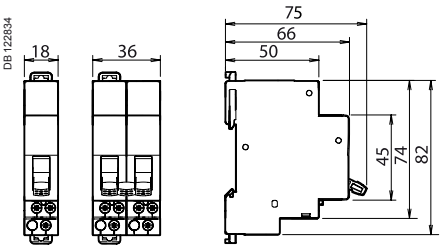
Connection

DB123134 

Tightening torque	Copper cables	
	Rigid	Flexible or with ferrule
	DB122945 	DB122946 
1 N.m	0.5 mm² min. 2 x 2.5 mm² max.	0.5 mm² min. 2 x 2.5 mm² max.

■ Phase-separated wall that can be divided to allow the teeth of all types of comb busbar to pass through.
■ Staggered terminals to simplify connection.

Dimensions (mm)

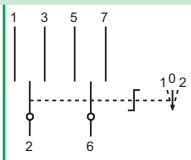
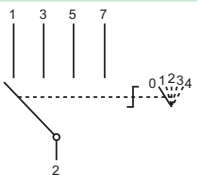
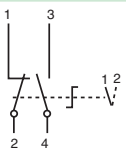
DB122834 

Technical data

Main characteristics	
Pollution degree	3
Power circuit	
Voltage rating (Ue)	250 V AC
Current rating (Ie)	20 A
Additional characteristics	
Endurance (O-C)	30,000 cycles AC22 (cos φ = 0.8)
Operating temperature	-20°C... +50°C
Storage temperature	-40°C... +70°C
Tropicalization	Treatment 2 (relative humidity 95 % at 55°C)

DIN rail selector switches iCMB, iCMD, iCME, iCMC, iCMV and iCMA

Control

Selector switches	iCMB	iCMD	iCME
Type	**Two-pole with zero setting**	**4-way**	**2-way for electronic circuits**
In compliance with standards	IEC 60947-3 (EN 60947-3) VDE 0660 part. 107 UL	IEC 60947-3 (EN 60947-3) VDE 0660 part. 107 UL	IEC 60947-3 (EN 60947-3) VDE 0660 part. 107 UL
	PB107120-38 	PB107121-38 	PB107122-38 
Function			
	■ This two-pole selector switch with zero setting allows manual control of a circuit with 2-way operation (non-locking) with a stop position	■ This 4-way selector switch allows control of a circuit with operating priorities	■ This 2-way selector switch is used specially for the control of electronic circuits of low voltage and current level
Wiring diagrams			
	DB123860 	DB123861 	DB123862 
Use			
	Example: electrically controlled metal screen: ■ position 1 = raising ■ position 0 = stop ■ position 2 = lowering Zero setting product, positions 1 and 2 must be maintained on the rotative handle by the operator	Example: fan control: ■ position 0 = stop ■ position 1 = override operation, slow speed ■ position 2 = override operation, high speed ■ position 3 = remote control ■ position 4 = automatic operation	■ Voltage range from 30 mV to 600 V AC
Catalogue numbers	**A9E15120**	**A9E15121**	**A9E15122**

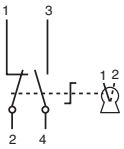
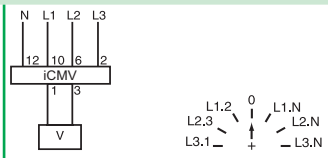
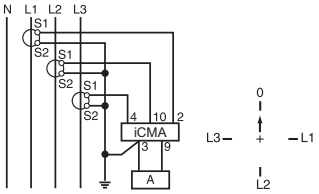
Technical specifications

Rated voltage (Ue)	V AC	415	415	See following table
Maximum operating voltage	V	440	440	440
Rating	A	10	10	See following table
Operating frequency	Hz	50/60	50/60	50/60
Width in 9-mm modules		4	4	4
Breaking capacity (resistive load)		–	–	

	V AC	V DC
1 V	5 A	3 A
12 V	1.2 A	0.7 A
24 V	0.7 A	0.4 A
48 V	0.45 A	0.25 A
110 V	0.25 A	0.13 A
240 V	0.15 A	0.08 A
300 V	0.13 A	0.07 A
440 V	0.1 A	0.05 A

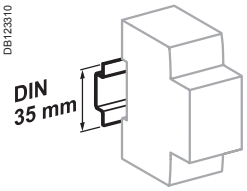
Operating temperature	°C	-20…+55	-20…+55	-20…+55
Storage temperature	°C	-25…+80	-25…+80	-25…+80

DIN rail selector switches iCMB, iCMD, iCME, iCMC, iCMV and iCMA (cont.)

	iCMC	iCMV	iCMA
	2-way key-actuated	**7-position voltmeter**	**4-position ammeter**
	IEC 60947-3 (EN 60947-3) VDE 0660 part. 107 UL	IEC 60947-3 (EN 60947-3) VDE 0660 part. 107 UL	IEC 60947-3 (EN 60947-3) VDE 0660 part. 107 UL
	PB107123-38 	PB107118-38 	PB107119-38 
	■ 2-way key-actuated selector switch (key Ronis 601 type) with locking in one or the other position	■ This 7-position voltmeter selector switch makes it possible, with a single voltmeter, to measure in succession the voltages (phase-to-phase and phase-to-neutral) of a three-phase circuit	■ This 4-position ammeter selector switch makes it possible, with a single ammeter (using current transformers), to measure in succession the currents of a three-phase circuit
	DB123869 	DB123146 	DB123145 
	–	–	–
	A9E15123	**15125**	**15126**
	415	415	415
	440	440	440
	10	10	10
	50/60	50/60	
	4	4	4
	–	–	–
	-20…+55	-20…+55	-20…+55
	-25…+80	-25…+80	-25…+80

DIN rail selector switches iCMB, iCMD, iCME, iCMC, iCMV and iCMA (cont.)

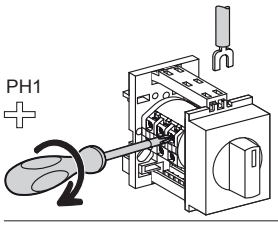
DB123310



Clip on DIN rail 35 mm.

Connection

DB123270



Tightening torque	Copper cables Flexible or rigid with ferrule
	DB122945 
0.35 N.m	< 1.5 mm^2

■ Connection by jumper terminals with captive screws.

Technical data

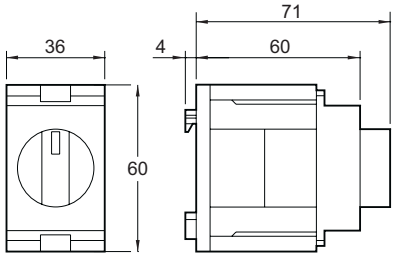
Additional characteristics		
Degree of protection	Device only	IP20
Endurance (O-C)	Electrical	1,000,000 switching operations
	Mechanical	2,000,000 switching operations (AC21A-3 x 440 V)

Weight (g)

Selector switches	
Type	
iCMA	58
iCMB	58
iCMC	70
iCMD	58
iCME	44
iCMV	58

Dimensions (mm)

DB123857



Button holders

They can be attached to a symmetrical 35 mm rail, in modular cabinets or enclosures, for control and indications auxiliaries: push-buttons, emergency stops, switches, light indicators; for tertiary and industrial applications.

PB107183-29

A9A15151

PB107184-29

A9A15152

Catalogue numbers

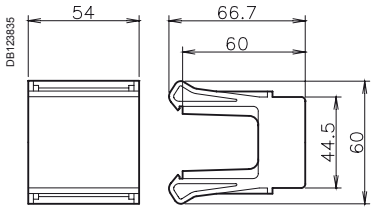
Button holders		
Type		**Width in 9 mm modules**
Ø 22 mm button holder		
	A9A15151	6
Universal support		
	A9A15152	6

Technical data

Main characteristics	Button holder	Universal support
For buttons, switches and indicators with metal or plastic flange Ø 22 of the Schneider Electric XB4 / XB5 type	■	-
For buttons, indicators, light emitting diodes (LED), potentiometers	-	■
Drilling diameter	Ø 22.3 mm	Easy drilling, to be adapted depending on use
Colour	White RAL 9003	
Self-extinguishing insulating material		
Depth under rail 60 mm (same as products)		

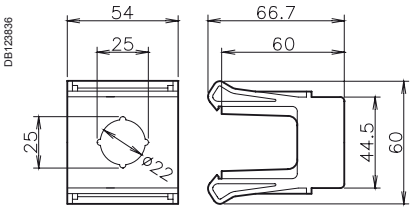
Dimensions (mm)

DB123835



Universal support

DB123836



Ø 22 mm button holder

Reflex iC60N, iC60H (curves B, C, D)

Country approval pictograms

PB115437-40

ComReady

PB115442-40

IEC/EN 60947-2

The Reflex iC60 devices are integrated control circuit breakers which combine the following main functions in a single device:
- Remote control by latched and/or impulse-type order according to the 3 operating modes to be chosen by the user.
- Circuit breaker, to provide:
  - circuit protection against short-circuit currents,
  - circuit protection against overload currents,
  - disconnection in the industrial sector.

Resetting after a fault is performed manually, by the resetting handle.

The Ti24 interface allows direct interfacing of the Reflex iC60 with a PLC, to:
- Execute remote control (Y3).
- Indicate the state of the control circuit (O/C) and circuit-breaker state information (auto/OFF).
- Connect in a fast way and sure the Reflex iC60 to the Acti 9 Smartlink thanks to the prefabricated cables.

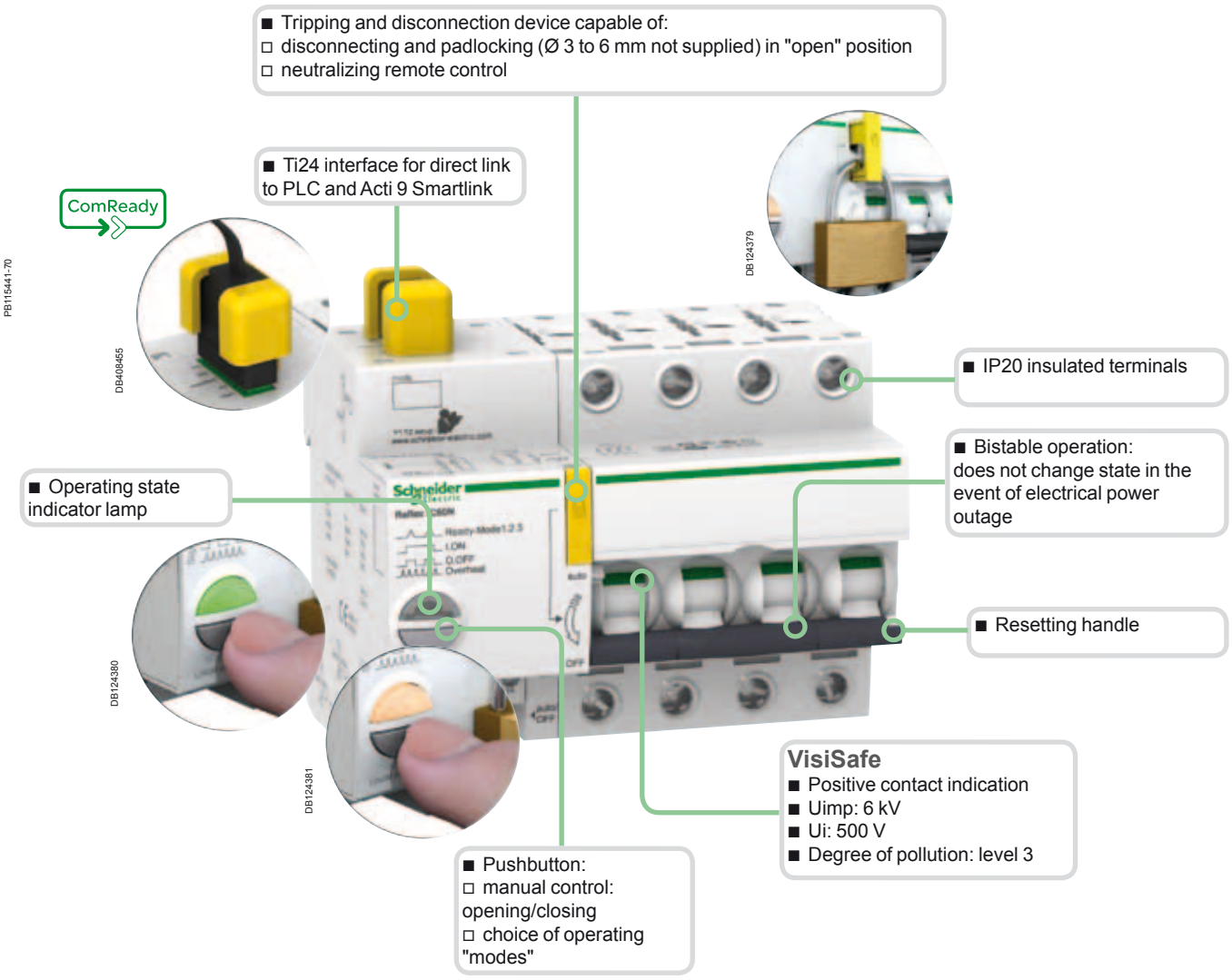
The iMDU auxiliary allows the Reflex iC60 to be controlled in 24/48 V AC/DC.

Alternating current (AC) 50/60 Hz				
Ultimate breaking capacity (Icu) as per IEC/EN 60947-2				Service breaking capacity (Ics)
		Voltage (Ue)		
Ph/Ph (2P, 3P, 4P)		220 to 240 V	380 to 415 V	
Reflex iC60N				
Rating (In)	10 to 40 A	20 kA	10 kA	75 % of Icu
	63 A	20 kA	10 kA	50 % of Icu
Reflex iC60H				
Rating (In)	10 to 40 A	30 kA	15 kA	50 % of Icu

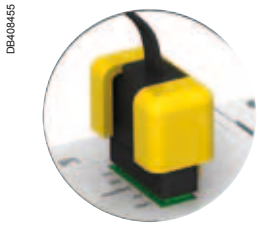
Catalogue numbers

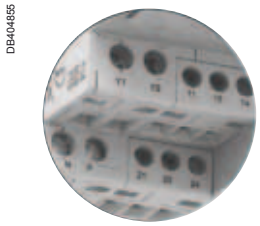
Reflex iC60 circuit breaker									
Type	2P			3P			4P		
Rating (In) for AC1 use	Curve			Curve			Curve		
	B	C	D	B	C	D	B	C	D
Reflex iC60N									
10 A	A9C61210	A9C62210	A9C63210	A9C61310	A9C62310	A9C63310	A9C61410	A9C62410	A9C63410
16 A	A9C61216	A9C62216	A9C63216	A9C61316	A9C62316	A9C63316	A9C61416	A9C62416	A9C63416
25 A	A9C61225	A9C62225	A9C63225	A9C61325	A9C62325	A9C63325	A9C61425	A9C62425	A9C63425
40 A	A9C61240	A9C62240	-	A9C61340	A9C62340	-	A9C61440	A9C62440	-
63 A	A9C61263	A9C62263	-	A9C61363	A9C62363	-	A9C61463	A9C62463	-
Reflex iC60H									
10 A	A9C64210	A9C65210	A9C66210	A9C64310	A9C65310	A9C66310	A9C64410	A9C65410	A9C66410
16 A	A9C64216	A9C65216	A9C66216	A9C64316	A9C65316	A9C66316	A9C64416	A9C65416	A9C66416
25 A	A9C64225	A9C65225	A9C66225	A9C64325	A9C65325	A9C66325	A9C64425	A9C65425	A9C66425
40 A	A9C64240	A9C65240	-	A9C64340	A9C65340	-	A9C64440	A9C65440	-
Width in 9 mm modules	9			11			13		
Vigi iC60	Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005			Vigi iC60 add-on residual current device, module CA902005		
iMDU auxiliary	See module CA907000 and CA907002			See module CA907000 and CA907002			See module CA907000 and CA907002		
Accessories	See module CA907000 and CA907001			See module CA907000 and CA907001			See module CA907000 and CA907001		

Reflex iC60N, iC60H (curves B, C, D) (cont.)



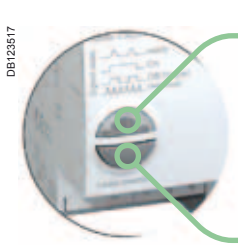
■ Longer product service life thanks to:
□ good overvoltage withstand capacity: products designed to provide a high industrial performance level (degree of pollution, rated impulse withstand voltage and insulation voltage),
□ high limitation performances,
□ fast closure independent of the speed of resetting of the operating handle.





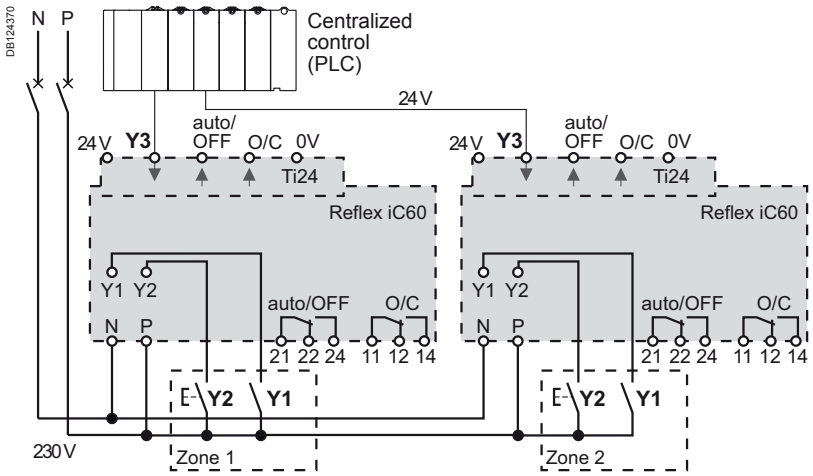
Legend	
Ti24 interface	
+24VDC	V DC power supply
Y3	Remote control by latched order
auto/OFF	Circuit-breaker state information
O/C	Control circuit state information (open/closed)
0 V	V DC power supply
Y1	Latched order control
Y2	Control by impulse-type
N	230 V AC power supply
P	
O/C 11 12 14	Control circuit state indication contact
auto/OFF 21 22 24	Circuit-breaker tripping indication contact

Reflex iC60N, iC60H (curves B, C, D) (cont.)



Remote control is possible by 3 operating modes to be set using the pushbutton on the front panel.

Three types of control: Y1, Y2, Y3



Operating modes

Mode 1: Reflex iC60 opening/closing, locally or centrally controlled

■ The opening/closing orders come from various control points, and they are taken into account in their order of arrival
□ Y1: latched order local control
□ Y2: impulse-type local control
□ Y3: latched order centralized control

Mode 2: Reflex iC60 opening/closing, possible inhibition of local impulse-type control

■ Y1 is used to inhibit Y2
□ Y1: local opening/Y2 inhibition latched order control
□ Y2: impulse-type local opening/closing control
□ Y3: latched order centralized opening/closing control

Mode 3: Reflex iC60 opening/closing, possible inhibition of centralised latched order control

■ Y1 is used to inhibit Y3
□ Y3 inhibition local latched order control
□ Y2: impulse-type local opening/closing control
□ Y3: latched order centralized opening/closing control

Reflex iC60

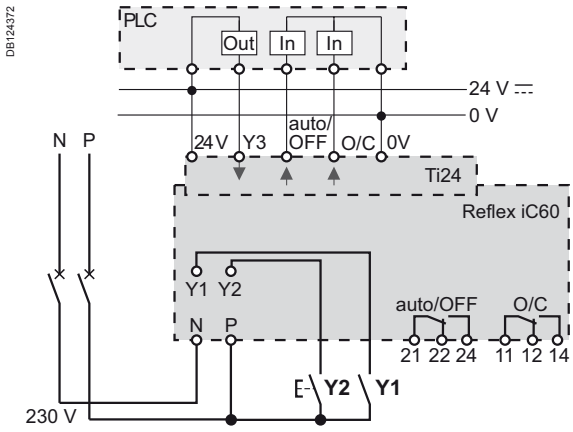


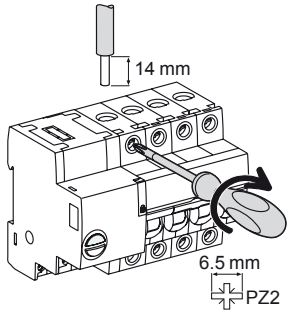
Table of modes

	Mode 1	Mode 2	Mode 3
Reflex iC60	■ Possible mode	■ Possible mode	■ Default mode

Reflex iC60N, iC60H (curves B, C, D) (cont.)

Power connection

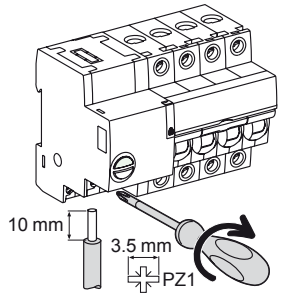
DB123561



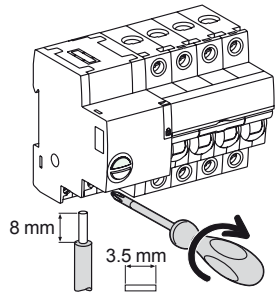
Terminal	Rating	Tightening torque	Without accessories: Copper cables — Rigid	Without accessories: Copper cables — Flexible or with ferrule	With accessories: Al terminal 50 mm²	With accessories: Screw-on connection for ring terminal	With accessories: Multi-cable terminal — Rigid cables	With accessories: Multi-cable terminal — Flexible cables
			DB122945	DB122946	DB122935 Al	DB118789 Ø	DB118787	
Power	10 to 25 A	2 N.m	1 to 25 mm²	1 to 16 mm²	-	Ø 5 mm	-	-
	40 to 63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²	50 mm²		3 x 16 mm²	3 x 10 mm²

Control connection

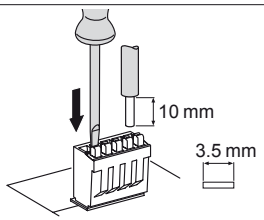
DB123562



DB123563

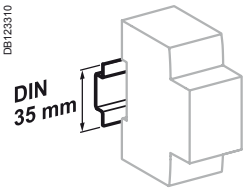


DB123580

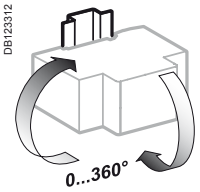


Terminal	Tightening torque	Without accessories: Copper cables — Rigid	Without accessories: Copper cables — Flexible	Without accessories: Copper cables — Flexible with ferrule
		DB122945	DB123553	DB123554
Power supply (N/P) Inputs (Y1/Y2)	1 N.m	1 to 10 mm²	1 to 6 mm²	1 to 4 mm²
Outputs (O/C, auto/OFF)	0.7 N.m	1 to 2.5 mm²	1 to 2.5 mm²	1 to 1.5 mm²
Ti24 interface	Spring-loaded terminals	0.5 to 1.5 mm²	0.5 to 1.5 mm²	0.5 to 1.5 mm²

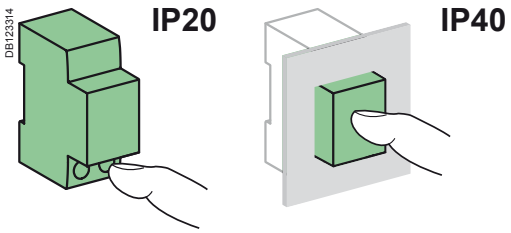
Reflex iC60N, iC60H (curves B, C, D) (cont.)



Clip on DIN rail 35 mm.



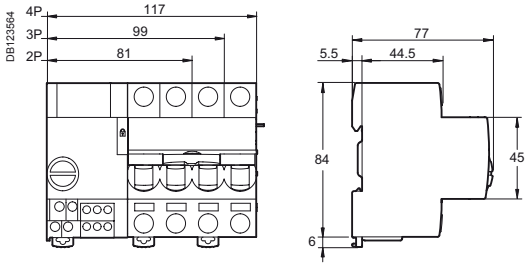
Indifferent position of installation.



Weight (g)

Circuit breaker	
Type	**Reflex iC60**
2P	480
3P	620
4P	750

Dimensions (mm)



Technical data

Control circuit				
Supply voltage (Ue) (N/P)		230 V AC - 50/60 Hz		
Control voltage (Uc)	Inputs (Y1/Y2)	230 V AC - 23 mA (24…48 V AC/DC, with iMDU auxiliary)		
	Input (Y3)	24 V DC - 5.5 mA		
Min. duration of control impulse (Y2)		≥ 250 ms		
Response time (Y2)		≤ 250 ms		
Maximum continuous apparent power	Inputs (Y1/Y2)	5.3 VA		
	Input Y3	0.12 VA		
Length of control wires	Inputs (Y1/Y2/Y3)	500 m		
Inrush current at 230 V - 50/60 Hz		Measured peak current	Peak current duration	Rms current measurement
	2P	11.4 Â	11 ms	7.6 A
	3P	21.8 Â	11 ms	14.5 A
	4P	21.8 Â	11 ms	14.5 A
The inrush currents are added in the event of simultaneous control of several Reflex iC60. The controls should therefore be offset by 10 ms (by automaton or time-delay relays).				
Power circuit				
Max. working voltage (Ue)		400 V AC		
Insulation voltage (Ui)		500 V		
Rated impulse withstand voltage (Uimp)	Set to disconnected	6 kV		
	Set to Ready	4 kV		
Thermal tripping	Reference temperature	50°C		
Magnetic tripping	Curve B	4 In ± 20 %		
	Curve C	8 In ± 20 %		
	Curve D	12 In ± 20 %		
Overvoltage category (IEC 60364)		IV		
Temperature derating		See module CA908007		
Indication / Remote control				
Potential-free changeover contact outputs (O/C, auto/OFF)	Min.	24 V DC - 100 mA		
	Max	230 V AC - 1 A		
Ti24 interface (as per IEC 61131)				
Outputs (O/C, auto/OFF)	Ti24 interface	24 V DC - 100 mA max		
Endurance (O-C)				
Electrical	AC1 - AC7a	Up to 50,000 cycles		
	AC5a - AC5b	Up to15,000 cycles		
	AC7c	Up to 20,000 cycles		
Mechanical		50,000 cycles		
Additional characteristics				
Degree of protection (IEC 60529)	Device only	IP20		
	Device in a modular enclosure	IP40 Insulation class II		
Degree of pollution		3		
Operating temperature		-25°C to +60°C		
Storage temperature		-40°C to +85°C		
Tropicalization		Treatment 2 (relative humidity of 93 % at 40°C)		
Immunity to voltage dips		IEC 61000-4-11 class III		
Immunity to power supply frequency variations		IEC 61000-4-28 and IACS E10		
Immunity to harmonics		IEC 61000-4-13 class 2		
Immunity to electrostatic discharges	Air	8 kV, IEC 61 000-4-2		
	Contacts	4 kV, IEC 61 000-4-2		
Immunity to stray magnetic fields		10 V/m up to 3 GHz, IEC 61000-4-3		
Immunity to fast transients		4 kV from 5 to 100 kHz, IEC 61000-4-4		
Immunity to shock waves		IEC 61000-4-5		
Immunity to power frequency magnetic fields		10 V from 150 kHz to 80 MHz, IEC 61000-4-6		
Immunité aux champs magnétiques à la fréquence du réseau		Level 4 30 A/m to IEC 61000-4-8 and IEC 61000-4-9		
Conducted emissions		CISPR 11/22		
Radiated emissions		CISPR 11/22		

iCT contactors

For the realization of the catalogue France, replace following catalogue numbers:

- **A9C20834** by **A9C24834.**
- **A9C20732** by **A9C24732.**
- **A9C21732** by **A9C25732.**

Pages 458, 459 and 468, 469.

iCT contactors

DB123399 DB116619 DB106604

Country approval pictograms

EN 61095, IEC 1095

iCT contactors are available in two versions:

- Contactors without manually-operated
- Contactors with manually-operated.

The breadth of the iCT contactor range satisfies most application cases.
iCT contactors can be combined with auxiliary control, protection and indication functions.

Contactors

iCT 2P

PB106115-35

manual control

iCT 4P

PB106105-35

- iCT contactors can be used to remote control applications in alternative networks:
  - lighting, heating, ventilation, roller blinds, sanitary hot water
  - mechanical ventilation systems, etc
  - load-shedding of non-priority circuits

PB106120-34

Indication iACTs

- This auxiliary allows indication or control of the "open" or "closed" position of the contactor power contacts

PB106124-34

Interference filtering iACTp

- This auxiliary is an interference suppressor which limits overvoltages on the control circuit

PB106123-34

Dual control iACTc

- Used to control a contactor in impulse-type mode or to combine latched or impulse-type control orders

PB107751-34

Control and indication 24 V DC iACT24

- Allows control and indication of a 230 Vac contactor from the Acti 9 Smartlink or by a PLC, by 24 V DC signals
- Also allows control by a maintained signal

PB106125-34

Time delay iATEt

- This auxiliary is used to time delay for iCT and iTL. According to cabling, there are 5 possible time delay types:
  - 1 for iTL
  - 4 for iCT

Function type A:
late closing
Delay energizing of contactor

Function type B:
time delay
- Energize the contactor by closing a push button
- The time delay starts as soon as the control contacts are closed

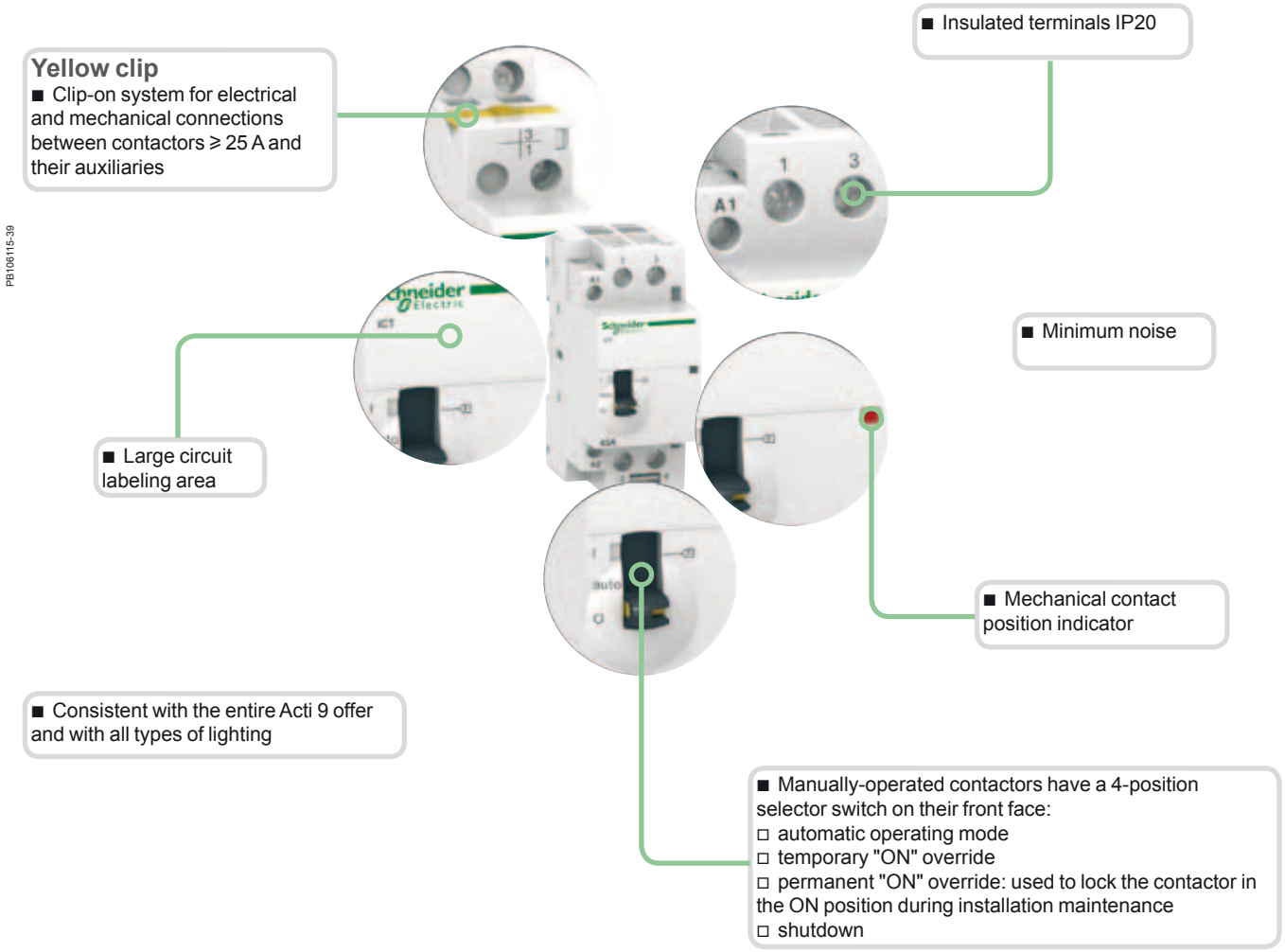
Function type C:
late opening
- Energize the contactor by closing a push button
- The time delay starts when the control contacts are opened

Function type H:
fixed time operation
- Operate the contactor for a pre-determined time from the moment of energizing

Contactors
Contactors auxiliaries

		Choice of 50 Hz contactors									
Type		**Contactor**						**Manually-operated contactors**			
Rating	A	16	20	25	40	63	100	16	25	40	63
Auxiliaries								**Contactors that can be equipped with auxiliaries**			
iACTs indication auxiliary		Yes	Yes	Yes				Yes			
iACTp protection auxiliary	By yellow clips	No	No	Yes				No	Yes		
iACTc, iATEt control auxiliary	By yellow clips	No	No	Yes				No	Yes		
iACT24 control auxiliary		Non	No	Yes (for contactors 230 V - 50 Hz)				No	Yes (for contactors 230 V - 50 Hz)		

iCT contactors (cont.)

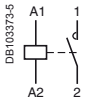
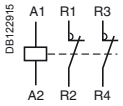
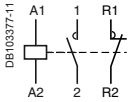
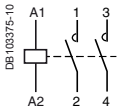
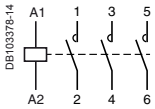
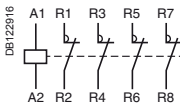
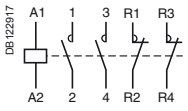
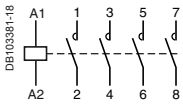
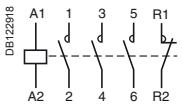


	Choice of 60 Hz contactors				
	Contactor				Manually-operated contactors
	16	25	40	63	40
	Contactors that can be equipped with auxiliaries				
	Yes				Yes
	No	Yes			Yes
	No	Yes			Yes
	No	Yes			No

iCT contactors (cont.)

Catalogue numbers

iCT contactors - 50 Hz

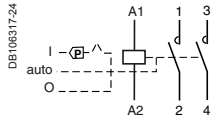
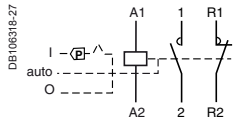
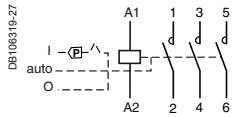
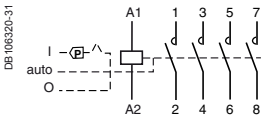
Type						Width in 9 mm modules
1P	**Rating (In)**		**Control voltage (V AC) (50 Hz)**	**Contact**		
	AC7a	**AC7b**				
	16 A	6 A	12	1NO	**A9C22011**	2
			24	1NO	**A9C22111**	2
			48	1NO	**A9C22211**	2
			220	1NO	**A9C22511**	2
			230…240	1NO	**A9C22711**	2
	25 A	8.5 A	220	1NO	**A9C20531**	2
			230…240	1NO	**A9C20731**	2
2P						
	16 A	6 A	12	2NO	**A9C22012**	2
			24	2NO	**A9C22112**	2
			48	2NO	**A9C22212**	2
			220	2NO	**A9C22512**	2
			230...240	2NO	**A9C22712**	2
			12	1NO+1NC	**A9C22015**	2
			24	1NO+1NC	**A9C22115**	2
			220	1NO+1NC	**A9C22515**	2
			230...240	1NO+1NC	**A9C22715**	2
	20 A	-	230...240	2NO	**A9C22722**	2
	25 A	8.5 A	24	2NO	**A9C20132**	2
			48	2NO	**A9C20232**	2
			220	2NO	**A9C20532**	2
			230...240	2NO	**A9C20732**	2
			220	2NC	**A9C20536**	2
			230...240	2NC	**A9C20736**	2
	40 A	15 A	220...240	2NO	**A9C20842**	4
	63 A	20 A	24	2NO	**A9C20162**	4
			220...240	2NO	**A9C20862**	4
	100 A (*)	-	220...240	2NO	**A9C20882**	6
3P						
	16 A	6 A	220…240	3NO	**A9C22813**	4
	25 A	8.5 A	220…240	3NO	**A9C20833**	4
	40 A	15 A	220…240	3NO	**A9C20843**	6
	63 A	20 A	220…240	3NO	**A9C20863**	6
4P						
	16 A	6 A	24	4NO	**A9C22114**	4
			220...240	4NO	**A9C22814**	4
			220...240	2NO+2NC	**A9C22818**	4
	20 A	-	220 ...240	4NO	**A9C22824**	4
	25 A	8.5 A	24	4NO	**A9C20134**	4
			220...240	4NO	**A9C20834**	4
			24	4NC	**A9C20137**	4
			220...240	4NC	**A9C20837**	4
			220...240	2NO+2NC	**A9C20838**	4
	40 A	15 A	220...240	4NO	**A9C20844**	6
			220...240	4NC	**A9C20847**	6
	63 A	20 A	24	4NO	**A9C20164**	6
			220...240	4NO	**A9C20864**	6
			24	4NC	**A9C20167**	6
			220...240	4NC	**A9C20867**	6
			220...240	2NO+2NC	**A9C20868**	6
			220...240	3NO+1NC	**A9C20869**	6
	100 A (*)	-	220...240	4NO	**A9C20884**	12

(*) do not use for lighting applications

iCT contactors (cont.)

Catalogue numbers

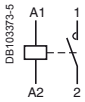
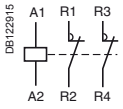
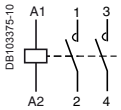
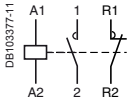
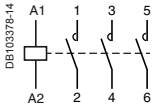
iCT manual control contactor 50 Hz

Type						Width in 9 mm modules
2P	Rating (In) AC7a	AC7b	Control voltage (V AC) (50/60 Hz)	Contact		
 DB106317-24	16 A	6 A	220	2NO	**A9C23512**	2
			230...240	2NO	**A9C23712**	2
			220	1NO+1NC	**A9C23515**	2
			230...240	1NO+1NC	**A9C23715**	2
	25 A	8,5 A	24	2NO	**A9C21132**	2
 DB106318-27			220	2NO	**A9C21532**	2
			230...240	2NO	**A9C21732**	2
	40 A	15 A	24	2NO	**A9C21142**	2
			220...240	2NO	**A9C21842**	4
	63 A	20 A	24	2NO	**A9C21162**	4
			220...240	2NO	**A9C21862**	4
3P						
 DB106319-27	25 A	8,5 A	220...240	3NO	**A9C21833**	4
	40 A	15 A	220...240	3NO	**A9C21843**	6
4P						
 DB106320-31	25 A	8,5 A	24	4NO	**A9C21134**	4
			220...240	4NO	**A9C21834**	4
	40 A	15 A	24	4NO	**A9C21144**	6
			220...240	4NO	**A9C21844**	6
	63 A	20 A	24	4NO	**A9C21164**	6
			220...240	4NO	**A9C21864**	6

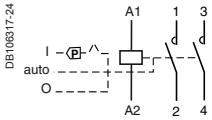
iCT contactors (cont.)

Catalogue numbers

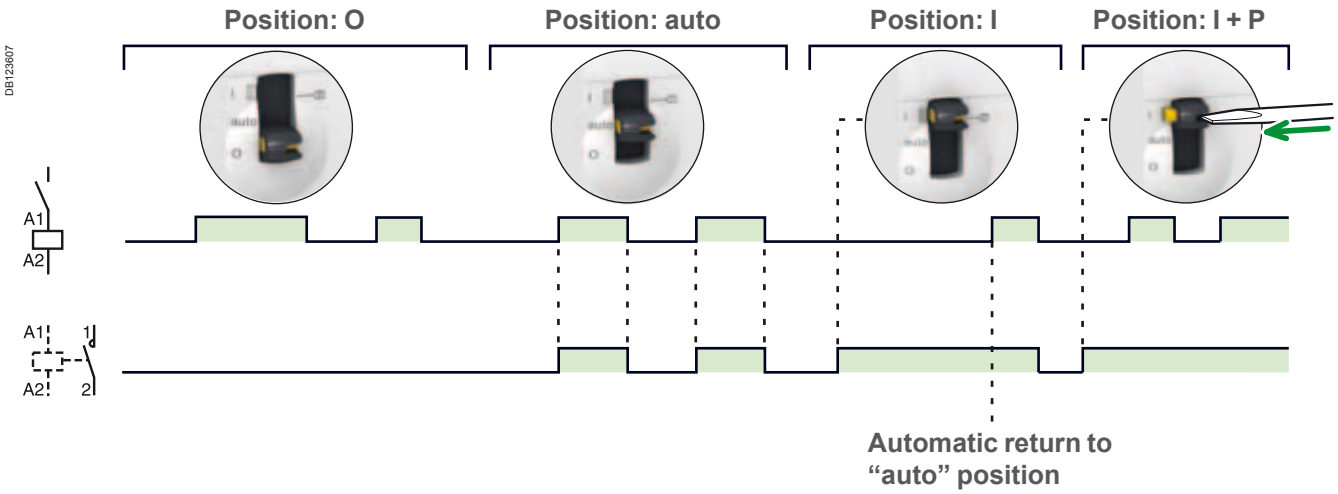
iCT contactors - 60 Hz

Type						Width in 9 mm modules
1P	Rating (In) AC7a	Rating (In) AC7b	Control voltage (V AC) (60 Hz)	Contact		
	25 A	8.5 A	127	1NO	**A9C20431**	2
			220 ...240	1NO	**A9C20631**	2
2P						
 	16 A	6 A	127	1NO+1NC	**A9C22415**	2
			220...240	1NO+1NC	**A9C22615**	2
	25 A	8.5 A	127	2NO	**A9C20432**	2
			220...240	2NO	**A9C20632**	2
			127	2NC	**A9C20436**	2
			220...240	2NC	**A9C20636**	2
	40 A	15 A	127	2NO	**A9C20442**	4
			220...240	2NO	**A9C20642**	4
3P						
	25 A	8.5 A	127	3NO	**A9C20433**	4
			220...240	3NO	**A9C20633**	4
	40 A	15 A	127	3NO	**A9C20443**	6
			220...240	3NO	**A9C20643**	6
	63 A	20 A	127	3NO	**A9C20463**	6
			220...240	3NO	**A9C20663**	6

iCT manual control contactor 60 Hz

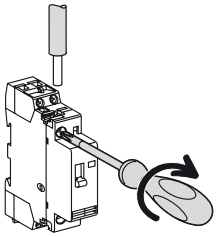
Type						Width in 9 mm modules
2P	Rating (In) AC7a	Rating (In) AC7b	Control voltage (V AC) (60 Hz)	Contact		
	40 A	15 A	127	2NO	**A9C21442**	4
			220...240	2NO	**A9C21642**	4

Operation (Manual control contactor)

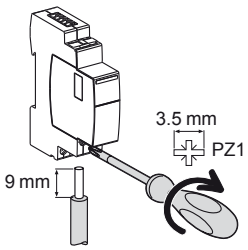


iCT contactors (cont.)

Connection

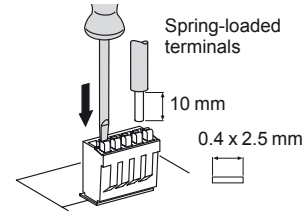


Type		Rating	Lenght tripping	Circuit	Tightening torque	Copper cables	
						Rigid	Flexible or with ferrule
						DB122945 DB122946	
iCT	PZ1: 4 mm	16 - 100 A	9 mm	Control	0.8 N.m	1.5 to 2.5 mm: 2 x 1.5 mm²	1.5 to 2.5 mm: 2 x 2.5 mm²
		16 and 25 A		Power		1.5 to 6 mm²	1 to 4 mm²
	PZ2: 6 mm	40 A - 63 A	14 mm		3.5 N.m	6 to 25 mm²	6 to 16 mm²
		100 A				6 to 35 mm²	6 to 35 mm²
iACTs, iACTp, iACTc, iATEt	PZ1: 4 mm	-	9 mm	-	0.8 N.m	1.5 to 2.5 mm: 2 x 1.5 mm²	1.5 to 2.5 mm: 2 x 2.5 mm²



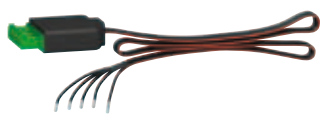
Type	Terminals	Tightening torque	Copper cables		
			Rigid	Flexible	Flexible or with ferrule
		DB122945	DB123553	DB123554	
iACT24	Power supply (N/P)	1 N.m	0.5 to 10 mm² 2 x 0.5 to 2 x 2.5 mm²	0.5 to 6 mm² 2 x 0.5 to 2 x 2.5 mm²	0.5 to 4 mm² 2 x 0.5 to 2 x 2.5 mm²
	Input (Y1/Y2)				

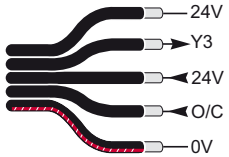
Ti24 connector connection



Type	Catalogue numbers	Copper cables	
		Rigid	Flexible
		DB122945	DB123553
Ti24 Interface	**A9XC2412**	1 x 0.5 to 1.5 mm²	1 x 0.5 to 1.5 mm²

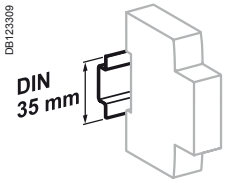
Ti24 prefabricated cables connection



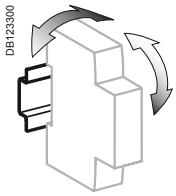


Type	Catalogue numbers	Length
Connection for Acti 9 Smartlink		
6 short prefabricated	**A9XCAS06**	100 mm
6 medium-sized prefabricated	**A9XCAM06**	160 mm
6 long prefabricated	**A9XCAL06**	870 mm
Connection for PLC type terminals		
6 long prefabricated on a single side	**A9XCAU06**	870 mm

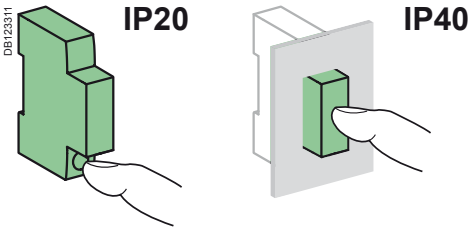
iCT contactors (cont.)

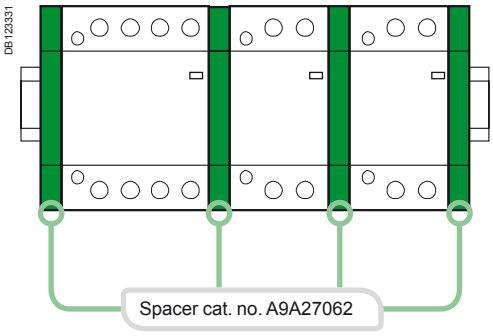


Clip on DIN rail 35 mm.



± 30° vertical.





Technical data

Power circuit		
Voltage rating (Ue)	1P, 2P	250 V AC
	3P, 4P	400 V AC
Frequency		50 Hz or 60 Hz
Type of load		See module CA908026
Endurance (O-C)		
Electrical		100,000 cycles
Maximum number of switching operation a day		100
Additional characteristics		
Insulation voltage (Ui)		500 V AC
Pollution degree		2
Rated impulse withstand voltage (Uimp)		2.5 kV (4 kV for 12/24/48 V AC)
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40
Operating temperature		-5°C to +60°C (1)
Storage temperature		-40°C to +70°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % at 55°C)
ELSV compliance (Extra Low Safety Voltage) for 12/24/48 V AC versions		
The product control conforms to the SELV (safety extra low voltage) requirements		

(1) In the case of contactor mounting in a enclosure for which the interior temperature is in range between 50°C and 60°C, it is necessary to use a spacer, cat. no. A9A27062, between each contactor

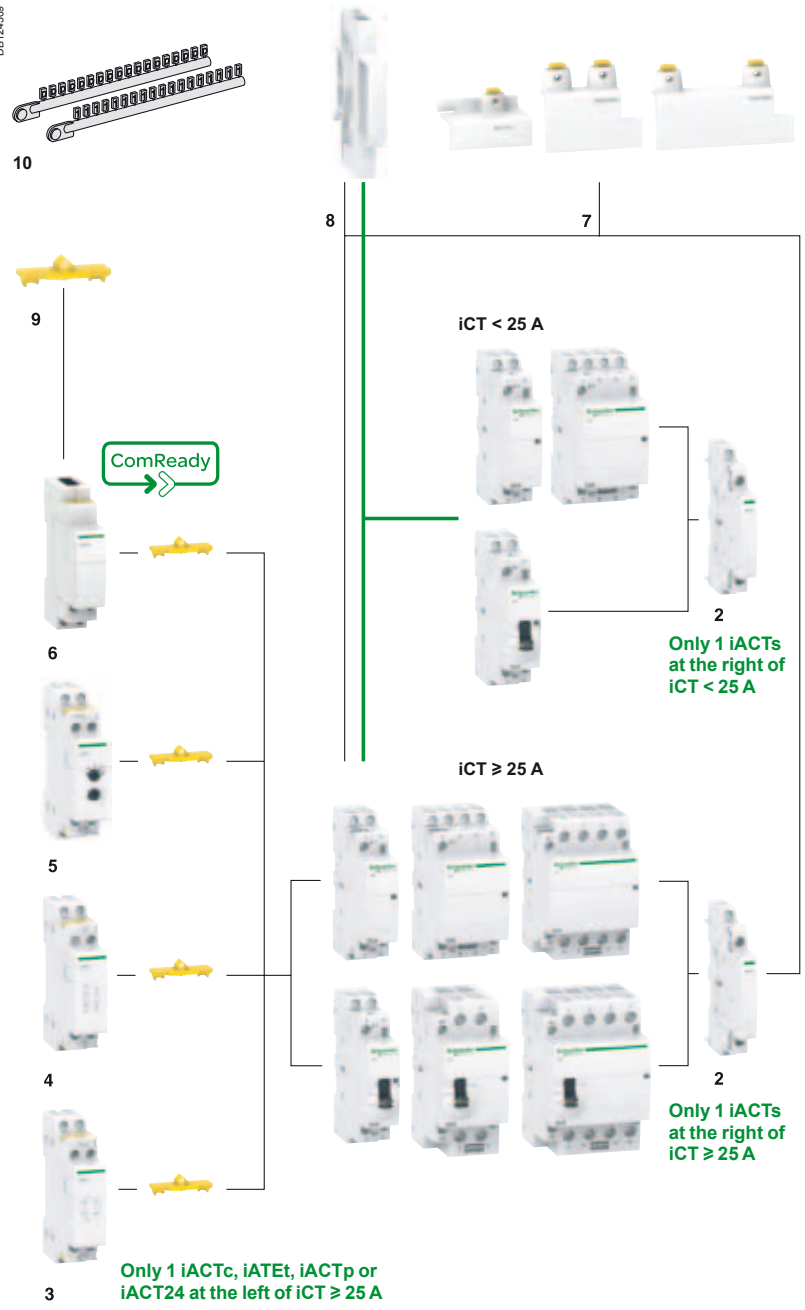
iCT contactors (cont.)

Mounting accessories

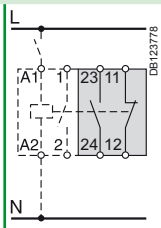
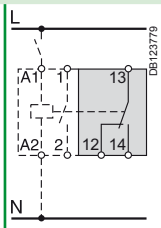
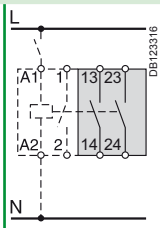
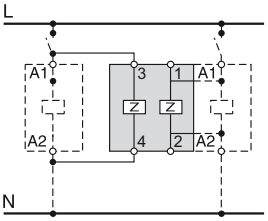
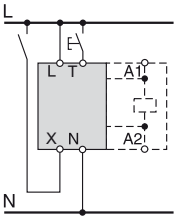
7	Sealable screw shields for top and bottom	3P, 4P 25 A	A9A15921
		2P 40/63 A	A9A15922
		3P, 4P 40/63 A	A9A15923
8	9 mm spacer		A9A27062
9	Yellow clips		A9C15415
10	Clip-on terminal markers	see module	CA907001

Auxiliaries

Indication			
2	iACTs	1NO + 1NC	A9C15914
		1CO	A9C15915
		2NO	A9C15916
Double control inputs			
3	iACTc	230 V AC	A9C18308
		24 V AC	A9C18309
Coil suppression blocs			
4	iACTp	12...48 V AC	A9C15919
		48...127 V AC	A9C15918
		220...240 V AC	A9C15920
Time delay			
5	iATEt	24...240 V AC	A9C15419
Control and indication			
6	iACT24	230 V AC	A9C15924



iCT contactors
Electrical auxiliaries for iCT

	Indication			Protection			Control	
Auxiliaries	**iACTs**			**iACTp**			**iACTc**	
Type	**Indication**			**Interference filtering**			**Impulse/latched control**	
	With Open/Close auxiliary contact			2 protection circuits				
	PB106120-34 			PB106124-34 			PB106123-34 	
Function								
	■ This auxiliary allows indication of the "open" or "closed" position of the contactor power contacts			■ This auxiliary is an interference suppressor which limits overvoltages on the control circuit			■ This auxiliary, combined with contactors, enables them to be controlled by 2 order types: □ impulse order for local control (input T) □ latched order for centralised control (input X) □ the last order received takes priority	
Wiring diagrams								
	DB123777 	DB123778 	DB123779 	DB123316 			DB123315 	
Mounting								
	■ Mounted to the right of iCT			■ Mounted to the left of iCT by yellow clips (1) ■ By wires			■ Mounted to the left of iCT by yellow clips (1)	
Use								
	–			■ The iACTp has 2 separate and identical circuits, allowing it to be combined with 2 different one on the iCT the other by wires			■ Mains power outages: □ < 70 ms: keeps its initial status □ > 80 ms: reset □ put back into operation by manual operation on input X or T. ■ Minimum impulse duration: 250 ms	
Catalogue numbers	**A9C15914**	**A9C15915**	**A9C15916**	**A9C15918**	**A9C15919**	**A9C15920**	**A9C18308**	**A9C18309**
Technical specifications								
Control voltage (Ue)	V AC	24…240		48 …127	12 …48	220 …240	230…240	24…48
	V DC	24…130		–			–	
Control voltage frequency	Hz	50/60		50/60			50/60	
Width in 9 mm modules		1		2			2	
Auxiliary contact (breaking capacity)		■ Mininimum: 10 mA at 24 V DC/AC ■ Maximum: □ 5 A at 230 V AC, AC12 □ 2 A at 230 V AC, AC15 □ 1 A at 130 V DC, DC13		–			–	
Number of contacts		1NO + 1NC	1CO	2NO	–		–	
Operating temperature	°C	-5°C to +50°C						
Storage temperature	°C	-40°C to +70°C						
Consumption		–		–			OFF load: 3 VA Inrush (2): 2 VA Holding (2): 0.2 VA	

(1) Electrical and mechanical link.
(2) Maximum consumption of all contactors controlled.

iCT contactors
Electrical auxiliaries for iCT (cont.)

Control (cont.)

iATEt

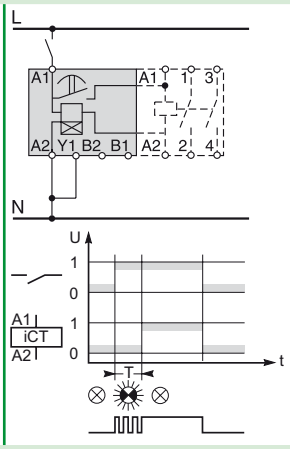
Time delay

PB106125-34

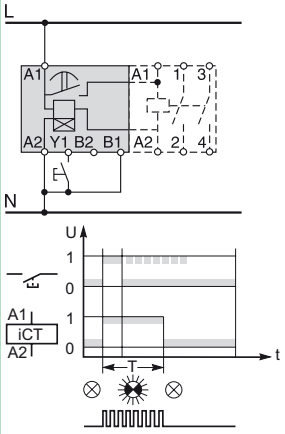
■ This auxiliary is used to time delay for iCT and iTL. According to cabling, there are 5 possible time delay types:
□ 1 for iTL
□ 4 for iCT.

Function type A: late closing	**Function type B: time delay**	**Function type C: late opening**	**Function type H: fixed time operation**
■ Delay energizing of contactor.	■ Energize the contactor by closing a push button. ■ The time delay starts as soon as the control contacts are closed.	■ Energize the contactor by closing a push button. ■ The time delay starts when the control contacts are opened.	■ Operate the contactor for a pre-determined time from the moment of energizing.

DB123321



DB124104



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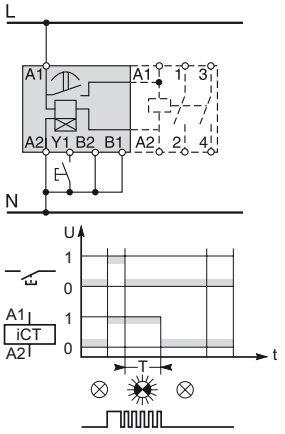

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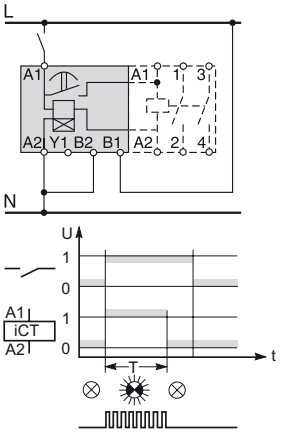


■ Mounted to the left of iCT by yellow clips (1)

–

A9C15419

24…240

24…110

50/60

2

–

–

-20°C to +50°C

-40°C to +80°C

Off-load: 5 VA
Inrush (2): 3 A
Holding (2): 0.2 A

iCT contactors
Electrical auxiliaries for iCT (cont.)

Control and indication

Auxiliary	iACT24
Type	**Control and indication 24 V DC**
	With Ti24 connector

PB107751-34

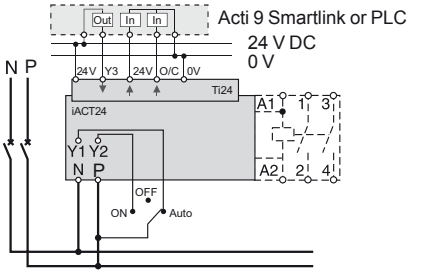
ComReady

Function

- This auxiliary allows a contactor to be interfaced with the Acti 9 Smartlink interface or a programmable logic controller (PLC) in 24 V DC (control, O/C indication)
- 230 V AC control

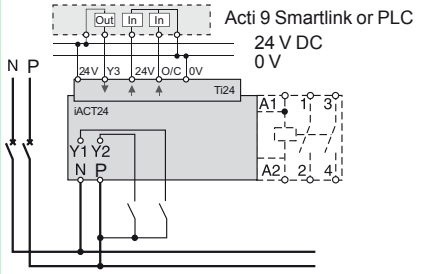
Wiring diagrams

DB124313



Wiring with exclusive selector
230 V AC control (Y1 = 0) / 24 V DC control (Y1 = 1)

DB124441



Wiring for non-exclusive 230 V AC and 24 V DC controls

Mounting

- To the left of the iCT contactor using the yellow clips (1).
- When an iACT24 is used, the A1/A2 terminals of the contactors should not be wired. Only the yellow clips integral with the iACT24 should be used for connection to the coil.

Utilization

- 230 V AC interface:
  - Y1: enabling of 24 V DC control (Y1 = 1) or inhibition of 24 V DC control (Y1 = 0).
  - Y2: 230 V pulse control
- "Ti24" 24 V DC interface:
  - Y3: 24 V DC control of iCT closing on rising edge and opening on falling edge
  - reading of the contactor status (opened or closed) from the position of the integrated O/C auxiliary contact
  - monitoring of connection of the "Ti24" terminal block by the upstream system (PLC, supervision system) via the 24 V terminal (in the centre of the Ti24 terminal block)

Catalogue numbers		**A9C15924**
Technical specifications		
Control voltage (Ue)	V AC	230, +10 %, -15 % (Y2)
	V DC	24, ± 20 % (Y3)
Control voltage frequency	Hz	50/60
Insulation voltage (Ui)	V AC	250
Rated impulse withstand voltage (Uimp)	kV	8 (OVC IV)
Pollution degree		3
Degree of protection		IP20B device only
		IP40 device in modular enclosure
Width in 9 mm modules		2
Auxiliary contact (O/C) Ti24		24 V DC protected output, min. 2 mA, max. 100 mA
Contact		1 O/C operating category AC 14
Operating temperature	°C	-25°C to +60°C
Storage temperature	°C	-40°C to +80°C
Consumption		<1 W
Standard		IEC/EN 60947-5-1

(1) Mechanical and electrical link.

iCT contactors
Accessories for iCT

Security

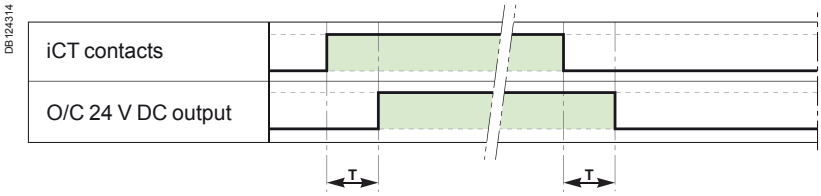
Accessories	Sealable screw shields			Yellow clips	Spacer
	PB104485-15	PB104486-15	PB104487-15	PB106143-10	PB104483-40
					
Function					
	■ Designed to cover terminals to avoid contact with device screws. ■ Allow sealing			■ Ensure the mechanical and/or electrical link between contactors and their auxiliaries.	■ Required to reduce temperature rise of modular devices installed side by side. ■ Recommended to separate electronic devices (thermostat, programmable clock, etc.) from electromechanical devices (relays, contactors).
	■ **For iCT: 3P, 4P - 25 A**	■ **For iCT: 2P - 40/63 A**	■ **For iCT: 3P, 4P - 40/63 A**	■ **For iCT: ≥ 25 A**	
Use					
	■ Bag of 10 upstream/10 downstream			■ Bag of 10	■ Bag of 5
Catalogue numbers	**A9A15921**	**A9A15922**	**A9A15923**	**A9C15415**	**A9A27062**
Technical specifications					
Width in 9 mm modules	4	4	6	–	1
Number of poles	3P, 4P	2P	3P	–	–

iCT contactors
Technical advice for iCT (cont.)

ComReady

Operation of the iACT24

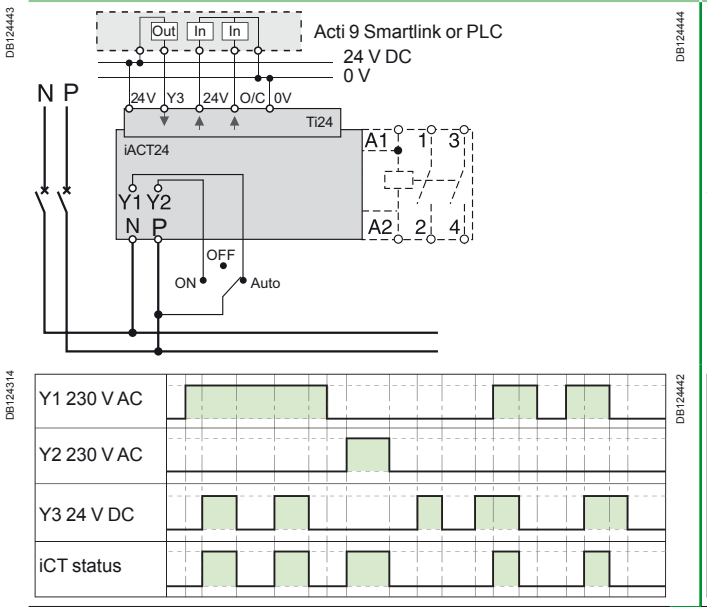
O/C 24 V DC output



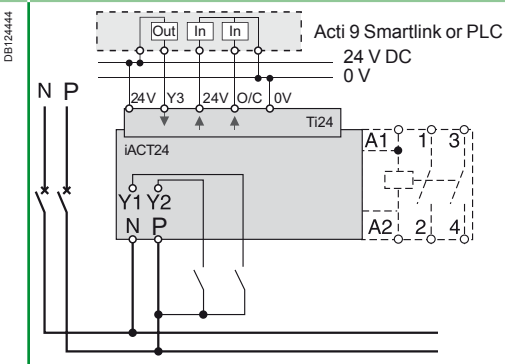
	Parameter	Min	Max
T	Time delay between iACT24 closing and indication	100 ms	200 ms

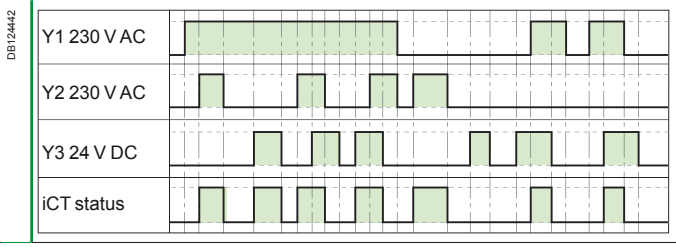
- Minimum duration of 230 V AC pulse (Y2): 200 ms.
- 30 iACT24 closing or opening actuations are authorized per minute: Minimum time delay between 2 actuations on the iACT4 via Y1,Y2, Y3 (closing or opening of the iCT coil): 220 ms.
- 10 closing or opening actuations spaced 440 milliseconds apart are authorized following no loading of the iACT24 during a period of 20 seconds.

Wiring with exclusive selector
230 V AC control (Y1 = 0) / 24 V DC control (Y1 = 1)



Wiring for non-exclusive 230 V AC and 24 V DC controls





iCT contactors
Technical advice for iCT

Consumption

iCT contactors - 50 Hz

Type	Rating (In)		Control voltage (V AC) (50 Hz)	Consumption		Max. power	
1P	AC7a	AC7b		Holding	Inrush		
	16 A	5 A	12	3.8 VA	15 VA	1.3 W	**A9C22011**
			24	3.8 VA	15 VA	1.3 W	**A9C22111**
			48	3.8 VA	15 VA	1.3 W	**A9C22211**
			220	3.8 VA	15 VA	1.3 W	**A9C22511**
			230…240	2.7 VA	9.2 VA	1.2 W	**A9C22711**
	25 A	8.5 A	220	3.8 VA	15 VA	1.3 W	**A9C20531**
			230…240	2.7 VA	9.2 VA	1.2 W	**A9C20731**
2P							
	16 A	5 A	12	3.8 VA	15 VA	1.3 W	**A9C22012**
			24	3.8 VA	15 VA	1.3 W	**A9C22112**
			48	3.8 VA	15 VA	1.3 W	**A9C22212**
			220	3.8 VA	15 VA	1.3 W	**A9C22512**
			230...240	2.7 VA	9.2 VA	1.2 W	**A9C22712**
			12	3.8 VA	15 VA	1.3 W	**A9C22015**
			24	3.8 VA	15 VA	1.3 W	**A9C22115**
			220	3.8 VA	15 VA	1.3 W	**A9C22515**
			230...240	2.7 VA	9.2 VA	1.2 W	**A9C22715**
	20 A	6.4 A	230...240	2.7 VA	9.2 VA	1.2 W	**A9C22722**
	25 A	8.5 A	24	3.8 VA	15 VA	1.3 W	**A9C20132**
			48	3.8 VA	15 VA	1.3 W	**A9C20232**
			220	3.8 VA	15 VA	1.3 W	**A9C20532**
			230...240	2.7 VA	9.2 VA	1.2 W	**A9C20732**
			220	3.8 VA	15 VA	1.3 W	**A9C20536**
			230...240	2.7 VA	9.2 VA	1.2 W	**A9C20736**
	40 A	15 A	220...240	4.6 VA	34 VA	1.6 W	**A9C20842**
	63 A	20 A	24	4.6 VA	34 VA	1.6 W	**A9C20162**
			220...240	4.6 VA	34 VA	1.6 W	**A9C20862**
	100 A (*)	-	220...240	6.5 VA	53 VA	2.1 W	**A9C20882**
3P							
	16 A	5 A	220…240	4.6 VA	34 VA	1.6 W	**A9C22813**
	25 A	8.5 A	220…240	4.6 VA	34 VA	1.6 W	**A9C20833**
	40 A	15 A	220…240	6.5 VA	53 VA	2.1 W	**A9C20843**
	63 A	20 A	220…240	6.5 VA	53 VA	2.1 W	**A9C20863**
4P							
	16 A	5 A	24	4.6 VA	34 VA	1.6 W	**A9C22114**
			220...240	4.6 VA	34 VA	1.6 W	**A9C22814**
			220...240	4.6 VA	34 VA	1.6 W	**A9C22818**
	20 A	6.4 A	220 ...240	4.6 VA	34 VA	1.6 W	**A9C22824**
	25 A	8.5 A	24	4.6 VA	34 VA	1.6 W	**A9C20134**
			220...240	4.6 VA	34 VA	1.6 W	**A9C20834**
			24	4.6 VA	34 VA	1.6 W	**A9C20137**
			220...240	4.6 VA	34 VA	1.6 W	**A9C20837**
			220...240	4.6 VA	34 VA	1.6 W	**A9C20838**
	40 A	15 A	220...240	6.5 VA	53 VA	2.1 W	**A9C20844**
			220...240	6.5 VA	53 VA	2.1 W	**A9C20847**
	63 A	20 A	24	6.5 VA	53 VA	2.1 W	**A9C20164**
			220...240	6.5 VA	53 VA	2.1 W	**A9C20864**
			24	6.5 VA	53 VA	2.1 W	**A9C20167**
			220...240	6.5 VA	53 VA	2.1 W	**A9C20867**
			220...240	6.5 VA	53 VA	2.1 W	**A9C20868**
			220...240	6.5 VA	53 VA	2.1 W	**A9C20869**
	100 A (*)	-	220...240	13 VA	106 VA	4.2 W	**A9C20884**

(*) do not use for lighting applications

iCT contactors
Technical advice for iCT (cont.)

Consumption (cont.)

iCT manual control contactor 50 Hz

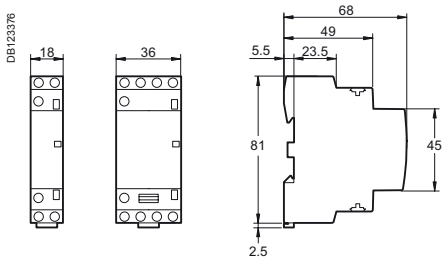
Type							
2P	Rating (In)		Control voltage (V AC) (50 Hz)	Consumption		Max. power	
	AC7a	AC7b		Holding	Inrush		
	16 A	5 A	220	2.7 VA	9.2 VA	1.2 W	**A9C23512**
			230...240	2.7 VA	9.2 VA	1.2 W	**A9C23712**
			220	3.8 VA	15 VA	1.3 W	**A9C23515**
			230...240	2.7 VA	9.2 VA	1.2 W	**A9C23715**
	25 A	8.5 A	24	3.8 VA	15 VA	1.3 W	**A9C21132**
			220	2.7 VA	9.2 VA	1.2 W	**A9C21532**
			230...240	2.7 VA	9.2 VA	1.2 W	**A9C21732**
	40 A	15 A	24	4.6 VA	34 VA	1.6 W	**A9C21142**
			220...240	4.6 VA	34 VA	1.6 W	**A9C21842**
	63 A	20 A	24	4.6 VA	34 VA	1.6 W	**A9C21162**
			220...240	4.6 VA	34 VA	1.6 W	**A9C21862**
3P							
	25 A	8.5 A	220...240	4.6 VA	34 VA	1.6 W	**A9C21833**
	40 A	15 A	220...240	6.5 VA	53 VA	2.1 W	**A9C21843**
4P							
	25 A	8.5 A	24	4.6 VA	34 VA	1.6 W	**A9C21134**
			220...240	4.6 VA	34 VA	1.6 W	**A9C21834**
	40 A	15 A	24	6.5 VA	53 VA	2.1 W	**A9C21144**
			220...240	6.5 VA	53 VA	2.1 W	**A9C21844**
	63 A	20 A	24	6.5 VA	53 VA	2.1 W	**A9C21164**
			220...240	6.5 VA	53 VA	2.1 W	**A9C21864**

iCT contactors - 60 Hz

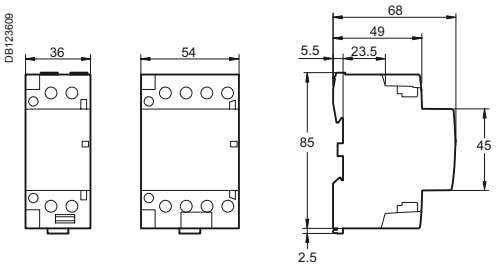
Type							
1P	Rating (In)		Control voltage (V AC) (60 Hz)	Consumption		Max. power	
	AC7a	AC7b		Holding	Inrush		
	25 A	8.5 A	127	3.8 VA	15 VA	1.3 W	**A9C20431**
			220 ...240	2.7 VA	9.2 VA	0.9 W	**A9C20631**
2P							
	16 A	5 A	127	3.8 VA	15 VA	1.3 W	**A9C22415**
			220...240	2.7 VA	9.2 VA	0.9 W	**A9C22615**
	25 A	8.5 A	127	3.8 VA	15 VA	1.3 W	**A9C20432**
			220...240	2.7 VA	9.2 VA	0.9 W	**A9C20632**
			127	3.8 VA	15 VA	1.3 W	**A9C20436**
			220...240	2.7 VA	9.2 VA	0.9 W	**A9C20636**
	40 A	15 A	127	4.6 VA	34 VA	1.6 W	**A9C20442**
			220...240	4.6 VA	34 VA	1.6 W	**A9C20642**
3P							
	25 A	8.5 A	127	4.6 VA	34 VA	1.6 W	**A9C20433**
			220...240	4.6 VA	34 VA	1.6 W	**A9C20633**
	40 A	15 A	127	6.5 VA	53 VA	2.1 W	**A9C20443**
			220...240	6.5 VA	53 VA	2.1 W	**A9C20643**
	63 A	20 A	127	6.5 VA	53 VA	2.1 W	**A9C20463**
			220...240	6.5 VA	53 VA	2.1 W	**A9C20663**

iCT contactors
Dimensions for iCT

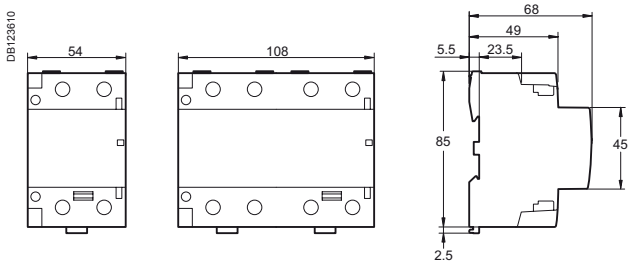
Dimensions (mm)



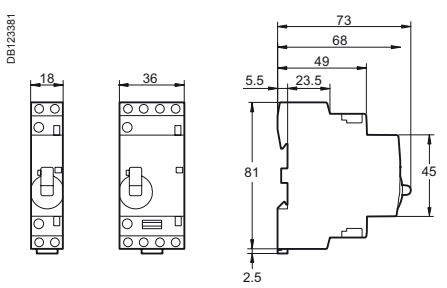
iCT 16/25 A



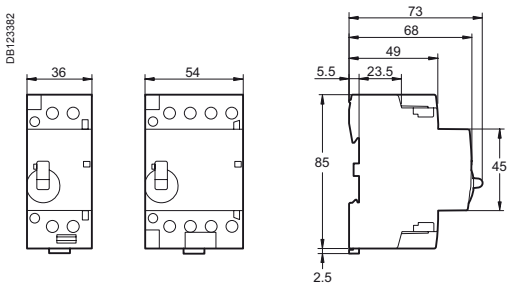
iCT 40/63 A



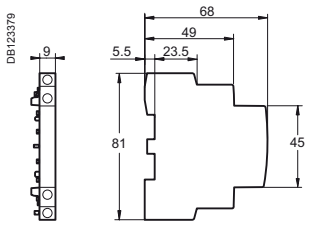
iCT 100 A



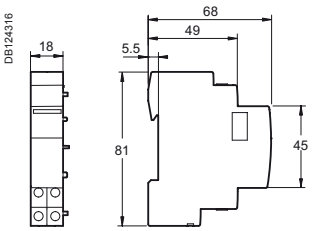
iCT manual control contactor 16/25 A



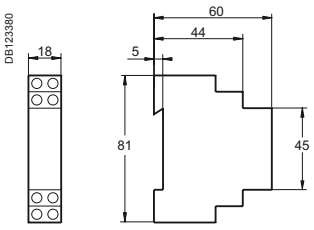
iCT manual control contactor 40/63 A



iACTs



iACT24



iATEt
iACTp
iACTc

iTL impulse relays

DB123399 DB116619

iTL, iTLI, iTLs, iTLc, iTLm

Country approval pictograms

IEC/EN 60669-2-2
iTLs: IEC/EN 60947-5-1

Impulse relays

iTL

■ The impulse relays are used to control, by means of pushbuttons, lighting circuits consisting of:
□ incandescent lamps, low-voltage halogen lamps, etc. (resistive loads)
□ fluorescent lamps, discharge lamps, etc. (inductive loads)

Remote indication

iTLs

■ Allows remote indication of its operating state (open/closed)

Indication iATLs

■ Allows remote indication of the associated impulse relay

Centralised control

iTLc

■ Allows centralised control of a group of TLc impulse relays, whilst at the same time retaining local impulse-type control

Centralised control iATLc

■ Used for centralised control, thanks to a "pilot line", of a group of impulse relays controlling separate circuit, while at the same time maintaining local individual control of each impulse relay

Latched control

iTLm

■ Operated by latched orders from a changeover contact (switch, time switch, thermostat). Manual control does not work

Latched control iATLm

■ Controls the associated impulse relay by latched orders from a changeover contact

Impulse relays

iTL impulse relays (cont.)

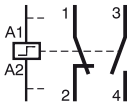
Impulse relays are used:

- Closing of the impulse relay pole(s) is triggered by an impulse on the coil.
- Having two stable mechanical positions, the pole(s) will be opened by the next impulse. Each impulse received by the coil reverses the position of the pole(s).
- Can be controlled by an unlimited number of pushbuttons.
- Zero energy consumption.

PB106131-34

Changeover contact iTLi

- This impulse relay has a changeover contact



PB106134-34

Extensions iETL

- Used to increase the number of impulse relay poles
- Can be installed on the iTL, iTLi, iTLc, iTLm and iTLs

PB106140-34

Centralised control + indication iATLc+s

- Used for centralised control, thanks to a "pilot line", of a group of impulse relays controlling separate circuit, while at the same time maintaining local individual control of each impulse relay
- Remote indication of the mechanical status of each relay

PB107752-34

Control and indication 24 V DC iATL24

- Allows control and indication of a 230 V AC impulse relay from the Acti 9 Smartlink or by a PLC, by 24 V DC signals
- Also allows control by a pulsed signal

PB106136-34

Multi-level centralised control iATLc+c

- Allows centralised control of a group of iTLc or “iTL + ATLc” impulse relays

PB106125-34

Time delay iATEt

- Combined with an impulse relay, it automatically disconnects the circuit after a preset time

PB106141-34

Control iATLz

- Must be used when installing several illuminated PBs in parallel to control an impulse relay (prevents operating malfunctions)

PB106142-63

Step by step control iATL4

- Allows step-by-step control of two circuits via a single pushbutton

Impulse relays auxiliaries

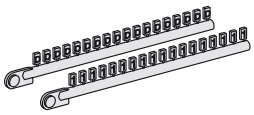
Specific auxiliaries

iTL impulse relays (cont.)

Mounting accessories

11	Yellow clips		**A9C15415**
12	9 mm spacer		**A9A27062**
13	Clip-on terminal markers	see module	**CA907001**

DB123631



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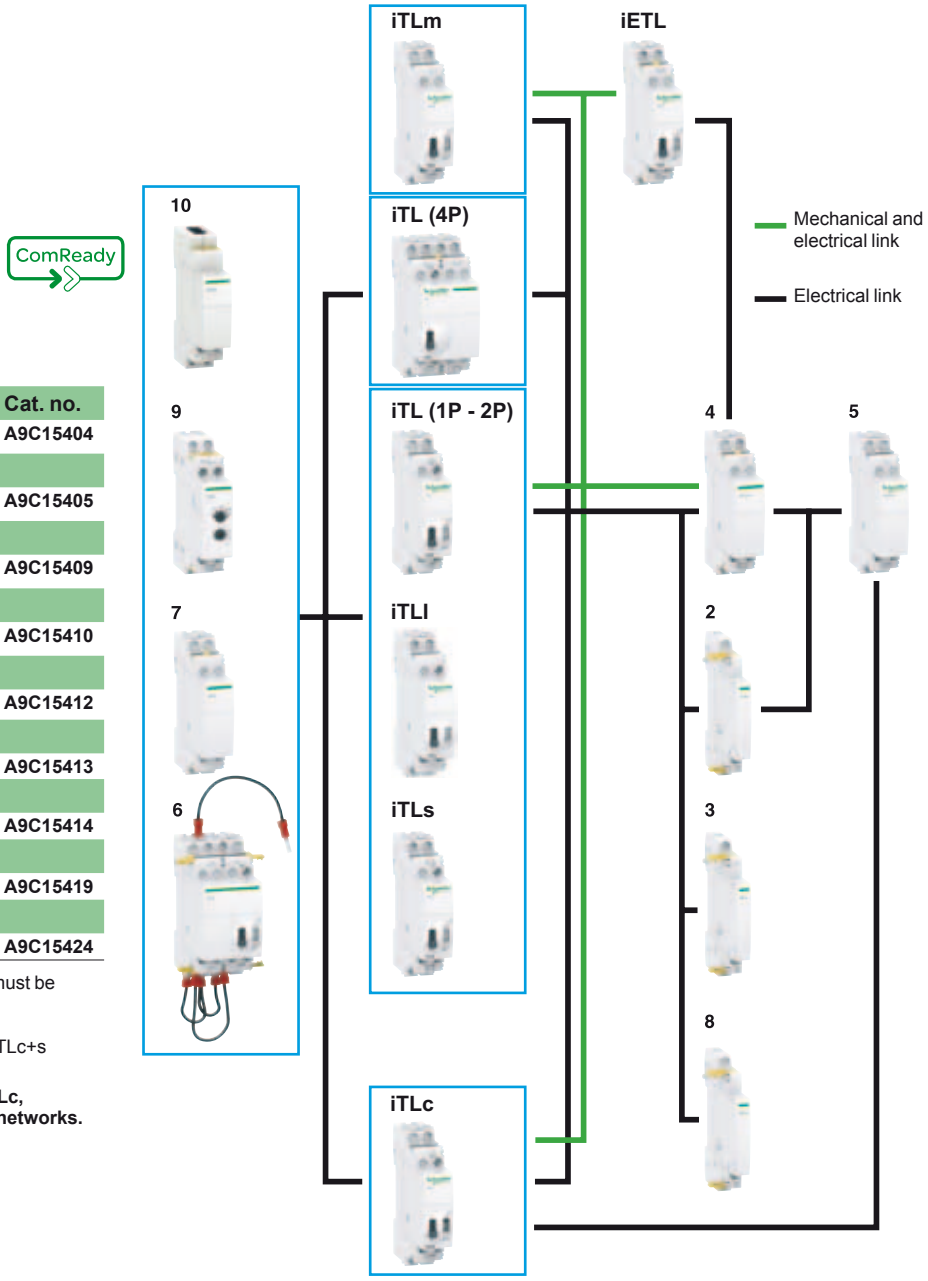
12

11



ComReady

Auxiliaries

Centralised control		**Control voltage**	**Cat. no.**
2	iATLc (1), (3)	24...240 V AC	**A9C15404**
Indication			
3	iATLs (1)	-	**A9C15405**
Centralised control + indication			
4	iATLc+s (3)	24...240 V AC	**A9C15409**
Multi-level centralised control			
5	iATLc+c (2), (3)	24...240 V AC	**A9C15410**
Step by step control			
6	iATL4	230 V AC	**A9C15412**
Control by illuminated push-buttons			
7	iATLz	230...240 V AC	**A9C15413**
Latched control			
8	iATLm (1)	12...240 V AC	**A9C15414**
Time delay control			
9	iATEt (4)	24...240 V AC	**A9C15419**
Control and indication			
10	iATL24	230 V AC	**A9C15424**

(1) The iATLc, iATLs and iATLm 9 mm auxiliaries must be mounted to the right of an impulse relay.
(2) Connection by traditional cabling.
The iATLc+c must be mounted to the right of an iATLc+s or an iATLc.

(3) The centralised control functions (iTLc, iATLc, iATLc+s, iATLc+c) only operate on AC voltage networks.

(4) iATEt: control voltage:
24...240 V AC, 24...110 V DC.

iTL impulse relays (cont.)

PB106126-41

Yellow clip
- A simple clip-on system for flexible auxiliaries combination and improved robustness
- For electrical and mechanical connections

- Insulated terminals IP20

- Large circuit labeling area

- Consistent with the entire Acti 9 offer and with all types of lighting

- Disconnection of remote control by selector switch (except for 4P single-piece iTL) for maintenance operation

- Manual controls on front face: direct and priority manual control by O-I toggle
- Mechanical contact position indicator

- Built-in or optional auxiliary function: state indication, centralised control, latched control, control for illuminated pushbutton, step-by-step control, time delay

iTL impulse relays (cont.)
Auxiliaries choice in V AC and V DC

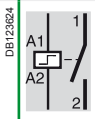
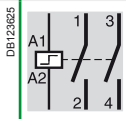
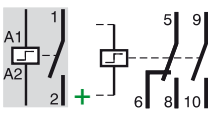
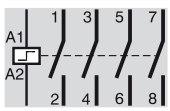
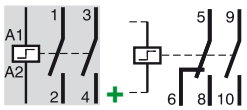
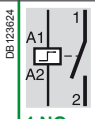
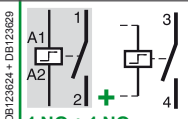
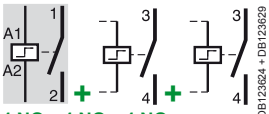
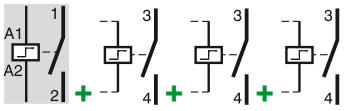
V AC		Choice impulse relays auxiliaries																	
Type		**Standard iTL**						**Changeover iTLI**						**iTLc centralised control**			**iTLm control on latched order**	**iTLs remote indication**		
Rating	A	16					32	16						16			16	16		
Control voltage (Uc)	V AC	230/240	130	48	24	12	230/240	230/240	130	48	24	12		230/240	48	24	230/240	230/240	48	24
Auxiliaries																				
Extension																				
iETL		■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■
Centralised control + indication																				
iATLc+s		■	■	■	■	-	■	■	■	■	-	-		-	-	-	-	■	■	■
Centralised control																				
iATLc		■	■	■	■	-	■	■	■	■	-	-		-	-	-	-	■	■	■
Indication																				
iATLs		■	■	■	■	-	■	■	■	■	■	■		■	■	■	■	■	■	■
Multi-level centralised control																				
iATLc+c		■	■	■	■	-	■	■	■	■	-	-		■	■	■	-	■	■	■
Latched control																				
iATLm		■	■	■	■	■	■	■	■	■	■	■		-	-	-	-	■	■	■
Control for illuminated Pushbutton																				
iATLz		■	-	-	-	-	■	■	-	-	-	-		■	-	-	-	■	-	-
Step by step control																				
iATL4		■	-	-	-	-	■	■	-	-	-	-		■	-	-	-	■	-	-
Time delay control																				
iATEt		■	■	■	■	-	■	■	■	■	■	-		-	-	-	-	■	■	■
Control and indication																				
iATL24		■	-	-	-	-	■	■	-	-	-	-		■	-	-	-	■	-	-

V DC		Choice impulse relays auxiliaries																	
Type		**Standard iTL**						**Changeover iTLI**						**iTLc centralised control**			**iTLm control on latched order**	**iTLs remote indication**		
Rating	A	16					32	16						16			16	16		
Control voltage (Uc)	V DC	110	48	24	12	6	110	110	48	24	12	6		-			110	110	24	12
Auxiliaries																				
Extension																				
iETL		■	■	■	■	■	■	■	■	■	■	■		-	-	-	-	■	■	■
Indication																				
iATLs		■	■	■	■	-	■	■	■	■	■	■		-	-	-	-	■	■	■
Time delay control																				
iATEt		■	■	■	-	-	■	■	■	■	-	-		-	-	-	-	■	■	-

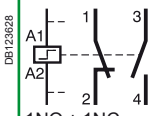
iTL impulse relays (cont.)

Catalogue numbers

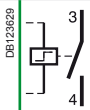
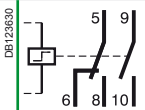
iTL impulse relays

Type			1P	2P	3P	4P
			 1 NO	 2 NO	 1 NO + 1 NO/NC + 1 NO	 4 NO  2 NO + 1 NO/NC + 1 NO
Rating (In)	**Control voltage (Uc)**					
	(V AC) (50/60 Hz)	**(V DC)**				
16 A	12	6	**A9C30011**	**A9C30012**	**A9C30011 + A9C32016**	**A9C30012 + A9C32016**
	24	12	**A9C30111**	**A9C30112**	**A9C30111 + A9C32116**	**A9C30114**
	48	24	**A9C30211**	**A9C30212**	**A9C30211 + A9C32216**	**A9C30212 + A9C32216**
	130	48	**A9C30311**	**A9C30312**	**A9C30311 + A9C32316**	**A9C30312 + A9C32316**
	230...240	110	**A9C30811**	**A9C30812**	**A9C30811 + A9C32816**	**A9C30814**
Width in 9 mm modules			2	2	4	4
			 1 NO	 1 NO + 1 NO	 1 NO + 1 NO + 1 NO	 1 NO + 1 NO + 1 NO + 1 NO
32 A	230...240	110	**A9C30831**	**A9C30831 + A9C32836**	**A9C30831 + 2 x A9C32836**	**A9C30831 + 3 x A9C32836**
Width in 9 mm modules			2	4	6	8

iTLI impulse relays

Type			2P
			 1NO + 1NC
Rating (In)	**Control voltage (Uc)**		
	(V AC) (50/60 Hz)	**(V DC)**	
16 A	12	6	**A9C30015**
	24	12	**A9C30115**
	48	24	**A9C30215**
	130	48	**A9C30315**
	230...240	110	**A9C30815**
Width in 9 mm modules			2

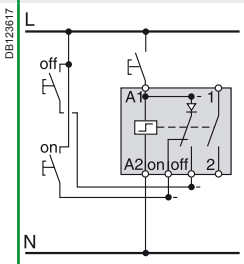
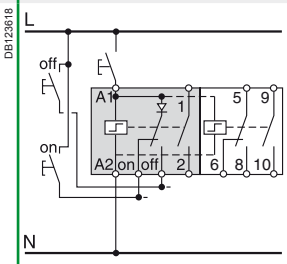
iETL extensions for iTL and iTLI

Type			1P	2P
			 1 NO	 1 NO/NC + 1 NO
Rating (In)	**Control voltage (Uc)**			
	(V AC) (50/60 Hz)	**(V DC)**		
16 A	12	6	-	**A9C32016**
	24	12	-	**A9C32116**
	48	24	-	**A9C32216**
	130	48	-	**A9C32316**
	230...240	110	-	**A9C32816**
32 A	230...240	110	**A9C32836**	-
Width in 9 mm modules			2	2

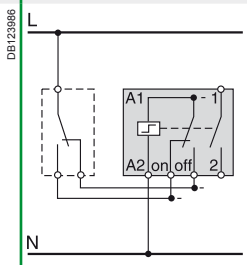
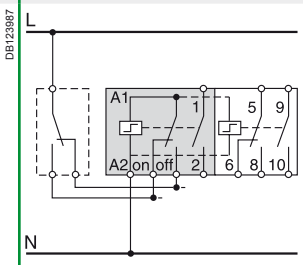
iTL impulse relays (cont.)
iTLc , iTLm, iTLs
with built-in auxiliary function

Catalogue numbers (cont.)

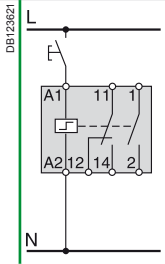
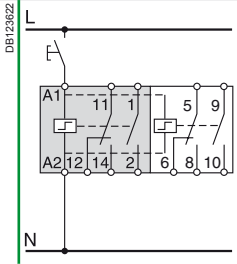
iTLc impulse relay with centralised control

Type		1P	3P
		 1NO	 1 NO + 1 NO/NC + 1 NO
Rating (In)	**Control voltage (Uc) (V AC) (50/60 Hz)**		
16 A	24	**A9C33111**	**A9C33111 + A9C32116**
	48	**A9C33211**	**A9C33211 + A9C32216**
	230...240	**A9C33811**	**A9C33811 + A9C32816**
Width in 9 mm modules		2	4

iTLm impulse relay with latched control

Type		1P	3P
		 1NO	 1 NO + 1 NO/NC + 1 NO
Rating (In)	**Control voltage (Uc) (V AC) (50/60 Hz)**		
16 A	230...240	**A9C34811**	**A9C34811 + A9C32816**
Width in 9 mm modules		2	4

iTLs impulse relay with remote indication*

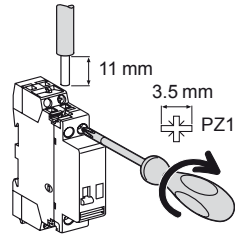
Type			1P	3P
			 1NO	 1 NO + 1 NO/NC + 1 NO
Rating (In)	**Control voltage (Uc)**			
	(V AC) (50/60 Hz)	**(V DC)**		
16 A	24	12	**A9C32111**	**A9C32111 + A9C32116**
	48	24	**A9C32211**	**A9C32211 + A9C32216**
	230...240	110	**A9C32811**	**A9C32811 + A9C32816**
Width in 9 mm modules			2	4

(*) Short circuit protection device for indication contacts : 6 A gG fuse.

iTL impulse relays (cont.)

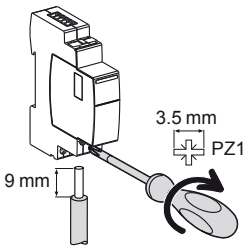
Connection

DB123132



Type	Rating	Circuit	Tightening torque	Copper cables	
				Rigid or with ferrule	Flexible or with ferrule
			DB122945	DB123553	
iTL, iTLi, iTLc, iTLm, iTLs, iETL	16 A	Control	1 N.m	0.5 to 4 mm²	1 to 4 mm²
		Power		1.5 to 4 mm²	1.5 to 4 mm²
iTL, iETL	32 A	Control		0.5 to 4 mm²	1 to 4 mm²
		Power	1.2 N.m	1.5 to 10 mm²	1.5 to 10 mm²
iATLs, iATLc, iATLc+s, iATLc+c, iATLm, iATEt, iATL4, iATLz			1 N.m	0.5 to 4 mm²	1 to 4 mm²

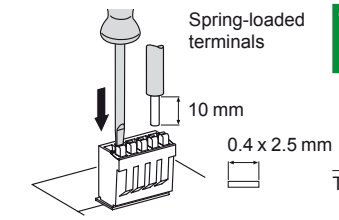
DB124308



Type	Terminals	Tightening torque	Copper cables		
			Rigid	Flexible	Flexible or with ferrule
		DB122945	DB123553	DB123554	
iATL24	Power supply (N/P)	1 N.m	0.5 to 10 mm² 2 x 0.5 to 2 x 2.5 mm²	0.5 to 6 mm² 2 x 0.5 to 2 x 2.5 mm²	0.5 to 4 mm² 2 x 0.5 to 2 x 2.5 mm²
	Input (Y1/Y2)				

Ti24 connector connection

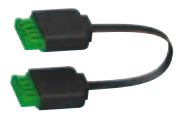
DB123580



Type	Catalogue numbers	Copper cables	
		Rigid	Flexible
	DB122945	DB123553	
Ti24 interface	**A9XC2412**	1 x 0.5 to 1.5 mm²	1 x 0.5 to 1.5 mm²

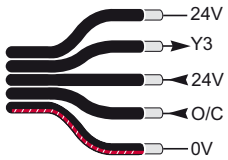
Ti24 prefabricated cables connection

PB107754-10



PB107755-14

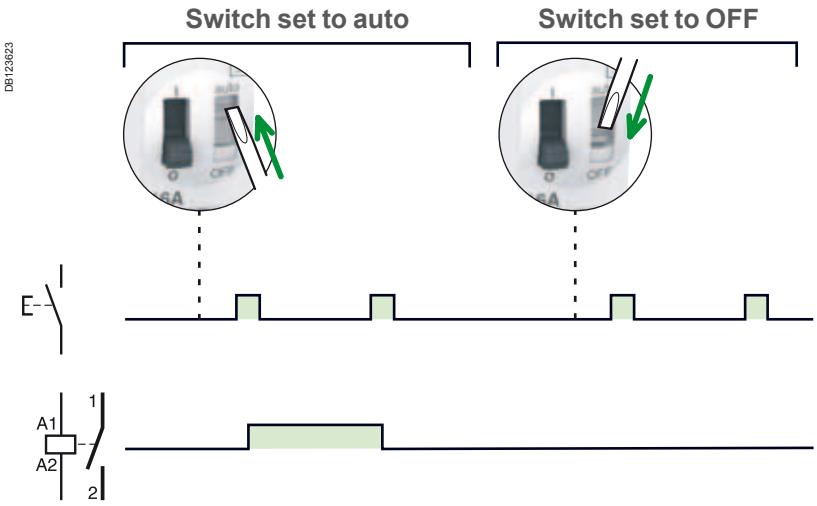
DB404857

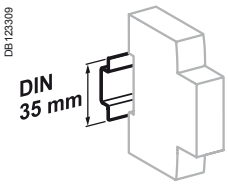


Type	Catalogue numbers	Length
Connection for Acti 9 Smartlink		
6 short prefabricated	**A9XCAS06**	100 mm
6 medium-sized prefabricated	**A9XCAM06**	160 mm
6 long prefabricated	**A9XCAL06**	870 mm
Connection for PLC type terminals		
6 long prefabricated on a single side	**A9XCAU06**	870 mm

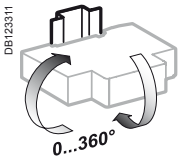
iTL impulse relays (cont.)

Operation

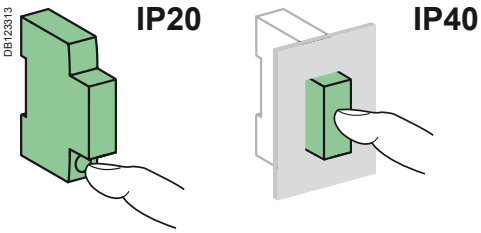




Clip on DIN rail 35 mm.



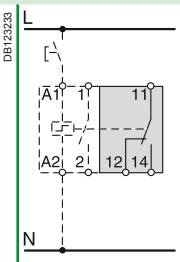
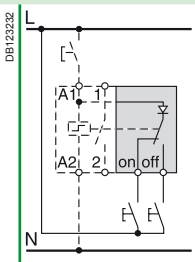
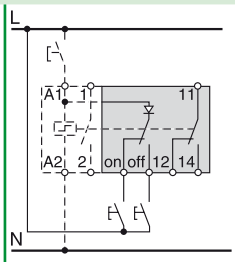
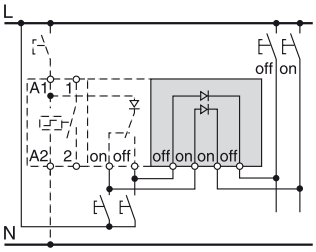
Indifferent position of installation.



Technical data

Control circuit			
		iTL and iTLI 16 A iTLc, iTLm, iTLs, iETL 16 A	**iTL 32 A, iETL 32 A**
Control voltage (Uc)	Tolerence at 50 Hz	+6 %, -15 %	
	Tolerence at 60 Hz	±6 %,	
	Tolerence V DC	+6 %, -10 %	
Dissipated power (during the impulse)		1, 2, 3P: 19 VA	19 VA
		4P: 38 VA	
Illuminated PB control		Max. current 3 mA (if > use an ATLz)	
Operating threshold		Min. 85 % of Un in conformance with IEC/EN60669-2-2	
Duration of the control order		50 ms to 1 s (200 ms recommended)	
Response time		50 ms	
Power circuit			
Voltage rating (Ue)	1P, 2P	24 ...250 V AC	
	3P, 4P	24....415 V AC	
Frequency		50 Hz or 60 Hz	
Maximum number of operations per minute		5	
Maximum number of switching operation a day		100	
Additional characteristics			
Insulation voltage (Ui)		440 V AC	
Pollution degree		3	
Rated impulse withstand voltage (Uimp)		6 kV	
Overvoltage category		IV	
Endurance (O-C)			
Electrical		200,000 cycles (AC21)	50,000 cycles (AC21)
		100,000 cycles (AC22)	20,000 cycles (AC22)
Other characteristics			
Degree of protection (IEC 60529)	Device only	IP20	
	Device in modular enclosure	IP40 Insulation class II	
Operating temperature		-20°C to +50°C	
Storage temperature		-40°C to +70°C	
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % at 55°C)	

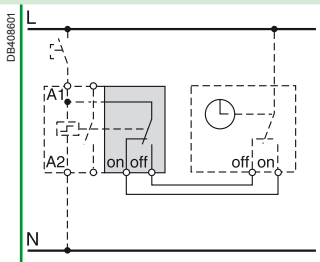
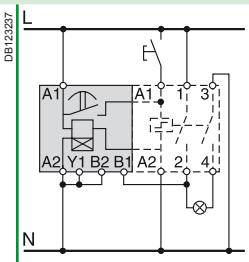
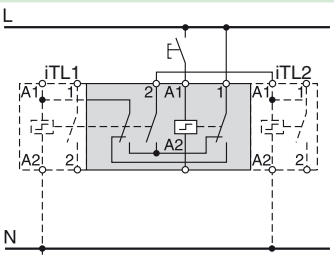
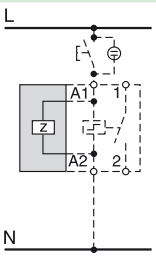
iTL impulse relays (cont.)
Electrical auxiliaries for iTL impulse relays

	Indication	Control		
Auxiliaries	**iATLs**	**iATLc**	**iATLc+s**	**iATLc+c**
Type	**Indication**	**Centralised control**	**Centralised control + indication**	**Multi-level centralised control**
	PB106139-34 	PB106137-34 	PB106140-34 	PB106136-34 
Function				
	■ Allows remote indication of the associated impulse relay	■ Used for centralised control, thanks to a "pilot line", of a group of impulse relays controlling separate networks, while at the same time maintaining local individual control of each impulse relay	■ And for remote indication of the mechanical status of each relay	■ Used to control the centralised controls of a number of impulse relay groups, while at the same time maintaining local individual control and centralised control by level
Wiring diagrams				
	DB123233 	DB123232 	DB123231 	DB123235 
	–	–	–	■ Each group, made up of iTLc or (iTL or iTLI or iTLs) + iATLc+s, must only contain a single iATLc+c ■ Maximum number of impulse relays that can be controlled: □ 230 V AC: 24 □ 130 V AC: 12 □ 48 V AC: 5
Mounting				
	■ Mounted to the right of iTL by yellow clips	■ Mounted to the right of iTL by yellow clips	■ Mounted to the right of iTL by yellow clips	■ Without mechanical link with impulse relays and auxiliaries
Catalogue numbers	**A9C15405**	**A9C15404**	**A9C15409**	**A9C15410**

Technical specifications					
Control voltage (Uc)	V AC	–	24…240	24…240	24 …240
	V DC	–	–	–	–
Control voltage frequency	Hz	–	50/60	50/60	50/60
Width in 9 mm modules		1	1	2	2
Auxiliary contact (breaking capacity)		■ Mininimum: 10 mA at 24 V AC/DC ■ Maximum (IEC 60947-5-1): □ 12…240 V AC 6 A □ 12…24 V DC 6 A □ 15…240 V AC 2 A □ 13…24 V DC 2 A	–	■ Mininimum: 10 mA at 24 V AC/DC ■ Maximum (IEC 60947-5-1): □ 12…240 V AC 6 A □ 12…24 V DC 6 A □ 15…240 V AC 2 A □ 13…24 V DC 2 A	–
Number of contacts		–	–	–	–
Operating temperature	°C	-20°C to +50°C			
Storage temperature	°C	-40°C to +70°C			

iTL impulse relays (cont.)
Electrical auxiliaries for iTL impulse relays (cont.)

Control

	iATLm	iATEt	iATL4	iATLz
	Latched control	**Time delay**	**Step by step control**	**Control by illuminated push-buttons**
				
	■ Combined with an impulse relay, it operates on latched orders	■ Combined with an impulse relay, it automatically disconnects the circuit after a preset time	■ Allows the step by step sequence over 2 circuits	■ Used to control impulse relays by illuminated push-buttons, without operating risks
				
	–	■ 5 time setting ranges: □ 1 to 10 s □ 6 to 60 s □ 2 to 10 min □ 6 to 60 min □ 2 to 10 h	■ The cycle is as follows: □ 1st impulse - iTL 1 closed, iTL 2 open □ 2nd impulse - iTL 1 open, iTL 2 closed □ 3rd impulse - iTL 1 and 2 closed □ 4th impulse - iTL 1 and 2 open □ 5th impulse - iTL 1 closed, iTL 2 open, etc	■ Provide an iATLz when the current drawn up by the illuminated push-buttons is higher than 3 mA (this current is sufficient to keep the coils energised). Above this value, fit one extra iATLz per 3 mA. ■ For example: for 7 mA, fit 2 iATLz
	■ Mounted to the right of iTL by yellow clips	■ Mounted to the left of iTL by yellow clips	■ Assembled between 2 impulse relays: according to the auxiliarisation table by yellow clips	■ Mounted to the left of iTL by yellow clips
	A9C15414	**A9C15419**	**A9C15412**	**A9C15413**
	12…240	24…240	230	230…240
	–	24…110	–	–
	50/60	50/60	50/60	50/60
	1	2	4	2
	–	–	–	–
	–	–	–	–
	-20°C to +50°C			
	-40°C to +70°C			

iTL impulse relays (cont.)
Electrical auxiliaries for iTL impulse relays (cont.)

Control and indication

Auxiliaire	iATL24
Type	**Control and indication 24 V DC**
	With Ti24 connector

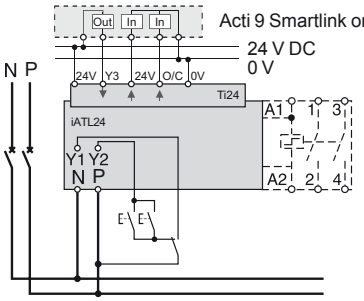
PB107752-34

Function

- This auxiliary allows a impulse relay to be interfaced with the Acti 9 Smartlink interface or a programmable logic controller (PLC) in 24 V DC (control, O/C indication)
- 230 V AC control

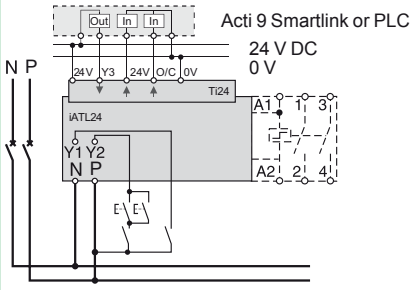
Wiring diagrams

DB124319



Wiring with exclusive selector 230 V AC and 24 V DC controls

DB124445



Wiring for non-exclusive 230 V AC and 24 V DC controls

Mounting

- To the left of the iTL impulse relay using the yellow clips (1).
- When an iATL24 is used, the A1/A2 terminals of the impulse relay should not be wired. Only the yellow clips integral with the iATL24 should be used for connection to the coil.

Utilization

- 230 V AC interface:
  - Y1: enabling of 24 V DC control (Y1 = 1) or inhibition of 24 V DC control (Y1 = 0).
  - Y2: 230 V pulse control
- "TI24" 24 V DC interface:
  - Y3: 24 V DC control of iTL closing on rising edge and opening on falling edge
  - reading of the impulse relay status (opened or closed) from the position of the integrated O/C auxiliary contact
  - monitoring of connection of the "Ti24" terminal block by the upstream system (PLC, supervision system) via the 24 V terminal (in the centre of the Ti24 terminal block)

Catalogue numbers		**A9C15424**
Technical specifications		
Control voltage (Uc)	V AC	230, +10 %, -15 % (Y2)
	V DC	24, ± 20 % (Y3)
Control voltage frequency	Hz	50/60
Insulation voltage (Ui)	V AC	250
Rated impulse withstand voltage (Uimp)	kV	8 (OVC IV)
Pollution degree		3
Degree of protection		IP20B device only
		IP40 device in modular enclosure
Width in 9 mm modules		2
Auxiliary contact (O/C) Ti24		24 V DC protected output, min. 2 mA, max. 100 mA
Contact		1 O/C operating category AC 14
Operating temperature	°C	-25°C to +60°C
Storage temperature	°C	-40°C to +80°C
Consumption		<1 W
Standard		IEC/EN 60947-5-1

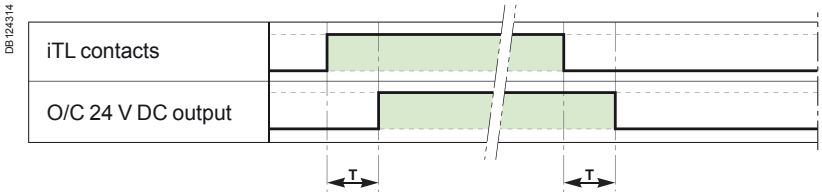
(1) Mechanical and electrical connection.

iTL impulse relays (cont.)
Electrical auxiliaries for iTL impulse relays (cont.)

ComReady

Operation of the iATL24

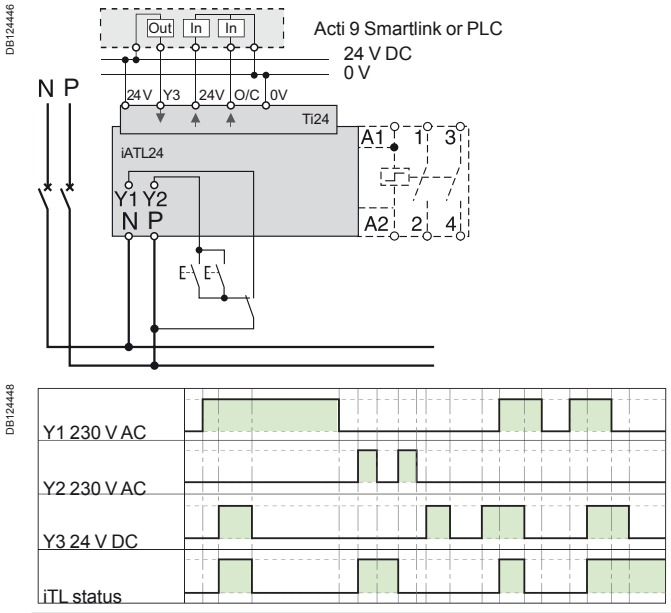
O/C 24 V DC output



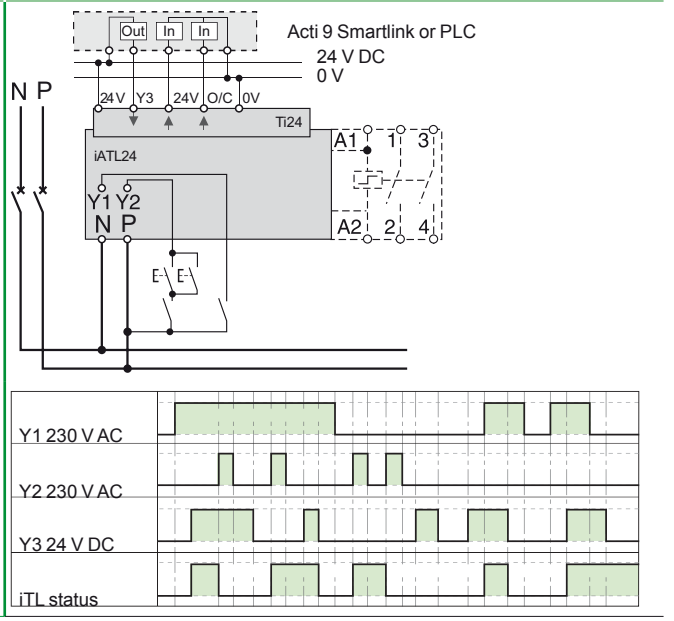
	Parameter	Min	Max
T	Time delay between iATL24 closing and indication	100 ms	200 ms

- Minimum duration of 230 V AC pulse (Y2): 200 ms.
- 30 iATL24 closing or opening actuations are authorized per minute: Minimum time delay between 2 actuations on the iATL24 via Y1,Y2, Y3 (closing or opening of the iTL coil): 440 ms.
- 10 closing or opening actuations spaced 440 milliseconds apart are authorized following no loading of the iATL24 during a period of 20 seconds.

Wiring with exclusive selector 230 V AC and 24 V DC controls



Wiring for non-exclusive 230 V AC and 24 V DC controls

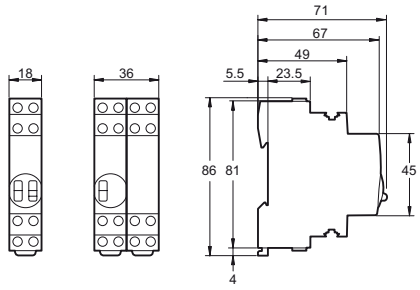


iTL impulse relays (cont.)
Accessories for iTL impulse relays

	Security	
Accessories	**Yellow clips**	**Spacer**
	PB106143-10 	PB104483 
Function		
	■ Ensure the mechanical and/or electrical link between impulse relays and their auxiliaries (set of 10).	■ Required to reduce temperature rise of modular devices installed side by side. ■ Recommended to separate electronic devices (thermostat, programmable clock, etc.) from electromechanical devices (relays, contactors).
Catalogue numbers	**A9C15415**	**A9A27062**
Technical specifications		
Width in 9 mm modules	–	1

Dimensions (mm)

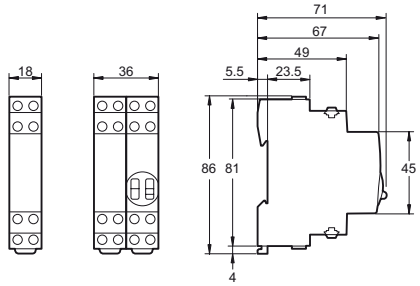
DB123375



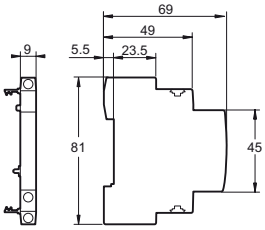
iTL 1P
iTLc
iTLm
iTLs
iTLi
iETL

iTL+iETL
iTL 4P

DB123383

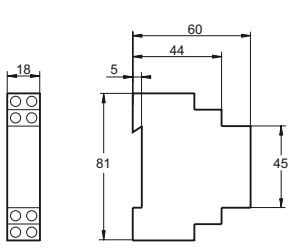


iATLc+s
iATLc+c
iATLz
iATL4



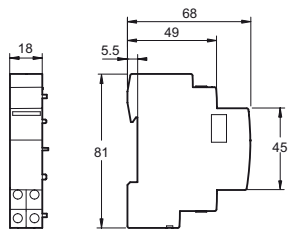
iATLc
iATLs
iATLm

DB123380



iATEt

DB124316



iATL24

TL impulse relays
Clario, Prodis, Librio
Contents

The Schneider Electric range of TL impulse relays comprises various offers (Clario, Prodis, Librio) so as to be as competitive as possible in each country, taking into account the specific features of each market:
- installation customs
- price
- approval by local organizations.

Variants

Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

TL impulse relays
Clario

DBxxxxxx

Country approval pictograms

IEC 60669-1 and IEC 60669-2-2

TL impulse relays allow remote control of single-phase circuits.

TL impulse relays are combined with single-phase circuit breakers or residual current devices.

PB107139-32

Circuit breaker

PB107106-32

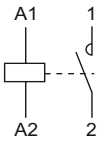
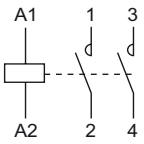
TL

Operation

TL impulse relays:
- have normally open contacts
- are controlled by impulse type electrical orders. One or more control points are possible.

Catalogue numbers

TL impulse relays

Type	Rating		Width in 9-mm modules
1P			
DB123662 	16 A	**A9C15488**	2
2P			
DB123663 	16 A	**A9C15489**	2

Offer selection see page 487

Clario

This sticker must be removed before publishing

TL impulse relays
Prodis

DBxxxxxx

Country approval pictograms

IEC 60669-1 and IEC 60669-2-2

TL impulse relays allow remote control of single-phase circuits.

TL impulse relays are combined with single-phase circuit breakers or residual current devices.

PB107170-32

Circuit breaker

PB107106-32

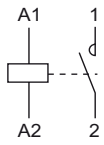
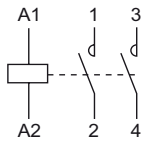
TL

Operation

TL impulse relays:
- have normally open contacts
- are controlled by impulse type electrical orders. One or more control points are possible.

Catalogue numbers

TL impulse relays

Type	Rating		Width in 9-mm modules
1P			
DB123662 	16 A	**A9C15506**	2
2P			
DB123663 	16 A	**A9C15507**	2

Offer selection see page 487

TL impulse relays
Librio

DBxxxxxx

Country approval pictograms

IEC 60669-1 and IEC 60669-2-2

TL impulse relays allow remote control of single-phase circuits.

TL impulse relays are combined with single-phase circuit breakers or residual current devices.

PB107890-32

Circuit breaker

PB107106-32

TL

Operation

TL impulse relays:
- have normally open contacts
- are controlled by impulse type electrical orders. One or more control points are possible.

Catalogue numbers

TL impulse relays

Type		Rating		Width in 9-mm modules
2P				
DB123663	A1 1 3 A2 2 4	16 A	**A9C15485**	2

Offer selection see page 487

Librio

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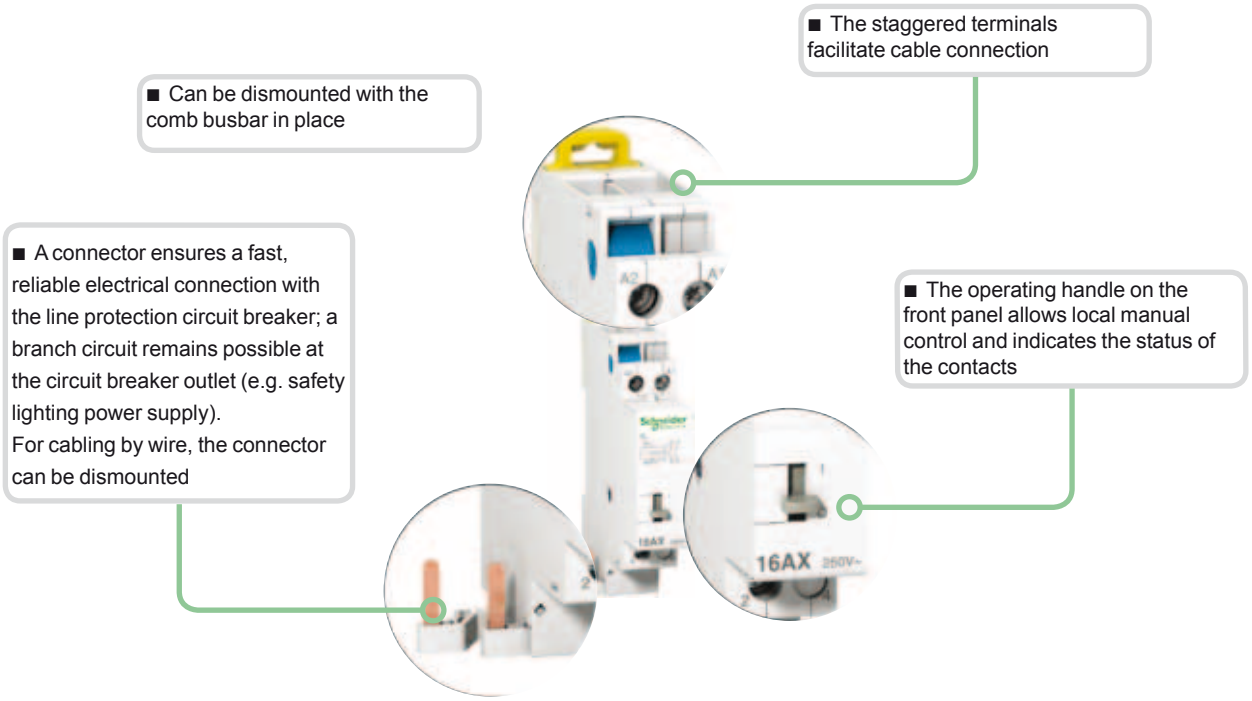
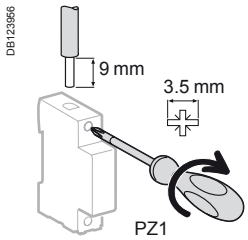
TL impulse relays
Clario, Prodis, Librio



Connection



Circuit	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
Power	1 N.m	1 x 1 to 4 mm² 2 x 1 to 2,5 mm²	1 x 1 to 4 mm² 2 x 1 to 2,5 mm²
Control	1 N.m	1 x 0,5 to 1,5 mm²	1 x 0,5 to 1,5 mm²

2 possible connections

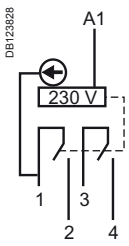


Figure 1:
Coil cabling with 1 wire

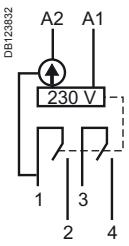
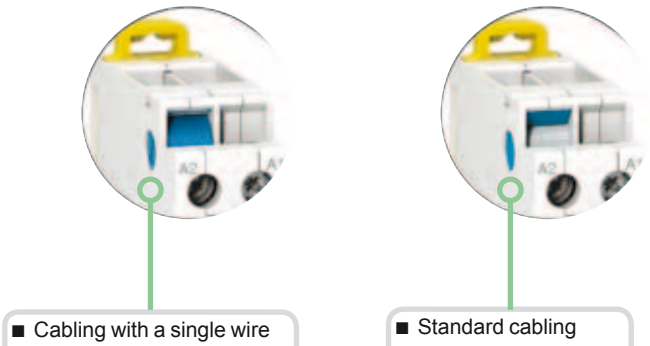
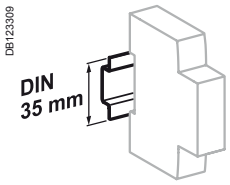


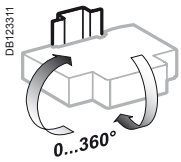
Figure 2:
Coil cabling with 2 wires



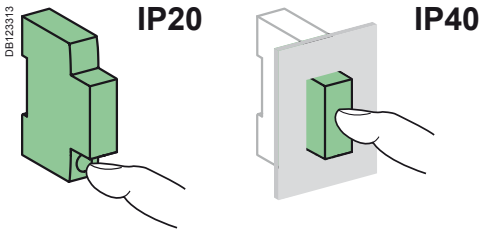
TL impulse relays
Clario, Prodis, Librio (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



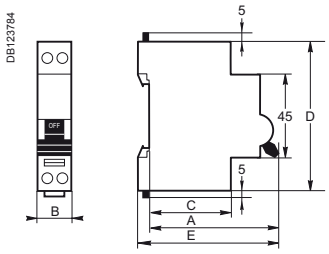
Technical data

Control circuit		
Coil voltage (Uc)		230/240 V AC
Frequency		50 Hz
Inrush power		19 VA
Control by luminous push buttons		Max. current consumption = 3 mA
Power circuit		
Voltage rating (Ue)		250 V AC
Frequency		50 Hz
Max. number of switching operations per minute		5
Pulse duration		50 ms (recommended value for automatic control: 200 ms)
Additional characteristics		
Insulation voltage (Ui)		500 V AC
Noise level at activation		< 60 dBA (to 1 m)
Pollution degree		3
Rated impulse withstand voltage (Uimp)		2.5 kV
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40
Endurance (O-C)	Electrical	200 000 cycles (AC22)
Operating temperature		-20°C to +50°C
Storage temperature		-40°C to +80°C
Tropicalization		Treatment 2 (relative humidity of 95 % at 55°C)

Weight (g)

TL impulse relays	
1P	100
2P	105

Dimensions (mm)



TL impulse relays					
Type	**A**	**B**	**C**	**D**	**E**
1P/2P	63	18	44	81	69

CT contactors
Clario, Prodis, Librio
Contents

Offers
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The Schneider Electric range of CT contactors comprises various offers (Clario, Prodis, Librio) so as to be as competitive as possible in each country, taking into account the specific features of each market:
- installation customs
- price
- approval by local organizations.

Variants

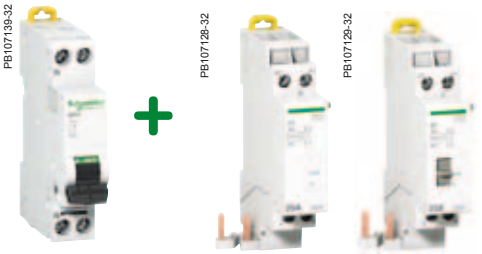
Only the product range to be marketed in your country and validated by the local product manager, in agreement with his Final Distribution (FD) partner should be retained. The others will be removed before publication.

CT contactors
Clario

Country approval pictograms

IEC/EN 61095

CT contactors combined with single-phase circuit breakers or residual current devices, allow remote control of single-phase circuits.

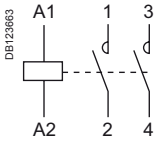
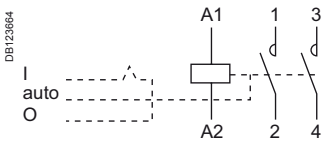


Circuit breaker *CT* *CT with manual control*

Operation
CT contactors:
- have normally open contacts
- are controlled by latched type electrical orders.

Catalogue numbers

CT contactors

Type	Rating		Width in 9-mm modules
2P			
	25 A	**A9C15180**	2
2P with manual control			
	25 A	**A9C15181**	2

CT contactors
Prodis

DB123400 DB122858 DB123660

Country approval pictograms

IEC/EN 61095

CT contactors combined with single-phase circuit breakers or residual current devices, allow remote control of single-phase circuits.

Operation

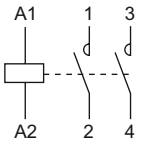
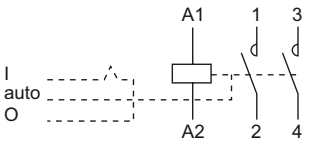
CT contactors:
- have normally open contacts
- are controlled by latched type electrical orders.

PB107170-32 PB107128-32 PB107129-32

Circuit breaker *CT* *CT with manual control*

Catalogue numbers

CT contactors

Type	Rating		Width in 9-mm modules
2P			
DB123663 	25 A	**A9C15185**	2
2P with manual control			
DB123664 	25 A	**A9C15186**	2

CT contactors
Librio

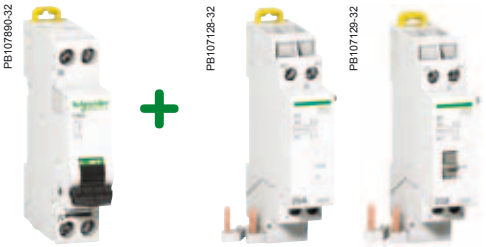
DB123400 DB122858 DB123660

Country approval pictograms

IEC/EN 61095

CT contactors combined with single-phase circuit breakers or residual current devices, allow remote control of single-phase circuits.

PB107890-32 PB107128-32 PB107129-32



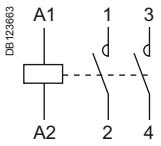
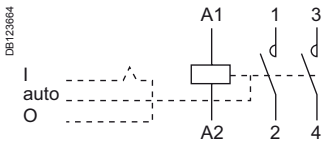
Circuit breaker *CT* *CT with manual control*

Operation

CT contactors:
- have normally open contacts
- are controlled by latched type electrical orders.

Catalogue numbers

CT contactors

Type	Rating		Width in 9-mm modules
2P			
DB123663 	25 A	**A9C15182**	2
2P with manual control			
DB123664 	25 A	**A9C15183**	2

Offer selection see page 493

Librio

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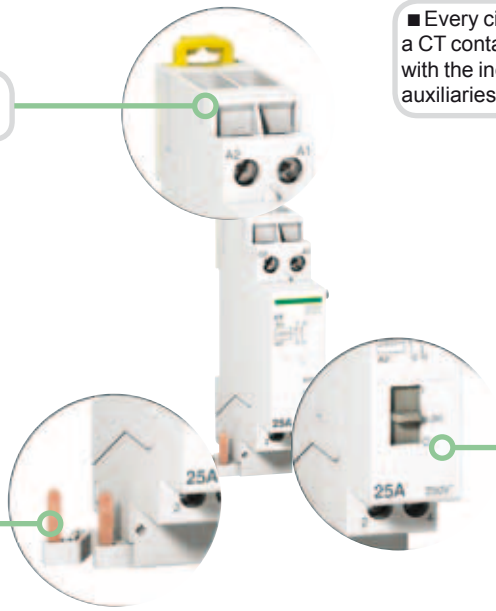
CT contactors
Clario, Prodis, Librio



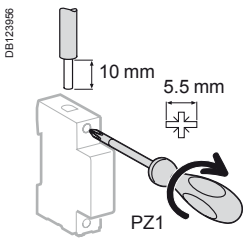
■ The staggered terminals facilitate cable connection

■ Every circuit breaker combined with a CT contactor remains compatible with the indication and tripping auxiliaries

Manual-control CT contactors:
■ Have a 3-position selector on the front panel:
□ automatic operation
□ temporary forced starting
□ permanent stoppage

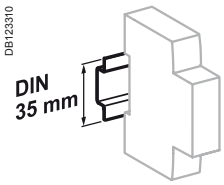
■ A connector ensures a fast, reliable electrical connection with the line protection circuit breaker; a branch circuit remains possible at the circuit breaker outlet (e.g. safety lighting power supply).
For cabling by wire, the connector can be dismounted

Connection

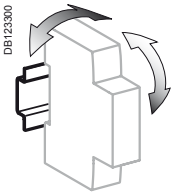


Rating	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
25 A	0.8 N.m	≤ 6 mm²	≤ 6 mm²

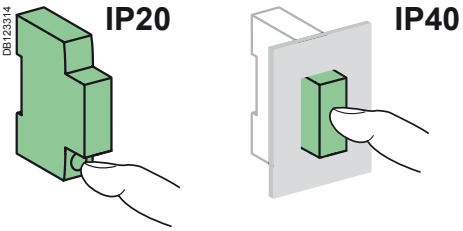
CT contactors
Clario, Prodis, Librio (cont.)



Clip on DIN rail 35 mm.



± 30° vertical.



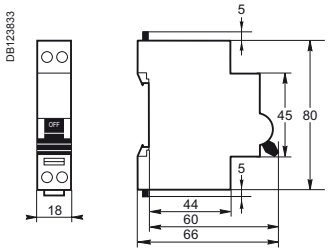
Technical data

Control circuit		
Coil voltage (Uc)		230 V AC
Frequency		50 Hz
Inrush power		15 VA
Holding power		3.8 VA
Voltage presence indicating system on front panel		Red indicator: coil energized
Power circuit		
Voltage rating (Ue)		250 V AC
Frequency		50 Hz
Max. number of switching operations per minute		6
Max. number of switching operations per day		100
Additional characteristics		
Insulation voltage (Ui)		500 V AC
Silent operation		< 20 dB
Pollution degree		2
Rated impulse withstand voltage (Uimp)		2.5 kV
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Operating temperature		-5°C to +60°C
Storage temperature		-40°C to +60°C
Tropicalization		Treatment 2 (relative humidity 95 % to 55°C)

Weight (g)

CT contactors	
Standard 2P	110
2P with manual control	120

Dimensions (mm)



iTL+ high-performance impulse relays

DB106604

Country approval pictograms

EN 60669-2-2

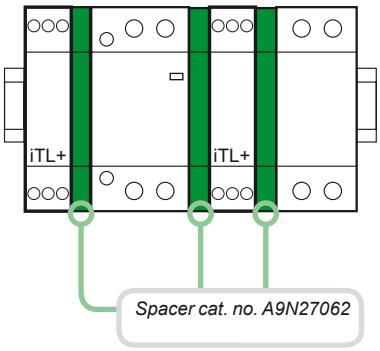
The iTL+ high-performance impulse relay allows remote control of single-phase circuits. It is designed for demanding applications.

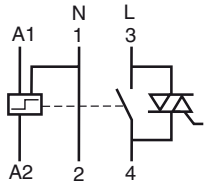
The iTL+ high-performance impulse relay is used for push-button control of lighting circuits consisting of:
- incandescent lamps, low-voltage halogen lamps, etc. (resistive loads)
- fluorescent tubes, discharge lamps, etc. (inductive loads).

PB107132-35

PB104483-35

DB124139



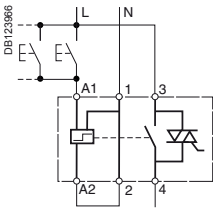
iTL+			
Type	**Rating**		**Width in 9 mm modules**
1P+N			
DB106156 	16 A	**A9C15032**	2+1 (1)

*(1) Supplied with a 9 mm spacer (cat. no. **A9N27062**): to be used for mounting the iTL+ alongside a circuit breaker, contactor, impulse relay, etc., in order to maintain optimal operation.*

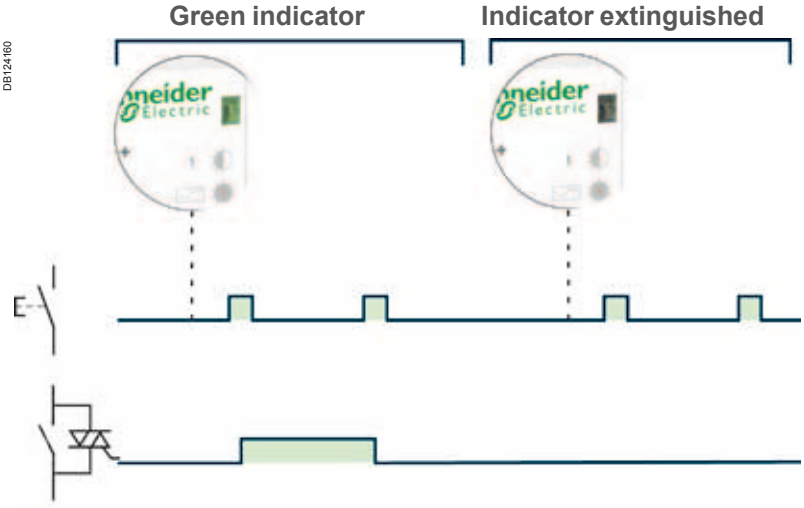
It is compulsory:
- to connect the neutral
- to keep the same control circuit connection "A1: phase", "A2: neutral"
- to use the same phase for connection of the power and control functions.

Operation

DB123966

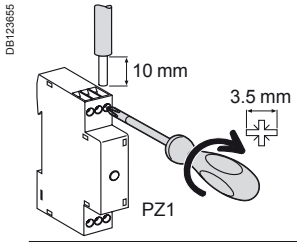


DB124160



Connection

DB123655

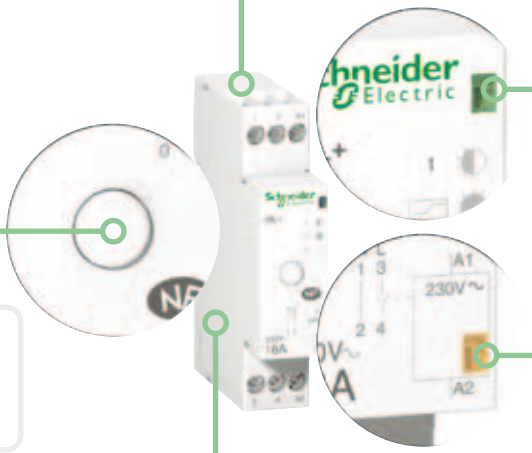


Type	Rating	Tightening torque	Copper cables	
			Rigid or flexible with ferrule	Rigid or flexible without ferrule
			DB123656	DB123657
iTL+	16 A	1 N.m	2 x 1.5 mm²	2 x 2.5 mm² 1 x 4 mm²

iTL+ high-performance impulse relays (cont.)

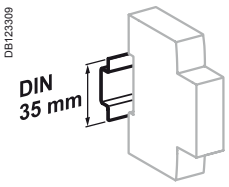
They combine the benefits of static switching and electromechanical technology: small size, little temperature rise.

PB107132-40



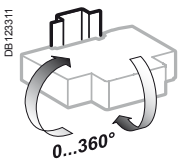
Following a mains failure, the iTL+ returns to 0 position (forced stoppage) irrespective of its initial state.

DB123309



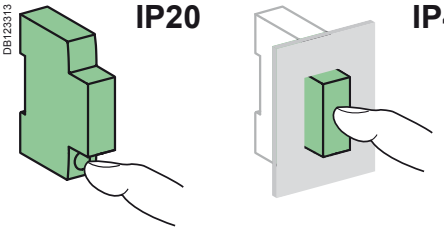
Clip on DIN rail 35 mm.

DB123311



Indifferent position of installation.

DB123313



Technical data

Control circuit		
Coil voltage (Uc)		230 V AC
Frequency		50 Hz
Inrush power		11 VA
Holding power		1.1 VA
Control by luminous push button		Max. current 5 mA
Control order duration		50 ms to 1 s (recommended 200 ms)
Power circuit		
Voltage rating (Ue)		230 V AC
Frequency		50 Hz
Electrical load	Minimum	20 W
	Maximum	3600 W
Max. number of switching operations per minute		6
Other characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Endurance (O-C)	Electrical	5.000.000 cycles (AC21 - AC22)
Noise level at activation		< 30 dBA
Operating temperature		-5°C to +55°C
Storage temperature		-40°C to +60°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)

Weight (g)

High-performance impulse relays	
Type	**iTL+**
1P+N	70

iCT+ high-performance contactors

DB106604

Country approval pictograms

EN 60669-2-2

iCT+ high-performance contactors allow remote control of single-phase circuits.
They are designed for demanding applications.

iCT+ high-performance contactors can be used for remote control of applications on AC networks:
- lighting, heating, ventilation, roller blinds, domestic hot water
- mechanical ventilation systems, etc.
- load shedding on non-priority circuits.

PB107130-35

Standard 1P+N

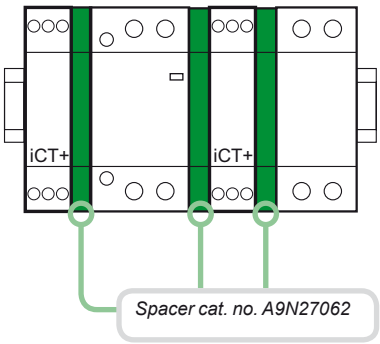
PB107131-35

1P+N with manual control

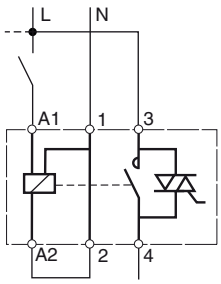
PB104483-35

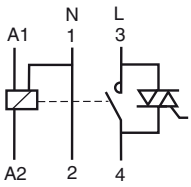
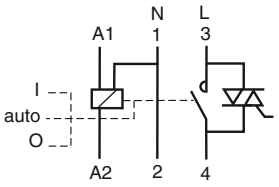
Spacer

DB124140



DB404607



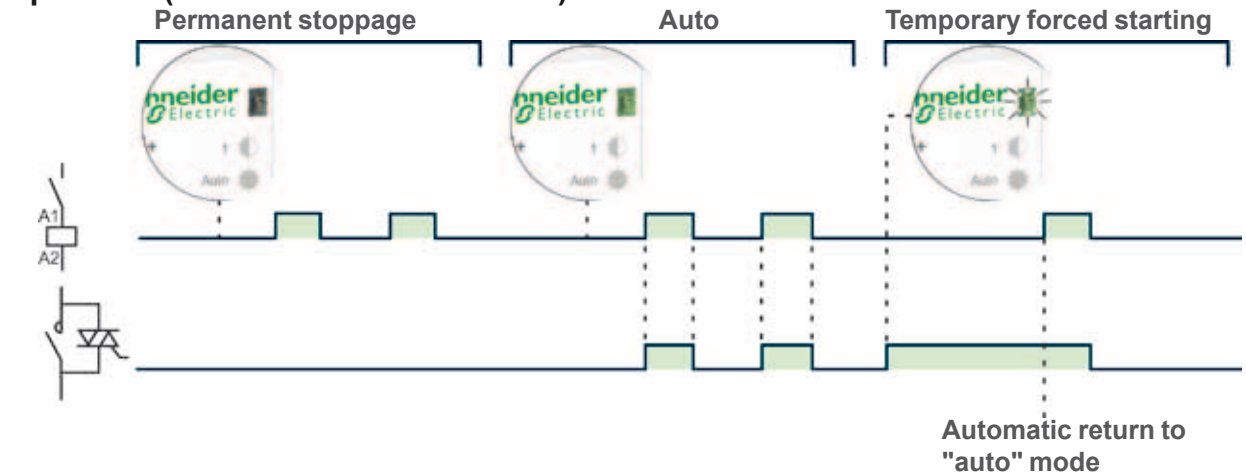
iCT+				
Type	**Rating**	**Contact**		**Width in 9-mm modules**
Standard 1P+N				
E57636 	20 A	1 NO	**A9C15030**	2+1 (1)
1P+N with manual control				
E57646 	20 A	1 NO	**A9C15031**	2+1 (1)

*(1) Supplied with a 9 mm spacer (cat. no. **A9N27062**): to be used for mounting the iCT+ alongside a circuit breaker, contactor, impulse relay, etc., in order to maintain optimal operation.*

It is compulsory:
- to connect the neutral
- to keep the same control circuit connection "A1: phase", "A2: neutral"
- to use the same phase for connection of the power and control functions.

Operation (manual-control contactor)

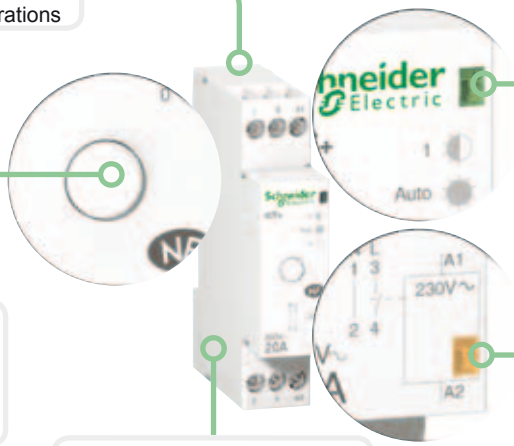
DB124156



iCT+ high-performance contactors (cont.)

They combine the benefits of static switching and electromechanical technology: small size, little temperature rise.

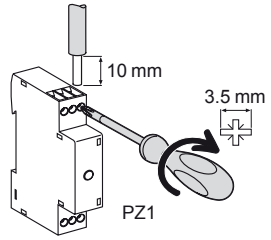
PB137131-40



Following a mains failure, the iCT+ returns to "auto" operating mode irrespective of its initial state.

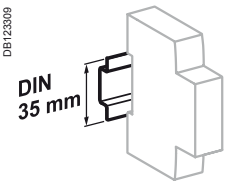
Connection

DB123655



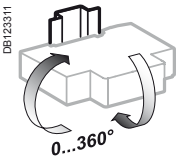
Type	Tightening torque	Copper cables	
		Rigid or flexible with ferrule	Rigid or flexible without ferrule
		DB123656	DB123657
iCT+	1 N.m	2 x 1.5 mm²	2 x 2.5 mm² 1 x 4 mm²

DB123309



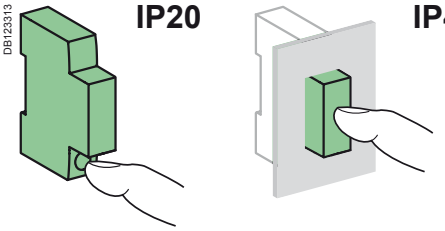
Clip on DIN rail 35 mm.

DB123311



Indifferent position of installation.

DB123313



Technical data

Control circuit		
Coil voltage (Uc)		230 V AC (± 10 %)
Frequency		50 Hz
Inrush power		11 VA
Holding power		1.1 VA
Power circuit		
Voltage rating (Ue)		230 V AC (± 10 %)
Frequency		50 Hz
Electrical load	Minimum	20 W
	Maximum	3600 W
Max. number of switching operations per minute		6
Other characteristics		
Endurance (O-C)	Electrical	5.000.000 cycles
Pollution degree		3
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Operating temperature		-5°C to +55°C
Storage temperature		-40°C to +60°C
Tropicalization (IEC 60068-1)		2 (relative humidity of 95 % at 55°C)

Weight (g)

High-performance contactors	
Type	**iCT+**
Standard 1P+N	70
1P+N with manual control	70

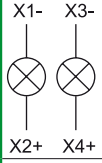
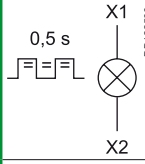
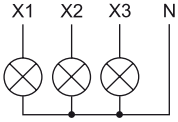
iIL indicator lights

IEC 60947-5-1

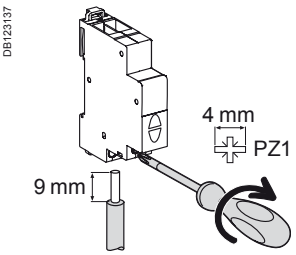
■ iIL indicator lights light up to indicate that a voltage is present.

Catalogue numbers

iIL indicator lights

Type	Single					Double		Flashing light	Three-phase voltage presence indicator light
									
Diagram									
Colour	Red	Green	White	Blue	Yellow	Green/red	White/ white	Red	Red/red/red
Cat. no.									
12...48 V AC/DC	**A9E18330**	**A9E18331**	**A9E18332**	**A9E18333**	**A9E18334**	**A9E18335**	-	-	-
110...230 V AC 110...130 V DC	**A9E18320**	**A9E18321**	**A9E18322**	**A9E18323**	**A9E18324**	**A9E18325**	**A9E18328**	-	-
110...230 V AC	-	-	-	-	-	-	-	**A9E18326**	-
230...400 V AC (3 phases)	-	-	-	-	-	-	-	-	**A9E18327**
Width in 9 mm modules	2					2		2	2

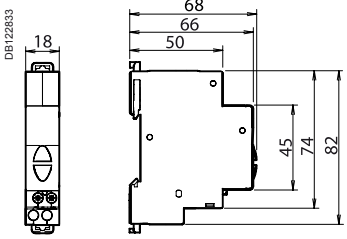
Connection



Tightening torque	Copper cables	
	Rigid	Flexible or with ferrule
		
1 N.m	0.5 mm^2 min.	0.5 mm^2 min.
	2 x 2.5 mm^2 max.	2 x 2.5 mm^2 max.

■ Phase-separated wall that can be divided to allow the teeth of all types of comb busbar to pass through.
■ Staggered terminals to simplify connection.

Dimensions (mm)



Technical data

Main characteristics	
Pollution degree	3
Power circuit	
Operating frequency	50...60 Hz
Flashing frequency	2 Hz
Additional characteristics	
Operating temperature	-35°C... +70°C
Storage temperature	-40°C... +80°C
Tropicalization	Treatment 2 (relative humidity 95 % at 55°C)
LED indicator light	Consumption per indicator light: 0.3 W
	Service life: 100,000 hours of constant lighting efficiency
	Maintenance-free indicator light (non-interchangeable LEDs)

iSO bells and iRO buzzers

iSO

iRO

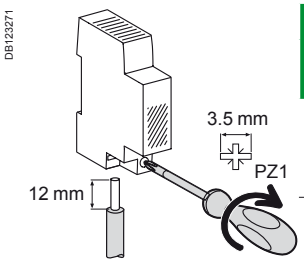
iSO and iRO

Audible indication in housing and the tertiary sector.

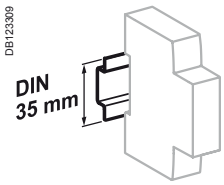
Catalogue numbers

Bell and buzzer			
Type			**Width in 9 mm modules**
iSO bell	**Voltage (Ue)**		
	230 V AC	**A9A15320**	2
	8…12 V AC	**A9A15321**	2
iRO buzzer			
	230 V AC	**A9A15322**	2
	8…12 V AC	**A9A15323**	2
Operating frequency	50...60 Hz		

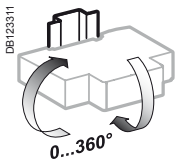
Connection



Tightening torque	Copper cables	
	Rigid	Flexible or with ferrule
		
1.3 N.m	< 4 mm²	< 4 mm²



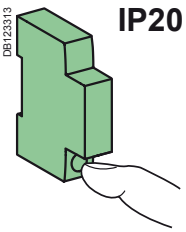
Clip on DIN rail 35 mm.

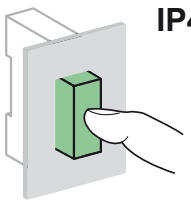


Indifferent position of installation.

Technical data

Main characteristics		iSO	iRO
Consumption	8…12 V AC	3.6 VA	
	220…240 V AC	5 VA	
Additional characteristics			
Degree of protection (IEC 60529)	Device only	IP40	
	Device in modular enclosure	IP20	
Operating temperature		-10°C to +40°C	
Storage temperature		-25°C to +60°C	
Sound level (at a distance of 60 cm)		80 dBA	70 dBA

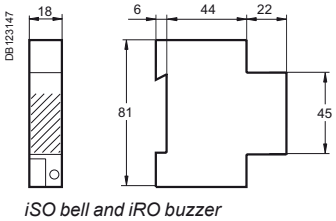




Weight (g)

Bell and buzzer	
Type	
iSO	77
iRO	64

Dimensions (mm)



iSO bell and iRO buzzer

iTR transformers

DB406142

Country approval pictogram

PB107156-35

PB107158-35

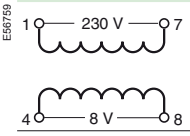
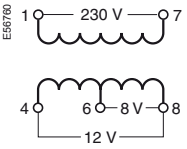
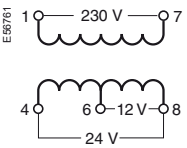
Bell transformers: EN/IEC 61558-2-8.
Safety transformers: EN/IEC 61558-2-6.

Bell transformers and safety transformers allow for a very low voltage (ELV 8 V, 12 V or 24 V) to be obtained from a low voltage network (LV 230 V).

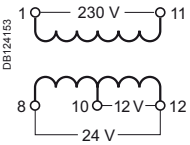
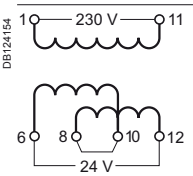
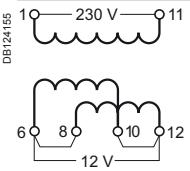
All Schneider Electric transformers are:
- Safe: primary and secondary circuits are perfectly insulated by each other
- Resistant to short-circuit currents thanks to the built-in device
- Class II with terminal shield (optional).

Catalogue numbers

Bell transformer

	Type	Power	Secondary voltage		Width in 9 mm modules
E56759		4 VA	8 V AC	**A9A15214**	4
E56760		4 VA	8-12 V AC	**A9A15213**	4
		8 VA	8-12 V AC	**A9A15216**	4
		16 VA	8-12 V AC	**A9A15212**	4
E56761		25 VA	12-24 V AC	**A9A15215**	6

Safety transformer

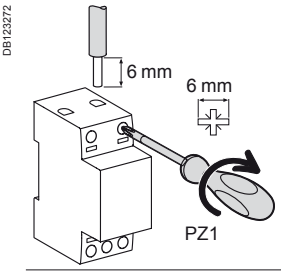
	Type	Power	Secondary voltage		Width in 9 mm modules
DB124153		16 VA	12-24 V AC	**A9A15218**	10
		25 VA	12-24 V AC	**A9A15219**	10
DB124154		40 VA	12-24 V AC	**A9A15220**	10
		63 VA	12-24 V AC	**A9A15222**	10
DB124155					
Operating frequency		50/60 Hz			

Terminal shield

Type		Width in 9 mm modules
	15228	4
	15229	6

iTR transformers (cont.)

Connection



Tightening torque	Copper cables	
	Rigid	Flexible or with ferrule
	 DB122945	 DB122946
0.5 N.m	< 2.5 mm²	< 2.5 mm²

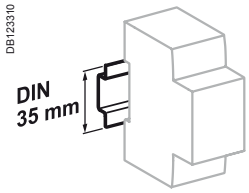
Technical data

Main characteristics		
Primary voltage		230 V AC ±10 %
Secondary voltage on load	For bell transformers	8-12-24 V AC ±15 %
	For safety transformers	12-24 V AC ±5 %

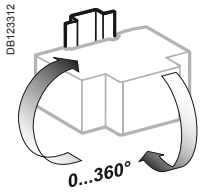
Transformer catalogue numbers	Rated secondary voltage	Off load voltage
A9A15214	8 V	12 V
A9A15213	8 V	12 V
	12 V	16 V
A9A15216	8 V	13 V
	12 V	18 V
A9A15212	8 V	13 V
	12 V	18 V
A9A15215	12 V	16 V
	24 V	32 V
A9A15218	12 V	14 V
	24 V	28 V
A9A15219	12 V	14 V
	24 V	28 V
A9A15220	12 V	14 V
	24 V	28 V
A9A15222	12 V	14 V
	24 V	28 V

Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20 with terminal shield
Operating temperature		-20°C to +55°C
Storage temperature		-25°C to +80°C

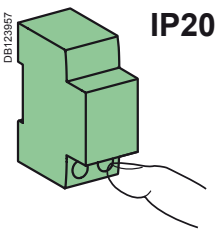
Note: Transformers have an off load operating voltage that is higher than the rated voltage. For loads that are sensitive to overloads (electro-magnetic circuits), the transformer must be made to operate at In. After operation of the protection device upon an overload, cut-off the power supply and let the transformer cool down before restart.



Clip on DIN rail 35 mm.



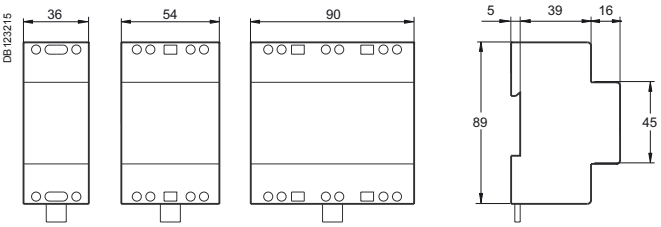
Bell transformer: indifferent position of installation.
Safety transformer: vertical position.



Weight (g)

iTR		
Type	**Cat. no.**	**Weight**
Bell	**A9A15212**	384
	A9A15213	240
	A9A15214	237
	A9A15215	633
	A9A15216	275
Safety	**A9A15218**	1082
	A9A15219	1125
	A9A15220	1190
	A9A15222	1309

Dimensions (mm)



A9A15212
A9A15213
A9A15214
A9A15216

A9A15215

A9A15218
A9A15219
A9A15220
A9A15222

Relays

Time delay relays are used in service sector and industrial buildings for small automatic control systems: ventilation, heating, animation, roller blind servo controls, escalators, pumps, lighting, signalling, monitoring, etc.

Time delay relays

iRTA
■ Delays energizing of a load

iRTB
■ Delays de-energizing of a load upon closing of an auxiliary contact (push button)

iRTC
■ Delays de-energizing of a load upon opening of an auxiliary contact (push button)

Time delay

iRBN and iRTBT relays can interface automatic control system inputs/ outputs with low-voltage devices.

Interface relays

iRBN
Low level relay
■ Actuation of low-amperage electronic circuits upon receiving an LV electrical order

iRTBT
Extra low voltage relay
■ Actuation of LV circuits based on an extra low voltage order

Control

Control relays monitor electrical parameters and indicate when they are exceeded

Control relays

iRCP
Phase control
■ Monitors the order and asymmetry of phases and the presence of voltage on the 3 phases of a three-phase circuit (power supply of a motor, etc.)

iRCI
Current control
■ Monitors the current flowing in a circuit and indicates any crossing of the set threshold

Monitoring

Relays (cont.)

PB111584-35

iRTH
■ Applies a time delay to de-energizing of a load

PB111585-35

iRTL
■ Applies a time delay to energizing and de-energizing of a load during different times, repeatedly (flasher)

PB111586-35

iRTMF
■ Allows one of the four types of time delay to be selected: A, B, C or H

iRLI and iERL relays are used to relay ON or OFF information to the auxiliary circuits and actuate low-power loads

Changeover relays

PB107108-35

iRLI
Changeover

PB107109-35

iERL extension

■ Relays ON or OFF information to the auxiliary circuits
■ Actuates low-power loads

Relaying and control

PB107126-35

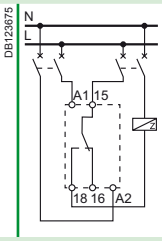
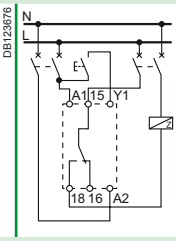
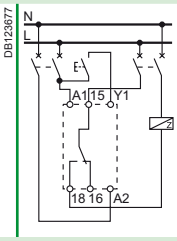
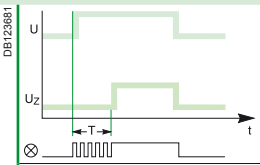
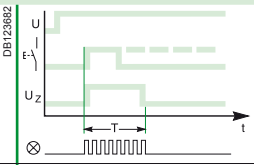
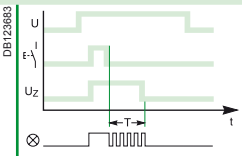
iRCU
Voltage control
■ Monitors the potential difference of a circuit and indicates any crossing of the set threshold

PB107127-35

iRCC
Compressor control
■ Monitors the compressor power supply and prevents its immediate restarting upon detection of a power cut or voltage dip

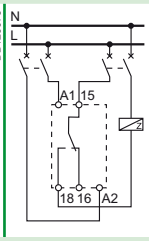
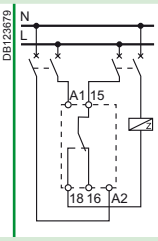
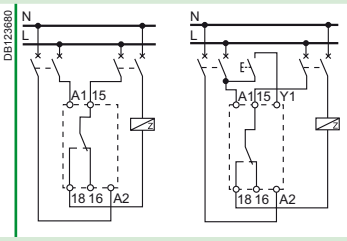
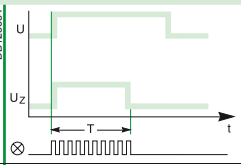
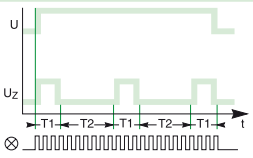
Time delay relays iRTA, iRTB, iRTC, iRTH, iRTL and iRTMF

Time delay relays

	iRTA	iRTB	iRTC
Type			
			
Function			
	■ Delays energizing of a load	■ Delays de-energizing of a load upon closing of an auxiliary contact (push button)	■ Delays de-energizing of a load upon opening of an auxiliary contact (push button)
Wiring diagrams			
			
Use			
			
	■ The single time delay cycle starts at switching on of the iRTA relay power supply ■ The load is energized at the end of time delay T	■ The single time delay cycle starts at closing of an auxiliary contact (push button) ■ The load is de-energized at the end of time delay T	■ The single time delay cycle starts only upon release of an auxiliary contact (push button) ■ The load is de-energized at the end of time delay T
Catalogue numbers	**A9E16065**	**A9E16066**	**A9E16067**

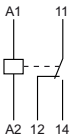
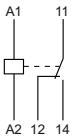
Technical specifications				
Control and power supply voltage (Uc)	V AC	24…240, ±10 %	24…240, ±10 %	24…240, ±10 %
	V DC	24, ±10 %	24, ±10 %	24, ±10 %
Operating frequency	Hz	50/60	50/60	50/60
Time delay range		0.1 s to 100 h	0.1 s to 100 h	0.1 s to 100 h
Precision		±10 % of full scale	±10 % of full scale	±10 % of full scale
Minimum duration of control impulse		100 ms	100 ms	100 ms
Insensitive to brownouts		⩽ 20 ms	⩽ 20 ms	⩽ 20 ms
Max. resetting time per voltage interruption		100 ms	100 ms	100 ms
Accuracy of repetition		±0.5 % at constant parameters	±0.5 % at constant parameters	±0.5 % at constant parameters
Changeover contact (cadmium free)	Mini	Rating 10 mA/5 V DC	Rating 10 mA/5 V DC	Rating 10 mA/5 V DC
	Maxi	Rating 8 A/250 V AC/DC	Rating 8 A/250 V AC/DC	Rating 8 A/250 V AC/DC
Endurance	Mechanical	> 5 x 10^6 switching operations	> 5 x 10^6 switching operations	> 5 x 10^6 switching operations
	Electrical	> 10^5 switching operations (utilization category AC1)	> 10^5 switching operations (utilization category AC1)	> 10^5 switching operations (utilization category AC1)
Display of contact status by green indicator lamp		Flashing during time delay	Flashing during time delay	Flashing during time delay
Degree of protection	Device only	IP20	IP20	IP20
Connection by tunnel terminals	Without ferrule	2 x 2.5 mm² single-strand	2 x 2.5 mm² single-strand	2 x 2.5 mm² single-strand
	With ferrule	2 x 1.5 mm² multi-strand	2 x 1.5 mm² multi-strand	2 x 1.5 mm² multi-strand
Width in 9-mm modules		2	2	2
Operating temperature	°C	-5 … +55	-5 … +55	-5 … +55
Storage temperature	°C	-40 … +70	-40 … +70	-40 … +70

Time delay relays iRTA, iRTB, iRTC, iRTH, iRTL and iRTMF (cont.)

	iRTH	iRTL	iRTMF
	PB111584-35 	PB111585-35 	PB111586-35 
	■ Applies a time delay to de-energizing of a load	■ Applies a time delay to energizing and de-energizing of a load during different times, repeatedly (flasher)	■ Allows one of the four types of time delay to be selected: A, B, C or H
	DB123678 	DB123679 	DB123680 
	DB123684 	DB123685 	
	■ The single time delay cycle starts at switching on of the iRTH relay power supply ■ The load is de-energized at the end of time delay T	■ The time delay cycle starts at energizing ■ The load is energized during an adjustable time T1 and then de-energized during an adjustable time T2. This cycle is reproduced until de-energizing of the iRTL relay power supply	■ Depending on the choice, the iRTMF generates time delay cycles for the iRTA, iRTB, iRTC or iRTH relays
	A9E16068	**A9E16069**	**A9E16070**
	24…240, ±10 %	24…240, ±10 %	12…240, ±10 %
	24, ±10 %	24, ±10 %	12…240, ±10 %
	50/60	50/60	50/60
	0.1 s to 100 h	0.1 s to 100 h	0.1 s to 100 h
	±10 % of full scale	±10 % of full scale	±10 % of full scale
	100 ms	100 ms	100 ms
	≤ 20 ms	≤ 20 ms	≤ 20 ms
	100 ms	100 ms	100 ms
	±0.5 % at constant parameters	±0.5 % at constant parameters	±0.5 % at constant parameters
	Rating 10 mA/5 V DC	Rating 10 mA/5 V DC	Rating 10 mA/5 V DC
	Rating 8 A/250 V AC/DC	Rating 8 A/250 V AC/DC	Rating 8 A/250 V AC/DC
	> 5 x 10^6 switching operations	> 5 x 10^6 switching operations	> 5 x 10^6 switching operations
	> 10^5 switching operations (utilization category AC1)	> 10^5 switching operations (utilization category AC1)	> 10^5 switching operations (utilization category AC1)
	Flashing during time delay	Flashing during time delay	Flashing during time delay
	IP20	IP20	IP20
	2 x 2.5 mm^2 single-strand	2 x 2.5 mm^2 single-strand	2 x 2.5 mm^2 single-strand
	2 x 1.5 mm^2 multi-strand	2 x 1.5 mm^2 multi-strand	2 x 1.5 mm^2 multi-strand
	2	2	2
	-5 … +55	-5 … +55	-5 … +55
	-40 … +70	-40 … +70	-40 … +70

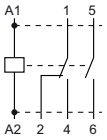
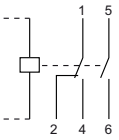
Interface relays iRBN, iRTBT

Interface relays

		iRBN	iRTBT
Type		**Low level**	**Extra low voltage**
		PB107144-35 	PB107164-35 
Standard		IEC/EN 61810-1	IEC/EN 61810-1
Function			
		■ Actuation of low-amperage electronic circuits upon receiving an LV electrical order	■ Actuation of LV circuits based on an extra low voltage order
Wiring diagrams			
		DB123686 	DB123686 
Use			
		■ Inputs of programmable logic controllers, of measuring or supervision circuits, etc.	■ ELV orders can be issued by a programmable logic controller (24 V DC static outputs), a central fire detection unit, a regulation system, etc.
Catalogue numbers		**A9A15393**	**A9A15416**
Technical specifications			
Input control voltage (Uc)	V AC	230, ±10 %	12...24, -15 to +10 %
	V DC	-	12...24, ±20 %
Output contact rating	Mini	5 mA/5 V DC (DC12) 5 mA/5 V AC	10 mA/10 V DC (DC12) 10 mA/10 V AC
	Maxi	1 A/24 V DC (DC12) 5 A/250 V AC	1 A/24 V DC (DC12) 5 A/250 V AC
Operating frequency	Hz	50/60	0…60
Strengthened insulation between ELV/LV circuits		4 kV	4 kV
Consumption	At inrush	5 VA	0.22 W
	At holding	2.5 VA	0.11 W
Endurance	Electrical	100,000 switching operations	100,000 switching operations
Display of voltage presence on the control circuit		By green indicator lamp	By green indicator lamp
Degree of protection	Device only	IP20	IP20
Connection by tunnel terminals		0.5 x 6 mm^2	0.5 x 6 mm^2
Width in 9-mm modules		2	2
Operating temperature	°C	-5 … +55	-5 … +55
Storage temperature	°C	-40 … +70	-40 … +70

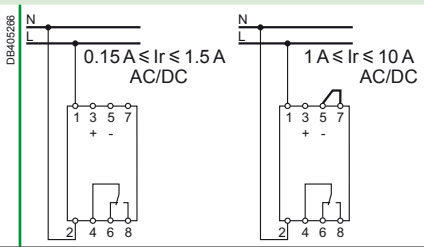
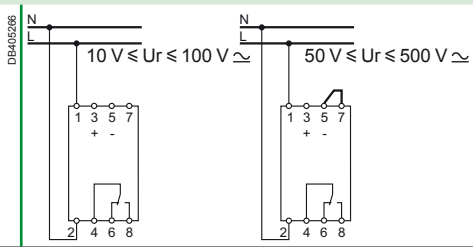
iRLI changeover and iERL extension relays

Changeover and extension relays

		iRLI				iERL			
Type		**Changeover relay**				**Extension for RLI**			
		PB107108-35 				PB107109-35 			
Standard		IEC/EN 61810-1 and NF C 45-250				IEC/EN 61810-1 and NF C 45-250			
Function									
		■ Relaying of ON or OFF information to the auxiliary circuits and actuation of low-power loads				■ Extension allowing additional contacts to be added to the iRLI changeover relays			
Wiring diagrams									
		DB123687 				DB123688 			
Use									
		■ The iRLI relay contains 1 changeover contact (O-C) and 1 normally open contact (N/O)				■ The iERL extension (max. 3 iERLs for 1 iRLI) contains 1 changeover contact (O-C) and 1 normally open contact (N/O) ■ Can be mounted without any tool and without additional cabling using a yellow clip which performs mechanical assembly and electrical connection between the coils			
Catalogue numbers		**A9E15535**	**A9E15536**	**A9E15537**	**A9E15538**	**A9E15539**	**A9E15540**	**A9E15541**	**A9E15542**
Technical specifications									
Control voltage (Uc)	V AC	230…240	48	24	12	230…240	48	24	12
Voltage rating (Ue)	V AC	230				230			
Insulation voltage (Ui)	V AC	250				250			
Rating (In)	A	10, cos φ = 1				10, cos φ = 1			
Operating frequency	Hz	50/60				50/60			
Inrush and holding power		4 VA				iRLI + iERL : 8 VA			
Endurance	Electrical	100,000 cycles AC21 (cos φ = 1)				100,000 cycles AC21 (cos φ = 1)			
Direct front face control	Power	By push button				By push button			
	Coil	By selector switch (disconnection)				By selector switch (disconnection)			
Position indicator		Mechanical indicator				Mechanical indicator			
Marking		Clip-on markers on the front panel				Clip-on markers on the front panel			
Degree of protection	Device only	IP20				IP20			
Connection by tunnel terminals		0.5 x 6 mm²				0.5 x 6 mm²			
Width in 9-mm modules		2				2			
Operating temperature	°C	-5 … +55				-5 … +55			
Storage temperature	°C	-40 … +70				-40 … +70			

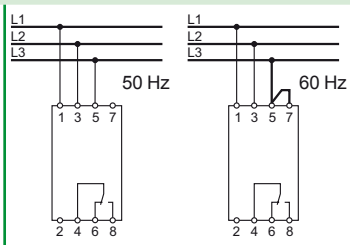
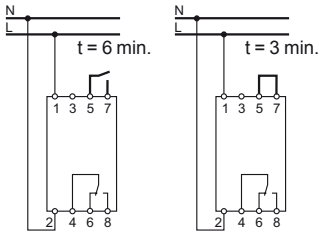
iRCP phase control, iRCI current control, iRCU voltage control and iRCC compressor control relays

Control relays

	iRCI	iRCU
Type	**Current control**	**Voltage control**
		
Function		
	■ Monitors the current (Ir) flowing in an AC or DC circuit and indicates any crossing of the set threshold	■ Monitors the voltage variation (Ur) of an AC or DC circuit and indicates any crossing of the set threshold
Wiring diagrams		
		
Catalogue numbers	**A9E21181**	**A9E21182**

Common technical specifications			
Supply voltage (Uc)	V AC	230, -15 % à +10 %	
Frequency	Hz	50/60	
Parameter setting		■ On the front panel, by direct scale, using a screwdriver	
Precision of display		±10 % of full scale	
Output by changeover contact		8 A under 250 V AC (cos φ = 1)	
Indications by LED	Green	Voltage presence	
	Red	Fault	
Consumption	VA	3	
Dissipated power	W	2	
Degree of protection	Device only	IP20	
Connection by tunnel terminals	Rigid cable	1.5 x 6 mm^2	
Width in 9-mm modules		4	
Operating temperature	°C	-5 … +55	
Storage temperature	°C	-40 … +80	
Particular technical specifications			
		Threshold adjustable from 10 % to 100 % of Ir	Threshold adjustable from 10 % to 100 % of Ur
		Hysteresis adjustable from 5 % to 50 % of Ir	Hysteresis adjustable from 5 % to 50 % of Ur
		Monitoring of overcurrent and undercurrent (selection by selector switch)	
		Fail-safe contact	
		De-energized Energized with fault 	
		Energized without fault 	
		Time delay on crossing threshold: 0.1 s to 10 s	
		Possibility of memorizing fault with resetting	
		Compatible with current transformers (CTs) of ratio X/5	■ Automatic recognition of AC voltage or DC voltage. ■ 2 measuring ranges selected by cabling: □ 10 V to 50 V □ 50 V to 500 V
		■ Automatic recognition of alternating or direct current. ■ 2 measuring ranges selected by cabling: □ 0.15 A to 1.5 A □ 1 A to 10 A	

iRCP phase control, iRCI current control, iRCU voltage control and iRCC compressor control relays (cont.)

	iRCP	iRCC
	Phase control	**Compressor control**
	PB107124-35 	PB107127-35 
	■ Monitors phases and the presence of voltage on the 3 phases of a three-phase circuit (power supply of a motor, etc.). It indicates any phase loss or inversion	■ Monitors the compressor's power supply and prevents its immediate restarting upon detection of a power cut or voltage dip
	DB405265 	DB405267 
	A9E21180	**A9E21183**
	400, ±15 %	230, -15 % à +10 %
	50/60	
	■ On the front panel, by direct scale, using a screwdriver	
	±10 % of full scale	
	8 A under 250 V AC (cos φ = 1)	
	Voltage presence	
	Fault	
	3	
	3 (total on the 3 phases)	2
	IP20	
	1.5 x 6 mm^2	
	4	
	-5 … +55	
	-40 … +80	
	Setting of phase asymmetry threshold: 5 % to 2 5% of 400 V	Threshold setting: ±5 % to ±15 % of 230 V
	Hysteresis: fixed, 5 % of asymmetry threshold	
	Monitoring of direction of phase rotation	
	Monitoring of presence of the 3 phases	
	Fail-safe contact	Fail-safe contact
	De-energized Energized with fault 	De-energized Energized with fault 
	Energized without fault 	Energized without fault 
	Time delay on tripping: 0.3 s	Time delay on overshoot: 3 or 6 minutes (selection by cabling)

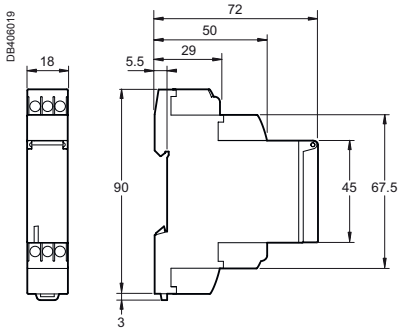
Relays

Technical data

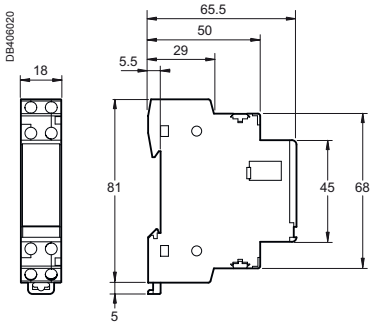
Weight (g)

Relays	
Type	
iRTA, iRTB, iRTC, iRTH, iRBN	65
iRTL	66
iRTMF	68
iRTBT	63
iRLI, iERL	112
iRCP, iRCC	210
iRCI, iRCU	215

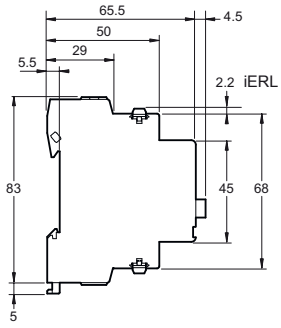
Dimensions (mm)



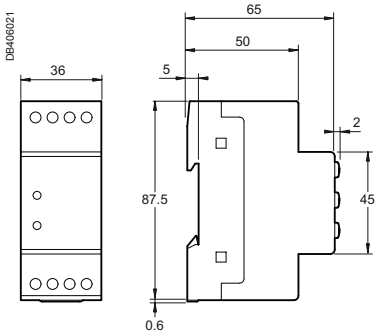
iRTA, iRTB, iRTC, iRTH, iRTL, iRTMF



iRBN, iRTBT



iRLI, iERL



iRCP, iRCI, iRCU, iRCC

DSE1, CDS, CDSc load-shedders

CDS
DSE1 CE

Country approval pictograms

DSE1: IEC 64-8

CDS, CDSc : NF C 61.750, EN 500 81.1

When consumption exceeds the selected threshold, the load-shedder temporarily cuts off the power supply to non-priority circuits.
Load-shedders are used to:
- increase the number of loads without modifying the installed power
- reduce the installed power
- prevent nuisance tripping of the upstream circuit breaker.

Load-shedders

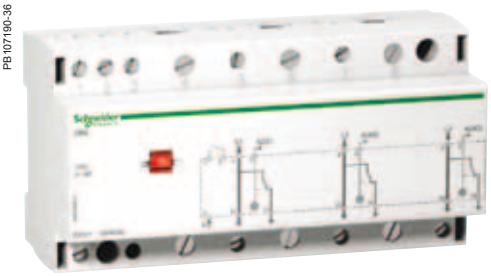
Single-phase DSE1

- Load-shedding and restoration of 1 non-priority channel
- Tripping threshold adjustable from 0.8 kW to 7 kW (by default: 3.7 kW)
- Pre-alarm time before load-shedding (Ton) adjustable from 0 s to 9999 s (by default: 60 s)
- Load-shedding time (Toff) adjustable from 0 s to 9999 s (by default: 120 s)
- Buzzer operating time (Tbe) adjustable from 1 s to 9999 s (by default: 60 s)
- Backlit LCD display, 3 digits after the decimal point

DSE1

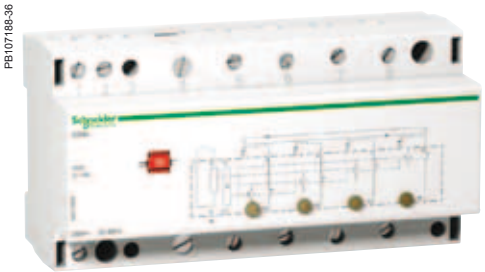
Single-phase CDS

- Load-shedding and restoration in cascading configuration of 2 non-priority circuits via 2 relays with time-delayed action:
  - load-shedding of circuit 1 only: load restoration after 5 min
  - load-shedding of circuit 1 and circuit 2:
    - load restoration of circuit 2: after 10 min
    - load restoration of circuit 1: 5 min. after circuit 2



Three-phase CDS

- Load-shedding and restoration separately phase by phase
- 1 relay per phase
- Load-shedding time: 5 min. for each channel



Single-phase CDSc

- Load-shedding and restoration in cascading configuration, then 1 to 4 non-priority circuits successively in turn
- Cyclic load-shedding: changing the order every 5 min.

CDS

DSE1, CDS, CDSc load-shedders (cont.)

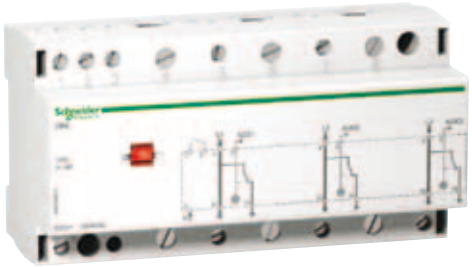
PB110008-34

DSE1

PB107189-34

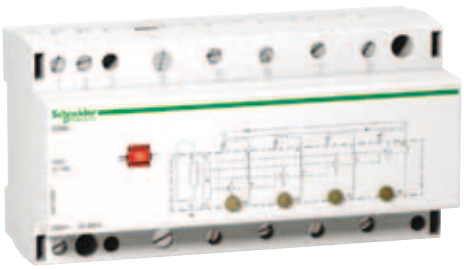
CDS 1P

PB107190-36



CDS 3P

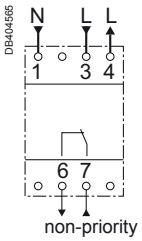
PB107188-36



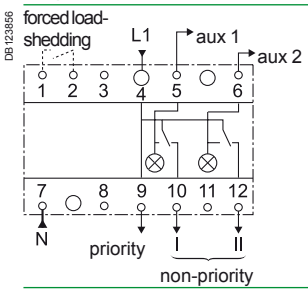
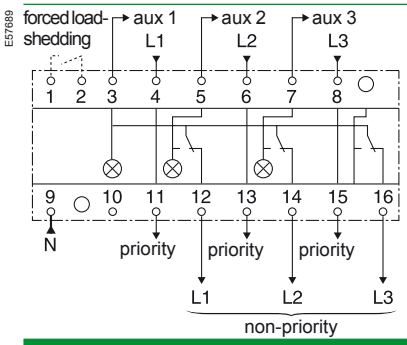
CDSc

Catalogue numbers

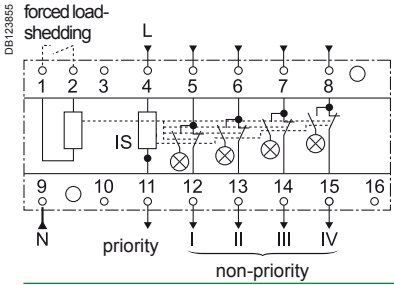
DSE1

Type		Width in 9-mm modules
Single-phase		
	**A9C15907**	4

CDS

Type		Width in 9-mm modules
Single-phase		
	**A9C15908**	10
Three-phase		
	**A9C15913**	16

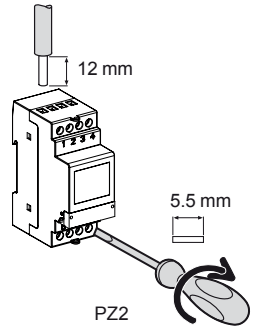
CDSc

Type		Width in 9-mm modules
Single-phase		
	**A9C15906**	16

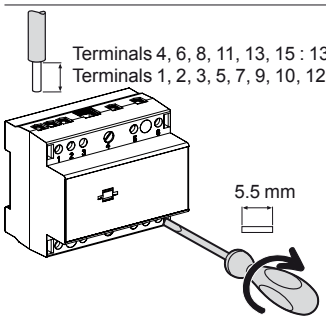
DSE1, CDS, CDSc load-shedders (cont.)

Connection

DB404693



DB124422



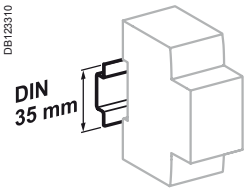
Type		Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
		DB122945	DB122946	
DSE1		1.2 N.m	6 mm²	6 mm²
CDS, CDSc	Priority circuit	3.5 N.m	10 to 50 mm²	10 to 35 mm²
	Non-priority circuit	2 N.m	2.5 to 10 mm²	2.5 to 10 mm²

■ Connection via tunnel terminals (captive screws).

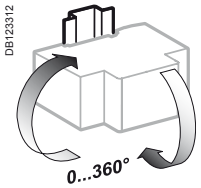
Technical data

Main characteristics		DSE1	CDS		CDSc
		1P	1P	3P	1P
Insulation voltage (Ui)		230 V AC	230 V AC	230 V AC	230 V AC
Tension d'emploi (Ue)		230 V AC, -15 %, +10 %	230 V AC	415 V AC	230 V AC
Frequency		50/60 Hz	50/60 Hz		
Threshold		From 3.5 A to 32 A, accuracy ±1 %	5-10-15-20-25-30-40-45-50-60-75-90		
Rating	Priority circuit	32 A (cosφ = 1)	90 A (cosφ = 1)		
	Non-priority circuit	16 A, 250 V AC (cosφ = 1) >16 A relaying by contactor required	Relaying by contactor required		
Load-shedding indication		By red indicator By buzzer	By yellow indicators		
Power consumption		5 VA, backlit 3.5 VA, not backlit	12 VA		4 VA
Active power		40 W to 8 kW, 32 A maximum	20 kW maximum		20 kW maximum
Control of current greater than 90 A		-	Use of an In/5 current transformer		
		-	Threshold setting: 5 A		
Forced load-shedding input		-	■	■	■
1 A - 250 V make contact for remote indication		-	2	3	-
Additional characteristics					
Degree of protection (IEC 60529)	Device only	IP20	IP20		IP20
	Device in modular enclosure	IP40	IP40		IP40
Operating temperature		-5°C to +50°C	-5°C to +55°C		
Storage temperature		-40°C to +70°C	-40°C to +70°C		
Tropicalisation (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)	Treatment 2 (relative humidity 95 % to 55°C)		

DSE1, CDS, CDSc load-shedders (cont.)



Clips onto 35 mm DIN rail or panel.

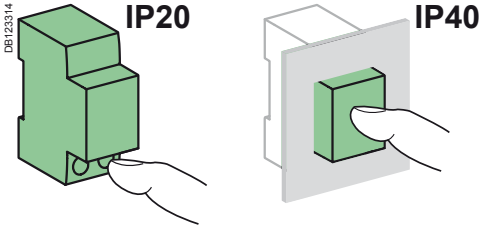


Indifferent position of installation.

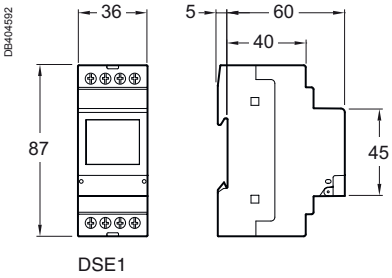
Technical data (cont.)

Weight (g)

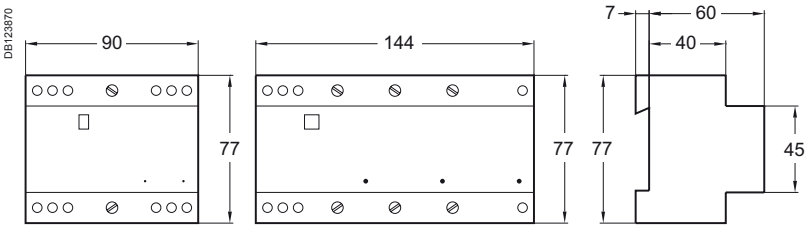
Load-shedders			
Type	**DSE1**	**CDS**	**CDSc**
1P	130	300	600
3P	-	500	-



Dimensions (mm)



DSE1



CDS 1P

CDS 3P
CDSc

DSE1, CDS, CDSc load-shedders (cont.)

Installation

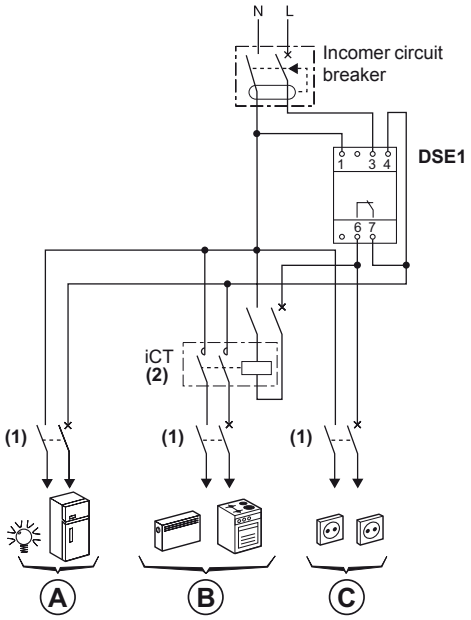
⚠ **Use a contactor for any load-shedding above 16 A.**

Designed for load-shedding household equipment circuits, except lighting circuits.

The load is restored without pre-indication.

DSE1

DB404821



(1) Determine the circuit-breaker rating according to the cable cross-section.
(2) Calculate the contactor rating according to the load power.

A Non load-sheddable priority loads.
B Load-sheddable non-priority loads >16 A (relaying by contactor).
C Load-sheddable non-priority loads < 16 A.

DSE1, CDS, CDSc load-shedders (cont.)

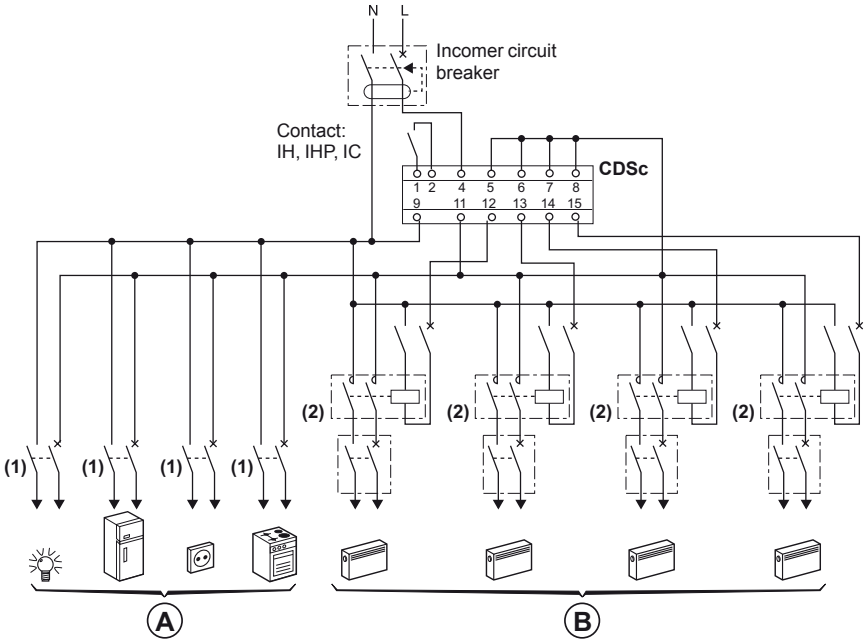
Installation (cont.)

⚠ **Non-priority outputs must not be connected directly: they must be relayed by means of contactors.**

Do not shed circuit loads that include machine and lighting type applications.

CDSc

DB124424

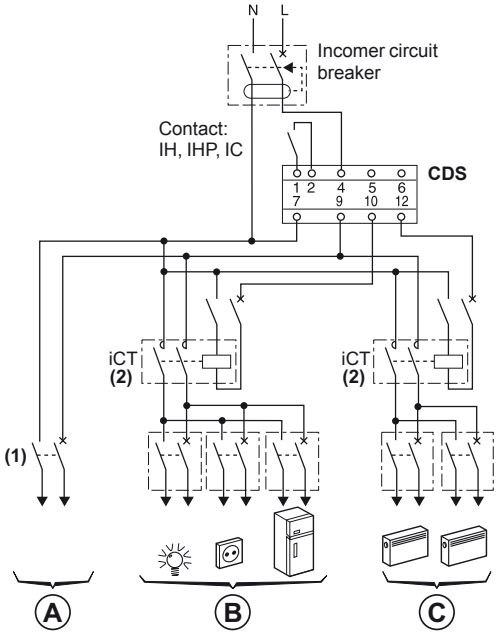


(1) Determine the circuit-breaker rating according to the cable cross-section.
(2) Calculate the contactor rating according to the load power.

A Non load-sheddable priority loads
B Load-sheddable non-priority loads.

CDS

DB124423



(1) Determine the circuit-breaker rating according to the cable cross-section.
(2) Calculate the contactor rating according to the load power.

A Non load-sheddable priority loads
B Load-sheddable non-priority loads: circuit 1.
C Load-sheddable non-priority loads: circuit 2.

Modular iPC power sockets

These power sockets allow low-voltage devices to be connected to the electrical network.
The differentiated socket is designed for specific applications (backed-up networks, sockets powered by a UPS, etc.), when it is wanted to highlight specialized power sockets. Its yellow colour allows users to locate and identify it easily.

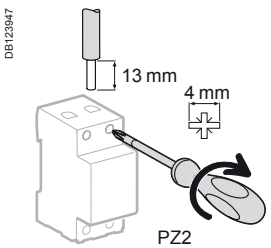
IEC 60884

Catalogue numbers

iPC 16 A power sockets

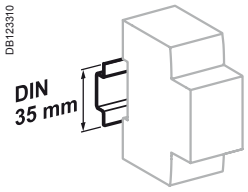
	PB107159-35	PB110810-35		PB107161-35	PB104003_SE-35		PB101297_SE-35
							
Diagram	DB106411 			DB106412 			DB106413 
Approval pictogram	DB106604 DB123399 	DB106604 		DB116619 DB123854 	DB116619 		DB122858 
Type	**Standard**	**With indicator**	**Differentiated**	**Standard**	**With indicator**	**Differentiated**	**Standard**
Color	White	White	Yellow	White	White	Yellow	White
Cover	With	With	With	Without	Without	With	With
Cat. no.	**A9A15306**	**A9A15307**	**15324**	**A9A15310**	**A9A15035**	**15033**	**A9A15303**
Standard	NF C 61314, NBN C 61112		NF C 61314	VDE 0620, NEN 1020	VDE 0620		IMQ as per CEI 2350
	NF C 15100 with “baby safe” type cover						
Width in 9-mm modules	5						

Connection

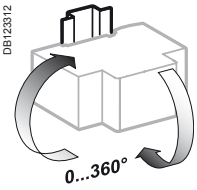


Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945 	DB122946 
iPC 16 A	1.2 N.m	10 mm²	6 mm²

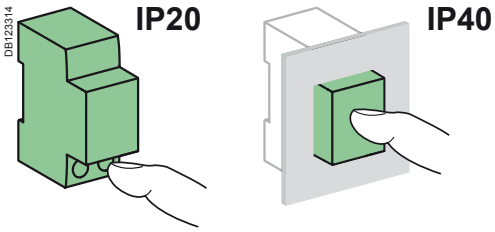
Modular iPC power sockets (cont.)



Clip on DIN rail 35 mm.



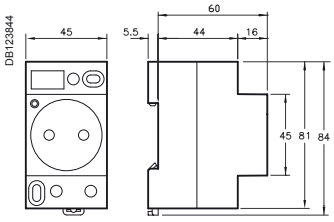
Indifferent position of installation.



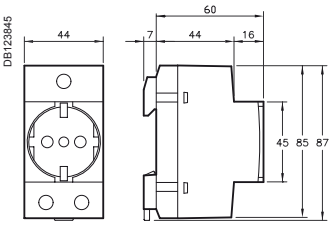
Technical data

Main characteristics		iPC 16 A
Voltage rating (Ue)		250 V AC
Power on indicator		LED technology long service life: 100,000 hours
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40
Operating temperature		-25°C to +70°C
Storage temperature		-40°C to +80°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)

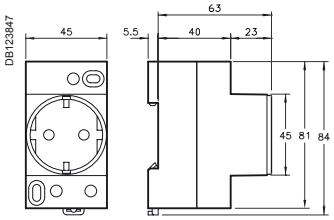
Dimensions (mm)



iPC 16 A NF standard



iPC 16 A Italian standard



iPC 16 A German standard

Weight (g)

iPC power sockets	
Type	
iPC 16 A	98

IC100, IC2000, IC2000P+, IC100kp+, IC Astro

Twilight switches

IC100

Adjustable from 2 to 100 lux.
It comes with a wall-mounted cell.

IC2000

Adjustable from 2 to 2000 lux. It comes with a standard wall-mounted or switchboard cell.

IC2000P+

It has 3 customisable pre-set programs and 3 setting ranges from 2 to 2100 lux.
Its 4 keys and large screen facilitate its programming.
It comes with a wall-mounted cell.

IC Astro

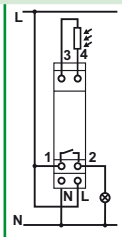
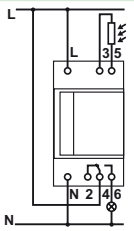
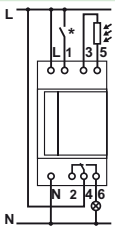
It operates without photoelectric cell and calculates sunrise and sunset times according to its geographic position.
It can be customised by using its programmation function.

IC100kp+

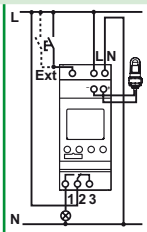
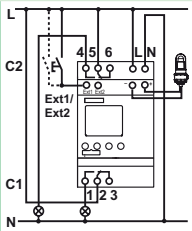
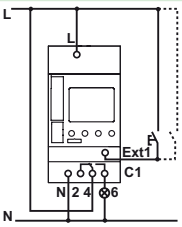
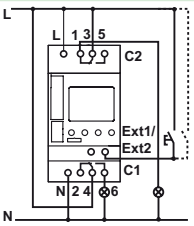
Adjustable from 1 to 99000 lux.
Its 4 keys and large screen facilitate its programming.
It comes with a digital wall-mounted and a memory key.

IC100, IC2000, IC2000P+, IC100kp+, IC Astro (cont.)

Selection table

	IC100	IC2000		IC2000P+
	P111637 + P83237 	P111639 + P116858 + P106866 		P111640 + P83237 
Function				
	The IC100 controls closing of a contact when brightness decreases and drops below the selected threshold. It controls opening of a contact when brightness increases and rises above the selected threshold	The IC2000 control closing of a contact when brightness decreases and drops below the selected threshold. They control opening of a contact when brightness increases and rises above the selected threshold		The IC2000P+ controls lighting according to brightness and time. If brightness drops below the set threshold (twilight function: IC) and if the time program allows relay closing (time switch function), then the lighting circuit is activated
Wiring diagrams				
	P106857 	P106858 		P106859 
Catalogue numbers	**15482**	**CCT15284**	**CCT15368**	**15483** (1)
Technical specifications				
Delivered with	Wall-mounted cell	Switchboard cell (**15281**)	Wall-mounted cell (**CCT15268**)	Wall-mounted cell
Optional accessories	Wall-mounted cell (**CCT15268**)	Switchboard cell (**15281**) Wall-mounted cell (**CCT15268**)	Wall-mounted cell (**CCT15268**) Switchboard cell (**15281**)	Wall-mounted cell (**CCT15268**)
Adjustable brightness threshold	2 to 100 lx	2 to 2000 lx		Range 1: 2 to 50 lx Range 2: 60 to 300 lx Range 3: 350 to 2100 lx
Voltage rating (Ue) (+10 %, -15 %)	230 V AC, 50/60 Hz	230 V AC, 50/60 Hz		230 V AC, 50/60 Hz
Consumption	6 VA	6 VA		3 VA
Operating temperature	-20°C to +50°C	-25°C to +50°C		-20°C to +50°C
Width (9 mm modules)	2	5		5
Insulation class	Class II	Class II		Class II
Degree of protection	IP20B	IP20B		IP20B
Output contact rating (under 250 VAC) cos φ = 1	16 A	16 A		16 A
Output contact rating (under 250 VAC) cos φ = 0.6	10 A	10 A		10 A
Time delays (On and Off)	20 s (On) 80 s (Off)	≥ 60 s		Adjustable from 20 to 140 s (80 s by default)
Operating accuracy	–	–		< ±1 s / day at 20°C.
Monitoring indicator light, not time delayed, lit when brightness is less than the threshold	Red	Red		–
Contact switching indicator light	Green	Green		–
LCD liquid crystal display	–	–		Back-lit
Program saving by lithium battery	–	–		■
Operating reserve	–	–		5-6 years
Location for instruction manual on front face	–	■		■
Cabling test function with a push-button on front face	–	■		–
Number of channels	1	1		1
Control by brightness detection	■	■		■
Coupling with weekly programming	–	–		42 switching times Minimum switching: 1 min Switching accuracy: 1 s
Control by calculation of sunrise/sunset times	–	–		–

Languages: *(1) English, french, spanish, italian, german, portuguese, swedish, dutch, finnish, norwegian/danish.* *(2) English, french, spanish, portuguese, hungarian, polish, romania turkish.*

	IC100kp+		IC Astro	
	IC100kp+ 1C	IC100kp+ 2C	IC Astro 1C	IC Astro 2C
	P116855 + P116858 	P116856 + P116858 	P116866 	P116867 
	The IC100kp+ 1C/2C control lighting according to brightness and time. If brightness drops below the set threshold (twilight function: IC) and if the time program allows relay closing (time switch function), then the lighting circuit is activated		The IC Astro astronomic programmable twilight switch is used to start and stop an electric load (e.g. lighting) according to sunrise and sunset times, without a brightness detector.Sunrise and sunset times are calculated automatically by the IC Astro according to the geographic parameters configured by the user	
	P106862 	P106863 	P106860 	P106861 
	CCT15490 (2) **CCT15491** (3)	**CCT15492** (2) **CCT15493** (3)	**CCT15223** (2) **CCT15224** (3)	**CCT15243** (2) **CCT15244** (3)
	Digital wall-mounted cell (**CCT15260**) Memory key (alone) (**CCT15861**)		–	Memory key (alone) (**CCT15861**)
	Digital wall-mounted cell (**CCT15260**) Digital switchboard cell (**CCT15261**) Programming kit for PC (**CCT15860**) Memory key (alone) (**CCT15861**)		Programming kit for PC (**CCT15860**) Memory key (alone) (**CCT15861**)	
	1 to 99000 lx		According to sunrise/sunset times	
	230 V AC, 50/60 Hz	100-240 V AC, 50/60 Hz	230 V AC, 50/60 Hz	
	3 VA		3 VA	6 VA
	-30°C to +50°C		-25°C to +45°C	
	4	6	5	
	Class II		Class II	
	IP20C		IP20B	
	16 A		16 A	
	10 A		10 A	
	Adjustable from 0 to 59.59 min.		Difference in sunset and/or sunrise times adjustable separately by ±120 min.	
	–		–	
	–		–	
	–		–	
	Back-lit		Back-lit	
	■		■	
	10 years		6 years	
	–		■	
	–		–	
	1	2	1	2
	■		–	
	84 switching times Operating accuracy: < ±1 s / day at 20°C Minimum switching: 1 min Switching accuracy: 1 s		84 switching times (not including sunrise/sunset) Minimum time between 2 switching operations: 1 min. Switching accuracy: 1 s Time accuracy: ±1 s /day	
	–		■	

an, czech, slovak, bulgarian, greek, slovene, serbian, croatian. ***(3)*** *English, french, italian, german, swedish,dutch, finnish, danish, russian, ukrainian, latvian, lituanien, estonian,*

IC100, IC2000, IC2000P+, IC100kp+, IC Astro (cont.)

Accessories selection table

	Wall-mounted cell		Switchboard cell	Programming kit for PC	Memory key	Digital wall-mounted cell	Digital switchboard cell
	P83237 P116858	P106856	P93580	P93581	P116858	P116859	
Function							
	Wall-mounted photoelectric cell		Switchboard photoelectric cell	Consists of a programming device, a memory key, a CDROM and a 2 m USB cable	Saving and duplicating programs	Digital wall-mounted photoelectric cell	Digital wall-mounted photoelectric cell
Mounting							
	■ Delivered with its fixing device for IC100 and IC200P+ ■ Replaced by CCT15268 for spare part use ■ Cell connection: by double insulation 2-conductor cable, not to be laid next to mains cables or water ducts, maximum length: 25 m	Delivered with 1 m cable and its fixing device	■ Delivered with its fixing device ■ Cell connection: by double insulation 2-conductor cable, not to be laid next to mains cables or water ducts, maximum length: 100 m	–	–	■ Delivered with its fixing device. ■ Cell connection: □ by double insulation 2-conductor cable: - 0.5 - 2.5 mm² for **CCT15260** - 0.25 - 1.5 mm² for **CCT15261** □ Not to be laid next to mains cables or water ducts, maximum length: - 100 m (2 x 1.5 mm²) - 50 m (2 x 0.75 mm²)	
Catalogue no.	**–**	**CCT15268**	**15281**	**CCT15860**	**CCT15861**	**CCT15260**	**CCT15261**
Technical spécifications							
Degree of protection	IP54	IP55	IP65	–	–	IP55	IP66
	IK05	–	IK05	–	–	–	–
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	–	–	-40°C to +70°C	-40°C to +70°C
Horizontally orientable	–	–	90°	–	–	90°	90°

Load table

Type of lighting (230 V AC)		**Max. power** (for higher power, relay with a contactor)				
		IC100	**IC2000**	**IC2000P+**	**IC Astro**	**IC100kp+**
Incandescent and halogen lamps		2300 W	2300 W	2300 W	2600 W	2600 W
LED lamps	Power for one lamp < 2 W	20 W	20 W	20 W	30 W	30 W
	Power for one lamp from 2 to 8 W	55 W	55 W	55 W	100 W	100 W
Non-corrected / serial-corrected / dual mounted fluorescent tubes with conventional ballast		2300 VA	2300 VA	26 x 36 W, 20 x 58 W, 10 x 100 W	26 x 36 W, 20 x 58 W, 10 x 100 W	26 x 36 W, 20 x 58 W, 10 x 100 W
Parallel corrected fluorescent tubes with conventional ballast		400 VA	400 VA	10 x 36 W, 6 x 58 W, 2 x 100 W	10 x 36 W, 6 x 58 W, 2 x 100 W	10 x 36 W, 6 x 58 W, 2 x 100 W
Fluorescent tubes with electronic ballast		–	–	9 x 36 W, 6 x 58 W	9 x 36 W, 6 x 58 W	650 VA max.
Dual-mounted fluorescent tubes with electronic ballast		300 VA	300 VA	5 x (2 x 36 W), 3 x (2 x 58 W)	5 x (2 x 36 W), 3 x (2 x 58 W)	–
Fluocompact lamps with electronic ballast		9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W	22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W
Fluocompact lamps with conventional ballast		1500 VA	1500 VA	–	–	–
Parallel-corrected mercury and sodium vapour lamps		400 VA	400 VA	250 VA	250 VA	800 VA max. (80 µF)
Non-corrected/ serial-corrected mercury and sodium vapour lamps		1000 VA	1000 VA	–	–	–
Motor		–	–	–	–	2300 VA max.

Specific technical data

IC2000P+	
External input	
Voltage rating (Ue)	230 V AC, +10 %, -15 %
Frequency	50/60 Hz
Input current	≤ 2.5 mA
Consumption	≤ 0.4 mW
Cable length	≤ 100 m
IC Astro	
Programming longitude	-180° (East) to +180° (West) in steps of 1°
Programming latitude	-90° (South) to +90° (North) in steps of 1°
IC100kp+, IC Astro	
Programming accessories	■ Programming kit for PC consists of a programming device, a memory key, a CDROM and a 2 m USB cable ■ Memory key for saving and duplicating programs, delivered on front face
External inputs	
External inputs for external control with a standard switch or a push-button	■ 1 input "Ext" for 1 channel versions ■ 2 inputs "Ext1" and "Ext2"for 2 channels versions
Voltage rating (Ue)	■ 230 V AC, +10 %, -15 % for 1 channel versions ■ 100-240 V AC +10 %, -15 % for 2 channels versions
Frequency	50/60 Hz
Input current	≤ 0.5 mA
Consumption	≤ 130 mW
Cable length	≤ 100 m

IC2000P+, IC Astro
Practicle advices

IC2000P+

The IC 2000P+ uses its time programming to define lighting On and Off periods:
■ According to three pre-set time programs:
□ "DAYPROG": On time programming from 7 am to 8 pm a validation of the IC function from 7 am to 8 pm,
□ "NIGHTPROG": On time programming from 5 am to 8 am and from 6 pm to 11 pm a validation of the IC function on these two operating periods,
□ "EMPTYPROG": Off time programming throughout the day a no validation of the IC function. These programs can be modified if necessary.
■ According to a customised operating period, with possibility of copying to the other days.
It is equipped with the following functions:
□ consideration of periods of absence (holidays),
□ temporary or permanent On or Off override,
□ remote control of lighting override by NO external contact,
□ consideration of change to “summer/winter” time, automatic or manual,
□ permanent liquid crystal display: of time and minutes, of day of the week, of the contact output status and current program.

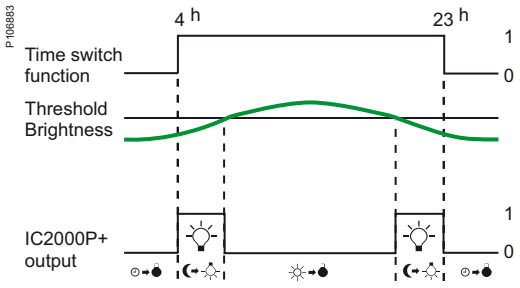


Fig. 1.

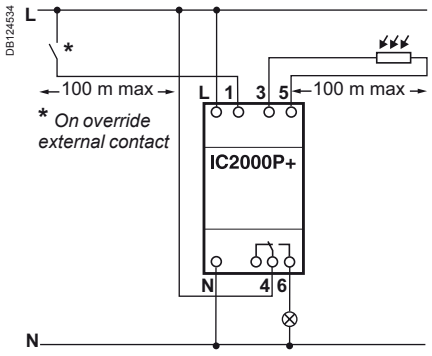


Fig. 2.

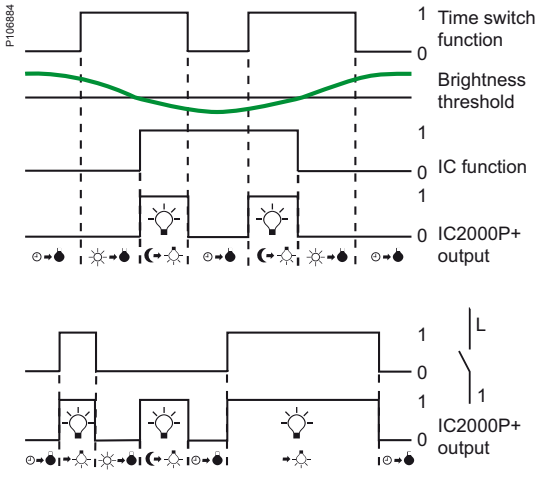


Fig. 3.

Example

Lighting of a shop window, in the evening, at a time variable according to brightness and switch-off at a set time (e.g. 11 pm). Then in the morning, lighting at a set time (e.g. 4 am) and switch-off at a time variable according to brightness (see Fig. 1).

Configuration

This consists of recording in the memory:
■ The language.
■ The year, month, day and time.
■ One of the 3 pre-set programs:
□ "DAYPROG": "On" time programming from 7 am to 8 pm ➡ validation of the IC function from 7 am to 8 pm,
□ "NIGHTPROG": "On" time programming from 5 am to 8 am and from 6 pm to 11 pm ➡ validation of the IC function on these two operating periods,
"EMPTYPROG": "Off" time programming throughout the day ➡ no validation of the IC function. These programs can be modified.
■ The brightness threshold. Once this phase is over, your IC 2000P+ operates in AUTO mode according to the items you have chosen.

Programming

The IC2000P+ is used to manage time programs. It allows:
■ Creation of a new program with the possibility of copying to the other days.
■ Viewing programs in memory.
■ Modification of a program in memory, of the time, date, summer/winter time.
■ Partial or total deletion of the program (date, time and language are kept).
■ Modification of the brightness threshold.
■ Separate setting of the time delay on switch-on and switch-off.

Move to On/Off override

■ Press briefly (< 2 s) and simultaneously the 2 keys "**-**", "**+**" (value setting and navigation keys) on the front face to move to "MAN ON" or "MAN OFF".
■ Press the keys for more than 2 s to move to "PERM ON" or "PERM OFF".
■ Supply of terminal 1 overrides the IC 2000P+ output to the "On" position.
This external override takes priority over the product On/Off override function (see Fig. 2, 3).

IC Astro

The IC Astro is configured according to the place of installation.

■ The place of installation of the IC Astro can be configured:

□ either by selecting a country and a town,

□ or by its geographic coordinates (latitude, longitude).

■ The IC Astro allows:

□ addition or deletion of a switch-off/switch-on switching operation (Off-On) between the sunset and sunrise times,

□ different programmes each day,

□ difference in sunset and/or sunrise times, adjustable separately by ±120 min. according to local constraints (mountains, buildings, etc.),

□ consideration of periods of absence (holidays),

□ remote control of lighting override by external standard switch or push-button via the external input (1 external input per channel),

□ re-initialisation of programmes,

□ automatic switching to “summer-winter” time,

□ permanent display by liquid crystals: hours and minutes, day of the week, contact output status, and current programme,

□ manual waiver of the lighting On/Off programme, permanently or temporarily (up to the next switching operation).

□ back-lighting of the screen.

Fig. 3.

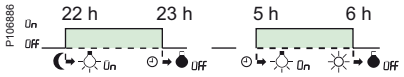


Fig. 4.

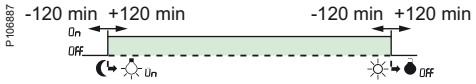


Fig. 5.

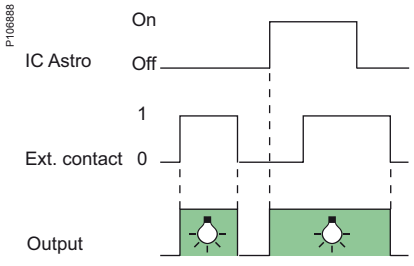


Fig. 6.

Example

Automatically lighting On and Off a shop window in Paris according to sunset and sunrise, example the 20th June.

■ At night (10 pm) the lighting switch-on.

■ At the morning (6 am) the lighting switch-off.

Configuration

This consists of writing in the memory:

■ The language.

■ The place of installation, either:

□ by its position (Argentina, China, etc.) and by the closest town,

□ by its geographic coordinates (latitude, longitude, time difference with respect to GMT) (a map is provided with the product).

■ The year, month, day and time.

■ Once this phase is complete, IC Astro will calculate the sunrise and sunset times and propose a default programme (operation from sunset to sunrise) (see Fig. 3).

Programming an Off period

The IC Astro offers the possibility of adding an "Off" period (programmed switch-off and switch-on) inside the programme, between the sunrise and sunset times (by default it is proposed from 11 pm to 5 am) (see Fig. 4).

Modifying programming and configuration

The twilight switch allows:

■ Creation of a new customised programme with possibility of copying onto the other days.

■ Display of programmes in memory.

■ Deletion, modification or addition of an automatic or programmed switching operation.

■ Partial or total deletion of the programme (date, time and language are kept).

■ Modification of time, date, summer/winter time.

■ Temporary cancellation of the "On" periods by configuring start and end dates and Times of absence (holidays).

■ Adjustment of difference in sunset and/or sunrise times by ± 120 min. according to local constraints (mountains, buildings, etc.) (see Fig. 5).

Move to On/Off override

■ Briefly press (<2 s) at the same time on the 2 keys "**-**", "**+**": (value setting and navigation keys) on the front face to move to "ON TEMP" or "OFF TEMP".

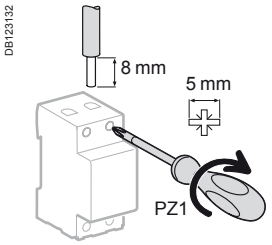
■ Hold down (>2 s) the keys to move to "ON PERM" or "OFF PERM".

■ The supply of input 5 forces the IC Astro output to the “ON” position.

This override takes priority over the product On/Off override function (see Fig. 6).

IC100, IC2000, IC2000P+, IC100kp+, IC Astro (cont.)

Connection



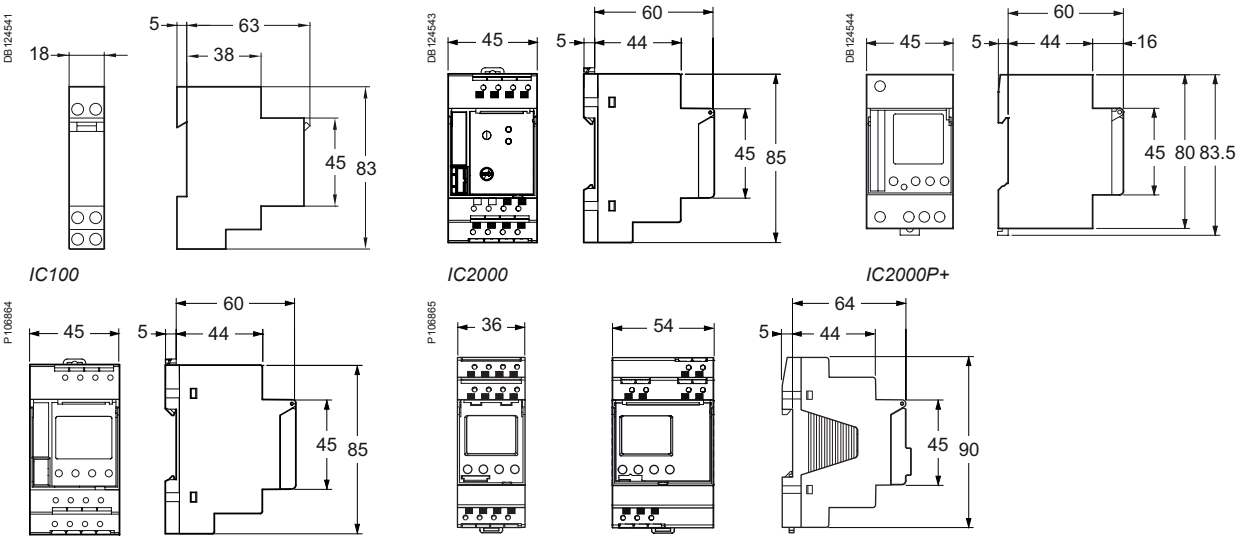
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB123553
IC100, IC2000P+	1.2 N.m	≤ 6 mm²	≤ 6 mm²
IC2000, IC Astro, IC100kp+	2 screwless / pole	2 x 2.5 mm²	2 x 2.5 mm²

IC100, IC Astro are mechanical compatible with electrical distribution comb busbar.

Weight (g)

Twilight switches	1C	2C
IC100	173	
IC2000	280	
IC2000P+	323	
IC Astro	132	
IC100kp+	183	352

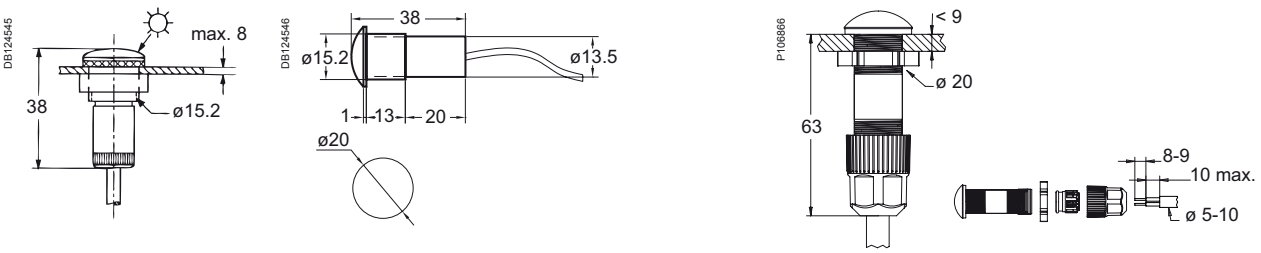
Dimensions (mm)



IC100 *IC2000* *IC2000P+*

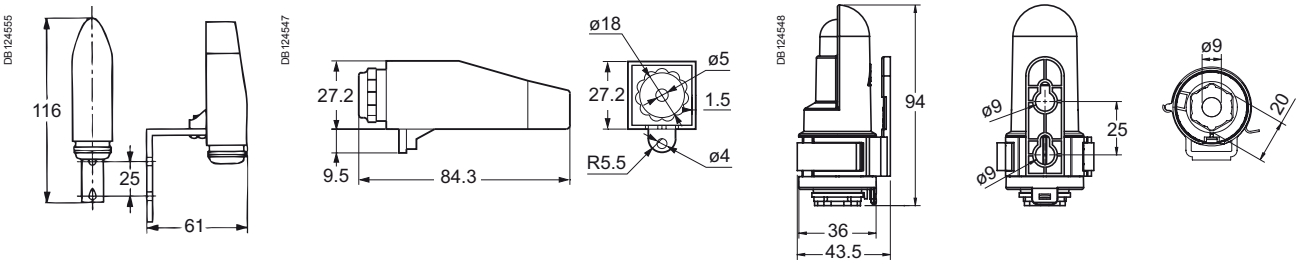
IC Astro 1C/2C *IC100kp+ 1C/2C*

Cells



Standard switchboard cell (15281) Fixed externally in vertical position by 2 ø 4 mm screws

Digital switchboard cell (CCT15261)



Wall-mounted cell (delivered with IC100, IC2000P+)

Standard and digital wall-mounted cell (CCT15268, CCT15260)

IHP, IH, IHH, ITA

Time switches

The 36 and 45 mm digital time switches

IHP 1c

IHP 2c

IHP+1c

IHP+2c

Automatically switch On and Off loads according to the program entered by the user with 4 keys and a display, they operate on a weekly cycle: the same program is repeated week after week.

IHP+ DCF 1c + DCF77 antenna

Synchronised on the frankfort transmitter via the DCF77 antenna.

The 18 mm digital time switches

IHP 1c/+ 1c

Automatically switch On and Off loads according to the program entered by the user with 4 keys and a display, they operate on a weekly cycle: the same program is repeated week after week.

The 54 mm mechanical time switches

P116860

IH 60mn 1c SRM

P116862

IH 24h 1c SRM/ ARM

P116616

IH 24h 2c ARM

P116619

IH 24h + 7j 1+1c ARM

P116863

IH 7j 1c ARM

Automatically switch On and Off loads according to the program entered by the user they operate on an hourly, daily or weekly cycle: the same program is repeated hour after hour (IH 60mn), day after day (IH 24h) or week after week (IH 7j).

The 18 mm mechanical time switches

P111614

IH 24h 1c SRM/ ARM

P111613

IHH 7j 1c ARM

Automatically switch On and Off loads according to the program entered by the user they operate daily on a weekly cycle.

The digital yearly time switches

P140490

ITA 1C

P140489

ITA 4C

They operate on an daily, weekly or yearly program
(ITA 1c: 1 channel, ITA 4c: 1, 2, 3 or 4 channels - 2 external inputs).

IHP, IH, IHH, ITA (cont.)

Selection table

The time switches control opening and closing of one or more separate circuits according to a programming pre-set by the user:
- by memorisation of On and Off switching operations for the IHP and ITA digital time switches
- by positioning of jumpers or captive segments on a programming dial for the IH mechanical time switches.

An IHP, IH or ITA time switch is chosen according to the following criteria:

Designation	Number of channels	Cycle period (d: day)	Minimum time between 2 switching operations	Number of switching operations	Saving on mains cut off	Width (modules of 9 mm)	Override controls On / Off	Output contact changeover switch (cos φ =1)	Time changeover (summer / winter)
The 36 or 45 mm digital time switches									
IHP 1c	1	24 h and/or 7 d	1 min.	56	6 years	5	On / Off	16 A	Auto
IHP + 1c	1	24 h and/or 7 d	1 s	84	6 years	5	On / Off	16 A	Auto
IHP 2c	2	24 h and/or 7 d	1 min.	56	6 years	5	On / Off	16 A	Auto
IHP + 2c	2	24 h and/or 7 d	1 s	84	6 years	5	On / Off	16 A	Auto
IHP+ DCF 1c (1)	1	24 h and/or 7 d	1 s	84	10 years	4	On / Off	16 A	Auto
The 18 mm digital time switches									
IHP 1c 18 mm	1	24 h and/or 7 d	1 min.	56	10 years	2	On / Off	16 A	Auto
IHP + 1c 18 mm	1	24 h and/or 7 d	1 s.	84	10 years	2	On / Off	16 A	Auto
The 36 or 72 mm digital yearly time switches									
ITA 1c (2)	1	24 h, 7 d, year	1 s	300	10 years	4	On/Off	16 A	Manual / Auto (3)
ITA 4c (2)	4	24 h, 7 d, year	1 s	300	10 years	8	On/Off	16 A	Manual / Auto (3)
The 54 mm mechanical time switches									
IH 60mn 1c SRM	1	60 min.	37.5 s	48 On - 48 Off	none	6	On / Off	10 A	Manual
IH 24h 1c SRM	1	24 h	15 min.	48 On - 48 Off	none	6	On / Off	16 A	Manual
IH 24h 1c ARM	1	24 h	15 min.	48 On - 48 Off	200 h (4)	6	On / Off	16 A	Manual
IH 24h 2c ARM	2	24 h	30 min.	24 On - 24 Off	150 h	6	On	16 A	Manual
IH 7j 1c ARM	1	7 days	2 h	42 On - 42 Off	200 h (4)	6	On / Off	16 A	Manual
IH 24h + 7j 1+1c ARM	1+1	24 h + 7 days	45 min. + 12 h	16 On -16 Off + 7 On -7 Off	150 h	6	On	16 A	Manual
The 18 mm mechanical time switches									
IHH 7j 1c ARM	1	7 days	2 h	42 On - 42 Off	100 h	2	On / Off	16 A	Manual
IH 24h 1c ARM	1	24 h	15 min.	48 On - 48 Off	100 h	2	On / Off	16 A	Manual
IH 24h 1c SRM	1	24 h	15 min.	48 On - 48 Off	none	2	On / Off	16 A	Manual

(1) The IHP+ DCF 1c can be synchronised on the Frankfurt 's DCF77 radio station via the DCF77 antenna.
(2) The ITA 1c and ITA 4c can be synchronised on the Frankfurt 's DCF77 radio station via the DCF antenna for ITA or GPS antenna for ITA.
(3) Summer/Winter-Time can be set to auto without any antenna.
(4) 110 h for 100 V AC supply voltage.

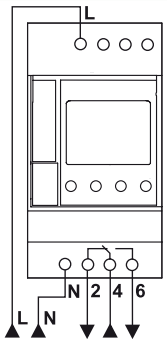
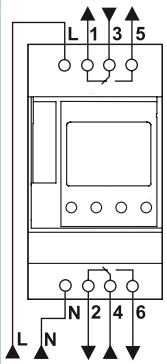
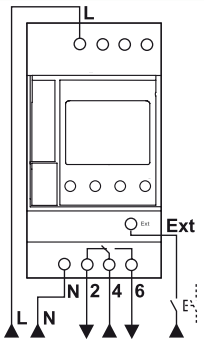
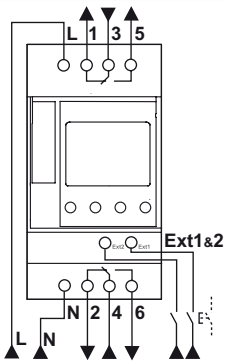
	Back-lit display, random function and pulse programming	"Absence for holidays" function	Screwless connection	Mechanical compatibility with electrical distribution comb busbars	Input for external control	Instruction manual holder on front face	Memory key supplied with the product	Cat. no.
		■	■	■		■		**CCT15400** [6], **CCT15420** [7], **CCT15450** [8], **CCT15720** [9], **CCT15850** [10]
	■ + Cycle programming	■	■	■	1 input	■	■	**CCT15401** [6], **CCT15451** [8], **CCT15721** [9], **CCT15851** [10]
		■	■	■		■		**CCT15402** [6], **CCT15422** [7], **CCT15452** [8], **CCT15722** [9], **CCT15852** [10]
	■ + Cycle programming	■	■	■	2 inputs	■	■	**CCT15423** [7], **CCT15723** [9], **CCT15853** [10]
	■ + Cycle programming	■	■		1 input		■	**CCT15857**
		■	■				[12]	**CCT15854** [11]
	■ + Cycle programming	■	■		1 input		■	**CCT15838** [11]
	Back-lit display, pulse and cycle programming	■[5]					[13]	**CCT15910**
	Back-lit display, pulse and cycle programming	■[5]			2 inputs		[13]	**CCT15940**
			■					**CCT15338**
			■					**CCT16364**
			■					**CCT15365**
								15337
			■					**CCT15367**
								15366
								15331
								15336
								15335

(5) Function included and can be realized through special program entry.
(6) English, Russian, Ukrainian, Latvian, Lituanien, Estonian languages.
(7) English, Bulgarian, Greek, Slovene, Serbian, Croatian languages.
(8) English, Hungarian, Polish, Romanian, Czech, Slovak languages.
(9) French, English, Italian, Spanish, German, Portuguese languages.
(10) French, English, Swedish, Dutch, Finnish, Norwegian/Danish languages.
(11) French, English, Italian, Spanish, German, Portuguese, Dutch languages.
(12) Memory key (CCT15861) is not supplied with IHP 1c 18 mm (CCT15854) but this memory key and the programming kit (CCT15860) can be used and operate on IHP 1c 18 mm (see "Accessories selection table").
(13) Memory key (CCT15955) is not supplied with ITA 1c /4c but this memory key and the programming kit (CCT15950) can be used and operate on ITA 1c/4c (see "Accessories selection table").

IHP, ITA

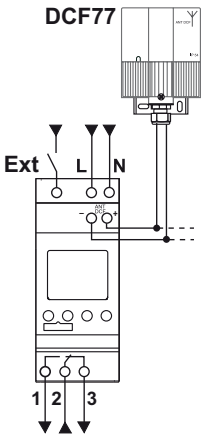
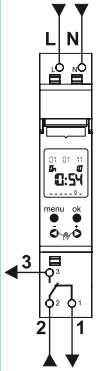
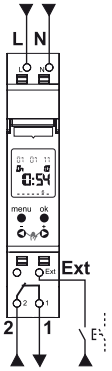
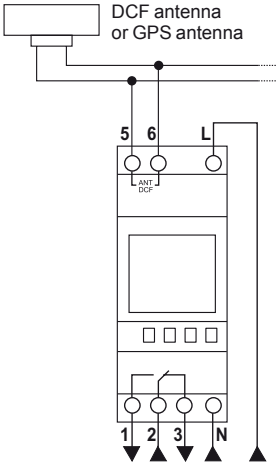
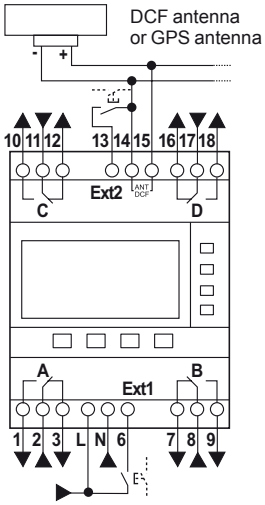
Selection table

Programmable time switches

	IHP 1c	IHP2c	IHP+1c	IHP+2c
	P140626 P140627 	P111624 	P111626 	
Function	■ These time switches automatically switch on and off loads according to the program entered by the user ■ They operate on weekly cycle: the same program is repeated week after week ■ They offer automatic summer/winter time change and allow to adjust it according to where you are located ■ The program can be overriden temporary or permanently by pressing 2 keys on the product ■ They also offer holidays program, by configuring the starting and ending dates of the absence.			
			■ A memory key and a programming kit can be used to duplicate on another IHP+ or to save the program created by the contractor (see "Accessories selection table") ■ Override control with switch or push-button via external input (1 external input for IHP+1c and 2 externals inputs for IHP+ 2c)	
Wiring diagrams				
Catalogue numbers	**CCT15400** (1) **CCT15420** (2) **CCT15450** (3) **CCT15720** (4) **CCT15850** (5)	**CCT15402** (1) **CCT15422** (2) **CCT15452** (3) **CCT15722** (4) **CCT15852** (5)	**CCT15401** (1) **CCT15451** (3) **CCT15721** (4) **CCT15851** (5)	**CCT15423** (2) **CCT15723** (4) **CCT15853** (5)
Technical specifications				
Voltage rating (Ue)	230 V AC, ±10 %, 50/60 Hz	230 V AC, ±10 %, 50/60 Hz	230 V AC, ±10 %, 50/60 Hz	230 V AC, ±10 %, 50/60 Hz
Consumption	0.8 W	0.8 W	0.8 W	0.8 W
Output contact current (250 V AC) Cos φ = 1	16 A	16 A	16 A	16 A
Output contact current (250 V AC) Cos φ = 0.6	10 A	10 A	10 A	10 A
Degree of protection	IP20B	IP20B	IP20B	IP20B
Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Time accuracy	± 1 s per day at 20°C	± 1 s per day at 20°C	± 1 s per day at 20°C	± 1 s per day at 20°C
Program saving and time by lithium battery – Lifetime	6 years	6 years	6 years	6 years
Program saving and time by lithium battery – Back-up time, cumulated mains cut off	6 years	6 years	6 years	6 years

(1) English, russian, ukrainian, latvian, lituanien, estonian. (2) English, bulgarian, greek, slovene, serbian, croatian. (3) English, hungarian, polish, romanian, czech, slovak. (4) French, english, italian, spanish, german, portuguese. (5) French, english, swedish, dutch, finnish, norwegian/danish.

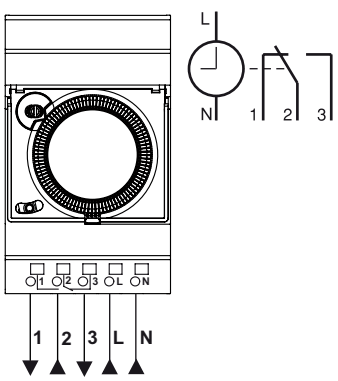
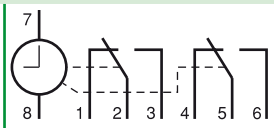
Yearly programmable time switches

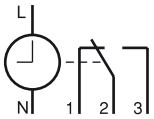
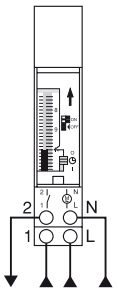
	IHP+ DCF 1c	IHP 1c 18 mm	IHP+1c 18 mm	ITA 1c	ITA 4c
	DB408971 	P111630 	DB408972 	P140490 	P140489 
				■ Weekly or yearly time programming to be distributed over 1 channel	■ Weekly or yearly time programming to be distributed over 1, 2, 3 or 4 channels ■ Override control with switch or push-button via external inputs
	■ A memory key and a programming kit can be used to duplicate on another IHP or to save the program created by the contractor (see "Accessories selection table") ■ 100% time precision enabled via optional DCF77 antenna (to be ordered seperately - see "Accessories selection table")	■ A memory key and a programming kit can be used to duplicate on another IHP or to save the program created by the contractor (see "Accessories selection table")		■ A memory key and a programming kit can be used to duplicate on another ITA or to save the program created by the user (see "Accessories selection table").	
					
	CCT15857	**CCT15854** (6)	**CCT15838** (6)	**CCT15910**	**CCT15940**
	230 V AC, ±10 %, 50/60 Hz	230 V AC, +10 %, -15 %, 50/60 Hz	230 V AC, +10 %, -15 %, 50/60 Hz	230 V AC, 50/60 Hz	230 V AC, 50/60 Hz
	1.4 W	0.4 W	0.4 W	1.4 - 1.9 W (depending on the switching status)	1.2 - 3,2 W (depending on the switching status)
	16 A	16 A	16 A	16 A	16 A
	10 A	4 A	4 A	6 A	6 A
	IP20B	IP20B	IP20B	IP20	IP20
	-30°C to +55°C	-25°C to +55°C	-25°C to +55°C	-30°C to +55°C	-30°C to +55°C
	Without antenna: ± 0.25 s per day at 25°C With antenna: 1 s on 1 million years (7)	± 0.25 s per day at 25°C	± 0.25 s per day at 25°C	Without antenna: ± 0.5 s per day at 20°C With antenna: 1 s on 1 million years (7)	Without antenna: ± 0.5 s per day at 20°C With antenna: 1 s on 1 million years (7)
	10 years	10 years	10 years	10 years	10 years
	10 years	10 years	10 years	10 years	10 years

(6) French, english, italian, spanish, german, portuguese, dutch. (7) Thanks to the synchronisation on the DCF Frankfurt's DCF77 radio station via the DCF antenna or GPS antenna.

Selection table

Mechanical time switches

	IH 60mn 1c SRM	IH 24h 1c SRM	IH 24h 1c ARM	IH 24h 2c ARM
	P116860 	P116861 	P116862 	P116616 
Function				
	■ They operate on hourly, daily or weekly cycle: the same program is repeated hour after hour (IH 60mn), day after day (IH 24h) or week after week (IH 7j, (IHH 7j) ■ The program can be overriden On			
Wiring diagrams				
Catalogue numbers	**CCT15338**	**CCT16364**	**CCT15365**	**15337**
Technical specifications				
Voltage rating (Ue)	230 V AC +10 %, -15%, 50 Hz	230 V AC +10 %, -15%, 50/60 Hz	110-230 V AC +10 %, -15%, 50/60 Hz	230 V AC +10 %, -15%, 50/60 Hz
Consumption	1 VA	2.5 VA	2.5 VA	2.5 VA
Output contact current under 250 VAC — Cos φ = 1	10 A	16 A	16 A	16 A
Output contact current under 250 VAC — Cos φ = 0.6	4 A	4 A	4 A	4 A
Degree of protection	IP20B	IP20B	IP20B	IP20B
Operating temperature	-20°C to +55°C	-20°C to +55°C	-20°C to +55°C	-20°C to +55°C
Time accuracy	±1 s per day at 20°C	±1 s per day at 20°C	±1 s per day at 20°C	±1 s per day at 20°C
Saving of program and time by lithium battery — Lifetime	–	–	6 years	6 years
Saving of program and time by lithium battery — Back-up time, cumulated mains cut off	–	–	200 h with 230 V AC 100 h with 100 V AC	150 h
Programming by: — Jumpers (supplied)	–	–	–	4 red + 4 green + 2 white
Programming by: — Captive segments	96	96	96	–

	IH 24h + 7j 1+1c ARM	IH 7j 1c ARM	IH24h 1c SRM 18 mm	IH 24h 1c ARM 18 mm	IHH 7j 1c ARM 18 mm
	P111619 	P116863 	P111614 	P111615 	P111613 
					
	15366	**CCT15367**	**15335**	**15336**	**15331**
	230 V AC +10 %, -15%, 50 Hz	110-230 V AC +10 %, -15%, 50/60 Hz	230 V AC, ±10 %, 50/60 Hz	230 V AC, ±10 %, 50/60 Hz	230 V AC, ±10 %, 50/60 Hz
	2.5 VA	2.5 VA	2.5 VA	2.5 VA	2.5 VA
	16 A	16 A	16 A	16 A	16 A
	4 A	4 A	4 A	4 A	4 A
	IP20B	IP20B	IP20B	IP20B	IP20B
	-20°C to +55°C	-20°C to +55°C	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
	±1 s per day at 20°C	±1 s per day at 20°C	±1 s per day at 20°C	±1 s per day at 20°C	±1 s per day at 20°C
	6 years	6 years	10 years	10 years Exchangeable battery	10 years Exchangeable battery
	150 h	200 h with 230 V AC 100 h with 110 V AC	–	100 h	100 h
	6 yellow (24 h), 12 blue + 2 red (7 days)	–	–	–	–
	–	84	96	96	84

IHP, IH, IHH, ITA

Accessories selection table

	Programming kits for PC		Memory keys	
	IHP+	ITA	IHP+	ITA
	P93580 	P140493 	P93581	P140494 
Function				
	Consists of a programming device, a memory key, a CDROM and a 2 m USB cable For IHP+ 1c/2c, IHP 1c 18 mm, IHP+ 1c 18 mm	Consists of a programming device, a CDROM and a 1.5 m USB cable For ITA 1c and ITA 4c	Saving and duplicating programs For IHP+ 1c/2c, IHP 1c 18 mm, IHP+ 1c 18 mm IHP+ DCF 1c	For ITA 1c and ITA 4c
Mounting				
	–		Located on front face	
Catalogue numbers	**CCT15860**	**CCT15950**	**CCT15861**	**CCT15955**
Technical spécifications				
Degree of protection	–		–	–
Operating temperature	–		–	–

Specific technical data

IHP+ 1c, IHP+ 2c, IHP+ DCF 1c	
Manual functions	Temporary cancellation of programming for holidays, public holidays, etc. by configuration of the 2 dates - start and end of absence
	Simulation of presence thanks to random operation during On periods
Pulse functions	Programming of pulses adjustable from 1 to 59 s (pulse takes priority over switching)
Back-lighting of the screen	
External input (only for IHP+ 1c, IHP+ 2c)	
External inputs for external control with a standard switch or a push-button	1 input for IHP+ 1c 2 inputs for IHP+ 2c
Voltage rating (Ue)	230 V AC, +10 %, -15 %
Frequency	50/60 Hz
Input current	≤ 1.2 mA
Consumption	≤ 0.3 mW
Cable length	≤ 100 m
(2) The ITA 1c and ITA 4c can be synchronised on the Frankfurt 's DCF77 radio station via the DCF or GPS antenna	
Automatic on commissioning, then at 1 am, 2 am, 3 am and 4 am every day	
Manual by pressing the IHP or ITA keys or after a "reset"	
Displayed on the screen by the letters RC	
Programming of pulses adjustable from 1 to 59 s (pulse takes priority over switching)	

Antennas

Additional jumpers

DCF77 antenna for IHP+ DCF	DCF antenna for ITA	GPS antenna for ITA	IH jumpers
P135728 	P140492 	P140491 	
Antenna for IHP+ DCF 1c	Antenna for ITA 1c and ITA 4c	Antenna for ITA 1c and ITA 4c	They are used to program a larger number of sequences for: ■ IH 24h 2c ARM (**15337**) ■ IH 24h + 7j 1+1c ARM (**15366**)
■ 10 IHP+ DCF 1c maximum per antenna, maximum distance between the IHP+ DCF 1c and the antenna: 100 m ■ Outside the electrical switchboard, outdoors, under shelter	■ 10 ITA maximum per antenna, maximum distance between the ITA and the antenna: 200 m ■ Outside the electrical switchboard, outdoors, under shelter	■ 10 ITA maximum per antenna, maximum distance between the ITA and the antenna: 200 m ■ Outside the electrical switchboard, outdoors, under shelter	1 bag containing: ■ 5 red ■ 5 green ■ 5 white ■ 5 yellow
MTN6606-0070	**CCT15960**	**CCT15970** (1)	**15341**
IP54	IP54	IP54	–
-20 °C to +70 °C	-20 °C to +50 °C	-30 °C to +55 °C	–

(1) *external 12-30 V DC power supply needed*

ITA 1c, ITA 4c		
Switching functions	On, Off, pulse, cycle, yearly program	
Pulse lenght pulse function (switching time)	1 s to 59 min 59s	
Pulse lenght timer (manual switching)	1 s to 9 h 59 min 59 s	
Pulse/pause length cycle	1 s to 9 h 59 min 59 s	
Minimum interval	1 min	
External inputs (only for ITA 4c)		
External inputs for external control with a standard switch or a push-button	2 inputs : ■ **Ext1** input: supplied with 230 V AC, ±10%- 50/60 Hz ■ **Ext2** input Ext2: potential free	
Antennas	**DCF- ITA**	**GPS- ITA**
Power supply	Via time switch (without battery)	External 12 - 30 V DC
Output	Protocole DCF	DCF time telegraph (no weather data)
Receiver	Narrowband-heterodyne receiver	–
Operation indicator	Flashing LED on receiving	Flashing LED on receiving

IHP, IH, IHH, ITA (cont.)
Praticle advices

Programming principle

■ For the digital time switches, this consists of memorising the days and times of the required switching operations.
■ For the mechanical time switches, this is performed by positioning captive segments or jumpers on a switching dial.

Example

■ Controlling an air conditionner in a hairdressing salon:

	Monday (1)	Tuesday	Wednesday	Thursday (2)	Etc.	
On n° 1		08 h 30	08 h 30	08 h 30		Switch on
Off n° 1		12 h 00	12 h 00			Switch off
On n° 2		13 h 30	13 h 30			Switch on
Off n° 2		20 h 00	20 h 00	20 h 00		Switch off

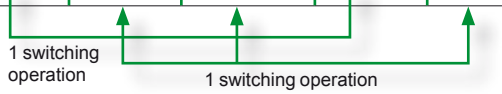
(1) *Closed on Mondays*
(2) *Non-stop*

Programming by copying or blocks

Whenever identical switching operations are found at the same times, several days in the week, this function lets you program these operations once only.
In this case a single switching operation is used. If this function is used wisely, the number of possible switching operations can be greatly increased.

Example

	Monday	Tuesday	Wednesday	Thursday	Friday	
On n°1	10 h 00			10 h 00		Switch on
Off n°1		18 h 00	18 h 00		18 h 00	Switch off



Number of switching operations

Designation	Number of switching operations
IHP 1c	56
IHP + 1c	84
IHP+ DCF 1c	84
IHP 2c	56
IHP + 2c	84
IHP 1c 18 mm	56
IHP + 1c 18 mm	84
ITA 1c, **ITA** 4c	300
IH 24h 1c ARM	48 On - 48 Off
IH 24h 1c SRM	48 On - 48 Off
IH 60mn 1c SRM	48 On - 48 Off
IH 24h 1c SRM	48 On - 48 Off
IH 24h 1c ARM	48 On - 48 Off
IH 24h 2c ARM	24 On - 24 Off
IH 7j 1c ARM	42 On - 42 Off
IH 24 h + 7j 1+1c ARM	16 On - 16 Off + 7 On - 7 Off

Saving on mains cut off

For digital switches equipped with this function, a lithium battery is used for saving. The program, date and time are preserved. Switching operations are not performed.

Lets you control starting and stopping of a group of loads according to a cycle that is repeated every 60 minutes.

60 min. time programming

Example

Controlling automatic watering	
On n° 1	2 min. 30 s
Off n° 1	5 min.
On n° 2	25 min.
Off n° 2	37 min. 30 s

Relevant time switches

IH 60mn 1c SRM.

Lets you control starting and stopping of one or two groups of loads according to a daily cycle that is repeated, in identical manner, every day of the week.

24 h daily programming

Example

- Controlling a door of a block of flats:
  - from 8 am to 7.30 pm: contact on "On", free access,
  - from 7.30 pm to 8 am the next day: contact on "Off", access by confidential code

every day of the week:

	From Monday to Sunday
On n° 1	8 am
Off n° 1	7.30 pm

Relevant time switches

- IH 24h 1c SRM/ARM.
- IH 24h 2c ARM.
- IHP 1c 18 mm.
- IHP + 1c 18 mm.
- IHP+ DCF 1c.
- IHP 1c, IHP + 1c.
- IHP 2c, IHP + 2c.
- ITA 1c, ITA 4c.

Lets you control starting and stopping of one to 4 groups of loads according to a weekly cycle, that can be different each day, repeated each week.

7 days weekly programming

Example

- Controlling an air conditionner in a hairdressing salon:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
On n° 1		09 h 00	09 h 00	09 h 00		
Off n° 1		12 h 00	12 h 00			
On n° 2		14 h 00	14 h 00			
Off n° 2		20 h 00	20 h 00	20 h 00		
On n° 3					8 h 30	8 h 30
Off n° 3					12 h 30	12 h 30
On n° 4					14 h 30	14 h 30
Off n° 4					21 h 00	21 h 00

Relevant time switches

- IH 7j 1c ARM.
- IHP 1c, IHP + 1c.
- IHP 2c, IHP + 2c.
- IHP 1c 18 mm.
- IHP + 1c 18 mm.
- IHP+ DCF 1c.
- ITA 1c, ITA 4c.

IHP, IH, IHH, ITA (cont.)

Lets you control by pulses (adjustable from 1 to 59 s) one to four groups of loads (pulse relays, bells, etc.).

Pulse programming

Example

■ Automatic controlling of bells, lighting and distribution of food: bells sounding the resumption and finish of work (channel 1), lighting of premises (channel 2), feeding fish in the aquarium (channel 3):

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Channel 1: bell (20 s pulse order)							
On	08 h 00	08 h 00	08 h 00	08 h 00	07 h 00	09 h 00	–
Duration	20 s	20 s	20 s	20 s	20 s	20 s	–
On	12 h 00	12 h 00	12 h 00	12 h 00	11 h 00	13 h 00	–
Duration	20 s	20 s	20 s	20 s	20 s	20 s	–
On	14 h 00	14 h 00	14 h 00	14 h 00	13 h 00	–	–
Duration	20 s	20 s	20 s	20 s	20 s	–	–
On	18 h 00	18 h 00	18 h 00	18 h 00	16 h 00	–	–
Duration	20 s	20 s	20 s	20 s	20 s	–	–
Channel 2: lighting (latched order)							
On	07 h 30	07 h 30	07 h 30	07 h 30	06 h 30	08 h 30	–
Off	18 h 30	18 h 30	18 h 30	18 h 30	17 h 00	13 h 30	–
Channel 3: aquarium (15 s pulse order)							
On	10 h 00	–	10 h 00	–	10 h 00	–	10 h 00
Duration	15 s	–	15 s	–	15 s	–	15 s

Programming

■ Programming of a pulse takes up 2 memory spaces.
■ Combination of the two order types (pulse and latched) is possible on the same channel.

Relevant time switches

■ IHP + 1c.
■ IHP + 1c 18 mm.
■ IHP+ DCF 1c.
■ IHP + 2c.
■ ITA 1c, ITA 4c.

Lets you create special programs for dated days.

Programming special days.

Example

■ Controlling lighting and heating in a school:
□ basic programming: program lighting (channel 1) and heating (channel 2):

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Channel 1: lighting							
On	07 h 00	07 h 00	07 h 00	07 h 00	07 h 00	–	–
Off	20 h 00	20 h 00	16 h 00	20 h 00	16 h 00	–	–
Channel 2: heating							
On	06 h 00	06 h 00	06 h 00	06 h 00	06 h 00	–	–
Off	18 h 00	18 h 00	12 h 00	18 h 00	12 h 00	–	–

□ dated programming: periods of non-operation, school holidays, etc.
Just memorise an Off at the start and another Off at the end of each period of absence:

		Holidays				
		Winter	Spring	Summer	Autumn	End of year
Channel 1: lighting						
Off	Date	20 feb.	17-apr	07-july	23 oct.	18 dec.
	Time	12 h 00	17 h 00	12 h 00	17 h 00	12 h 00
Off	Date	08-march	03-may	9 sept.	2 nov.	4 jan.
	Time	01 h 00	01 h 00	01 h 00	01 h 00	01 h 00
Channel 2: heating						
Off	Date	20 feb.	17-apr		23 oct.	18 dec.
	Time	12 h 00	17 h 00		17 h 00	12 h 00
Off	Date	08-march	03-may		2 nov.	4 jan.
	Time	01 h 00	01 h 00		01 h 00	01 h 00

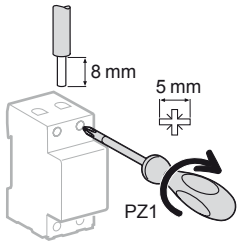
Relevant time switches

■ ITA 1c, ITA 4c.

Load table

Type of lighting (230 V AC)		**Max. power** (for higher power, relay with a contactor)						
		IHP 45 mm	**IHP 18 mm**	**IHP+ 18 mm**	**IHP+ DCF 36 mm**	**IH 18 mm**	**IH 54 mm**	**ITA**
Incandescent and halogen lamps		2600 W	1000 W	2000 W	2600 W	1000 W	1000 W	2000 W
LED lamps	Power for one lamp < 2 W	30 W	6 W	55 W	30 W	15 W	5 W	200 W
	Power for one lamp from 2 to 8 W	100 W	20 W	180 W	100 W	50 W	15 W	200 W
Non-corrected / serial-corrected / dual mounted fluorescent tubes with conventional ballast		2300 VA	1000 VA	2000 VA	1000 VA	700 VA	600 VA	1000 VA
Parallel corrected fluorescent tubes with conventional ballast		730 W (80 µF)	80 W (14 µF) 2 x 40 W (4.7 µF) 2 x 58 W (7 µF)	1300 W (140 µF)	730 VA (80 µF)	400 W (37 µF)	80 W (12 µF)	550 VA
Fluocompact lamps with electronic ballast		170 W	30 W	300 W	22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W	80 W	25 W	200 W

Connection



Type		**Tightening torque**	**Copper cables**	
			Rigid	**Flexible or with ferrule**
IHP	1c, 2c, +1c, +2c	2 screwless / pole	2 x 2.5 mm²	2 x 2.5 mm²
IHP 18 mm	1c, +1c	2 screwless / pole	2 x 2.5 mm²	2 x 2.5 mm²
IHP+	DCF 1c	2 screwless / pole	2 x 2.5 mm²	2 x 2.5 mm²
IH	60mn 1c SRM	2 screwless / pole	2 x 2.5 mm²	2 x 2.5 mm²
	24h 1c SRM, ARM	2 screwless / pole	2 x 2.5 mm²	2 x 2.5 mm²
	24h 2c ARM	1.2 N.m	≤ 6 mm²	≤ 6 mm²
	7j 1c ARM	2 screwless / pole	2 x 2.5 mm²	2 x 2.5 mm²
	24h + 7j 1+1c ARM	1.2 N.m	≤ 6 mm²	≤ 6 mm²
IH 18 mm	24h 1c SRM/ ARM	1.2 N.m	≤ 6 mm²	≤ 6 mm²
IHH 18 mm	7j 1c ARM	1.2 N.m	≤ 6 mm²	≤ 6 mm²
ITA 1c, ITA 4c		1.2 N.m	≤ 6 mm²	≤ 6 mm²

IHP 1c/2c, IHP+ 1c/2c are mechanical compatible with electrical distribution comb busbar.

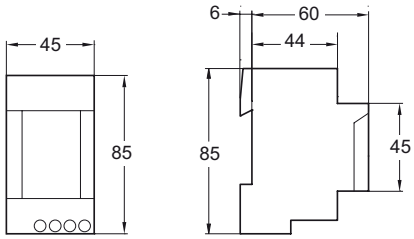
Weight (g)

Time switches		
IHP	1c / 2c	170/ 205
IHP+	1c / 2c	190/ 211
IHP 18 mm	1c / +1c	90
IHP+ DCF	1c	244
IH 54 mm	60mn 1c SRM	208
	24h 1c SRM/ARM	212 / 119
	24h 2c ARM	216
	7j 1c ARM	119
	24h + 7j 1+1c ARM	223
IH 18 mm	24h 1c SRM / ARM	97
IHH 18 mm	7j 1c ARM	101
ITA 1c		152
ITA 4c		303

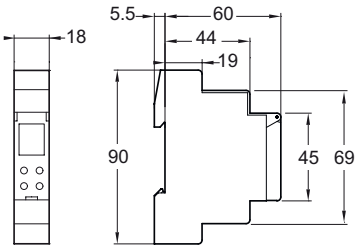
IHP, IH, IHH, ITA (cont.)

Dimensions (mm)

IHP time switches

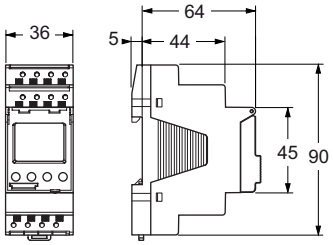


5P (45 mm)
IHP1c, IHP2c, IHP+1c, IHP+2c



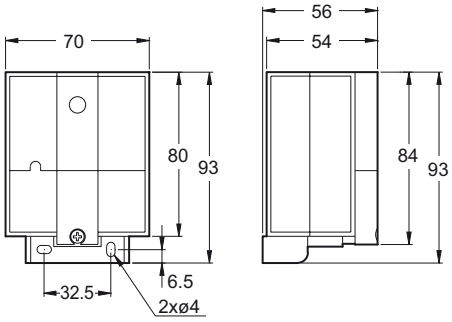
2P (18 mm)
IHP1c, IHP+1c

IHP+ DCF 1c

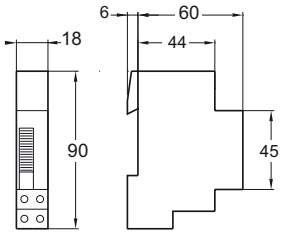


4P (36 mm)
IHP+ DCF 1c

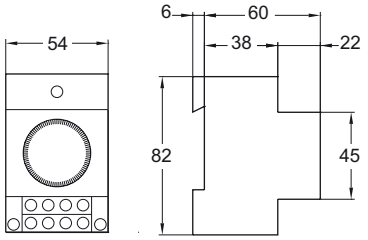
DCF77 antenna for IHP+ DCF 1c



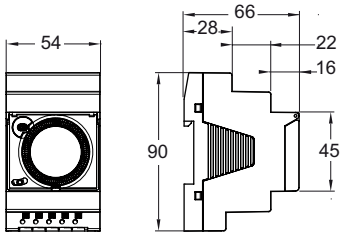
IH, IHH time switches



2P (18 mm)
IH 24h 1c SRM/ARM
IHH 7j1c ARM

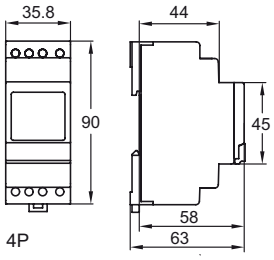


6P (54 mm)
IH 24h 2c ARM,
IH 24h +7j 1+1c ARM

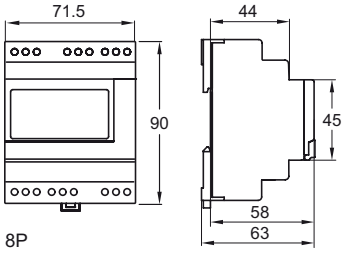


6P (54 mm)
IH 60mn 1c SRM, IH 24h 1c SRM/ARM
IH 7j 1c ARM

ITA yearly time switches

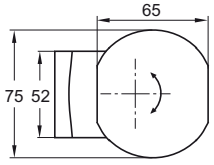


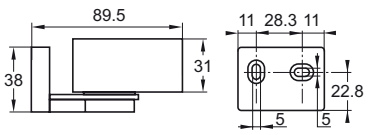
4P



8P

DCF antenna and GPS antenna for ITA





MIN, MINs, MINp, MINt

Timers

Electromechanical timer

P111648

MIN
Adjustable time delay from 1 to 7 min.

Silent electronic timers

P111642

MINs
Adjustable time delay from 0.5 to 20 min.

P111643

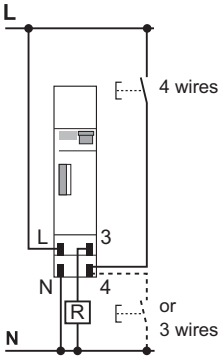
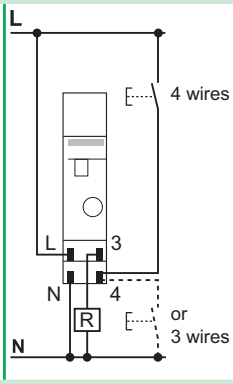
MINp
Adjustable time delay from 0.5 to 20 min. with switch-off warning.

P111644

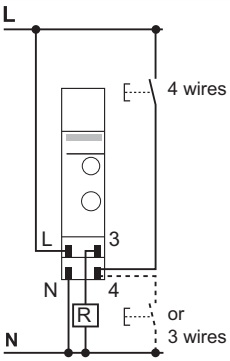
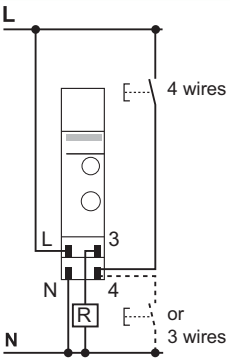
MINt
Adjustable time delay from 0.5 to 20 min. with switch-off warning and impulse relay function.

MIN, MINs, MINp, MINt (cont.)

Selection table

	MIN	MINs
Type	**Electromechanical timer**	**Silent electronic timer**
	P111648 	P111642 
Function		
	These timers allow closing and then opening of a contact in a determined time	
	Control circuit: connected standard or luminous push-buttons. Timer inoperative via self-protection if consumption above 50 mA maximum	
Wiring diagrams		
	P108867 	P108869 
Mounting		
	Two operating modes triggered by switch on front face: ■ Automatic mode: □ operation in timing mode □ time delay adjustable from 1 to 7 min. □ setting in steps of 15 s using knob □ pressing a push-button renews the time delay ■ Manual override mode: constant lighting	Two operating modes triggered by switch on front face: ■ Timer mode: time delay adjustable from 0.5 to 20 min. ■ Permanent mode: constant lighting
Catalogue numbers	**15363**	**CCT15232**

Technical specifications		
Voltage rating (Ue) (+10 %, -15 %)	230 V AC, 50 Hz	230 V AC, 50/60 Hz
Consumption	1 VA	< 6 VA
Output contact current | Cos φ = 1	16 A	16 A
Degree of protection	IP20B	IP20B
Operating temperature	-10°C to +50°C	-10°C to +50°C
Width (9 mm modules)	2	2
Consumption of connected luminous push-buttons	50 mA maxi	150 mA maxi
Adjustable time delay	1 to 7 min.	0.5 to 20 min.
Long time delay	–	–
Insulation class	–	Class II
1 screw connection per pole for cables up to 6 mm^2	■	■
Selection of the type of connection (3 or 4 wires)	Selector switch	Automatic
Mechanical compatibility with electrical distribution comb busbar	–	■
Switch-off warning function	–	–
Impulse relay function	–	–

	MINp	MINt	Accessory
	Silent electronic timer		**Wall mount accessory**
	P111643 	P111644 	P135159 
	The MINp timer allows closing and then opening of a contact in a determined time, and it also provides warning that the lighting is about to be switched off by flickering of the lamplight (switch-off warning)	The MINt timer is the same as MINp with an "impulse relay" additional function	The MIN timers can be mounted on a wall by using 15359 reference. The protection cover is sealable.
	P106871 	P106871 	The 15359 accessory can be also used to mount others 18 mm DIN rail devices (for example: time switches, circuit breakers...).
	■ Time delay adjustable from 0.5 to 20 min. ■ Three operating modes triggered by switch on front face: □ timer mode with "switch-off warning" function built into the device. The lamp blinks 40 and 30 s before the end of the time delay □ timer mode mode without "switch-off warning" function □ permanent mode : constant lighting		
	■ Timer mode operation: □ pressing a push-button for longer than 2 s: lighting will last for 1 h. Pressing again a push-button for less than 2 s relaunch the time delay of 1 h and pressing again a push-button for more than 2 s switches off the light □ pressing a push-button for less than 2 s launch the pre-set time delay, pressing again a push-button for less than 2 s relaunch the pre-set time delay	■ Timer mode operation: □ pressing a push-button for longer than 2 s: lighting will last for 1 h. Pressing again a push-button for less than 2 s relaunch □ the time delay of 1 h and pressing again a push-button for more than 2 s switches off the light □ pressing a push-button for less than 2 s launch the pre-set time delay, pressing again a push-button for less than 2 s, switches off the light (impulse relay mode)	
	CCT15233	**CCT15234**	**15359**
	230 V AC, 50/60 Hz	230 V AC, 50/60 Hz	
	< 6 VA	< 6 VA	
	16 A	16 A	
	IP20B	IP20B	
	-25°C to +50°C	-25°C to +50°C	
	2	2	See § dimensions
	150 mA maxi	150 mA maxi	
	0.5 to 20 min.	0.5 to 20 min.	
	1 h	1 h	
	Class II	Class II	
	■	■	
	Automatic	Automatic	
	■	■	
	■	■	
	–	■	

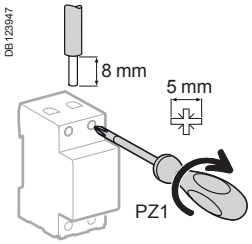
MIN, MINs, MINp, MINt (cont.)

Load table

Products		MIN	MINs	MINp, MINt
Type of lighting		**Maximum power**		
230 V incandescent and halogen lamps		2300 W	2300 W	3600 W
LED lamps	Power for one lamp < 2 W	30 W	20 W	55 W
	Power for one lamp from 2 to 8 W	90 W	55 W	150 W
Non-corrected / serial-corrected / dual mounted fluorescent tubes with conventional ballast		2300 VA	2300 VA	3600 VA (1)
Fluocompact lamps with conventional ballast		2000 VA	1500 VA	1500 VA (1)
Parallel-corrected fluorescent tubes with conventional ballast		1300 VA (70 F)	400 VA (42 µF)	1200 VA (120 µF) (1)
Fluorescent tubes with electronic ballast		300 VA	300 VA	1000 VA
Fluocompact lamps with electronic ballast		9 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W	34 x 7 W, 27 x 11 W, 24 x 15 W, 22 x 23 W

(1) *The "switch-off warning" function is not available for these types of loads.*

Connection

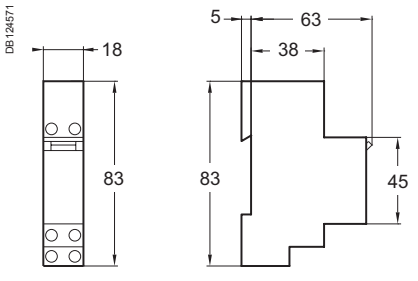


Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945	DB122946
MIN, MINs, MINp, MINt	1.2 N.m	≤ 6 mm²	≤ 6 mm²

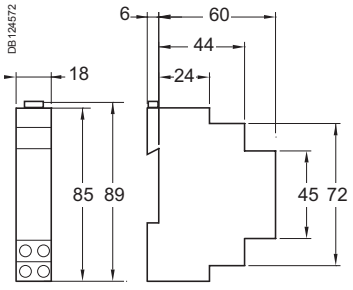
Weight (g)

Time switches	
MIN	84
MINs	75
MINp	103
MINt	76

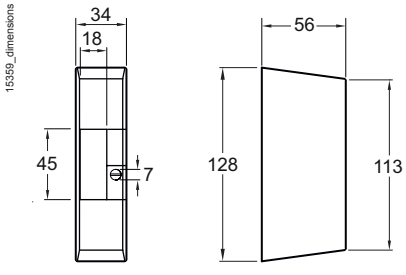
Dimensions (mm)

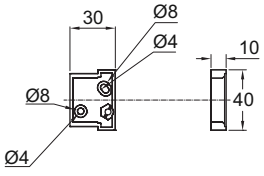


MIN



MINs, MINp, MINt





Wall mount accessory

STD and SCU range
STD400RC/RL-DIN & SAE
STD400LED, STD400LED+
STD1000RL-DIN & SAE
SCU10-DIN & SAE

STD

P112245

STD400RC/RL-DIN

P112246

STD400RC/RL-SAE

P112248

STD1000RL-SAE

STD

■ The STD dimmers modulate incandescent halogen, lighting brightness and motors for unit powers from 40 to 1000 W from one or more switch-on points.
■ They can be controlled either with the local control push-button placed on front panel or with auxiliary push-buttons.
■ They have soft-On / soft-Off, light level memory and minimum level setting features.
■ They are available in 2 different types:
□ DIN type (STD400RC/RL-DIN, STD1000RL-DIN) supplied without digital inputs,
□ SAE type (STD400RC/RL-SAE, STD1000RL-SAE) supplied with 4 digital inputs.

DB406995

STD400LED

DB406996

STD400LED+

STD LED

■ The STD LED dimmers switch and dim the lighting brightness of:
□ incandescent lamps, halogen lamps, (conventional or with electronic transformer),
□ dimmable lamps: fluocompact and LED 230 V.
■ The brightness is set via the push buttons connected to the dimmer.
■ They have soft-On / soft-Off, light level memory and minimum level setting features.
■ The STD LED+ could be used with a movement detector, a presence detector or a programmable time switch. It also provides a staircase function incl. pre-warning.

SCU

P112221-35

SCU10-SAE

SCU

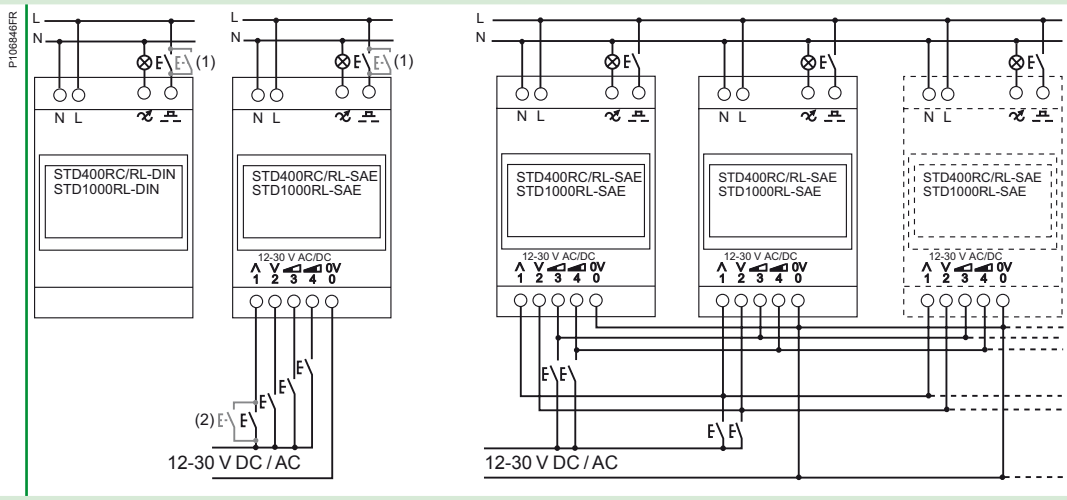
■ The SCU dimmers modulate fluorescent lighting brightness for unit powers from 40 to 1500 W from one or more switch-on points.
■ They can be controlled either with the local control push-button placed on front panel or with auxiliary push-buttons.
■ They have soft-On / soft-Off, light level memory and minimum level setting features.
■ They are available in 2 different types:
□ DIN type (SCU10-DIN) supplied without digital inputs,
□ SAE type (SCU10-SAE) supplied with 4 digital inputs.

STD and SCU range (cont.)
STD400RC/RL-DIN & SAE
STD400LED, STD400LED+
STD1000RL-DIN & SAE
SCU10-DIN & SAE

Selection table
STD

	STD400RC/RL-DIN	STD400RC/RL-SAE	STD1000RL-DIN	STD1000RL-SAE
Type	**400 W**		**1000 W**	

Wiring diagrams



Mounting

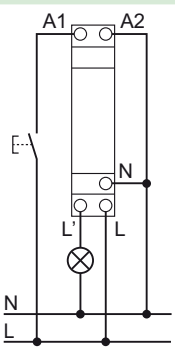
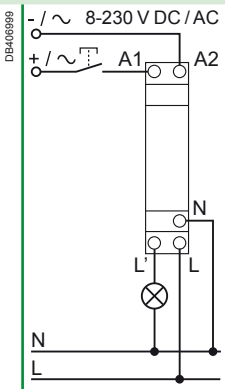
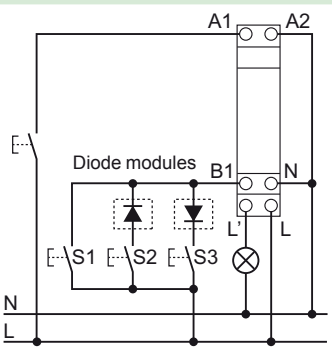
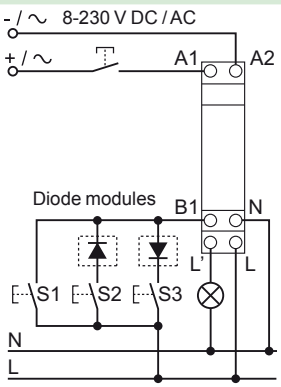
With SAE types, it is possible to control a maximum of 20 dimmers combining STD400RC/RL-SAE and STD1000RL-SAE, with only one push-button via the 4 digital inputs

Catalogue numbers	**CCTDD20001**	**CCTDD20002**	**CCTDD20003**	**CCTDD20004**

Technical specifications

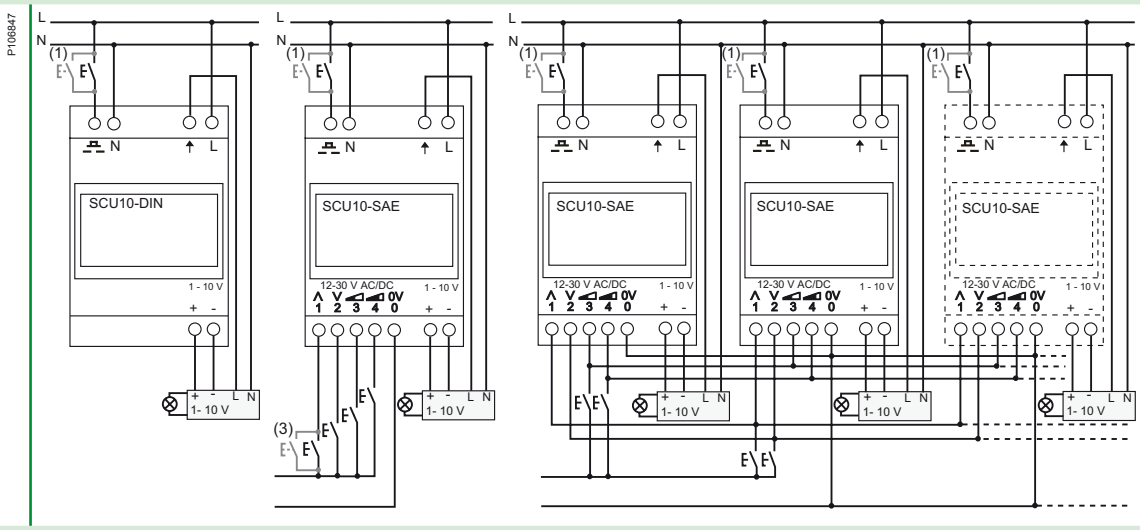
Voltage rating (Ue)	230 V AC ± 10 %, 50 Hz			
Control voltage	230 V AC ± 10 %, 50 Hz			
Consumption	0.8 VA			
Power loss	3 W			
Local push-button	Short push for On/Off control, long push for dimming			
Auxiliary push-button input	Short push for On/Off control, long push for dimming: ■ up to 25 parallel connected auxiliary push-buttons without indication lamps ■ up to 5 parallel connected auxiliary push-buttons with indication lamps ■ max wire length 50 m			
The minimum light level setting is adjustable	■			
Indication blue LED (built in the local push-button)	Illuminates during the on-state. The LED is blinking in error mode			
Protection class	-			
Degree of protection	IP20			
Operating temperature	0°C to +40°C, 40°C to +70°C with - 6 W /°C de-rating			
Storage temperature	0°C to +60°C			
Width (module of 9 mm)	4	4	8	8
Protections, fuses	■ Electronic overload, overvoltage and over temperature protection ■ Single shot thermal fuse			
Standards	According to EN 60669-2-1			
Directives	According to CE, EMC 89/336/EEC and LVD 73/73/23/EEC			

(1) Use of maximum 25 push-buttons without indication lamp and 5 push-buttons with indication lamp, connected in parallel.
(2) Use of maximum 25 push-buttons without indication lamp, connected in parallel, only for STD400RC/RL-SAE and STD1000RL-SAE.

	STD400LED	STD400LED+
	400 W	
	 DB406995	 DB406996 DB407041
	 DB406700  DB406999	 DB406998  DB406997
	-	The 2 diode modules (supplied) could be used to implement 2 push-buttons, for example (push-button 1 = Switch on/Dim up, push-button 2 = Switch off/dim down) or to manage until 3 scenarios of lighting
	CCTDD20016	**CCTDD20017**
	230 V AC +10 %, -15 %, 50 Hz	
	8...230 V AC/DC	
	0.3 W	
	0.2 W	0.2 W
	-	-
	Short push for On/Off control, long push for dimming: ■ up to 10 parallel connected auxiliary push-buttons without indication lamps ■ max wire length 100 m	Short push for On/Off control, long push for dimming: ■ up to 10 parallel connected auxiliary push-buttons without indication lamps ■ max wire length 100 m
	■	-
	-	
	II	
	IP20	
	-30°C to +50°C	
	-20°C to +70°C	-20°C to +70°C
	2	
	Electronic overload, overvoltage and over temperature protection	
	According to EN 60669-1, EN 60669-2-1	
	According to CE, 2004/108/EC, 2006/95/EC, 2011/65/EC	

STD and SCU range (cont.)
STD400RC/RL-DIN & SAE
STD400LED, STD400LED+
STD1000RL-DIN & SAE
SCU10-DIN & SAE

Selection table
SCU

	SCU10-DIN	SCU10-SAE
Type	**1 - 10 V**	
	 P112250	 P112221
Wiring diagrams	 P106847	
Mounting	With SAE types, it is possible to control a maximum of 20 dimmers combining STD400RC/RL-SAE, STD1000RL-SAE and SCU10-SAE with only one push-button via the 4 digital inputs	
Catalogue numbers	**CCTDD20011**	**CCTDD20012**

Technical specifications		
Voltage rating (Ue)	230 V AC ± 10 %, 50 Hz	
Consumption	0.8 VA	
Power loss	3 W	
Current sink for 1-10 V output	0.2- 100 mA	
Local push-button	Short push for On/Off control, long push for dimming	
Auxiliary push-button input	Short push for On/Off control, long push for dimming: ■ up to 25 parallel connected auxiliary push-buttons without indication lamps ■ up to 5 parallel connected auxiliary push-buttons with indication lamps ■ max wire length 50 m	
The minimum light level setting is adjustable	■	
Indication blue LED (built in the local push-button)	Illuminates during the on-state. The LED is blinking in error mode	
Degree of protection	IP20	
Operating temperature	0°C to +40°C, 40°C to +70°C with - 6 W /°C de-rating	
Storage temperature	0°C to +60°C	
Width (module of 9 mm)	8	8
Protections, fuses	■ Electronic overload, overvoltage and over temperature protection ■ Single shot thermal fuse	
Standards	According to EN 60669-2-1	
Directives	According to CE, EMC 89/336/EEC and LVD 73/73/23/EEC	

(1) Use of maximum 25 push-buttons without indication lamp and 5 push-buttons with indication lamp, connected in parallel.
(3) Use of maximum 25 push-buttons without indication lamp, connected in parallel, only for SCU10-SAE

STD and SCU range (cont.)
STD400RC/RL-DIN & SAE
STD400LED, STD400LED+
STD1000RL-DIN & SAE
SCU10-DIN & SAE

Specific technical data

SAE types		
Input voltage		12- 30 V AC/DC
The **STD400RC/RL-SAE**, **STD1000RL-SAE** and **SCU10-SAE** dimmers are supplied with 4 digital inputs	Input 1	On/Off and dimming up/down or only On and dimming up (depends on function mode)
	Input 2	Off and dimming down or only Off (depends on function mode)
	Input 3	Adjustable lighting level memory 1 (50 % default)
	Input 4	Adjustable lighting level memory 2 (100 % default)
Max wire length		50 m
Up to 25 push-buttons per input. No push-button with indication lamp		
STD400RC/RL-DIN and STD400RC/RL-SAE dimmers are power regulators designed for all dimmable load types. Dimmers have automatic load type detection and the load regulation method is adjusted to fit the load		

Operation modes for SAE types

■ **STD400RC/RL-SAE**, **STD1000RL-SAE** and **SCU10-SAE** dimmers have 2 different operation modes (**A** and **B**) using auxiliary push-buttons connected on digital inputs (1, 2, 3 and 4 terminals).

■ Modes **A** and **B** can be changed by pushing the digital inputs 3 and 4 simultaneously for 10 s. After the mode is changed the load and the LED start to blink as long as the inputs are pushed.

■ In the mode **A**, the input 1 dims the lights on with a short push and up with a long push and turns light off with a short push and dims the light down with a long push. The direction is changed every time the input 1 is released. The input 2 dims the lights always off.

■ In the mode **B**, the input 1 dims lights only up with a long push and turns lights on with a short push. The input 2 dims the lights only down with a long push and turns lights off with a short push.

■ Inputs 3 and 4 are for memory places for light levels. The light level is called with a short push and set into the memory with a long push of 3 s.

Common technical data

Common operation mode for SAE & DIN types

■ The dimmer is turned On/Off by shortly pushing the front panel push-button. This push-button lights blue when the dimmer is On.

■ The light level is controlled by keeping the front panel push-button pushed until wanted level has been reached.

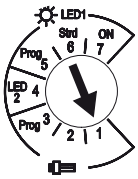
■ The direction of dimming (up/down) is changed every time the front panel push-button is released.

■ The dimmer has memory function which stores the light level before Off-command. When the dimmer is turned back On, the light level is the same as it was before Off-command.

■ Auxiliary push-buttons connected on terminal have the same functionality as the push-button on the front panel of the dimmer.

STD and SCU range (cont.)
STD400RC/RL-DIN & SAE
STD400LED, STD400LED+
STD1000RL-DIN & SAE
SCU10-DIN & SAE

STD400LED specific technical data

Lamp	Function	Product	
		STD400LED	STD400LED+
		DB406703 	DB406704 
		Switch for setting the functions	Switch for setting the functions
			DB406705 
		-	Potentiometer for setting the dimming time
Dimmable compact fluorescent lamps (CFL)	**1**	Automatic load detection Start with 100 % Dimming down not possible till after 3 s	Automatic load detection Start with 100 % Dimming down not possible till after 3 s Control 3 different light scenes
	2	No automatic load detection (always with phase section) Start with 50 % Dimming down not possible till after 2 s	No automatic load detection (always with phase section) Start with 50 % Dimming down not possible till after 2 s Control 3 different light scenes
	Prog 3	Programming the minimum brightness	Programming minimum switch-on brightness Programming of 3 light different scenes (with diode modules included): snooze, wake-up, dimming switch-on function
Dimmable LED	**4**	No automatic load (always with phase section) to used if dimming problems with the LEDs	
Standard: Incandescent, Halogen, Transformer, Dimmable LEDs ...	**Prog 5**	Programming the minimum brightness	Programming minimum switch-on brightness Programming of 3 light different scenes (with diode modules included): snooze, wake-up, dimming switch-on function
	6	**Standard function:** Adjustable switch-on brightness (preset 100 %) Light brighness dimming switch-on after 2 s	**Comfort function:** Adjustable switch-on brightness (preset 100 %) Light brighness dimming switch-on With snooze and wake-up functions Control 3 different light scenes
	7	Dimmer is always on	**Standard function:** Adjustable switch-on brightness (preset 100 %) Light brighness dimming switch-on Control 3 different light scenes
	8	-	**2-push button function:** (double switch or rocker button) with diode modules, to switch on/Dim up or switch off/dim down
	9	-	**Time switch function:** Time configurable with potentiometer from 1 s to 60 minutes with switch-off pre-warning by dimming down and long time function by long button press
	10	-	**Switch function:** For presence and movement detector Control 3 different light scenes

STD and SCU range (cont.)
STD400RC/RL-DIN & SAE
STD400LED, STD400LED+
STD1000RL-DIN & SAE
SCU10-DIN & SAE

Load table

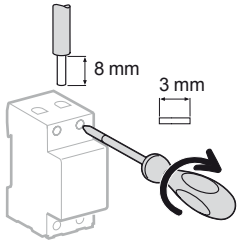
STD400RC/RL-DIN, STD400RC/RL-SAE	
230 V incandescent and halogen lamps	40 - 400 W
Low voltage halogen lamps with electronic transformer	40 - 400 W
Low voltage halogen lamps with conventional transformer	40 - 400 W
Low voltage halogen lamps with toroidal transformer	40 - 300 W
Motors (fans, ventilators...)	40 - 200 W
STD400LED, STD400LED+	
230 V incandescent and halogen lamps	0 - 400 W *
Low voltage halogen lamps with electronic transformer	0 - 300 W
Low voltage halogen lamps with conventional transformer	0 - 400 W *
Low voltage halogen lamps with toroidal transformer	0 - 400 W *
Dimmable fluocompact lamps (CFL)	0 - 80 W
Dimmable LED lamps	0 - 60 W

* In the case of a load of >300 W keep an 8 mm ventilation distance to the right and left.

STD1000RL-DIN, STD1000RL-SAE	
230 V incandescent and halogen lamps	60 - 1000 W
Low voltage halogen lamps with conventional transformer	60 - 1000 W
Motors (fans, ventilators...)	60 - 600 W
SCU10-DIN, SCU10-SAE	
Mono fluorescent tubes with electronic ballast (dia.26 mm)	50 x 18 W, 40 x 36 W, 25 x 58 W
Duo fluorescent tubes with electronic ballast (dia.26 mm)	40 x 18 W, 20 x 36 W, 12 x 58 W
Fluocompact lamps with electronic ballast	50 max. up to 1500 W

Connection

P106928



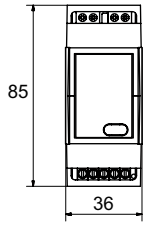
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB123945	DB123553
STD and SCU (top connection)	0.5 N.m	< 4mm²	< 4 mm²
STD and SCU (bottom connection)	0.5 N.m	< 2.5 mm²	< 2.5 mm²
STD400LED, STD400LED+	0.5 N.m	< 2.5 mm²	< 2.5 mm²

Weight (g)

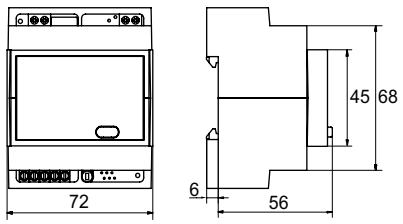
Dimmers	
STD400RC/RL-DIN	80
STD400RC/RL-SAE	90
STD1000RL-DIN	120
STD1000RL-SAE, SCU10	130
STD400LED	65
STD400LED+	70

Dimensions (mm)

P106845

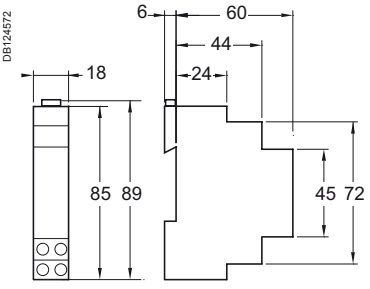


STD400RC/RL



STD1000RL
SCU10

DB124572



STD400LED, STD400LED+

TH4, TH7 and THP1+ 1C

Thermostats

P123732

TH4

For individual and multifamily housing, tertiary premises, TH4 thermostat monitors and regulates ambient temperature from +8°C to +26°C according to 3 temperature set points:

- comfort: while the promises are occupied
- reduced: while the premises are unoccupied
- above freezing: for a prolonged period of non-occupancy.

P123731

TH7

For industrial premises stretching from cold storage to ovens, TH7 thermostat monitors and regulates temperature from -40°C to +80°C with a wide setting range.
It can also be used for frost protections at home.

Programmable thermostat

DB406975

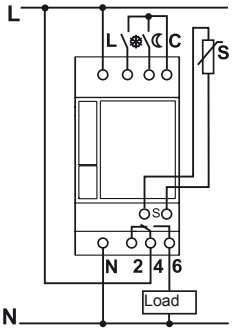
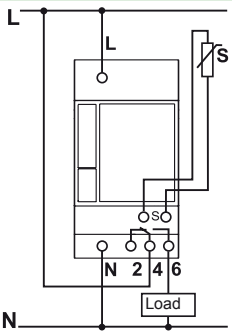
THP1+ 1C

Programmable thermostat control the operating periods of all heating types by monitoring and regulating ambient temperature between 10°C and 30°C, using a programme pre-set by the user.

TH4, TH7 and THP1+ 1C (cont.)

Selection table

Thermostats

	TH4	TH7
Type		
	P123732 	P123731 
Function		
	For individual and multifamily housing, tertiary premises, TH4 thermostat monitors and regulates ambient temperature from +8°C to +26°C according to 3 temperature set points: ■ comfort: while the promises are occupied ■ reduced: while the premises are unoccupied ■ above freezing: for a prolonged period of non-occupancy	■ For industrial premises stretching from cold storage to ovens, TH7 thermostat monitors and regulates temperature from -40°C to +80°C with a wide setting range ■ It can also be used for frost protections at home
Wiring diagrams		
	P106772 	P106773 
Mounting		
	Delivered with CCT15846 ambient temperature probe	Delivered without probe
Catalogue numbers	**CCT15841**	**CCT15840**

Technical specifications				
Voltage rating (Ue)			230 V AC ± 10 %, 50/60 Hz	
Consumption			< 4 VA	
Output contact current (250 V AC)	Max.	Cos φ = 1	16 A	
		Cos φ = 0.6	3 A	
	Min.		–	
Power reserve			–	
Time base			–	
Difference between tripping and activation			± 0.2°C	
Degree of protection			IP20	
Operating temperature			-10°C to +55°C	
Storage temperature			-20°C to +60°C	
Set Point accuracy			1°C	
Humidity			15-95 % RH (no condensation)	
Width (module of 9 mm)			5	
Color			White RAL 9003	
Protections, fuses			Internal over voltage protection against surges, internal over temperature protection	
Compliance with Community Directives	Isolating requirements, E.M.C. guidelines and Safety guidelines		EN 60730-2-9	
	RoHS and environmental issues		EU-directive 2002/95/EC (RoHS)	
			WEEE-directive 2002/96/EC (recycling)	
			REACH Regulation (EC) No 1907/2006	

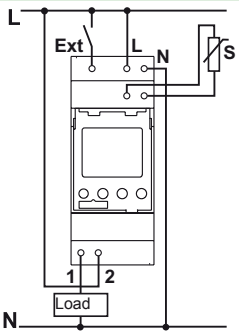
Programmable thermostat

THP1+ 1C

DB406975

■ The THP1+ 1C programmable thermostat controls the operating periods of all heating types by monitoring and regulating ambient temperature between 10°C and 30°C, using a programme pre-set by the user and memorised
■ The THP1+ 1C monitors and regulates temperature in a room by comparing the value of the temperature measured by the ambient temperature probe with the value of the setpoint displayed on its front face according to 3 operating modes:
□ comfort: 10°C to 30°C while the premises are occupied
□ reduced: 10°C to 26°C while the premises are unoccupied
□ above freezing: the temperature in the premises is maintained at approximately 10°C
■ The THP1+ 1C, can control the following loads:
□ convectors
□ a burner
□ a "hot air" heating system
□ heating valves: hydraulic, electromagnetic or electrothermal

DB406979



	An ambient temperature probe needs to be ordered separately (see next page ref. 15835 or 15836)
	CCT15833

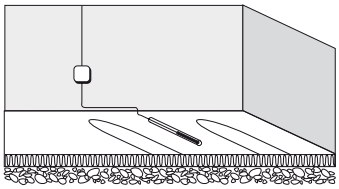
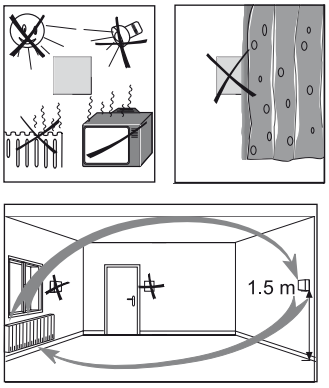
	230-240 V AC ±10%, 50-60 Hz
	1.36 VA
	10 A
	2 A
	10 mA (230 V AC, 100 mA (12 V AC/DC)
	10 years at 20°C
	Quartz
	± 0.2°C
	IP20
	0°C to +50°C
	-20°C to +70°C
	0.1°C
	–
	4
	White RAL 9003
	Internal short circuit protection
	EN 60730-2-9
	2006/95/EC - low voltage directive
	2011/65/EU - RoHS directive
	2004/108/EC - electromagnetic compatibility

TH4, TH7 and THP1+ 1C (cont.)

Selection table

TH4, TH7

Temperature probes

Accessories	Floor temperature probe (with 1.5 m cable)	Ambient temperature probe (with 1.5 m cable)
Type		
	P123733 	P123734 
Installation		
	P106853 	P106854 
Mounting		
	This probe must be placed: ■ in a Ø 9 mm tube, embedded in the slab in the middle of a turn ■ one of the ends must run out of a distribution box sealed in the nearest wall (to simplify probe installation or replacement)	This probe must be fixed 1.50 m above the floor, away from drafts and sources of heat (sun's rays, radiators, machines, etc.)
Catalogue numbers	**CCT15845**	**CCT15846**

Note: *for all probes, do not run connecting cables alongside power cables.*
TH4 and TH7 probes cables can be extended up to 70 m by using 6/10th telephone cable or up to 150 m by using shielded copper cable.
THP1+ 1C probes cables can be extended up to 50 m by using 6/10th telephone cable or shielded copper cable.

Specific technical data

TH4		
Settings	Comfort	From +8°C to +26°C
	Reduced	From 0°C to 10°C below the selected "comfort" temperature set point: control (manual or automatic) by external dry contact
	Above freezing	Maintains room temperature according to a factory adjusted temperature set point of +5°C: control (manual or automatic) by external dry contact
Three indicator lights visualise	Green	Above freezing operation
	Yellow	Reduced operation
	Red	Relay: ON
Delivered with ambient temperature probe (CCT15846)		NTC 10 kΩ (25°C) can be extended up to 150 m with shieded copper cable and up to 70 m with telephone cable

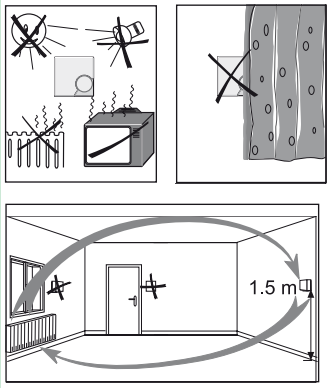
Note: *however, the set point selected never can't be less than +8°C. Eg. If the reduced set point is selected with a 12°C set point temperature and a 10°C reduction temperature, the operative set point will not be +2°C (12-10) but rather +8°C (+5°C only if the "above freezing" input is closed/active).*

TH7		
Temperature set point settings (1)	Range	6 fixed positions: -40°C, -20°C, 0°C, +20°C, +40°C and +60°C
	Adjustements	From 0°C to 20°C above the selected fixed position
Indicator light	Red	Relay: ON
Delivered without probe		

(1) For example: if "range" is on -40°C, setting is possible between -40°C and -20°C.

THP1+ 1C

Temperature probes

	Outside temperature probe (with 2 m cable)	Collar temperature probe (with 1.5 m cable)	Ambient temperature probes	
			Non-adjustable probe	± 3 °C adjustable probe
	P123735 	P123736 	P126320 	049540r 
			P106855 	
	This probe must be fixed away from: ■ the sun preferably facing north ■ all heat sources (chimney, etc.)	This probe must be fixed on the hot water outgoing pipe (min. ø 21 mm, max. ø 90 mm) approximately 1.50 m from the boiler.	These probes must be fixed 1.50 m above the floor, away from drafts and sources of heat (sun's rays, radiators, machines, etc.)	
	CCT15847	**CCT15848**	**15835**	**15836**

Memory key (optional)

P93581-8_13

Saving and duplicating programs	
Catalogue number	**CCT15861**

TH4, TH7 and THP1+ 1C (cont.)

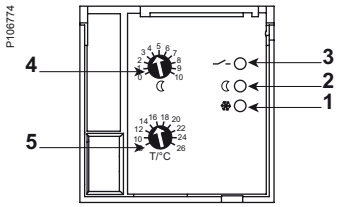


Fig. 1.

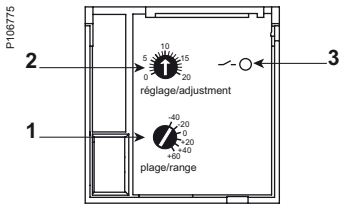
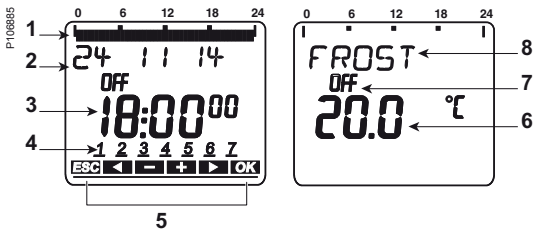


Fig. 2.



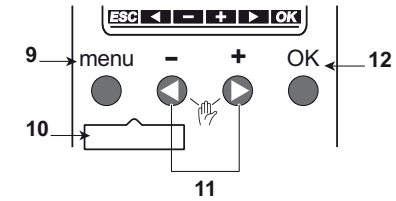


Fig. 3.

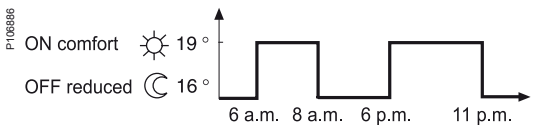


Fig. 4.

TH4

Front face (see Fig. 1)

1 Above freezing mode indicator.
2 Reduced mode indicator.
3 Relay.
4 Reduced threshold adjustment (reduction of temperature with respect to the setpoint).
5 Temperature threshold adjustment.

TH7

Front face (see Fig. 2)

1 Temperature range setting (6 ranges).
2 Temperature fine adjustement.
3 Relay indicator.

THP1+ 1C

Front face (see Fig. 3)

1 Programmed switching times
2 Date display
3 Time display
4 Days of the week from 1 to 7
5 Display of the active buttons with the relevant function
6 Actual temperature: 20°C
7 Channel status: ON = On
OFF = Off
8 Operating mode: Frost
Comfort
Reduce
9 menu: Activate display
Open menu
Cancel menu
ESC (leave menu)
10 Memory card interface
11 Options are displayed
12 OK: Save selection
Confirm selection

THP1+ 1C programming

A programmable clock, built into the THP1+ 1C, is used for programming (see Fig. 4).

■ The various operations for updating time and day.
■ Programming possibilities:
□ 24 hours and 7 days: a separate programme for each day of the week,
□ up to 42 switching operations memorised,
□ the same switching operation used over several days only counts as one switching operation,
□ Power reserve: 10 years.

Example

■ Programming:
□ temperature thresholds: "comfort" 19°C and "reduced" 16°C,
□ presence from 6 a.m. to 8 a.m. and from 6 p.m. to 11 p.m.: "comfort" heating, temperature of 19°C,
□ absence (from 8 a.m. to 6 p.m.) and nighttime (from 11 p.m. to 6 a.m.): "reduced" heating, temperature of 16°C.

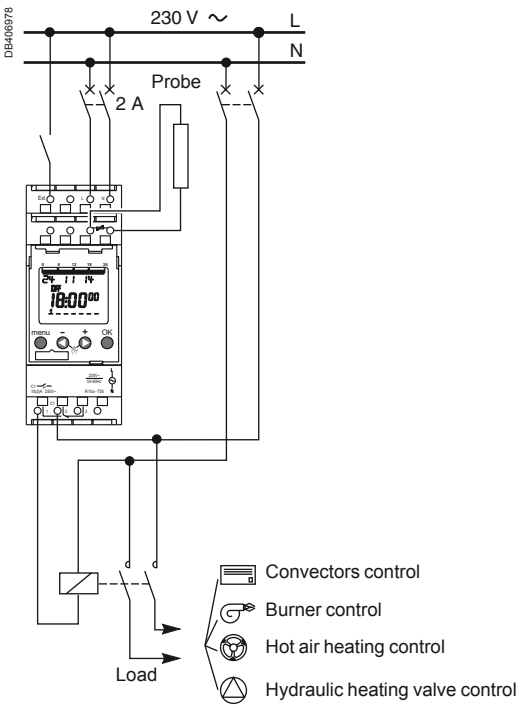


Fig. 5. THP1+ 1C connection example.

Local control

The configuration interface of the THP1+ 1C programmable thermostat consists of a screen and four configuration buttons.

The THP1+ 1C programmable thermostat has a built-in clock and its main menu is used to:

- set the temperatures: "comfort", "reduced" or "frost protection",
- assign these temperatures to a maximum of 42 hourly switching operations over 7 days,
- set the date and time format, the transition to summer or winter time,
- manually override the temperature without changing the hourly switching operations if the premises are not used during holidays, etc.

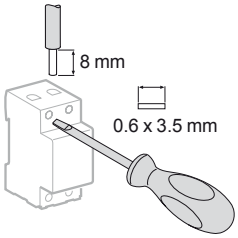
The option menu can be accessed to set:

- the external input (deactivated, "comfort", "reduced" or "frost protection" temperature),
- the type of heating:
  - heater, convector (NORMAL),
  - inertia heating (UNDERFLOOR),
  - pulsed-air heating (AIR HEATING),
- the temperature compensation to correct the measurement obtained by the temperature probe in the event of an unfavourable location,
- the screen lighting mode:
  - constantly on,
  - off after 1 minute,
- the language used,
- and to reset the parameters (return to factory settings).

TH4, TH7 and THP1+ 1C (cont.)

Connection

DB406976



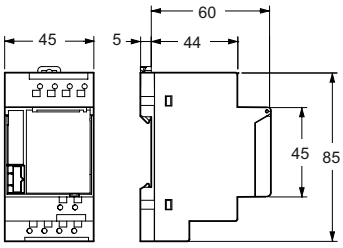
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
		DB122945 	DB123553 
TH4, TH7, THP1+ 1C	2 screwless / pole	2 x 2.5 mm^2	2 x 2.5 mm^2

Weight (g)

Thermostats	
TH4, TH7	125
TH4 with probe	205
Programmable thermostat	
THP1+ 1C	184

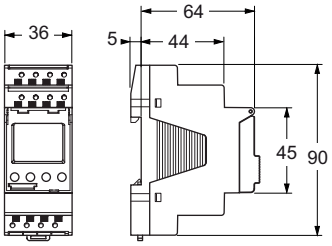
Dimensions (mm)

P106777



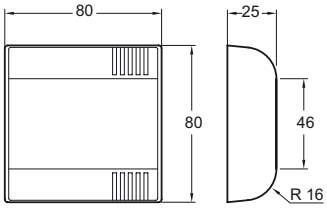
TH4 and TH7 thermostats

DB406974



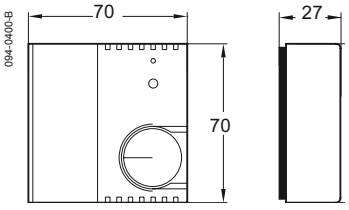
THP1+ 1C programmable thermostat

P106778



TH4, TH7, ambient temperature probe

094-0400-B



THP1+ 1C ambient temperature probes

400 Hz network

Compatibility of 50/60 Hz equipment with a 400 Hz network

The performance of products designed for domestic frequencies of 50/60 Hz is impacted by the specific properties of networks of 400 Hz frequency.

Phenomena due to the increased frequency influence the behaviour of the copper components of transformers, cables and protective equipment.

Some types of equipment designed for 50/60 Hz networks may not be suitable. You should check whether or not a product is compatible, and also apply any correction factors given by the manufacturer.

Circuit breakers

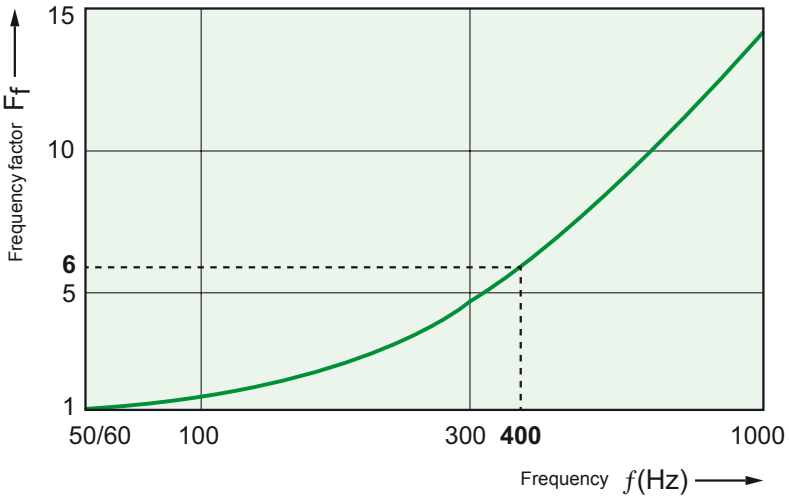
Depending on the technologies used, modular circuit breakers designed for 50/60 Hz can be used at 400 Hz.
To choose the performance of a modular circuit breaker:
- do not take any thermal derating into account
(In at 400 Hz is equivalent to In at 50 Hz).
- increase the magnetic tripping threshold, according to the table below.
- check that the short-circuit current on the installation is less than the breaking capacity of the circuit breaker. The breaking capacity of the circuit breakers at a frequency of 400 Hz is the same as at frequencies of 50/60 Hz. This characteristic is generally complied with, due to the fact that the short-circuit current of a 400 Hz generator is relatively low. In most cases, the generator Isc does not exceed four times the rated current.

Circuit breaker	Curve	Magnetic trip thresholds		
		50 Hz	400 Hz	Tolerance
iDPN, DPN	B	4 In	6 In	± 20 %
	C	8 In	12 In	
	D	12 In	18 In	
iC60	B	4 In	5.6 In	
	C	8 In	11.2 In	
	D	12 In	16.8 In	
C60	B	4 In	5.1 In	
	C	8.5 In	10.9 In	
	D	12 In	15.4 In	
C120	The NG125 and C120 circuit breakers are not suitable for networks of 400 Hz frequency. Refer to the Compact NSX offer.			
NG125				

400 Hz network (cont.)

Earth leakage protection devices

The residual current device trip thresholds designed for 50/60 Hz increase with the frequency, but since the human body is less sensitive to the passage of a current at 400 Hz, protection is still ensured for the users.
According to the IEC 60479-2 standard, at 400 Hz the ventricular fibrillation threshold is higher by a ratio of 6 (which means that the physiological effect of a 180 mA current at 400 Hz will be the same as that of a 30 mA current at 50/60 Hz).



Variations in the ventricular fibrillation threshold for shock durations exceeding the period of cardiac cycle (as per IEC 60479-2).

Compatibility of residual current devices at 400 Hz:

Depending on the type and the technology employed, a residual current device designed for a frequency of 50/60 Hz will or will not be capable of ensuring protection for users in accordance with the requirements of the standard.

Type of protection and type of equipment		Use possible on network of 400 Hz frequency	Limit
A type		Not compatible	Trip threshold exceeding the limit given by the curve
AC type		Not recommended	Excessive sensitivity with risk of unwanted tripping (poor guarantee of continuity of service)
Si type	iID iTG40	Yes	
	Vigi iC60	Yes	
	DPN Vigi, Vigi DPN	Yes	

Note: The choice of an iID residual current circuit breaker ensures protection for users at 400 Hz while ensuring good continuity of service.

At 400 Hz, the test function of residual current devices designed for 50/60 Hz is not operational due to the increase in the trip threshold.

Auxiliary function

Voltmetric releases

If a circuit breaker needs to be provided with a voltmetric release whose control circuit is powered by the 400 Hz network, it is necessary to use a release auxiliary of appropriate characteristics for 400 Hz networks:

Type	Voltage	Cat. no.
Undervoltage release iMN	115 V AC - 400 Hz	A9A26959

Influence of ambient temperature

Influence of temperature on the operation

Devices		Characteristics influenced by temperature	Temperature	
			Min.	Max.
C60H-DC, C60, C120, NG125, C60PV-DC circuit breakers		Tripping on overload	-30°C	+70°C
DPN circuit breakers		Tripping on overload	-25°C	+70°C
iK60 circuit breakers		Tripping on overload	-25°C	+60°C
iC60a/N/H/L circuit breakers		Tripping on overload	-35°C	+70°C
Circuit breakers	With Vigi (AC)	Tripping on overload	-5°C	+60°C
	With Vigi (A, ***SI***)		-25°C	+60°C
Reflex iC60		Tripping on overload	-25°C	+60°C
iC60N/H RCBO, iC60H2 RCBO		Tripping on overload	-15°C	+60°C
C60NA-DC, SW60PV-DC, C120NA-DC switch-disconnectors		Maximum operating current	-25°C	+70°C
STI, SBI isolatable fuse-carriers		Maximum operating current	-20°C	+60°C
iID K residual current circuit breakers		Maximum operating current	-5°C	+60°C
iID residual current circuit breakers	AC	Maximum operating current	-5°C	+60°C
	A, ***SI***		-25°C	+60°C
Switches	iSW (Acti 9 design)	Maximum operating current	-25°C	+60°C
	iSW		-20°C	+50°C
	iSW-NA		-35°C	+70°C
Protection auxiliaries		None	-35°C	+70°C
RCA, ARA control auxiliaries		None	-25°C	+60°C
iCT contactors		Installation conditions	-5°C	+60°C
iTL impulse relays		None	-20°C	+50°C
Linergy DS	Cat. no. 04040 Cat. no. 04041	Maximum operating current	-25°C	+60°C
Linergy FH		Maximum operating current	-25°C	+60°C
iCT, iTL auxiliaries		None	-20°C	+50°C
Linergy DX		Maximum operating current	-25°C	+60°C
Linergy FM	Cat. no. 04000	Maximum operating current	-25°C	+60°C

Note: the temperature considered is the temperature viewed through the device.

Circuit breakers

High temperatures

■ A rise in temperature decreases the tripping current of the thermal protection.
■ Protection is still ensured: the tripping threshold remains lower than the current acceptable by the cable (I_z)
■ To prevent nuisance tripping, it should be checked that this threshold remains higher than the maximum operating current (I_B) of the circuit, defined by:
□ the rated load currents,
□ the coefficients of expansion and simultaneity of use.
If the temperature is sufficiently high for the tripping threshold to become lower than the operating current I_B, switchboard ventilation should be provided for.

Low temperatures

■ A fall in temperature increases the tripping current of the thermal protection.
■ There is no risk of nuisance tripping: the threshold remains higher than the maximum operating current of the circuit (I_B) demanded by the loads.
■ It should be checked that the cable remains suitably protected, i.e. that its acceptable current (I_z) is higher than the values shown in the following tables (in amperes).

When the ambient temperature could vary within a broad range, both these aspects must be taken into account:
■ the difference between the maximum operating current of the circuit (I_B) and the tripping threshold of the circuit breaker for the minimum ambient temperature,
■ the difference between the strength of the cable (I_z) and the maximum tripping threshold of the circuit breaker for the maximum ambient temperature.

Influence of ambient temperature (cont.)

Maximum permissible current

■ The maximum current allowed to flow through the device depends on the ambient temperature in which it is placed.
■ The ambient temperature is the temperature inside the enclosure or switchboard in which the devices are installed.
■ The reference temperature is in a halftone colour for the different devices.

■ When several devices operating simultaneously are mounted side by side in a small enclosure, a temperature rise in the enclosure results in a reduction in the operating current. A reduction coefficient of 0.8 will then have to be assigned to the rating (already derated, if applicable, depending on the ambient temperature).

■ Example:
Depending on the ambient temperature and the method of installation, the table below shows how to determine, for an iC60, the operating currents not to be exceeded for ratings 25 A, 32 A and 40 A (reference temperature 50°C).

Operating current not to be exceeded (A)							
Installation conditions (IEC 60947-2)		**iC60 alone**			**Several iC60 in the same enclosure** (calculate with the reduction coefficient indicated below)		
Ambient temperature (°C)		**35°C**	**50°C**	**65°C**	**35°C**	**50°C**	**65°C**
Type	**Nominal rating (A)**	**Actual rating (A)**					
iC60	25	26.35	25	23.57	26.35 x 0.8 = 21	25 x 0.8 = 20	23.57 x 0.8 = 19
	32	34	32	29.9	34 x 0.8 = 27	32 x 0.8 = 25.6	29.9 x 0.8 = 24
	40	42.5	40	37.34	42.5 x 0.8 = 34	40 x 0.8 = 32	37.34 x 0.8 = 30

Influence of ambient temperature (cont.)

Household (IEC 60898-1)

DPN derating table (IEC 60898-1)

DPN		Ambient temperature (°C)																		
Rating	Curve	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
1 A	B, C, D	1.51	1.47	1.43	1.39	1.35	1.3	1.26	1.21	1.16	1.11	1.06	**1**	0.94	0.88	0.81	0.73	0.65	0.55	0.43	0.27
2 A	B, C, D	2.47	2.43	2.39	2.35	2.31	2.27	2.23	2.18	2.14	2.09	2.05	**2**	1.95	1.9	1.85	1.8	1.74	1.69	1.63	1.57
3 A	B, C, D	3.74	3.68	3.62	3.55	3.49	3.42	3.36	3.29	3.22	3.15	3.07	**3**	2.92	2.85	2.76	2.68	2.6	2.51	2.42	2.32
4 A	B, C, D	4.9	4.82	4.75	4.67	4.59	4.51	4.43	4.35	4.26	4.18	4.09	**4**	3.91	3.81	3.72	3.62	3.52	3.41	3.3	3.19
6 A	B, C, D	7.04	6.95	6.86	6.77	6.68	6.59	6.49	6.4	6.3	6.2	6.1	**6**	5.9	5.79	5.68	5.57	5.46	5.35	5.23	5.11
10 A	B	11.7	11.6	11.4	11.3	11.1	11	10.8	10.7	10.5	10.3	10.2	**10**	9.8	9.7	9.5	9.3	9.1	8.9	8.7	8.5
10 A	C, D	12.1	12	11.8	11.6	11.4	11.2	11	10.8	10.6	10.4	10.2	**10**	9.8	9.6	9.3	9.1	8.9	8.6	8.4	8.1
13 A	B	15.4	15.2	15	14.8	14.6	14.4	14.1	13.9	13.7	13.5	13.2	**13**	12.8	12.5	12.3	12	11.8	11.5	11.2	11
13 A	C, D	15.5	15.3	15.1	14.9	14.6	14.4	14.2	14	13.7	13.5	13.3	**13**	12.8	12.5	12.2	12	11.7	11.4	11.1	10.8
16 A	B, C	18.8	18.5	18.3	18.1	17.8	17.6	17.3	17.1	16.8	16.5	16.3	**16**	15.7	15.4	15.2	14.9	14.6	14.3	14	13.6
16 A	D	18.9	18.6	18.4	18.1	17.9	17.6	17.4	17.1	16.8	16.6	16.3	**16**	15.7	15.4	15.1	14.8	14.5	14.2	13.9	13.5
20 A	B	23.4	23.1	22.8	22.5	22.2	21.9	21.6	21.3	21	20.7	20.3	**20**	19.7	19.3	19	18.6	18.3	17.9	17.5	17.1
20 A	C, D	23.6	23.3	23	22.7	22.4	22	21.7	21.4	21	20.7	20.4	**20**	19.6	19.3	18.9	18.5	18.1	17.7	17.3	16.9
25 A	B, C, D	29.2	28.8	28.5	28.1	27.8	27.4	27	26.6	26.2	25.8	25.4	**25**	24.6	24.2	23.7	23.3	22.8	22.4	21.9	21.4
32 A	B, C, D	37.8	37.3	36.8	36.3	35.8	35.3	34.7	34.2	33.7	33.1	32.6	**32**	31.4	30.8	30.2	29.6	29	28.4	27.7	27
40 A	B, C, D	47.7	47	46.4	45.7	45	44.3	43.7	43	42.2	41.5	40.8	**40**	39.2	38.4	37.6	36.8	36	35.1	34.2	33.3

iK60 derating table. B curve (IEC 60898-1)

iK60	Ambient temperature (°C)																	
Rating	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60
1 A	1.19	1.17	1.15	1.14	1.12	1.11	1.09	1.07	1.05	1.04	1.02	**1**	0.98	0.96	0.94	0.92	0.9	0.88
2 A	2.45	2.41	2.37	2.34	2.3	2.26	2.22	2.17	2.13	2.09	2.04	**2**	1.95	1.91	1.86	1.81	1.76	1.71
3 A	3.69	3.63	3.57	3.51	3.45	3.39	3.33	3.27	3.2	3.14	3.07	**3**	2.93	2.86	2.78	2.71	2.63	2.55
4 A	4.92	4.84	4.77	4.69	4.61	4.53	4.44	4.36	4.27	4.18	4.09	**4**	3.91	3.81	3.71	3.61	3.5	3.39
6 A	7.44	7.32	7.2	7.07	6.95	6.82	6.69	6.56	6.42	6.29	6.14	**6**	5.85	5.7	5.54	5.38	5.22	5.04
10 A	11.9	11.8	11.6	11.4	11.3	11.1	10.9	10.8	10.6	10.4	10.2	**10**	9.8	9.6	9.4	9.2	9	8.8
16 A	19	18.7	18.5	18.2	18	17.7	17.4	17.1	16.9	16.6	16.3	**16**	15.7	15.4	15.1	14.8	14.5	14.1
20 A	23.5	23.2	22.9	22.6	22.3	22	21.7	21.4	21	20.7	20.4	**20**	19.7	19.3	18.9	18.6	18.2	17.8
25 A	29.1	28.8	28.4	28	27.7	27.3	26.9	26.6	26.2	25.8	25.4	**25**	24.6	24.2	23.8	23.3	22.9	22.5
32 A	37.9	37.4	36.9	36.4	35.9	35.3	34.8	34.3	33.7	33.2	32.6	**32**	31.4	30.8	30.2	29.6	28.9	28.3
40 A	47.4	46.7	46.1	45.5	44.8	44.2	43.5	42.8	42.1	41.4	40.7	**40**	39.3	38.5	37.7	37	36.2	35.3
50 A	59.9	59.1	58.2	57.4	56.5	55.6	54.7	53.8	52.9	52	51	**50**	49	48	46.9	45.9	44.8	43.6
63 A	76.4	75.3	74.1	73	71.8	70.6	69.4	68.2	66.9	65.6	64.3	**63**	61.6	60.3	58.8	57.4	55.9	54.3

iK60 derating table. C curve (IEC 60898-1)

iK60	Ambient temperature (°C)																	
Rating	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60
1 A	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1	1	**1**	0.98	0.96	0.94	0.92	0.9	0.88
2 A	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2	**2**	1.95	1.91	1.86	1.81	1.76	1.71
3 A	3.7	3.6	3.6	3.5	3.5	3.4	3.3	3.3	3.2	3.1	3.1	**3**	2.93	2.86	2.78	2.71	2.63	2.55
4 A	4.9	4.8	4.8	4.7	4.6	4.5	4.4	4.4	4.3	4.2	4.1	**4**	3.91	3.81	3.71	3.61	3.5	3.39
6 A	7.4	7.3	7.2	7.1	6.9	6.8	6.7	6.6	6.4	6.3	6.1	**6**	5.85	5.7	5.54	5.38	5.22	5.04
10 A	12.4	12.2	12	11.8	11.6	11.4	11.2	10.9	10.7	10.5	10.2	**10**	9.8	9.5	9.2	9	8.7	8.4
16 A	19.4	19.1	18.8	18.5	18.2	17.9	17.6	17.3	17	16.7	16.3	**16**	15.7	15.3	14.9	14.6	14.2	13.8
20 A	24	23.6	23.3	23	22.6	22.3	21.9	21.5	21.2	20.8	20.4	**20**	19.6	19.2	18.8	18.3	17.9	17.5
25 A	30	29.5	29.1	28.7	28.3	27.8	27.4	26.9	26.4	26	25.5	**25**	24.5	24	23.5	22.9	22.4	21.8
32 A	38.8	38.2	37.7	37.1	36.5	35.9	35.3	34.6	34	33.3	32.7	**32**	31.3	30.6	29.9	29.1	28.4	27.6
40 A	47.4	46.7	46.1	45.5	44.8	44.2	43.5	42.8	42.1	41.4	40.7	**40**	39.3	38.5	37.7	37	36.2	35.3
50 A	59.9	59.1	58.2	57.4	56.5	55.6	54.7	53.8	52.9	51.9	51	**50**	49	48	46.9	45.9	44.8	43.6
63 A	76.4	75.3	74.1	73	71.8	70.6	69.4	68.2	66.9	65.6	64.3	**63**	61.6	60.3	58.8	57.4	55.9	54.3

Influence of ambient temperature (cont.)

Household (IEC 60898-1) (cont.)

iC60 derating table (IEC 60898-1)

iC60	Ambient temperature (°C)																					
Rating	-35	-30	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
0.5 A	0.61	0.6	0.59	0.59	0.58	0.57	0.56	0.55	0.54	0.54	0.53	0.52	0.51	**0.5**	0.49	0.48	0.47	0.46	0.45	0.44	0.43	0.42
1 A	1.22	1.2	1.19	1.17	1.15	1.14	1.12	1.11	1.09	1.07	1.05	1.04	1.02	**1**	0.98	0.96	0.94	0.92	0.9	0.88	0.86	0.84
2 A	2.52	2.49	2.45	2.41	2.37	2.34	2.3	2.26	2.22	2.17	2.13	2.09	2.04	**2**	1.95	1.91	1.86	1.81	1.76	1.71	1.65	1.59
3 A	3.8	3.74	3.69	3.63	3.57	3.51	3.45	3.39	3.33	3.27	3.2	3.14	3.07	**3**	2.93	2.86	2.78	2.71	2.63	2.55	2.47	2.38
4 A	5.07	5	4.92	4.84	4.77	4.69	4.61	4.53	4.44	4.36	4.27	4.18	4.09	**4**	3.91	3.81	3.71	3.61	3.5	3.39	3.28	3.17
6 A	7.67	7.55	7.44	7.32	7.2	7.07	6.95	6.82	6.69	6.56	6.42	6.29	6.14	**6**	5.85	5.7	5.54	5.38	5.22	5.04	4.87	4.68
10 A	12.3	12.1	11.9	11.8	11.6	11.4	11.3	11.1	10.9	10.8	10.6	10.4	10.2	**10**	9.8	9.6	9.4	9.2	9	8.8	8.5	8.3
13 A	15.8	15.6	15.4	15.2	15	14.8	14.6	14.4	14.1	13.9	13.7	13.5	13.2	**13**	12.8	12.5	12.3	12	11.8	11.5	11.2	10.9
16 A	19.5	19.2	19	18.7	18.5	18.2	18	17.7	17.4	17.1	16.9	16.6	16.3	**16**	15.7	15.4	15.1	14.8	14.5	14.1	13.8	13.4
20 A	24.1	23.8	23.5	23.2	22.9	22.6	22.3	22	21.7	21.4	21	20.7	20.4	**20**	19.7	19.3	18.9	18.6	18.2	17.8	17.4	17
25 A	29.8	29.4	29.1	28.8	28.4	28	27.7	27.3	26.9	26.6	26.2	25.8	25.4	**25**	24.6	24.2	23.8	23.3	22.9	22.5	22	21.5
32 A	38.9	38.4	37.9	37.4	36.9	36.4	35.9	35.3	34.8	34.3	33.7	33.2	32.6	**32**	31.4	30.8	30.2	29.6	28.9	28.3	27.6	26.9
40 A	48.6	48	47.4	46.7	46.1	45.5	44.8	44.2	43.5	42.8	42.1	41.4	40.7	**40**	39.3	38.5	37.7	37	36.2	35.3	34.5	33.6
50 A	61.6	60.7	59.9	59.1	58.2	57.4	56.5	55.6	54.7	53.8	52.9	52	51	**50**	49	48	46.9	45.9	44.8	43.6	42.5	41.3
63 A	78.6	77.5	76.4	75.3	74.1	73	71.8	70.6	69.4	68.2	66.9	65.6	64.3	**63**	61.6	60.3	58.8	57.4	55.9	54.3	52.8	51.1

C60 derating table (IEC 60898-1)

C60	Ambient temperature (°C)																					
Rating	-30	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70	
0.5 A	0.65	0.64	0.63	0.62	0.6	0.59	0.58	0.57	0.55	0.54	0.53	0.51	**0.5**	0.49	0.47	0.45	0.44	0.42	0.4	0.38	0.36	
0.75 A	0.98	0.96	0.94	0.92	0.9	0.89	0.87	0.85	0.83	0.81	0.79	0.77	**0.75**	0.73	0.71	0.68	0.66	0.63	0.61	0.59	0.57	
1 A	1.2	1.19	1.17	1.16	1.14	1.12	1.11	1.09	1.07	1.05	1.04	1.02	**1**	0.98	0.96	0.94	0.92	0.9	0.88	0.86	0.84	
2 A	2.36	2.33	2.3	2.27	2.24	2.22	2.19	2.16	2.13	2.1	2.06	2.03	**2**	1.97	1.93	1.9	1.87	1.83	1.79	1.76	1.72	
3 A	3.53	3.49	3.44	3.4	3.36	3.32	3.27	3.23	3.19	3.14	3.09	3.05	**3**	2.95	2.9	2.85	2.8	2.75	2.7	2.64	2.59	
4 A	4.59	4.54	4.5	4.45	4.4	4.35	4.3	4.26	4.21	4.15	4.10	4.05	**4**	3.95	3.89	3.84	3.78	3.73	3.67	3.61	3.55	
6 A	8.68	8.49	8.29	8.09	7.89	7.68	7.46	7.24	7.01	6.77	6.52	6.27	**6**	5.72	5.43	5.12	4.79	4.43	4.05	3.62	3.13	
8 A	10.18	10.01	9.85	9.68	9.51	9.33	9.15	8.97	8.79	8.6	8.4	8.2	**8**	7.79	7.58	7.36	7.13	6.89	6.65	6.4	6.13	
10 A	12.1	11.96	11.8	11.6	11.5	11.3	11.1	10.9	10.8	10.6	10.4	10.2	**10**	9.8	9.6	9.4	9.2	9	8.8	8.5	8.3	
13 A	15.7	15.5	15.3	15.1	14.9	14.6	14.4	14.2	14	13.7	13.5	13.2	**13**	12.7	12.5	12.2	12	11.7	11.4	11.1	10.8	
16 A	18.6	18.4	18.2	18	17.8	17.6	17.4	17.1	16.9	16.7	16.5	16.2	**16**	15.8	15.5	15.3	15	14.8	14.5	14.2	14	
20 A	24.4	24.1	23.7	23.4	23	22.7	22.3	22	21.6	21.2	20.8	20.4	**20**	19.6	19.2	18.7	18.3	17.8	17.4	16.9	16.4	
25 A	30	29.6	29.2	28.8	28.4	28	27.6	27.2	26.8	26.3	25.9	25.5	**25**	24.5	24.1	23.6	23.1	22.6	22.1	21.6	21	
32 A	40.7	39.8	39.2	38.5	37.9	37.2	36.5	35.8	35.1	34.3	33.6	32.8	**32**	31.2	30.4	29.5	28.6	27.7	26.8	25.6	24.6	
40 A	51.1	50.1	49.2	48.4	47.5	46.7	45.8	44.9	43.9	43	42	41	**40**	39	37.9	36.8	35.6	34.5	33.2	31.8	30.5	
45 A	58.5	57.4	56.4	55.3	54.3	53.2	52.1	51	49.9	48.7	47.5	46.3	**45**	43.7	42.4	41	39.6	38.1	36.5	35	33.5	
50 A	64.2	63	61.9	60.8	59.7	58.6	57.4	56.3	55.1	53.8	52.6	51.3	**50**	48.7	47.3	45.8	44.4	42.8	41.3	39.5	37.9	
63 A	82.3	80.7	79.2	77.8	76.3	74.7	73.2	71.6	69.9	68.3	66.6	64.8	**63**	61.1	59.2	57.2	55.2	53.1	50.8	48.7	46.6	

C120 derating table (IEC 60898-1)

C120	Ambient temperature (°C)																				
Rating	-30	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
10 A	12.9	12.7	12.5	12.2	12	11.8	11.5	11.3	11	10.8	10.5	10.3	**10**	9.7	9.4	9.1	8.8	8.5	8.2	7.9	7.5
16 A	19.4	19.1	18.8	18.6	18.3	18	17.8	17.5	17.2	16.9	16.6	16.3	**16**	15.7	15.4	15.1	14.7	14.4	14	13.7	13.3
20 A	24.6	24.2	23.9	23.5	23.2	22.8	22.4	22	21.6	21.2	20.8	20.4	**20**	19.6	19.1	18.7	18.2	17.7	17.3	16.8	16.2
25 A	30.9	30.5	30	29.5	29.1	28.6	28.1	27.6	27.1	26.6	26.1	25.5	**25**	24.4	23.9	23.3	22.7	22.1	21.5	20.8	20.1
32 A	38.9	38.4	37.9	37.3	36.8	36.2	35.6	35	34.5	33.9	33.3	32.6	**32**	31.4	30.7	30	29.3	28.6	27.9	27.2	26.4
40 A	49.8	49.1	48.3	47.6	46.8	46	45.2	44.4	43.5	42.7	41.8	40.9	**40**	39.1	38.1	37.1	36.1	35.1	34.1	33	31.8
50 A	62.2	61.3	60.4	59.4	58.4	57.5	56.5	55.4	54.4	53.3	52.2	51.1	**50**	48.8	47.7	46.4	45.2	43.9	42.6	41.2	39.8
63 A	78.6	77.5	76.3	75	73.8	72.5	71.3	69.9	68.6	67.3	65.9	64.5	**63**	61.5	60	58.4	56.8	55.2	53.5	51.7	49.9
80 A	98.4	97	95.6	94.2	92.7	91.2	89.7	88.1	86.6	85	83.4	81.7	**80**	78.3	76.5	74.7	72.8	70.9	69	67	64.9
100 A	124.5	122.6	120.7	118.8	116.9	114.9	112.9	110.9	108.8	106.6	104.5	102.3	**100**	97.7	95.3	92.9	90.4	87.8	85.2	82.5	79.6
125 A	157	154.6	152.2	149.7	147.1	144.6	141.9	139.2	136.5	133.7	130.9	128	**125**	122	118.8	115.6	112.3	108.9	105.4	101.8	98	

Influence of ambient temperature (cont.)

Tertiary/Industry (IEC 60947-2)

DPN derating table (IEC 60947-2)

DPN		Ambient temperature (°C)																			
Rating	Curve	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
1 A	B, C, D	1.66	1.62	1.59	1.55	1.51	1.47	1.43	1.39	1.35	1.3	1.26	1.21	1.16	1.11	1.06	**1**	0.94	0.88	0.81	0.73
2 A	B, C, D	2.64	2.6	2.56	2.52	2.48	2.44	2.4	2.36	2.32	2.28	2.23	2.19	2.14	2.1	2.05	**2**	1.95	1.9	1.85	1.79
3 A	B, C, D	3.97	3.91	3.86	3.8	3.74	3.68	3.61	3.55	3.49	3.42	3.36	3.29	3.22	3.15	3.07	**3**	2.92	2.85	2.77	2.68
4 A	B, C, D	5.19	5.12	5.05	4.98	4.9	4.83	4.75	4.67	4.6	4.52	4.43	4.35	4.27	4.18	4.09	**4**	3.91	3.81	3.72	3.62
6 A	B, C, D	7.42	7.34	7.25	7.16	7.07	6.98	6.89	6.8	6.7	6.61	6.51	6.41	6.31	6.21	6.11	**6**	5.89	5.78	5.67	5.56
10 A	B	12.3	12.2	12.1	11.9	11.8	11.6	11.5	11.3	11.2	11	10.8	10.7	10.5	10.3	10.2	**10**	9.8	9.7	9.5	9.3
10 A	C, D	12.9	12.7	12.5	12.3	12.2	12	11.8	11.6	11.4	11.2	11	10.8	10.6	10.4	10.2	**10**	9.8	9.6	9.3	9.1
13 A	B	16.7	16.5	16.3	16.1	15.8	15.6	15.4	15.1	14.9	14.6	14.4	14.1	13.8	13.6	13.3	**13**	12.7	12.4	12.1	11.8
13 A	C, D	16.9	16.7	16.5	16.2	16	15.7	15.5	15.2	15	14.7	14.4	14.2	13.9	13.6	13.3	**13**	12.7	12.4	12.1	11.7
16 A	B, C	20.4	20.1	19.8	19.6	19.3	19	18.7	18.5	18.2	17.9	17.6	17.3	17	16.7	16.3	**16**	15.7	15.3	15	14.6
16 A	D	20.5	20.2	20	19.7	19.4	19.1	18.8	18.5	18.2	17.9	17.6	17.3	17	16.7	16.3	**16**	15.7	15.3	14.9	14.6
20 A	B	25.3	25	24.7	24.4	24	23.7	23.4	23	22.7	22.3	21.9	21.6	21.2	20.8	20.4	**20**	19.6	19.2	18.8	18.3
20 A	C, D	25.7	25.3	25	24.6	24.3	23.9	23.6	23.2	22.8	22.4	22	21.7	21.3	20.8	20.4	**20**	19.6	19.1	18.7	18.2
25 A	B, C, D	31.6	31.2	30.8	30.4	30	29.6	29.2	28.7	28.3	27.8	27.4	26.9	26.5	26	25.5	**25**	24.5	24	23.5	22.9
32 A	B, C, D	41.1	40.5	40	39.4	38.9	38.3	37.7	37.1	36.5	35.9	35.3	34.7	34	33.4	32.7	**32**	31.3	30.6	29.9	29.1
40 A	B, C, D	52	51.3	50.6	49.8	49.1	48.3	47.6	46.8	46	45.2	44.4	43.5	42.7	41.8	40.9	**40**	39.1	38.1	37.1	36.1

iC60, Reflex iC60 derating table (IEC 60947-2)

iC60	Ambient temperature (°C)																				
Rating	-35	-30	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
0.5 A	0.66	0.65	0.64	0.63	0.63	0.62	0.61	0.6	0.59	0.58	0.57	0.56	0.55	0.54	0.53	0.52	0.51	**0.5**	0.49	0.48	0.47	0.45
1 A	1.32	1.3	1.28	1.27	1.25	1.23	1.21	1.2	1.18	1.16	1.14	1.12	1.1	1.08	1.06	1.04	1.02	**1**	0.98	0.96	0.93	0.91
2 A	2.79	2.75	2.71	2.67	2.63	2.58	2.54	2.5	2.45	2.4	2.36	2.31	2.26	2.21	2.16	2.11	2.05	**2**	1.94	1.89	1.83	1.76
3 A	4.21	4.15	4.08	4.02	3.96	3.89	3.83	3.76	3.69	3.62	3.55	3.48	3.4	3.32	3.25	3.17	3.08	**3**	2.91	2.82	2.73	2.64
4 A	5.62	5.54	5.46	5.37	5.29	5.2	5.11	5.02	4.93	4.83	4.74	4.64	4.54	4.44	4.33	4.22	4.11	**4**	3.88	3.76	3.64	3.51
6 A	8.55	8.42	8.29	8.16	8.03	7.89	7.75	7.61	7.46	7.31	7.16	7.01	6.85	6.69	6.52	6.35	6.18	**6**	5.81	5.62	5.43	5.22
10 A	13.3	13.2	13	12.8	12.6	12.5	12.3	12.1	11.9	11.7	11.5	11.3	11.1	10.9	10.7	10.5	10.2	**10**	9.8	9.5	9.3	9
13 A	17.1	16.9	16.7	16.4	16.2	16	15.8	15.5	15.3	15.1	14.8	14.6	14.3	14.1	13.8	13.6	13.3	**13**	12.7	12.4	12.1	11.8
16 A	21.1	20.8	20.6	20.3	20	19.7	19.5	19.2	18.9	18.6	18.3	18	17.7	17.3	17	16.7	16.3	**16**	15.7	15.3	14.9	14.5
20 A	26	25.7	25.4	25	24.7	24.4	24.1	23.7	23.4	23	22.7	22.3	21.9	21.6	21.2	20.8	20.4	**20**	19.6	19.2	18.7	18.3
25 A	31.9	31.6	31.2	30.8	30.4	30.1	29.7	29.3	28.9	28.5	28.1	27.6	27.2	26.8	26.4	25.9	25.5	**25**	24.5	24.1	23.6	23.1
32 A	42	41.5	41	40.5	39.9	39.4	38.8	38.2	37.7	37.1	36.5	35.9	35.3	34.6	34	33.3	32.7	**32**	31.3	30.6	29.9	29.1
40 A	52.6	51.9	51.3	50.6	49.9	49.2	48.5	47.8	47.1	46.4	45.6	44.9	44.1	43.3	42.5	41.7	40.9	**40**	39.1	38.2	37.3	36.4
50 A	67.1	66.3	65.4	64.5	63.5	62.6	61.6	60.7	59.7	58.7	57.7	56.7	55.6	54.5	53.4	52.3	51.2	**50**	48.8	47.6	46.3	45
63 A	86.3	85.1	83.9	82.7	81.4	80.1	78.9	77.6	76.2	74.9	73.5	72.1	70.7	69.2	67.7	66.2	64.6	**63**	61.4	59.7	57.9	56.1

Reflex iC60

C60 derating table (IEC 60947-2)

C60	Ambient temperature (°C)																				
Rating	-30	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
0.5 A	0.68	0.67	0.66	0.65	0.64	0.63	0.62	0.61	0.6	0.59	0.58	0.56	0.55	0.54	0.53	0.51	**0.5**	0.49	0.47	0.46	0.44
0.75 A	0.93	0.92	0.91	0.9	0.89	0.88	0.87	0.86	0.85	0.83	0.82	0.81	0.8	0.79	0.78	0.76	**0.75**	0.74	0.72	0.7	0.68
1 A	1.31	1.3	1.28	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.11	1.09	1.07	1.05	1.02	**1**	0.98	0.95	0.93	0.91
2 A	2.55	2.59	2.56	2.52	2.49	2.45	2.41	2.37	2.34	2.3	2.26	2.22	2.17	2.13	2.09	2.04	**2**	1.95	1.91	1.88	1.84
3 A	3.81	4.04	3.98	3.92	3.85	3.79	3.73	3.66	3.59	3.52	3.45	3.38	3.31	3.23	3.16	3.08	**3**	2.92	2.83	2.82	2.76
4 A	4.9	4.86	4.81	4.76	4.7	4.65	4.59	4.54	4.48	4.42	4.37	4.31	4.25	4.19	4.13	4.06	**4**	3.94	3.87	3.81	3.74
6 A	7.93	7.82	7.71	7.6	7.49	7.38	7.27	7.15	7.03	6.91	6.79	6.66	6.54	6.41	6.27	6.14	**6**	5.86	5.71	5.56	5.42
8 A	10.37	10.23	10.09	9.96	9.82	9.68	9.54	9.4	9.25	9.11	8.96	8.81	8.65	8.49	8.33	8.17	**8**	7.83	7.65	7.47	7.31
10 A	13.3	13.2	13	12.8	12.6	12.4	12.2	12	11.8	11.6	11.4	11.2	10.9	10.7	10.5	10.2	**10**	9.8	9.5	9.2	9
13 A	17	16.9	16.6	16.4	16.2	15.9	15.7	15.4	15.2	14.9	14.7	14.4	14.1	13.9	13.6	13.3	**13**	12.7	12.4	12.1	11.8
16 A	20	19.8	19.5	19.3	19.1	18.8	18.6	18.4	18.1	17.9	17.6	17.3	17.1	16.8	16.6	16.3	**16**	15.7	15.4	15.1	14.8
20 A	26.9	26.6	26.2	25.8	25.4	25	24.6	24.2	23.7	23.3	22.9	22.4	22	21.5	21	20.5	**20**	19.5	18.9	18.4	17.9
25 A	32.9	32.5	32.1	31.6	31.1	30.7	30.2	29.7	29.2	28.7	28.2	27.7	27.2	26.7	26.1	25.6	**25**	24.4	23.8	23.2	22.6
32 A	41.5	41.1	40.5	40	39.4	38.9	38.3	37.7	37.1	36.5	35.9	35.3	34.7	34	33.4	32.7	**32**	31.3	30.6	29.9	29.1
40 A	53.7	52.9	52.2	51.4	50.6	49.8	49	48.2	47.3	46.5	45.6	44.7	43.8	42.9	42	41	**40**	39	37.9	36.9	35.8
45 A	60.8	60.1	59.2	58.3	57.4	56.5	55.5	54.6	53.6	52.6	51.6	50.5	49.5	48.4	47.3	46.2	**45**	43.8	42.6	41.4	40.1
50 A	65	64.3	63.5	62.6	61.7	60.8	59.9	59	58.1	57.1	56.2	55.2	54.2	53.2	52.1	51.1	**50**	48.9	47.8	46.7	45.5
63 A	85.5	84.6	83.3	82	80.7	79.4	78	76.7	75.3	73.9	72.4	70.9	69.4	67.9	66.3	64.7	**63**	61.3	59.5	57.8	56

Influence of ambient temperature (cont.)

Tertiary/Industry (IEC 60947-2) (cont.)

C60H-DC derating table (IEC 60947-2)

C60H-DC	Ambient temperature (°C)																				
Rating	-30	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
0.5 A	0.63	0.62	0.61	0.6	0.59	0.58	0.56	0.55	0.54	0.53	0.51	**0.5**	0.49	0.47	0.46	0.44	0.43	0.41	0.39	0.38	0.36
1 A	1.18	1.17	1.15	1.14	1.12	1.1	1.09	1.07	1.05	1.04	1.02	**1**	0.98	0.96	0.94	0.92	0.9	0.88	0.86	0.84	0.82
2 A	2.54	2.5	2.45	2.41	2.36	2.31	2.26	2.21	2.16	2.11	2.06	**2**	1.94	1.88	1.82	1.76	1.7	1.63	1.56	1.48	1.41
3 A	3.78	3.71	3.65	3.58	3.51	3.45	3.38	3.3	3.23	3.16	3.08	**3**	2.92	2.84	2.75	2.66	2.57	2.48	2.38	2.27	2.17
4 A	5.08	4.99	4.9	4.81	4.71	4.62	4.52	4.42	4.32	4.22	4.11	**4**	3.89	3.77	3.65	3.53	3.4	3.27	3.13	2.98	2.83
5 A	6	5.92	5.83	5.74	5.66	5.57	5.48	5.39	5.29	5.2	5.1	**5**	4.9	4.8	4.69	4.58	4.47	4.36	4.24	4.12	4
6 A	7.26	7.15	7.04	6.94	6.83	6.71	6.6	6.48	6.37	6.25	6.12	**6**	5.87	5.74	5.61	5.47	5.33	5.19	5.04	4.89	4.73
10 A	12.6	12.4	12.2	11.9	11.7	11.5	11.3	11	10.8	10.5	10.3	**10**	9.7	9.5	9.2	8.9	8.6	8.3	7.9	7.6	7.2
13 A	15.5	15.3	15.1	14.9	14.6	14.4	14.2	14	13.7	13.5	13.3	**13**	12.8	12.5	12.2	12	11.7	11.4	11.1	10.8	10.5
15 A	18.6	18.3	18	17.7	17.4	17.1	16.7	16.4	16.1	15.7	15.4	**15**	14.6	14.3	13.9	13.5	13	12.6	12.2	11.7	11.2
16 A	19.4	19.1	18.9	18.6	18.3	18	17.6	17.3	17	16.7	16.3	**16**	15.7	15.3	14.9	14.6	14.2	13.8	13.4	13	12.5
20 A	24.1	23.7	23.4	23	22.7	22.3	21.9	21.6	21.2	20.8	20.4	**20**	19.6	19.2	18.7	18.3	17.9	17.4	16.9	16.4	15.9
25 A	30.4	29.9	29.5	29	28.5	28.1	27.6	27.1	26.6	26.1	25.5	**25**	24.5	23.9	23.3	22.7	22.1	21.5	20.9	20.2	19.6
30 A	37.4	36.7	36.1	35.5	34.9	34.2	33.5	32.9	32.2	31.5	30.7	**30**	29.2	28.5	27.7	26.8	26	25.1	24.2	23.2	22.3
32 A	38.5	37.9	37.4	36.8	36.2	35.7	35.1	34.5	33.9	33.3	32.6	**32**	31.4	30.7	30	29.3	28.6	27.9	27.1	26.3	25.5
40 A	48.9	48.2	47.4	46.7	45.9	45.1	44.3	43.5	42.6	41.8	40.9	**40**	39.1	38.2	37.2	36.2	35.2	34.2	33.1	32	30.8
50 A	59.9	59.1	58.3	57.4	56.5	55.6	54.7	53.8	52.9	52	51	**50**	49	48	46.9	45.9	44.8	43.6	42.5	41.3	40.1
63 A	78.2	76.9	75.6	74.3	73	71.7	70.3	68.9	67.5	66	64.5	**63**	61.4	59.8	58.2	56.5	54.7	52.9	51.1	49.1	47.1

C60PV-DC derating table (IEC 60947-2)

C60PV-DC	Ambient temperature (°C)																				
Rating	-30	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
1 A	1.18	1.17	1.15	1.14	1.12	1.1	1.09	1.07	1.05	1.04	1.02	**1**	0.98	0.96	0.94	0.92	0.9	0.88	0.86	0.84	0.82
2 A	2.54	2.5	2.45	2.41	2.36	2.31	2.26	2.21	2.16	2.11	2.06	**2**	1.94	1.88	1.82	1.76	1.7	1.63	1.56	1.48	1.41
3 A	3.78	3.71	3.65	3.58	3.51	3.45	3.38	3.3	3.23	3.16	3.08	**3**	2.92	2.84	2.75	2.66	2.57	2.48	2.38	2.27	2.17
5 A	6	5.92	5.83	5.74	5.66	5.57	5.48	5.39	5.29	5.2	5.1	**5**	4.9	4.8	4.69	4.58	4.47	4.36	4.24	4.12	4
8 A	9.64	9.5	9.36	9.22	9.08	8.93	8.78	8.63	8.48	8.32	8.16	**8**	7.83	7.67	7.49	7.31	7.13	6.95	6.76	6.56	6.36
10 A	12.6	12.4	12.2	11.9	11.7	11.5	11.2	11	10.8	10.5	10.3	**10**	9.7	9.4	9.2	8.9	8.6	8.2	7.9	7.6	7.2
13 A	15.5	15.3	15.1	14.8	14.6	14.4	14.2	14	13.7	13.5	13.2	**13**	12.7	12.5	12.2	12	11.7	11.4	11.1	10.8	10.5
15 A	18.6	18.3	18	17.7	17.4	17.1	16.7	16.4	16.1	15.7	15.4	**15**	14.6	14.3	13.9	13.5	13	12.6	12.2	11.7	11.2
16 A	19.4	19.1	18.9	18.6	18.3	18	17.6	17.3	17	16.7	16.3	**16**	15.7	15.3	14.9	14.6	14.2	13.8	13.4	13	12.5
20 A	24.1	23.7	23.4	23	22.7	22.3	21.9	21.6	21.2	20.8	20.4	**20**	19.6	19.2	18.7	18.3	17.9	17.4	16.9	16.4	15.9
25 A	30.4	29.9	29.5	29	28.5	28.1	27.6	27.1	26.6	26.1	25.5	**25**	24.5	23.9	23.3	22.7	22.1	21.5	20.9	20.2	19.6

C120 derating table (IEC 60947-2)

C120	Ambient temperature (°C)																				
Rating	-30	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
10 A	14.5	14.3	14	13.8	13.5	13.3	13	12.7	12.5	12.2	11.9	11.6	11.3	11	10.7	10.3	**10**	9.7	9.3	8.9	8.5
16 A	21.2	21	20.7	20.4	20.1	19.8	19.4	19.1	18.8	18.5	18.2	17.8	17.5	17.1	16.8	16.4	**16**	15.6	15.2	14.8	14.4
20 A	27	26.6	26.3	25.9	25.5	25	24.6	24.2	23.8	23.3	22.9	22.4	22	21.5	21	20.5	**20**	19.5	18.9	18.4	17.8
25 A	33.7	33.3	32.8	32.3	31.8	31.3	30.8	30.2	29.7	29.1	28.6	28	27.5	26.9	26.3	25.6	**25**	24.4	23.7	23	22.3
32 A	42.7	42.1	41.5	40.9	40.3	39.7	39	38.4	37.7	37.1	36.4	35.7	35	34.3	33.5	32.8	**32**	31.2	30.4	29.6	28.7
40 A	54.8	54	53.2	52.4	51.5	50.7	49.8	48.9	48	47.1	46.1	45.2	44.2	43.2	42.1	41.1	**40**	38.9	37.7	36.6	35.3
50 A	69.1	68.1	67	65.9	64.8	63.7	62.6	61.5	60.3	59.1	57.9	56.7	55.4	54.1	52.8	51.4	**50**	48.6	47.1	45.5	43.9
63 A	87.1	85.8	84.5	83.1	81.8	80.4	78.9	77.5	76	74.5	73	71.4	69.8	68.2	66.5	64.8	**63**	61.2	59.3	57.4	55.4
80 A	103.7	102.4	101	99.7	98.3	96.9	95.5	94.1	92.6	91.1	89.6	88.1	86.5	84.9	83.3	81.7	**80**	78.3	76.5	74.7	72.9
100 A	137.6	135.5	133.5	131.4	129.2	127.1	124.8	122.6	120.3	118	115.6	113.1	110.6	108.1	105.5	102.8	**100**	97.2	94.2	91.2	88.1
125 A	174.6	171.9	169.2	166.4	163.6	160.7	157.8	154.9	151.8	148.7	145.6	142.4	139.1	135.7	132.2	128.7	**125**	121.2	117.3	113.3	109.1

Influence of ambient temperature (cont.)

Tertiary/Industry (IEC 60947-2) (cont.)

NG125 derating table (IEC 60947-2)

NG125	Ambient temperature (°C)																				
Rating	-30	-25	-20	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60	+65	+70
10 A	13.7	13.5	13.2	13	12.8	12.5	12.3	12	11.7	11.5	11.2	10.9	10.6	10.3	**10**	9.7	9.4	9	8.7	8.3	7.9
16 A	20.3	20.1	19.8	19.5	19.2	18.9	18.6	18.3	18	17.7	17.4	17	16.7	16.4	**16**	15.7	15.3	14.9	14.5	14.1	13.7
20 A	26	25.6	25.3	24.9	24.5	24	23.6	23.2	22.8	22.3	21.9	21.4	21	20.5	**20**	19.5	19	18.5	17.9	17.4	16.8
25 A	33.8	33.2	32.7	32.1	31.5	30.9	30.3	29.7	29.1	28.4	27.8	27.1	26.4	25.7	**25**	24.3	23.5	22.7	21.9	21	20.1
32 A	41.2	40.6	40	39.4	38.8	38.2	37.5	36.9	36.2	35.6	34.9	34.2	33.5	32.7	**32**	31.2	30.5	29.7	28.8	28	27.1
40 A	53.5	52.7	51.8	51	50.1	49.1	48.2	47.3	46.3	45.3	44.3	43.3	42.2	41.1	**40**	38.9	37.7	36.5	35.2	33.9	32.5
50 A	66.3	65.2	64.2	63.1	62.1	61	59.8	58.7	57.5	56.4	55.1	53.9	52.6	51.3	**50**	48.6	47.2	45.8	44.3	42.7	41.1
63 A	83.4	82.1	80.8	79.5	78.1	76.8	75.4	73.9	72.5	71	69.5	67.9	66.3	64.7	**63**	61.3	59.5	57.7	55.8	53.9	51.8
80 A	100.4	99.1	97.8	96.4	95	93.6	92.2	90.8	89.3	87.8	86.3	84.8	83.2	81.6	**80**	78.3	76.6	74.9	73.1	71.3	69.4
100 A	133.4	131.3	129.1	127	124.8	122.5	120.2	117.9	115.5	113.1	110.6	108	105.4	102.7	**100**	97.2	94.3	91.3	88.2	85	81.6
125 A	165.2	162.7	160.1	157.5	154.8	152.1	149.3	146.5	143.6	140.7	137.7	134.6	131.5	128.3	**125**	121.6	118.1	114.6	110.9	107	103.1

Tertiaire/Industrie (IEC 60947-3)

SW60-DC derating table (IEC 60947-3)

SW60PV-DC	Ambient temperature (°C)											
Rating	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+60	+70
50 A	63	61	60	58	56	54	52	**50**	48	46	41	35

C60NA-DC derating table (IEC 60947-3)

C60NA-DC	Ambient temperature (°C)											
Rating	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+60	+70
50 A	63	61	60	58	56	54	52	**50**	48	46	41	35

C120NA-DC derating table (IEC 60947-3)

C120NA-DC	Ambient temperature (°C)											
Rating	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+60	+70
100 A	113	111	110	108	106	104	102	**100**	98	96	91	85

STI derating tables (IEC 60947-3)

STI	Ambient temperature (°C)				
	⩽ +20	+30	+40	+50	+60
Reduction coefficient (I_e)	1	0.95	0.9	0.8	0.7

STI	Number of poles side-by-side			
	1 to 3	4 to 8	8 to 12	> 12
Reduction coefficient (I_{th})	1	0.9	0.8	0.6

SBI derating tables (IEC 60947-3)

SBI	Ambient temperature (°C)				
	⩽ +20	+30	+40	+50	+60
Reduction coefficient (I_e)	1	0.95	0.9	0.8	0.7

SBI	Number of poles side-by-side		
	1 to 3	4 to 6	⩾ 7
Reduction coefficient (I_{th})	1	0.95	0.9

Influence of ambient temperature (cont.)

Tertiary/Industry (IEC 61009-1)

iC60H2 RCBO derating table (IEC 61009-1)

iC60H2 RCBO	Ambient temperature (°C)															
Rating	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60
10 A	12.3	12.2	12	11.8	11.7	11.5	11.3	11.1	11	10.8	10.6	10.4	10.2	**10**	9.8	9.6
16 A	19.6	19.4	19.1	18.8	18.6	18.3	18	17.8	17.5	17.2	16.9	16.6	16.3	**16**	15.7	15.4
20 A	24.9	24.6	24.2	23.9	23.5	23.2	22.8	22.4	22	21.6	21.2	20.8	20.4	**20**	19.6	19.1
25 A	30.2	29.8	29.5	29.1	28.7	28.3	27.9	27.5	27.1	26.7	26.3	25.9	25.4	**25**	24.6	24.1
32 A	37.9	37.5	37.1	36.7	36.2	35.8	35.3	34.9	34.4	33.9	33.5	33	32.5	**32**	31.5	31

iC60N/H RCBO derating table (IEC 61009-1)

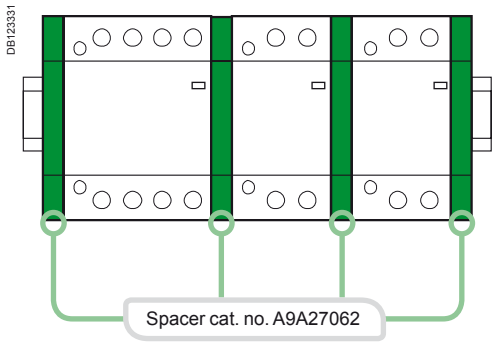
iC60N/H RCBO	Ambient temperature (°C)															
Rating	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40	+45	+50	+55	+60
6 A	8.3	8.15	7.99	7.83	7.67	7.50	7.33	7.16	6.98	6.79	6.6	6.41	6.21	**6**	5.78	5.56
10 A	12.9	12.7	12.5	12.3	12.1	11.9	11.6	11.4	11.2	11	10.7	10.5	10.3	**10**	9.7	9.5
16 A	20.9	20.6	20.3	19.9	19.6	19.2	18.8	18.4	18.1	17.7	17.3	16.9	16.4	**16**	15.6	15.1
20 A	26.3	25.9	25.4	25	24.5	24.1	23.6	23.1	22.6	22.1	21.6	21.1	20.6	**20**	19.4	18.8
25 A	31.5	31	30.6	30.1	29.6	29.2	28.7	28.2	27.7	27.2	26.6	26.1	25.6	**25**	24.4	23.8
32 A	39.2	38.7	38.2	37.7	37.2	36.6	36.1	35.5	35	34.4	33.8	33.2	32.6	**32**	31.4	30.7
40 A	50.2	49.5	48.8	48	47.3	46.5	45.8	45	44.2	43.4	42.6	41.7	40.9	**40**	39.1	38.2
45 A	55.5	54.7	54	53.2	52.5	51.7	50.9	50.1	49.3	48.5	47.6	46.8	45.9	**45**	41.9	41

Switches

■ In all cases, the switches are correctly protected against overloads by a circuit breaker with a lower or equal rating, operating at the same ambient temperature.

iCT contactors

In the case of contactor mounting in an enclosure for which the interior temperature is in a range between 50°C and 60°C, it is necessary to use a spacer, cat. no. A9A27062, between each contactor.



Linergy DS, Linergy DX, Linergy FH, Linergy FM

In all cases, quick distribution blocks (Linergy DS: cat. no. 04040, 04041), screw distribution blocks, horizontal comb busbars and quick device feeders (Linergy FM: cat. no. 04000) are correctly protected against overloads by a circuit breaker with a lower or equal rating, operating at the same ambient temperature.

Dissipated power, Impedance and Voltage drop

Acti 9 products

The following table indicates the average dissipated power per pole in W for a current equal to the rating of the device and at the operating voltage.

Rating (A)		0.5	1	1.6	2	2.5	3	4	6	6.3	10	12.5	13	16	20	25	32	40	50	63	80	100	125
Circuit breakers																							
iC60N/H/L		2.3	2.3	2.3	1.9		2.2	2.4	1.3		2		2	2.1	2.2	2.7	2.8	3.6	4	5.6			
iC60L-MA				0.7		0.2		0.6		0.9	1.1	1.5		1.6		0.8		2					
iK60			2.3		1.9		2.2	2.4	2.7		1.8		1.8	2.5	3	3.1	3.5	3.6	4	5.6			
Integrated control circuit breakers																							
Reflex iC60N/H	Power circuit										2			2.1		2.7		3.6		5.6			
	Control circuit	See module CA904012																					
RCCB																							
iID	2P													0.8		0.9		2.6		2.6	3	5	
	4P															0.7		1.9		1.5	2.6	4.3	
iID K																2.7		3.6		5.6			
Add-on residual current devices																							
Vigi iC60	10 mA															3							
	30 mA															1.4		1.1		2.3			
	100 mA															1.1				2.3			
	300 mA															1.3		0.9		2.3			
	500 mA															1.1		0.9		2.3			
	1000 mA																			2.3			
Contactors																							
iCT/iCT+	Power circuit													0.6	0.9	1.4		1.5		3.4		4	
	Control circuit	See module CA904007																					
Impulse relays																							
iTL/iTL+	Power circuit													0.6			1.5						
	Control circuit	See module CA904008																					
Push-buttons																							
iPB															0.6								
Selector switches																							
iSSW															0.8								
iCMA/iCMB/iCMC/ iCMDV/iCMV											0.4												
Load-shedders																							
DSE1, CDS, CDSc																	1.8				3		
Relays																							
iRTA, iRTB, iRTC, iRTH, iRTL, iRTMF														2.5									
Switch-disconnectors																							
iSW																		0.6		1.8		4.7	6.4
iSW-NA	2P																	0.7		1.8		3	5
	4P																	0.6		1.5		2.5	4.1
Remote controls																							
RCA, ARA		See module CA904010 and CA904011																					
Indication auxiliaries																							
iOF, iSD, iOF/SD+OF		See module CA908028																					
Tripping auxiliaries																							
iMN, iMNs, iMNx, iMX+OF, iMX, iMSU		See module CA908029																					
Indicator lights																							
iIL		0.3																					
Transformers																							
iTR		4																					

Note: When the enclosure's thermal balance, consider the 4P devices load is only on 3 phases.
RCBO dissipated power per pole is the sum of circuit breaker dissipated power per pole + add-on residual current device dissipated power per pole.
Example: iC60N (25 A) + Vigi iC60 (30 mA) = 2.7 + 1.4 = 4.1 W.

Impedance calculation:
$Z = P / I^2$
Z: impedance in Ohms
P: dissipated power in Watts (table values)
I: rating in Amperes

Voltage drop calculation:
$U = P / I$
U: voltage drop in Volts
P: dissipated power in Watts (table values)
I: rating in Amperes

Dissipated power, Impedance and Voltage drop (cont.)

Multi 9 products

The following table indicates the average dissipated power per pole in W for a current equal to the rating of the device and at the operating voltage.

Rating (A)		0.5	1	1.6	2	2.5	3	4	5	6	6.3	10	12.5	13	15	16	20	25	30	32	40	50	63	80	100	125
Circuit breakers																										
DPN			2.5		1.9		2.1	2.6		2.7		2.7		3.3		3.2	4.7	4.7		4.6	5.8					
C60		2.2	2.3		2.6		2.2	2.4		2.7		1.8		2.5		2.5	3	3.1		3.5	4.3	4.8	6.1			
C60H-DC		2.2	2.3		2.6		2.2	2.4	2.7	2.7		1.8		2.5	2.5	2.5	3	3.1	3.5	3.5	4.3	4.8	6.1			
C120												1.3				2.1	2.3	2.5		3.2	3.1	3.2	3	3.2	2	4.1
NG125												1.7				2.4	2.7	2.7		3.8	3.8	4.2	4	5.6	5.2	8
C60L-MA				2.4		2.5		2.4			3	2	2.5			2.6		3			4.6					
NG125L-MA								0.15			0.15	0.2	0.4			0.3		0.6			1.4		2	2.7		
RCCB																										
ID Type A/AC																		1.4			3.6		4.4	7.2	18	28
ID Type B																		1.2			2.9		7.2	12	18	28
Add-on residual current devices																										
Vigi DPN																		1.4			2.1					
Vigi C60																		2.8			1.6		3			
Vigi C120																										3.6
Vigi NG125																										4
Residual current device reclosers																										
RED, REDs, REDtest																		1.5			2.7		3.1			
Contactors																										
CT/CT+	Power circuit															0.9	1	1.4			1.4		3.4		4	
	Control circuit	See module 92020																								
Impulse relays																										
TL/TL+	Power circuit															0.9				1.4						
	Control circuit	See module 92011																								
Push-buttons																										
BP																	0.6									
Selector switches																										
CM																	0.8									
CMA/CMB/CMC/CMD/ CMV												0.4														
Load-shedders																										
DSE1, CDS, CDSc																				1.8				3		
Relays																										
RTA, RTB, RTC, RTH, RTL, RTMF																2.5										
Switch-disconnectors																										
I, iSW																	0.8			1.3	1.1		1.8		3.4	4.2
I-NA																					3.2		3.2			
NG125NA																							2	2.7	4	7
Indication auxiliaries																										
OF, SD, OF+SD/OF		iDPN (DPN), C60, C120, ID, I-NA: see module CM908010																								
OF+OF, OF+SD		NG125: see module CM908011																								
Tripping auxiliaries																										
MN, MNs, MNx, MX+OF, MX, MSU		iDPN (DPN), C60, C120, ID, I-NA: see module CM908010																								
MN, MNx, MX+OF		NG125: see module CM908011																								
Indicator lights																										
V		0.3																								
Transformers																										
TR		4																								

Note: When the enclosure's thermal balance, consider the 4P devices load is only on 3 phases.
RCBO dissipated power per pole is the sum of circuit breaker dissipated power per pole + add-on residual current device dissipated power per pole.
Example: C60N (25 A) + Vigi C60 (25 A) = 3.1 + 1.8 = 4.9 W.

Impedance calculation:
$Z = P / I^2$
Z: impedance in Ohms
P: dissipated power in Watts (table values)
I: rating in Amperes

Voltage drop calculation:
$U = P / I$
U: voltage drop in Volts
P: dissipated power in Watts (table values)
I: rating in Amperes

Resistance to environmental conditions

Acti 9 devices have successfully passed the environmental resistance tests specified in the building standards (IEC / EN 60898 and 60947-2 for circuit breakers, IEC / EN 61008 for residual current circuit breakers, etc.).
Most of these tests were performed under the control of official bodies in different countries: the devices therefore carry the quality mark issued by each of these bodies.

Schneider Electric has also subjected these devices to additional tests with higher requirements, to give users reliability and sturdiness that are unparalleled on the market.
These tests checked that the constraints described below did not have any significant effect on the main functions of the devices:
- Tripping (for protection devices).
- Isolation and dielectric withstand.
- Degree of protection (IP) of the casing.
- Grip on the mounting bracket (rail).
- Manual opening / closing.

Additional checks were performed for certain tests, mentioned in the tables below.

Constraints	Atmospheric				
Type	**Humidity**	**Salt mist**	**Corrosive atmospheres**		**Dust**
Standard defining the test protocol	**IEC 60068-2-78**	**IEC 60068.2.52**	**IEC 60721-3-3**		
Constraint level applied					
	Temperature 40°C, relative humidity 93%.	Severity 2 (maritime environment).	Classification 3C2: urban regions with industrial activities, heavy traffic.	Covered swimming pools atmospheres	Plaster deposits + bumps.
Additional checks after constraint					
		Conductivity, overheating. No corrosion.			Conductivity and overheating.
Circuit breakers					
iK60N	■	■	-	-	■
iC60a/N/H/L	■	■	■	■	■
Residual current circuit breakers					
iID K	■	■	-	-	■
iID	■	■	■	***SI*** only	■
Residual current devices					
iC60a/N/H/L + Vigi iC60	■	■	■	***SI*** only	■
Protection device auxiliaries					
iOF	■	■	■	-	■
iSD	■	■	■	-	■
iOF/SD+OF	■	■	■	-	■
iMN, iMNs	■	■	■	-	■
iMX, iMX+OF	■	■	■	-	■
iMNx	■	■	■	-	■
iMSU	■	■	■	-	
Surge arresters					
iPF	-	-	-	-	-
iPRD	-	■		-	-
Mounting accessories					
Rotary handle	■	■	-	-	■
Plug-in base	■	■	-	-	■
Padlocking device	■	■	■	-	■
Safety accessories					
Screw shield	■	■	■	-	■
Interpole barrier	■	■	■	-	■
Spacer	■	■	■		
Splitter blocks					
Linergy FM	■	■	■	-	■
Linergy DX	■	■	■	-	■
Comb busbars for iC60	■	■	■	-	■

Resistance to environmental conditions (cont.)

	Mechanical						Storage
	Vibrations, impacts and bumps	**Vibrations**	**Bumps (repeated impacts)**	**Impacts**	**Impacts on the device**	**Falls**	**Damp heat**
	IEC 60721-3-3	**IEC 60068.2-6**	**IEC 60068-2-27**	**IEC 60068-2-27**	**IEC 62262**	**IEC 60068-2-32**	**IEC 60068-2-30**
	Class 3M4: industrial environment with considerable vibrations and impacts (e.g. proximity of machines, circulation of vehicles).	Amplitude: 3.5 mm. Acceleration: 1 g. Directions: 3 axes. Frequency: 5 to 300 Hz.	Acceleration: 15 g. Pulse duration: 6 ms.	Force: 15 g. Pulse duration: 11 ms.	IK 05: 5 impacts of 0.7 J.	Height: 0.8 m, concrete floor.	Db: - Temperature: 55°C. - Relative humidity: 95%.
	No power supply fault, no tripping.				Casing, degree of protection (IP).	Casing, degree of protection (IP).	
	-	■	■	-	■	■	
	■	■	■	■	■	■	
	-	■	■	-	■	■	
	■	■	■	■	■	■	
	■	■	■	■	■	■	
	■	■	■	■	■	■	■
	■	■	■	■	■	■	■
	■	■	■	■	■	■	■
	■	■	■	■	■	■	■
	■	■	■	■	■	■	■
	■	■	■	■	■	■	■
	■	■	■	■	■	■	■
	-	-	-	-	-		
	-	■ Frequency: 8.5 to 100 Hz.	-	-	-	■ Height: 0.6 m.	
	■	■	■	■	■	■	
	■	■	■	■	■	■	
	■	■	■	■	■	■	
	■	■	■	■	■	■	
	■	■	■	■	■	■	
	■	■	■	■	■	■	
	■	■	■	■	■	■	■
	■	■	■	■	■	■	■
	■	■	■	■	■	■	■

Connection iC60, iID double terminals

Connection between double terminal protection devices

Cable-to-cable

DB404816

Product	Rating	Tightening torque	Back		Front	
			Copper cables		Copper cables	
			Rigid	Flexible or with ferrule	Rigid	Flexible or with ferrule
		DB122945	DB122946	DB122945	DB122946	
iC60	0.5 to 25 A	2 N.m	1 to 16 mm²	1 to 10 mm²	1 to 16 mm²	1 to 16 mm²
	32 to 63 A	3.5 N.m	1 to 16 mm²	1 to 10 mm²	1 to 16 mm²	1 to 16 mm²
iID	All					

■ Connection by comb busbar or by cable (according to EN 50027).

Surface mounting
iC60, iK60, iID, iID K, iSW, iSW-NA

PB104437

iC60N

PB104459

iK60N

PB104472

iID

PB104497

iID K

PB110906

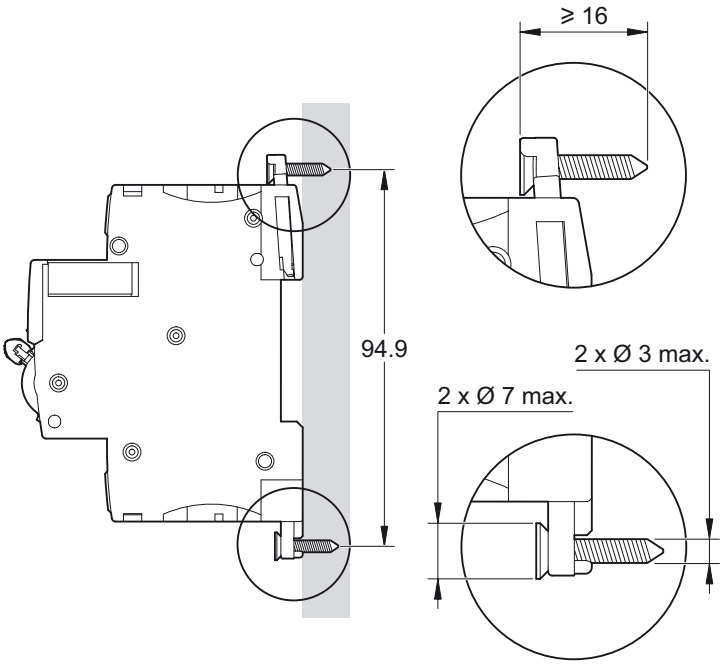
iSW

PB107096

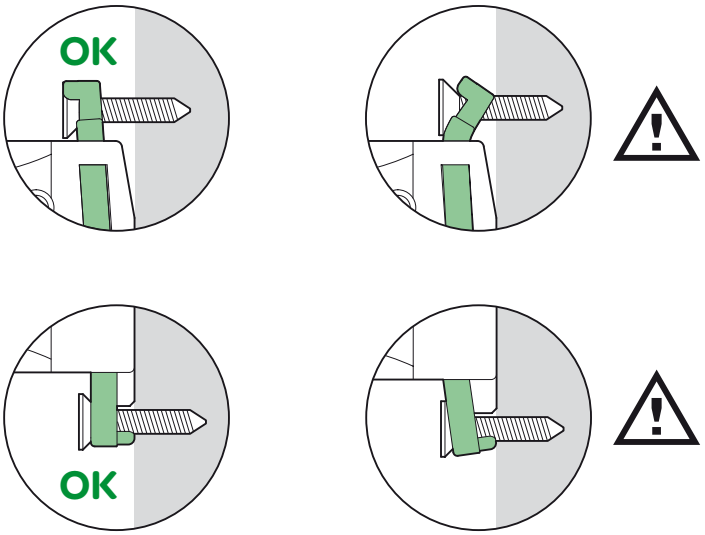
iSW-NA

Mounting (mm)

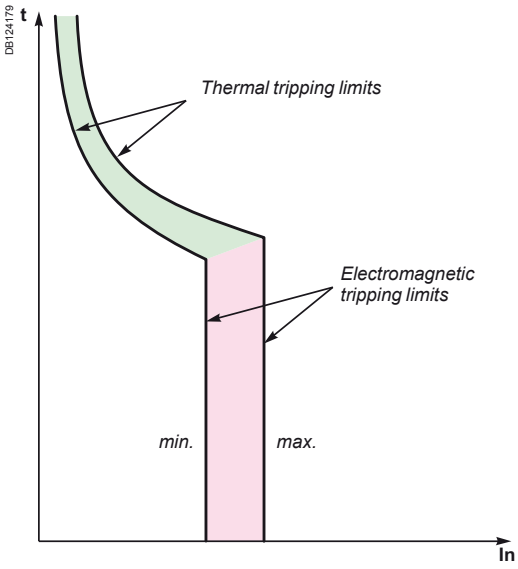
DB406553



DB406554



Tripping curves



The following curves show the total fault current breaking time, depending on its amperage. For example: based on the curve on page 587, an iC60 circuit breaker of curve C, 20 A rating, will interrupt a current of 100 A (5 times the rated current In) in:
- 0.45 seconds at least
- 6 seconds at most.

The circuit breakers' tripping curves consist of two parts:
- tripping of overload protection (thermal tripping device): the higher the current, the shorter the tripping time
- tripping of short-circuit protection (magnetic tripping device): if the current exceeds the threshold of this protection device, the breaking time is less than 10 milliseconds. For short-circuit currents exceeding 20 times the rated current, the time-current curves do not give a sufficiently precise representation. The breaking of high short-circuit currents is characterized by the current limiting curves, in peak current and in energy. The total breaking time can be estimated at 5 times the value of the ratio $(I^2t)/(\hat{I})^2$.

Verification of the discrimination between two circuit breakers

By superimposing the curve of a circuit breaker on that of the circuit breaker installed upstream, one can check whether this combination will be discriminating in cases of overload (discrimination for all current values, up to the magnetic threshold of the upstream circuit breaker). This verification is useful when one of the two circuit breakers has adjustable thresholds; for fixed-threshold devices, this information is provided directly by the discrimination tables.
To check discrimination on short circuit, the energy characteristics of the two devices must be compared.

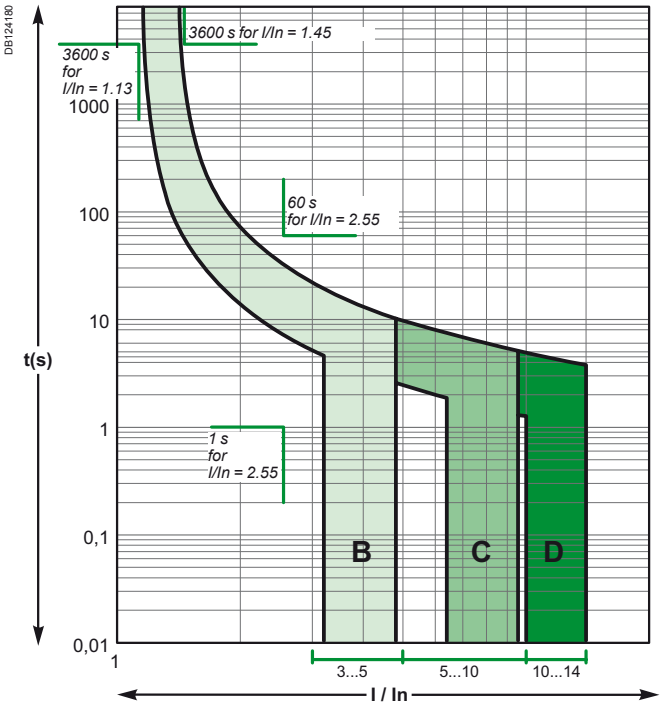
Tripping curves
According to IEC/EN 60898-1 standards

Alternative current 50/60 Hz

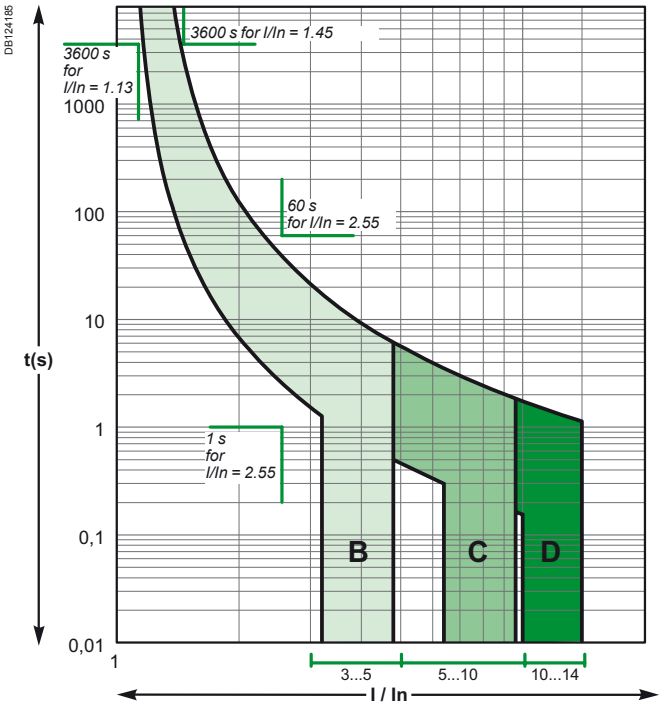
iC60a/N/H/L

According to IEC/EN 60898-1 (reference temperature 30°C)

Curves B, C, D rating up to 4 A



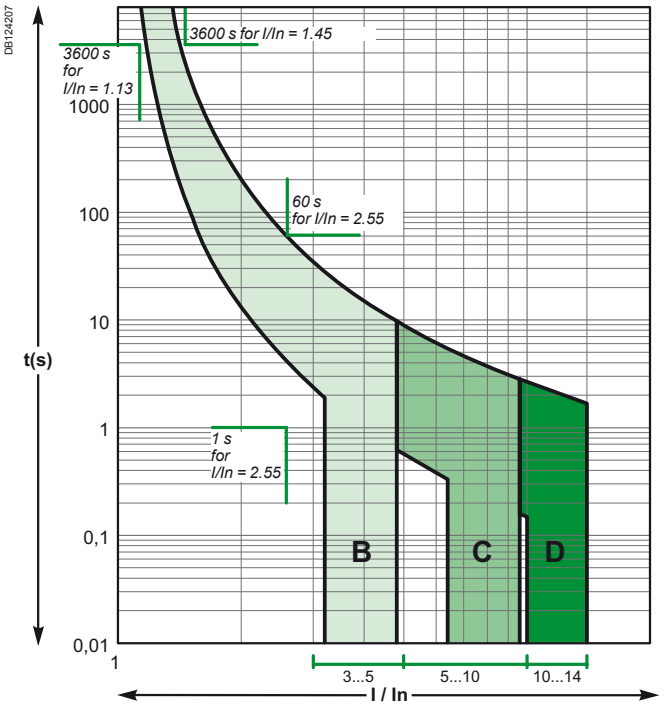
Curves B, C, D rating 6 A to 63 A



C120N/H

According to IEC/EN 60898-1 (reference temperature 30°C)

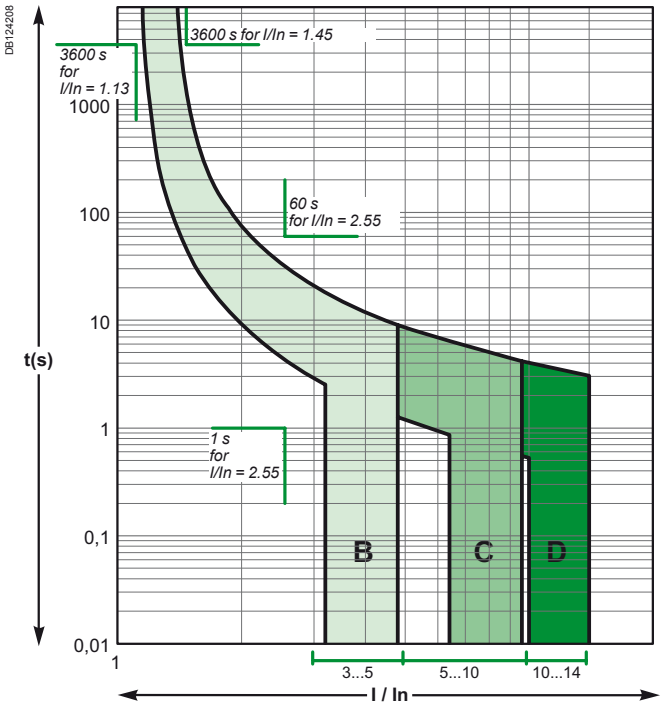
Curves B, C, D



DPN, DPN N, DPN H (circuit-breaker and residual current device)

According to IEC/EN 60898-1 (reference temperature 30°C)

Curves B, C, D



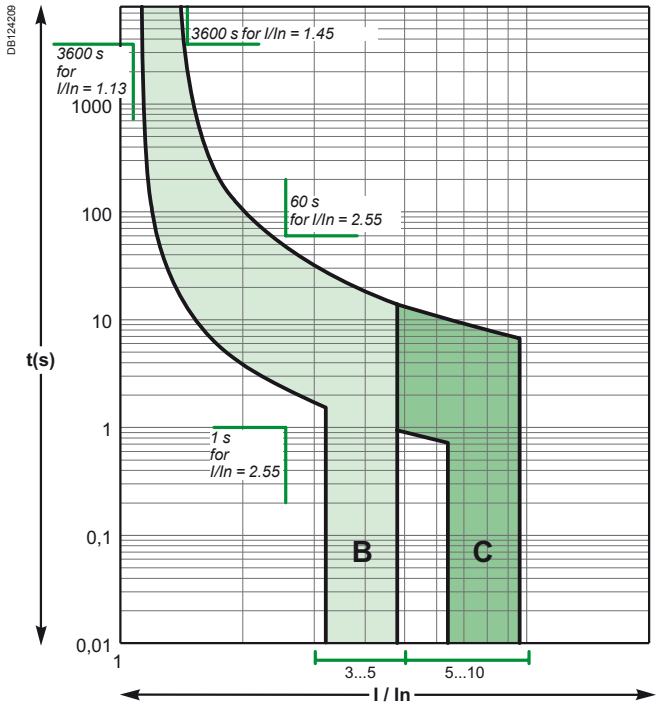
Tripping curves
According to IEC/EN 60898-1 standards

Alternative current 50/60 Hz

iK60

According to IEC/EN 60898-1 (reference temperature 30°C)

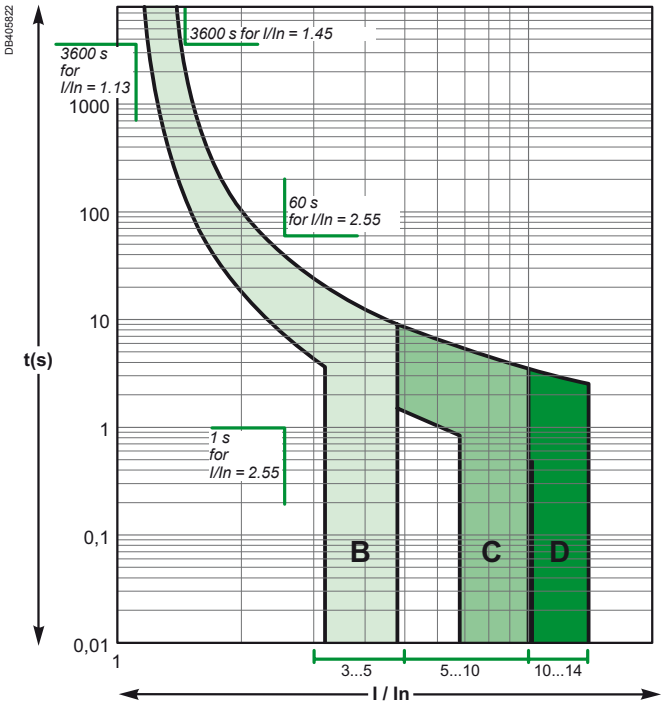
Curves B, C



C60

According to IEC/EN 60898-1 (reference temperature 30°C)

Curves B, C, D



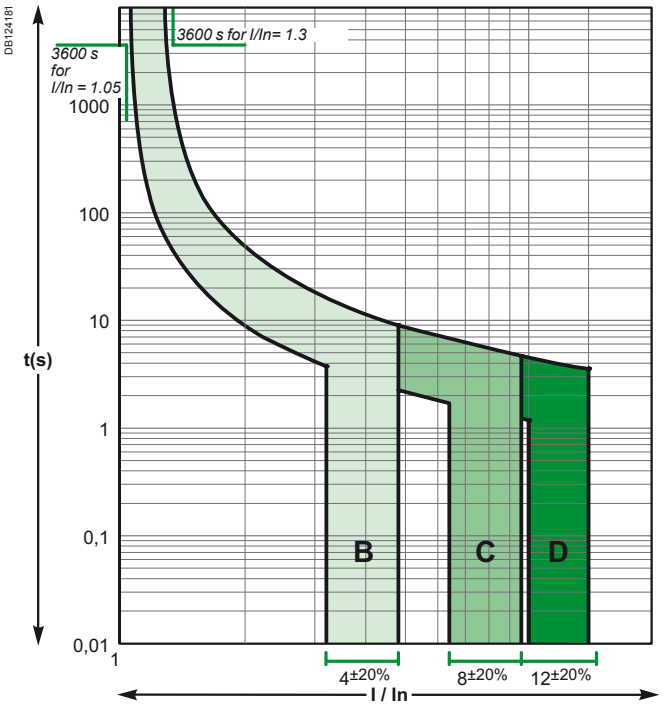
Tripping curves
According to IEC/EN 60947-2 standards

Alternative current 50/60 Hz

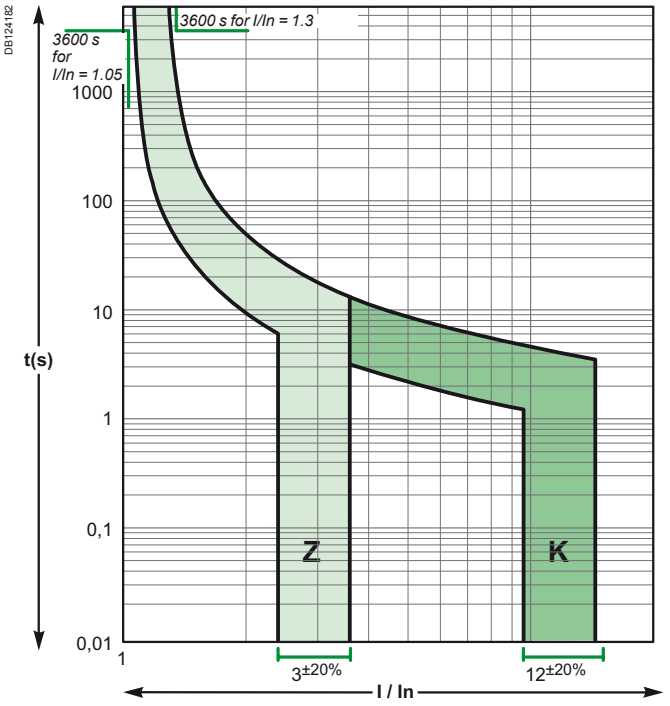
iC60N/H/L MCB and iC60 RCBO

According to IEC/EN 60947-2 for MCB and IEC/EN 61009-1 for RCBO (reference temperature 50°C)

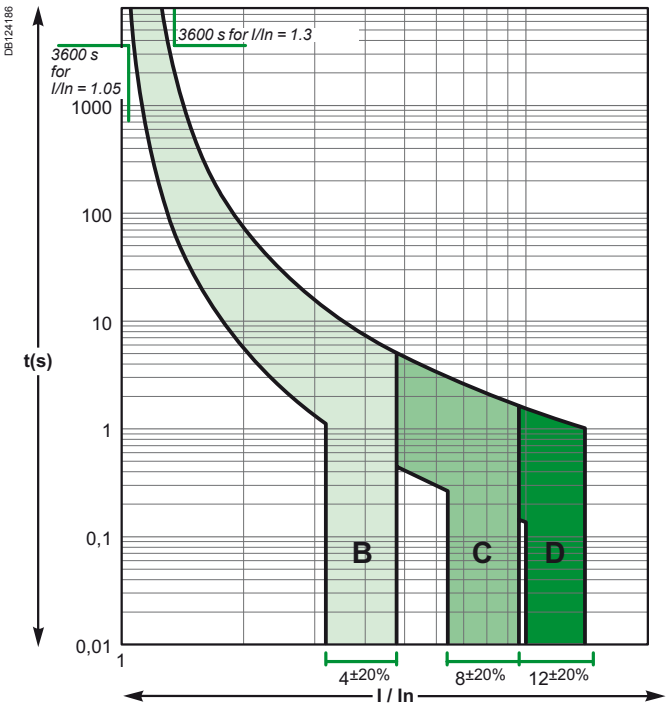
Curves B, C, D rating up to 4 A



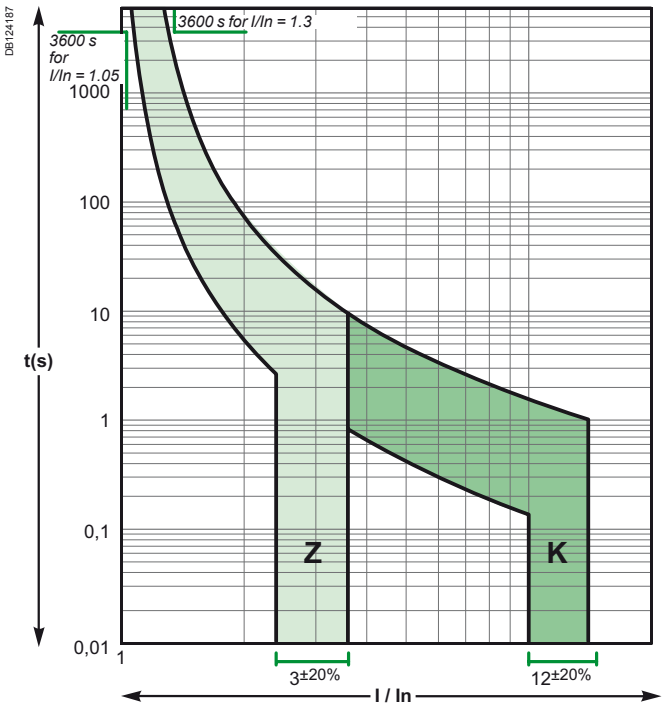
Curves Z, K rating up to 4 A



Curves B, C, D rating 6 A to 63 A



Curves Z, K rating 6 A to 63 A



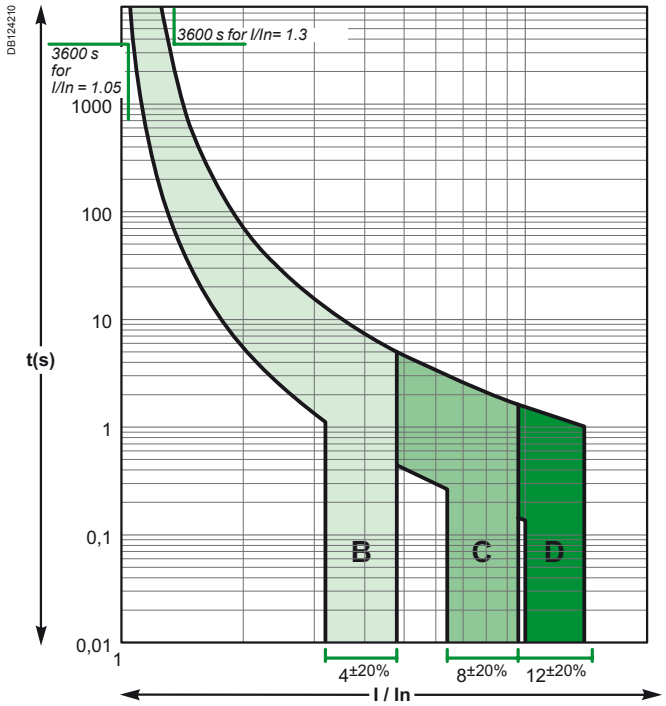
Tripping curves
According to IEC/EN 60947-2 standards

Alternative current 50/60 Hz

Reflex iC60N/H

According to IEC/EN 60947-2 (reference temperature 50°C)

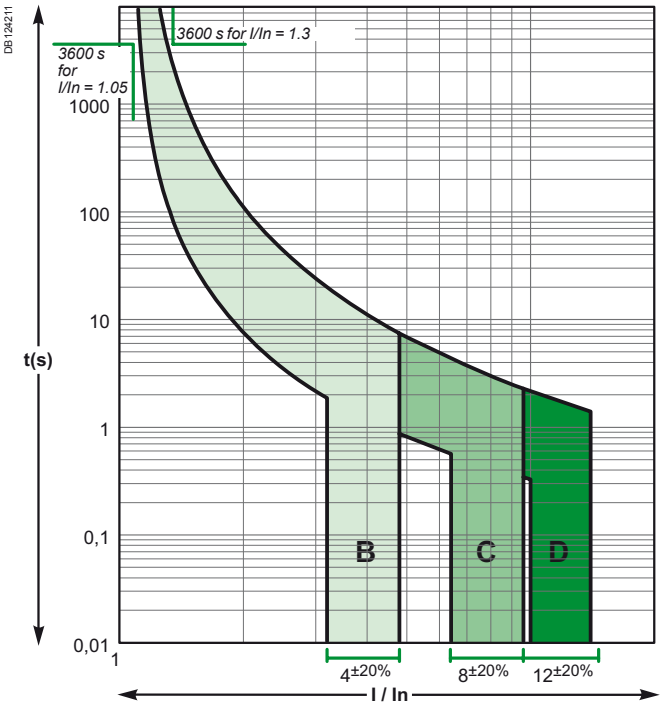
Curves B, C, D



NG125a/N/H/L

According to IEC/EN 60947-2 (reference temperature 40°C)

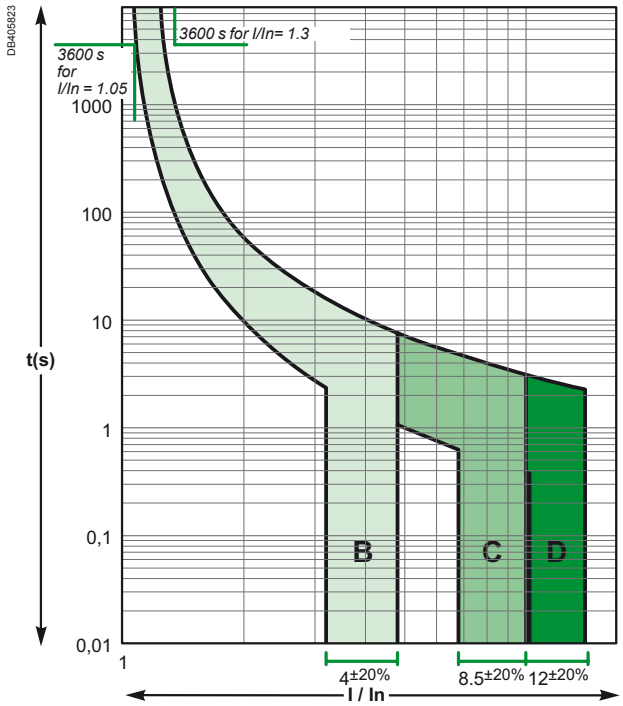
Curves B, C, D



C60

According to IEC/EN 60947-2 (reference temperature 50°C)

Curves B, C, D



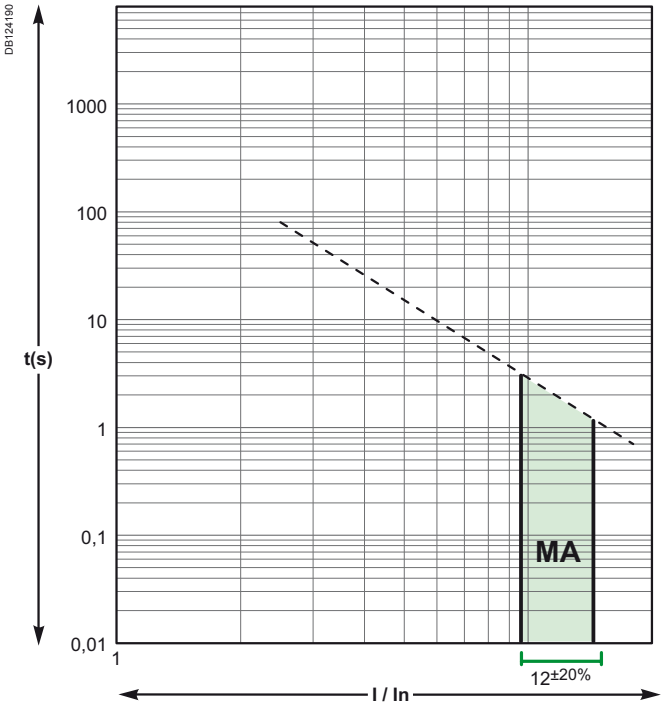
Tripping curves
According to IEC/EN 60947-2 standards

Motor curve

iC60L-MA

According to IEC/EN 60947-2

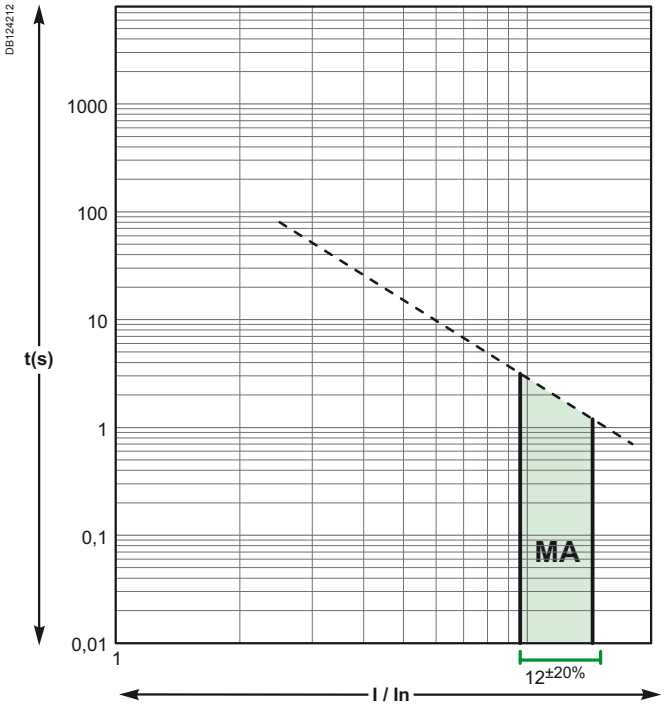
Curve MA



NG125L-MA

According to IEC/EN 60947-2

Curve MA



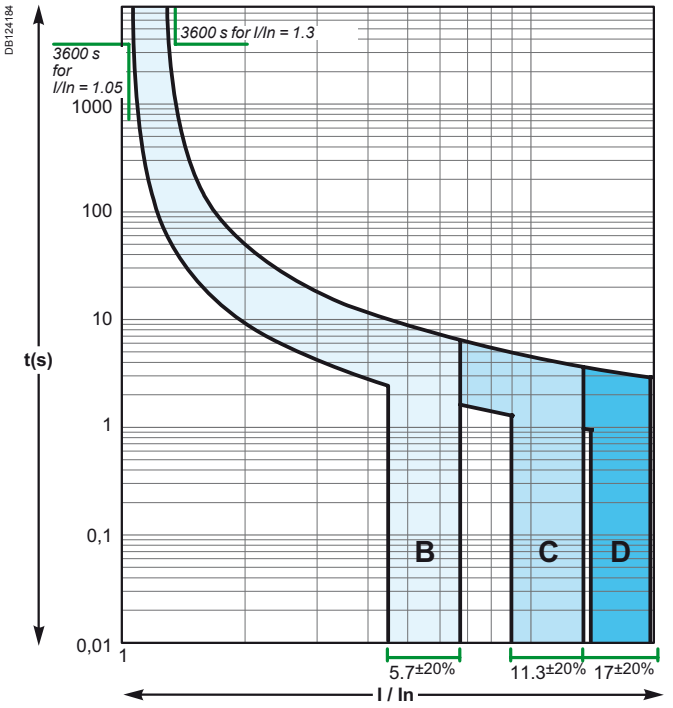
Tripping curves
According to IEC/EN 60947-2 standards

Direct current

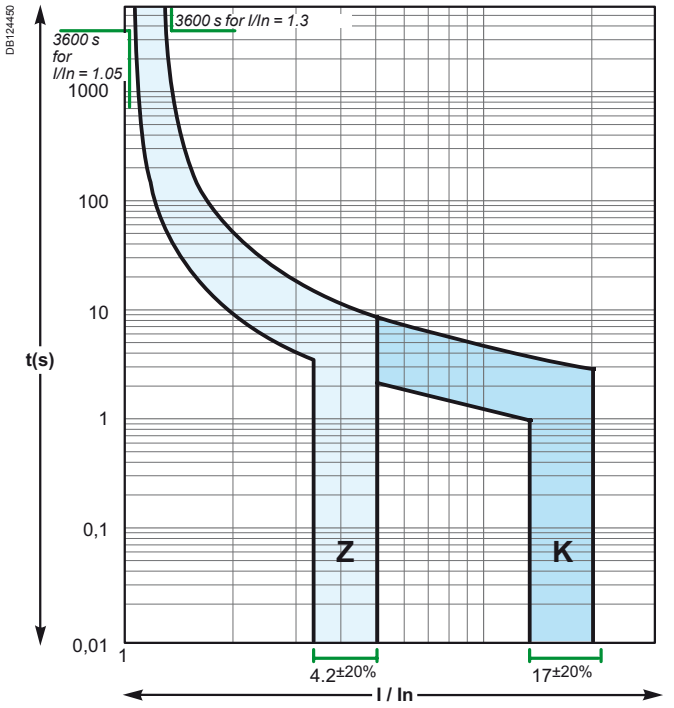
iC60N/H/L

According to IEC/EN 60947-2 (reference temperature 50°C)

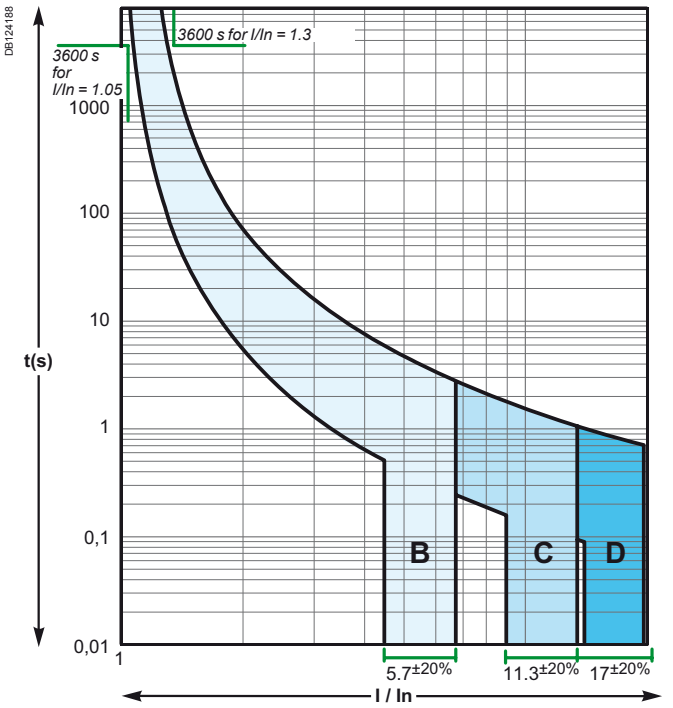
Curves B, C, D rating up to 4 A



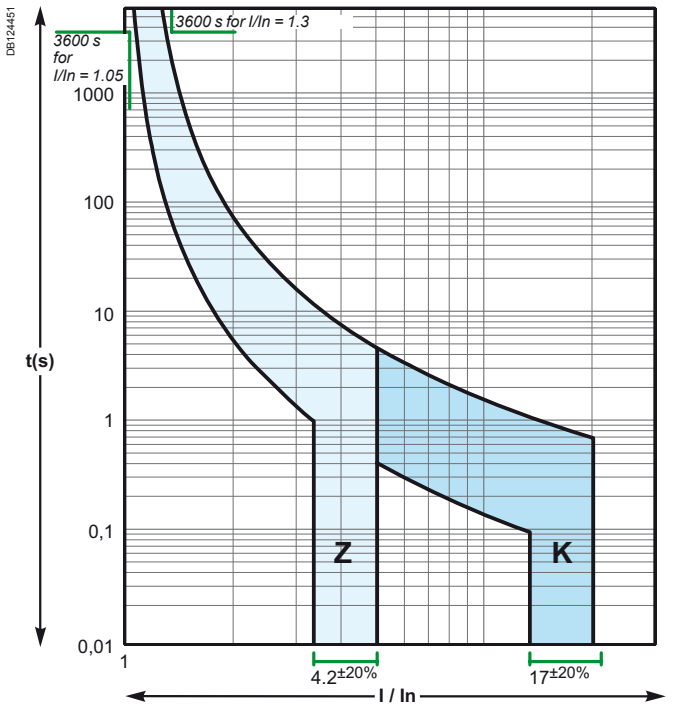
Curves Z, K rating up to 4 A



Curves B, C, D rating 6 A to 63 A



Curves Z, K rating 6 A to 63 A



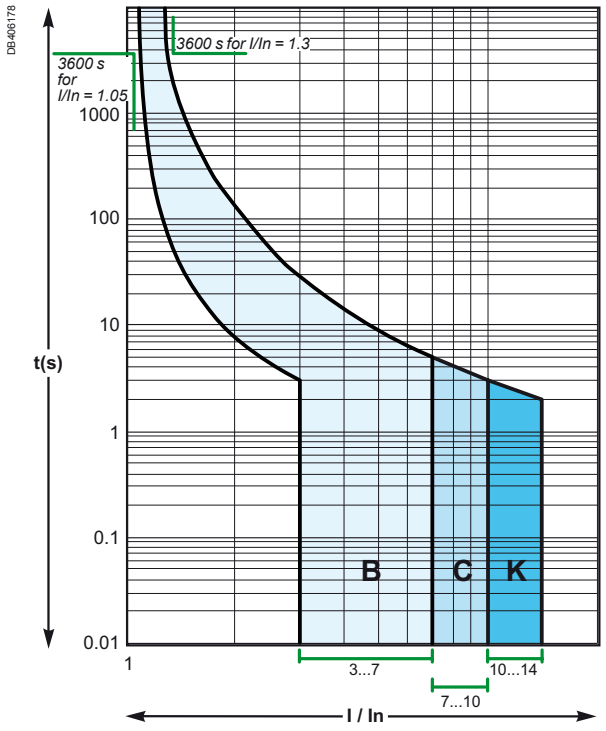
Tripping curves
According to IEC/EN 60947-2 standards

Direct current

C60H-DC

According to IEC/EN 60947-2 (reference temperature 25°C)

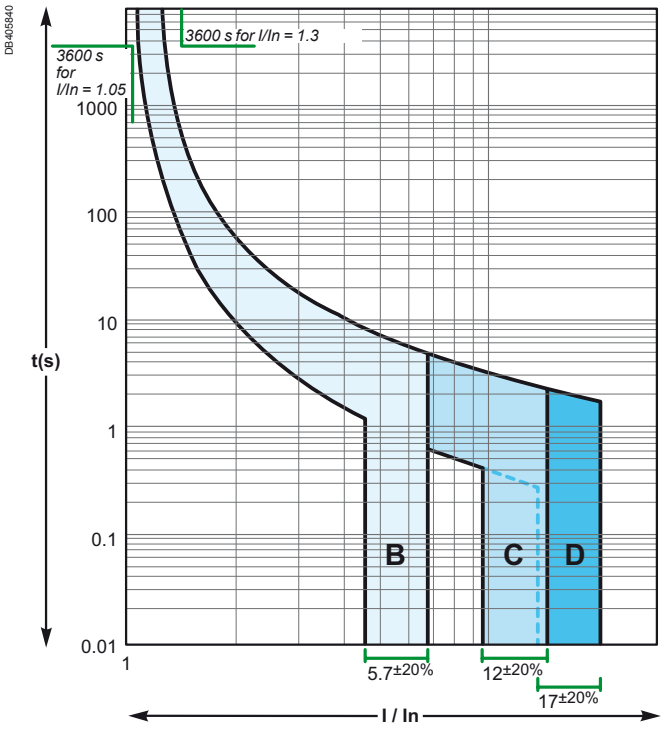
Curves B, C, K



C60

According to IEC/EN 60947-2 (reference temperature 50°C)

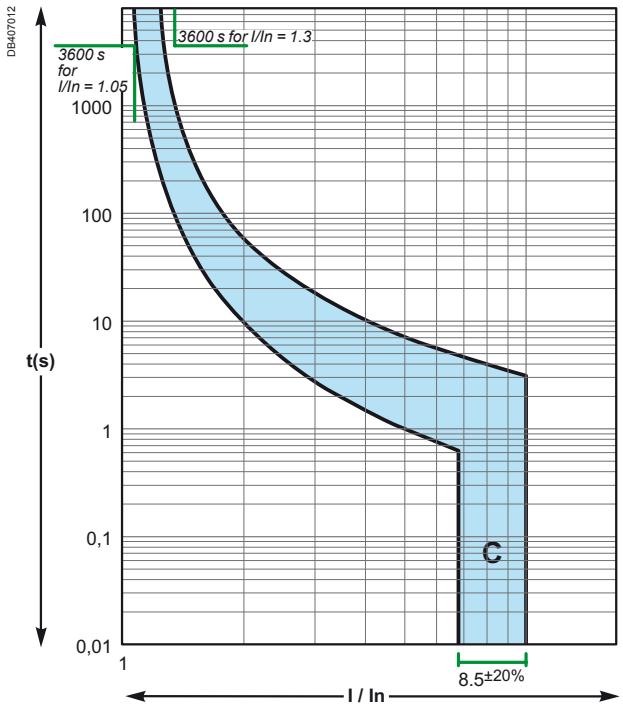
Curves B, C, D



C60PV-DC

According to IEC/EN 60947-2 (reference temperature 50°C)

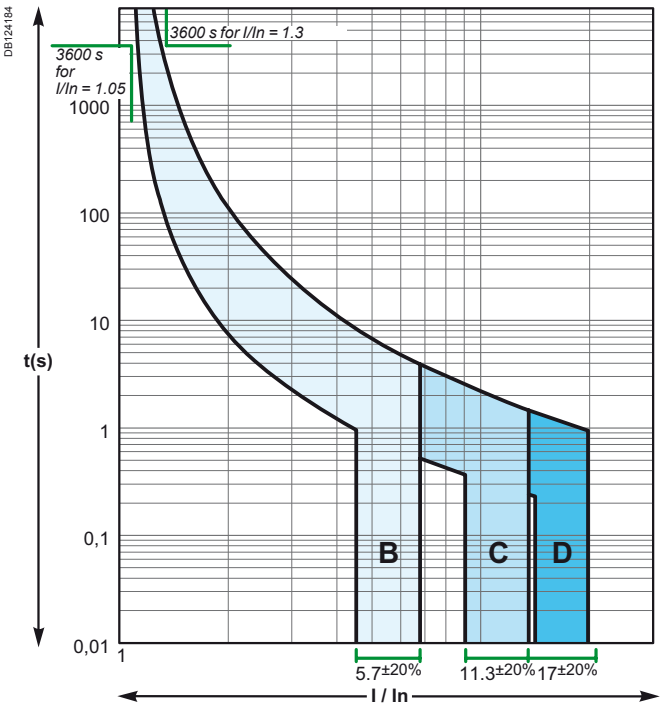
Curve C



NG125a/N/H/L

According to IEC/EN 60947-2 (reference temperature 40°C)

Curves B, C, D

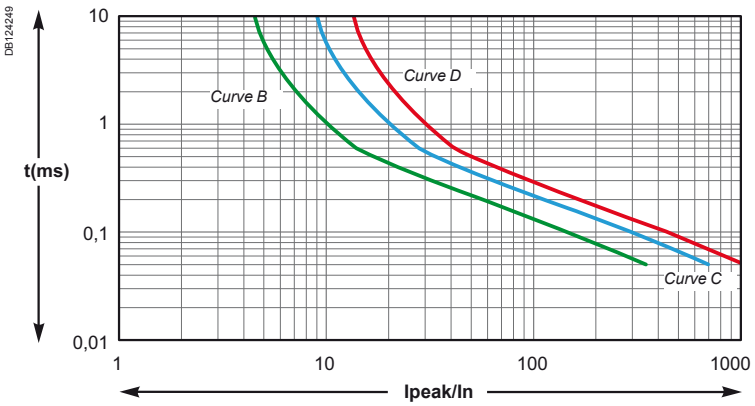


Tripping curves
Coordination with loads

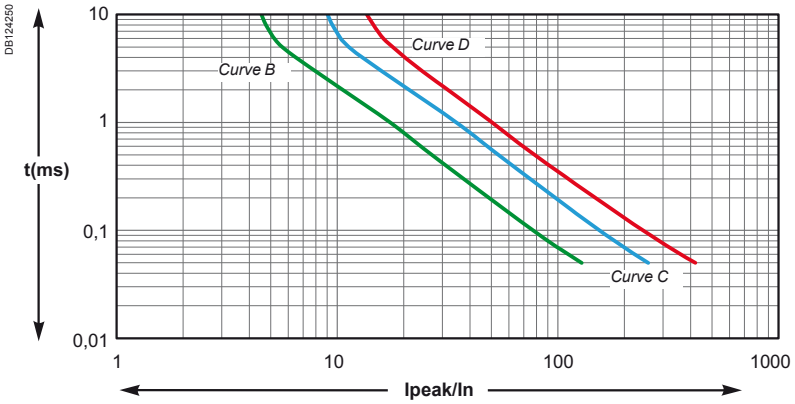
The circuit-breaker characteristics chosen depend on the type of load downstream of the installation.
The rating depends on the size of the cables to be protected and the curves depend on the load inrush current.

Product selection according to the load inrush current
When certain "capacitive" loads are switched on, very high inrush currents appear during the first milliseconds of operation. The following graphs show the average non-tripping curves of our products for this time range (50 µs to 10 ms).

iC60



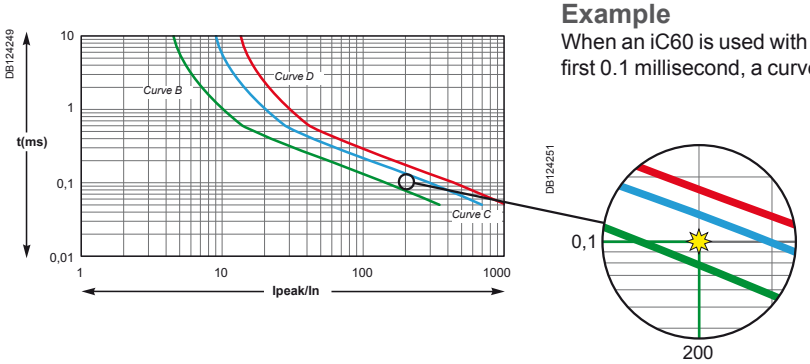
NG125 / C120



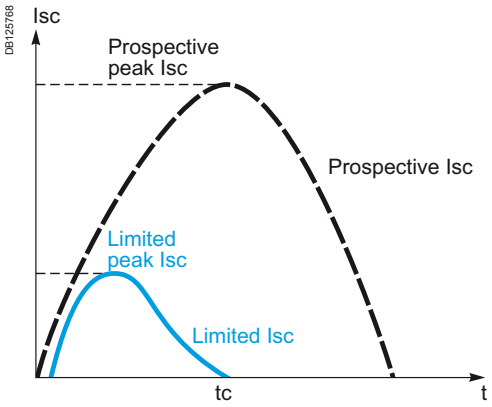
This information allows us to select the most appropriate product, according to the load specifications: curve and rating.

Example

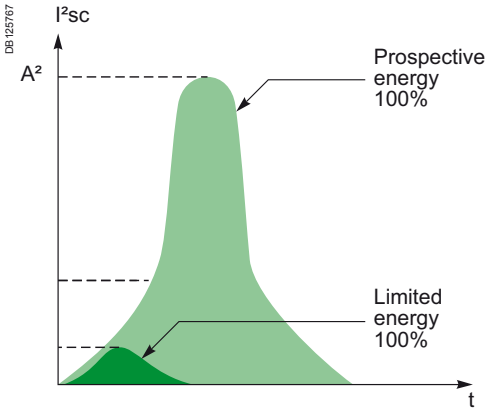
When an iC60 is used with a load with current peaks in the order of 200 In during the first 0.1 millisecond, a curve C or D product must be installed.



Short-circuit current limiting



Prospective current and real limit current.



Definition

The limiting capacity of a circuit breaker is its ability to lessen the effects of a short circuit on an electrical installation by reducing the current amplitude and the dissipated power.

Benefits of limiting

Long installation service life

Thermal effects

Lower temperature rise at the conductor level, hence increased service life for cables and all components that are not self-protected (e.g. switches, contactors, etc.)

Mechanical effects

Lower electrodynamic repulsion forces, hence less risk of deformation or breakage of electrical contacts and busbars.

Electromagnetic effects

Less interference on sensitive equipment located in the vicinity of an electric circuit.

Savings through cascading

Cascading is a technique derived directly from current limiting: downstream of a current-limiting circuit breaker it is possible to use circuit breakers of breaking capacity lower than the prospective short-circuit current (in line with the cascading tables). The breaking capacity is heightened thanks to current limiting by the upstream device. Substantial savings can be achieved in this way on switchgear and enclosures.

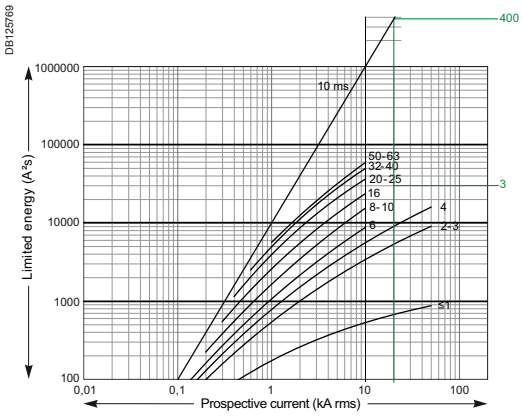
Discrimination of protection devices

The circuit breakers' current limiting capacity improves discrimination with the protection devices located upstream: this is because the required energy passing through the upstream protection device is greatly reduced and can be not enough to cause it to trip. Discrimination can thus be natural without having to install a time-delayed protection device upstream.

Acti 9 circuit breaker current limiting

Profiting from Schneider Electric's experience and expertise in the field of short-circuit current breaking, the circuit breakers of the Acti 9 range have a top-level current limiting characteristic for modular devices.
This assures them of optimal protection of the entire power distribution system.

Short-circuit current limiting (cont.)



Representation: Current limiting curves

The current limiting capacity of a circuit breaker is reflected by 2 curves which give, as a function of the prospective short-circuit current (current which would flow in the absence of a protection device):

- the real peak current (limited)
- the thermal stress (in A²s), this value, multiplied by the resistance of any element through which the short-circuit current passes, gives the power dissipated by this element.

The straight line "10 ms" representing the energy A²s of a prospective short-circuit current of a half-period (10 ms) indicates the energy that would be dissipated by the short-circuit current in the absence of limiting by the protection device (see example).

Example

What is the energy limited by an iC60N 25 A circuit breaker for a prospective short-circuit current of 10 kA rms. What is the quality of current limiting?

> as shown in the graph opposite:

- this short-circuit current (10 kA rms) is likely to dissipate up to 1,000 kA²s
- the iC60N circuit breaker reduces this thermal stress to: 35 kA²s, which is 22 times less.

Example of use: Stresses acceptable by the cables

The following table shows the thermal stresses acceptable by the cables depending on their insulation, their composition (Cu or Al) and their cross section. Cross-section values are expressed in mm² and stresses in A²s.

S (mm²)		1.5	2.5	4	6	10
PVC	Cu	2.97×10^4	8.26×10^4	2.12×10^5	4.76×10^5	1.32×10^6
	Al					5.41×10^5
PRC	Cu	4.10×10^4	1.39×10^5	2.92×10^5	6.56×10^5	1.82×10^6
	Al					7.52×10^5
S (mm²)		**16**	**25**	**35**	**50**	
PVC	Cu	3.4×10^6	8.26×10^6	1.62×10^7	3.21×10^7	
	Al	1.39×10^6	3.38×10^6	6.64×10^6	1.35×10^7	
PRC	Cu	4.69×10^6	1.39×10^7	2.23×10^7	4.56×10^7	
	Al	1.93×10^6	4.70×10^6	9.23×10^6	1.88×10^7	

Example

Is a Cu/PVC cable of cross section 10 mm² protected by a NG125L device?

The above table shows that the acceptable stress is 1.32×10^6 A²s. Any short-circuit current at the point where a NG125L device (Icu = 25 kA) is installed will be limited, with a thermal stress of less than 2.2×10^5 A²s. (Curve on page 603).

The cable is therefore always protected up to the breaking capacity of the circuit breaker.

Short-circuit current limiting (cont.)

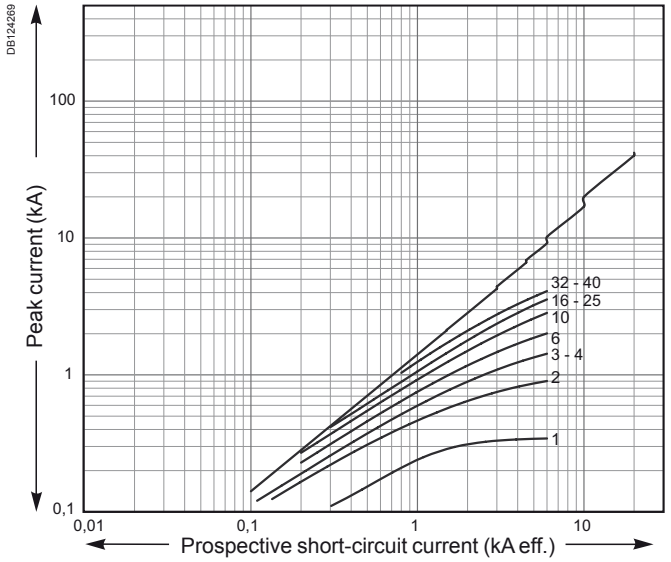
Ue: 380-415 V AC

Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

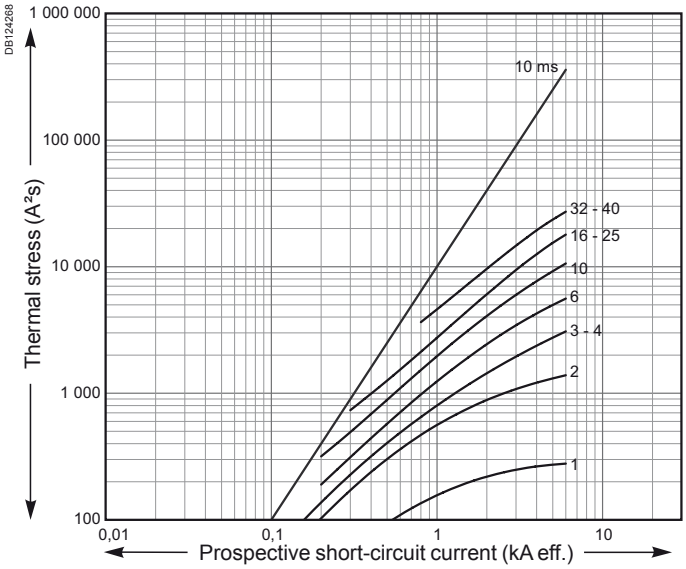
DPN (MCB and RCBO)

1P+N / 3P / 3P+N

Peak current



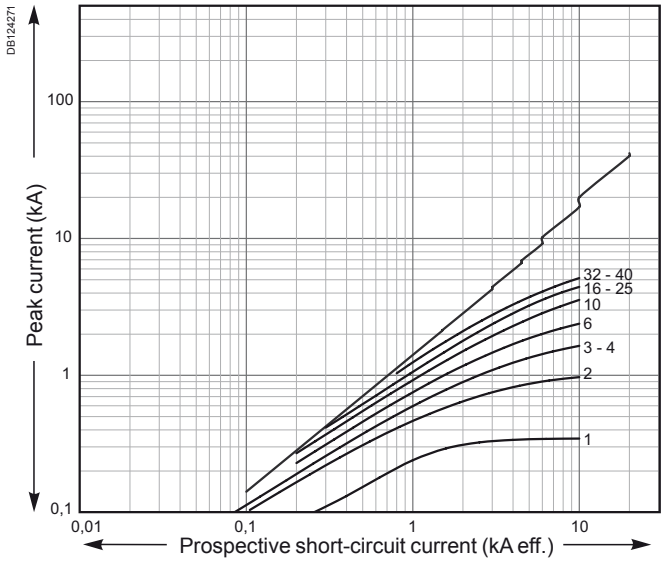
Thermal stress



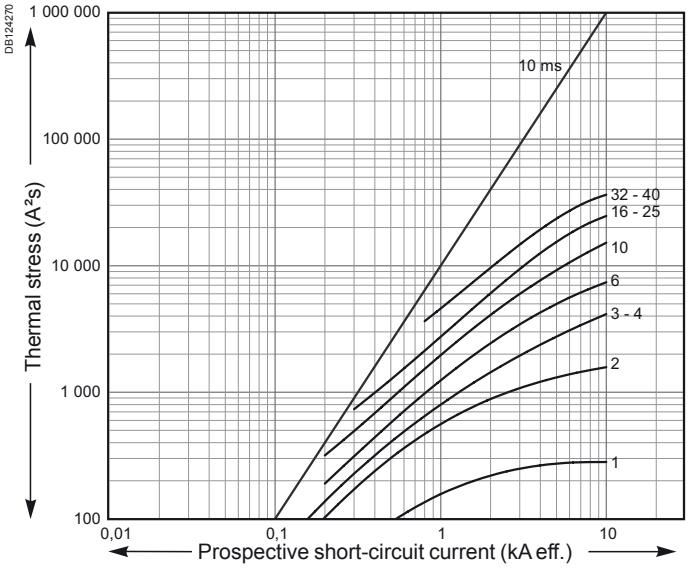
DPN N (MCB and RCBO)

1P+N / 3P / 3P+N

Peak current



Thermal stress



Short-circuit current limiting (cont.)

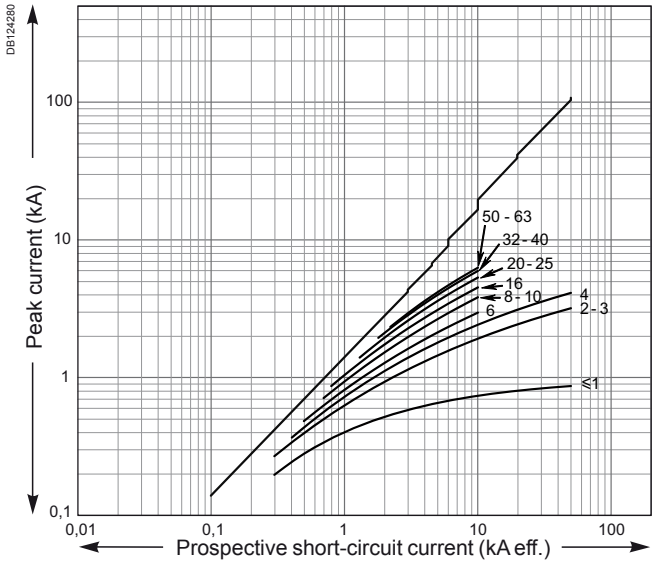
Ue: 380-415 V AC

Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

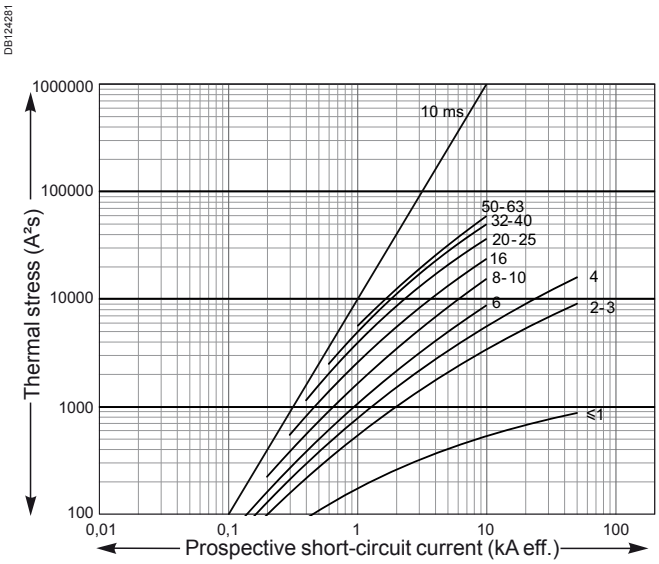
iC60N

1P / 1P+N / 2P / 3P / 4P

Peak current



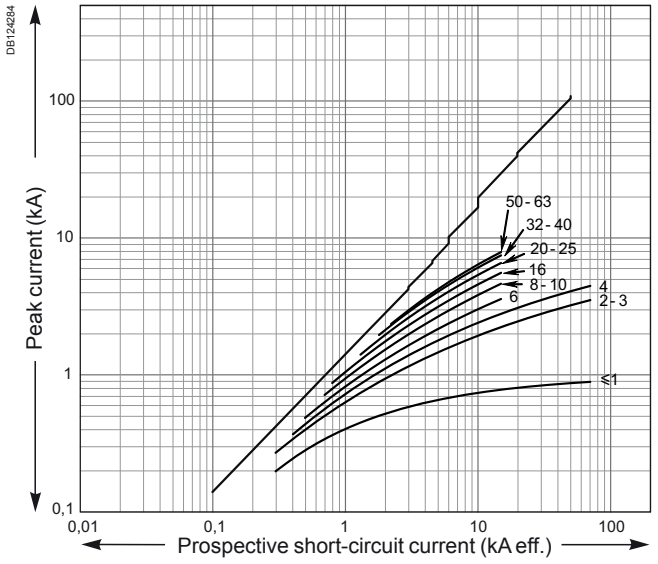
Thermal stress



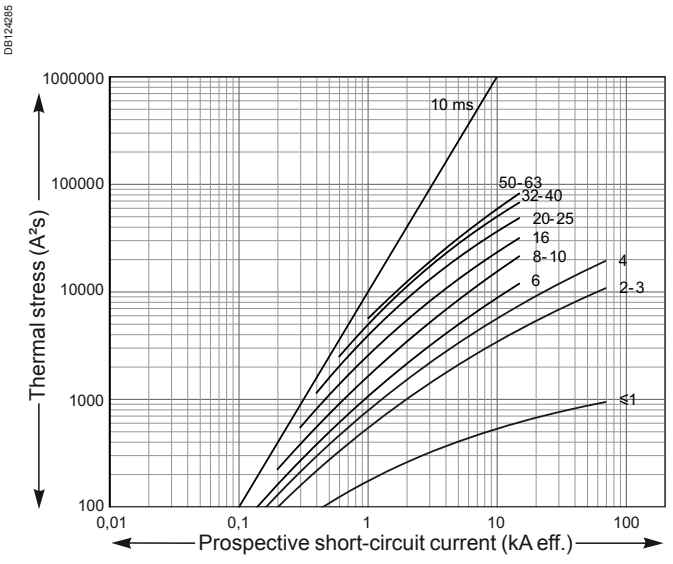
iC60H

1P / 1P+N / 2P / 3P / 4P

Peak current



Thermal stress



Short-circuit current limiting (cont.)

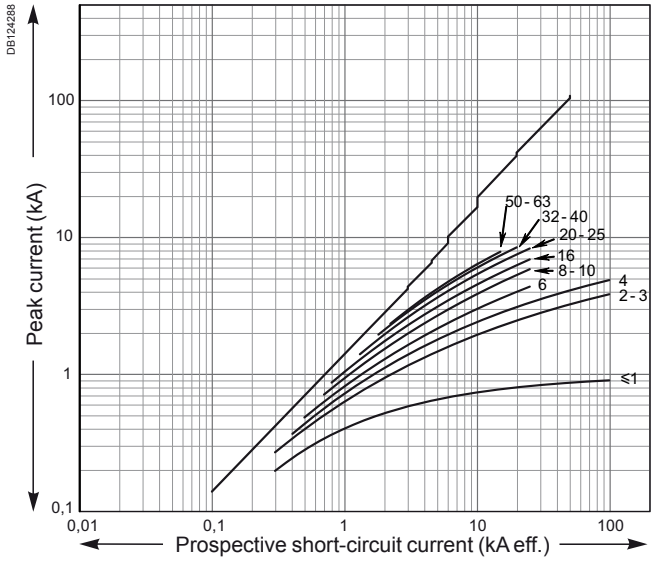
Ue: 380-415 V AC

Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

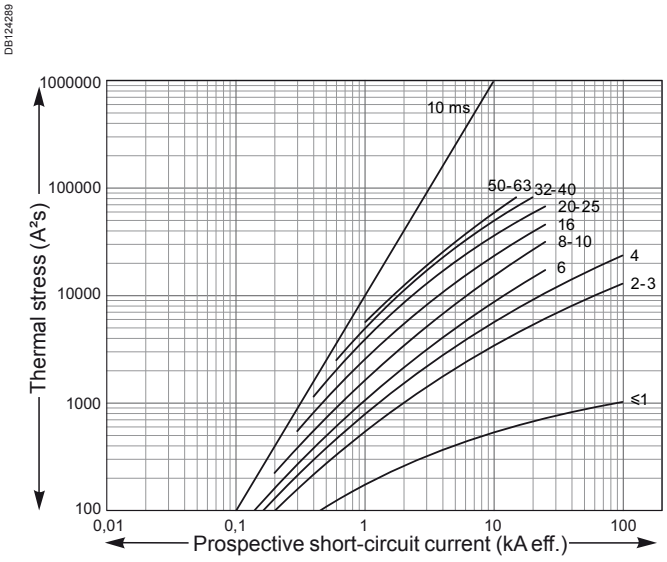
iC60L

1P / 2P / 3P / 4P

Peak current



Thermal stress



Short-circuit current limiting (cont.)

Ue: 380-415 V AC

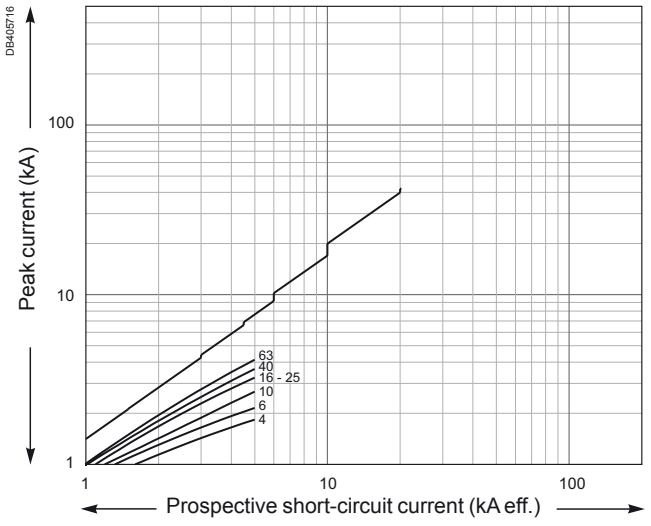
Limitation curves for network

Ue: 380-415 V AC (Ph/N 220-240 V AC)

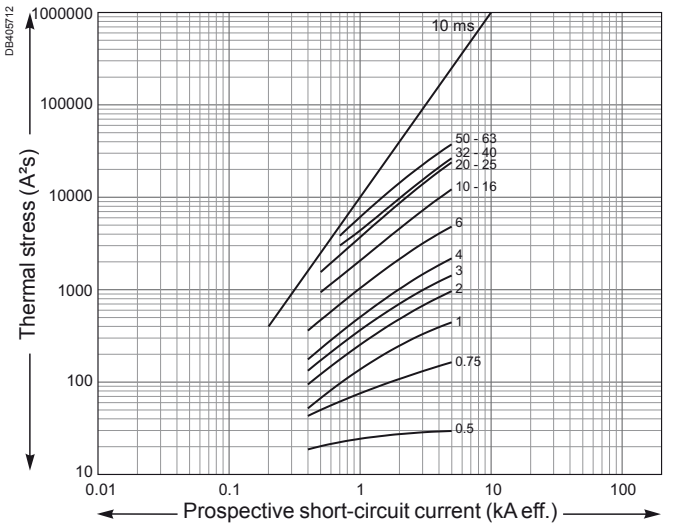
C60a

1P / 2P / 3P / 3P+N / 4P

Peak current



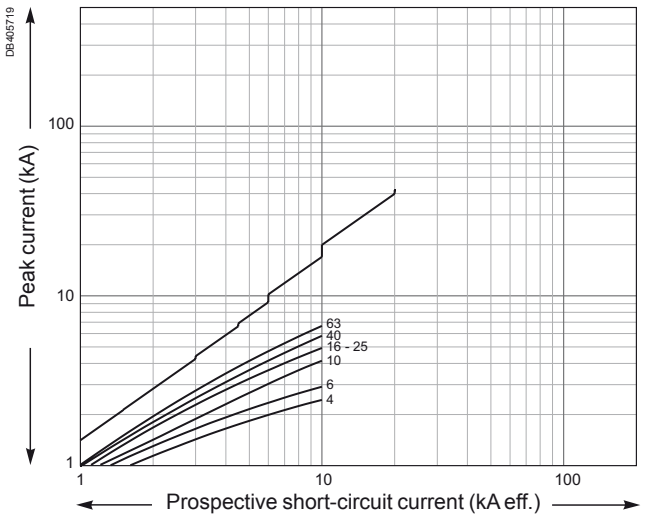
Thermal stress



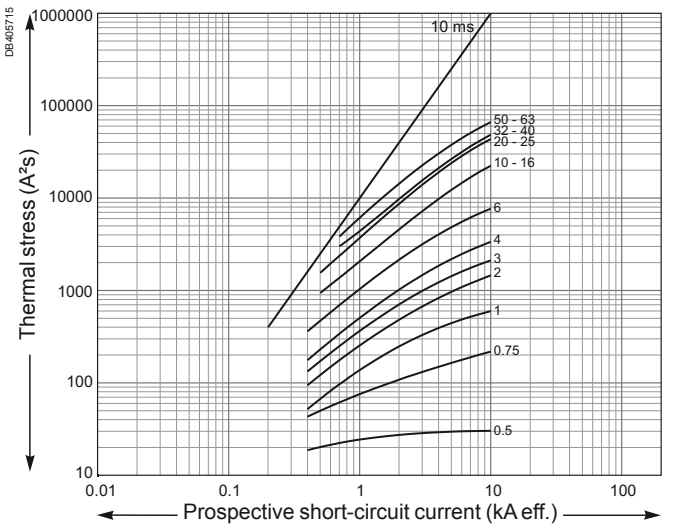
C60N

1P / 1P+N / 2P / 3P / 3P+N / 4P

Peak current



Thermal stress



Short-circuit current limiting (cont.)

Ue: 380-415 V AC

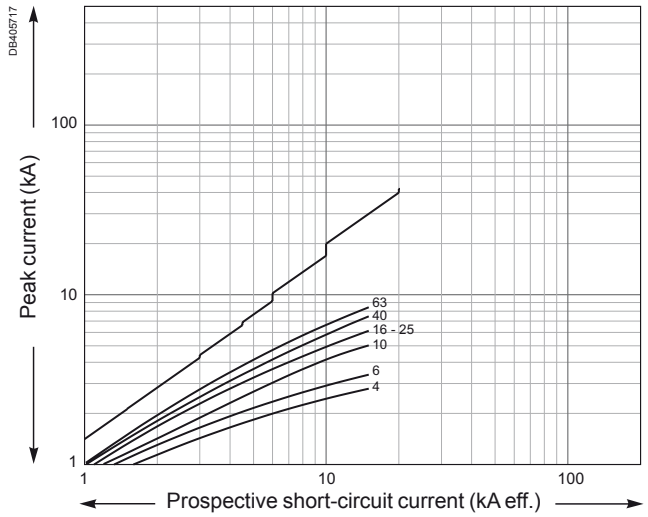
Limitation curves for network

Ue: 380-415 V AC (Ph/N 220-240 V AC)

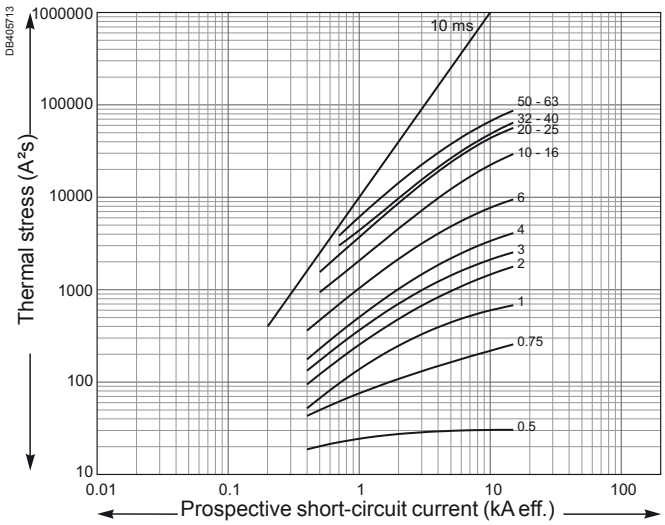
C60H

1P / 1P+N / 2P / 3P / 3P+N / 4P

Peak current



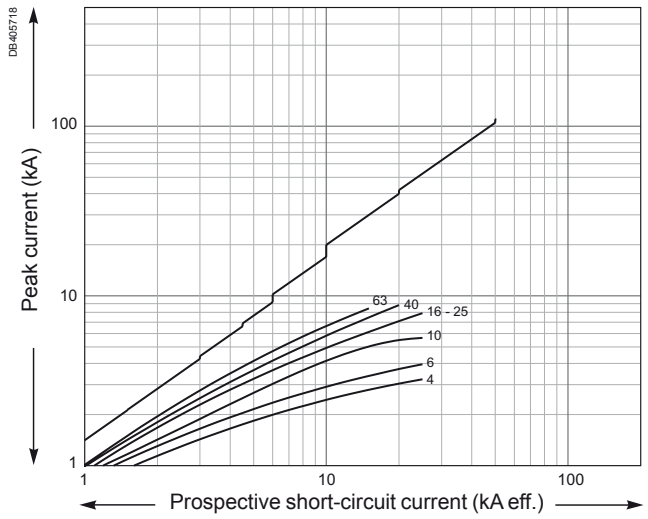
Thermal stress



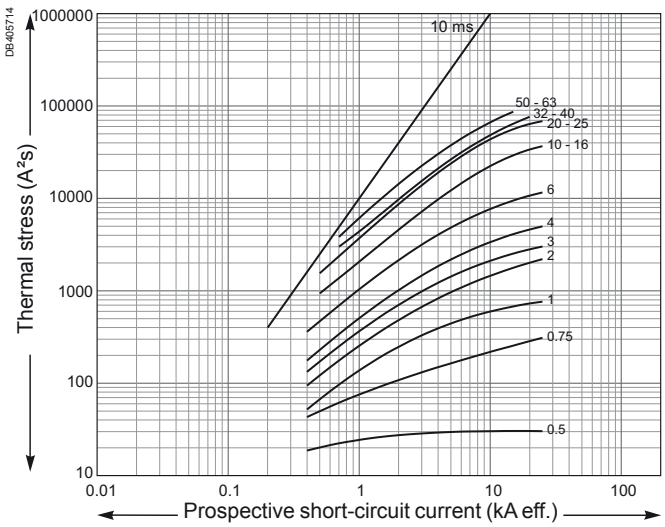
C60L

1P / 2P / 3P / 4P

Peak current



Thermal stress



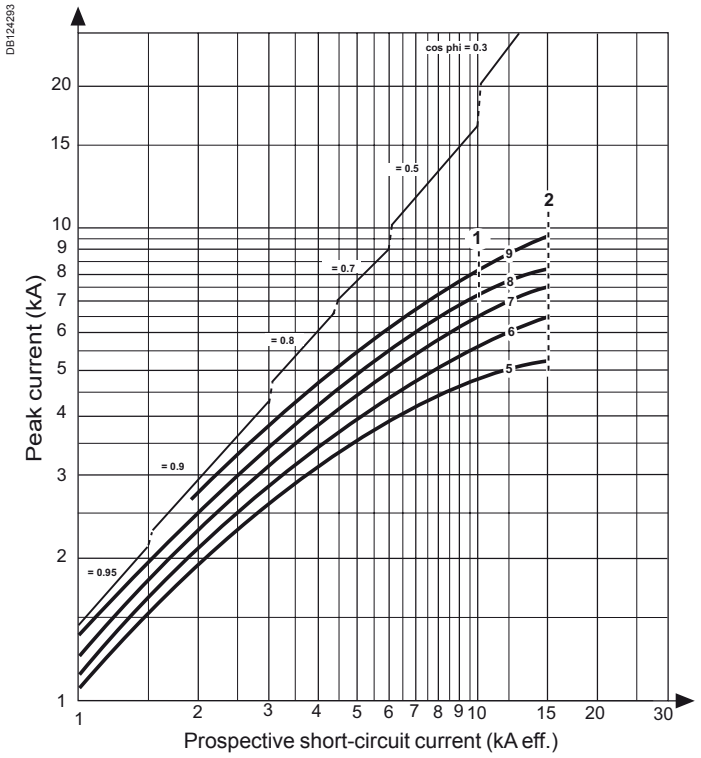
Short-circuit current limiting (cont.)
Ue: 380-415 V AC

Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

C120N, H

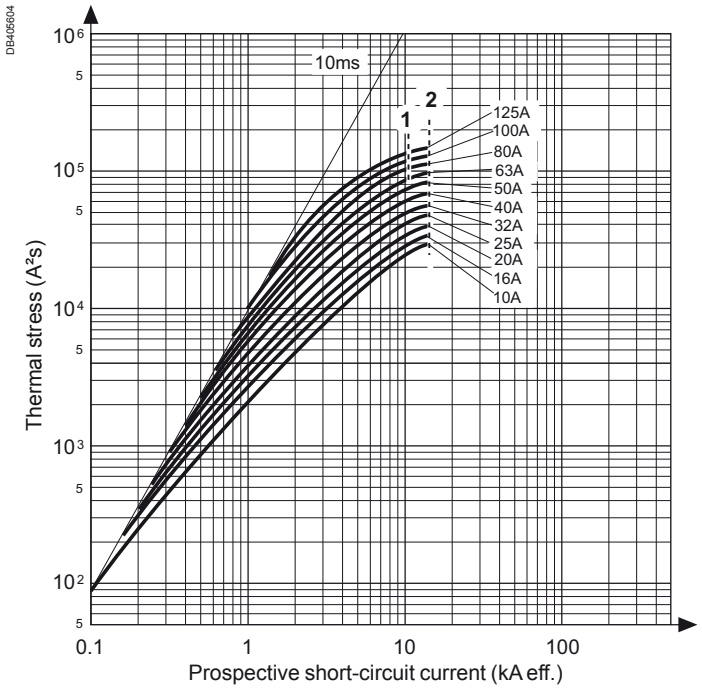
1P / 2P / 3P / 4P

Peak current



■ Circuit breaker type in accordance with the mark:
□ 1: C120N
□ 2: C120H
□ 5: 10-16 A
□ 6: 20-25 A
□ 7: 32-40 A
□ 8: 50-63 A
□ 9: 80-125 A

Thermal stress



■ Circuit breaker type in accordance with the mark:
□ 1: C120N
□ 2: C120H

Short-circuit current limiting (cont.)

Ue: 380-415 V AC

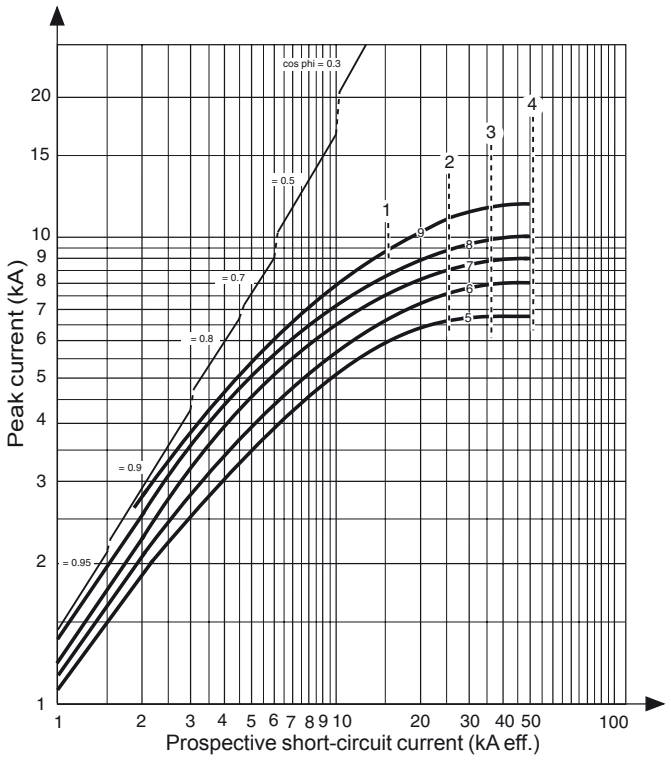
Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

NG125a, N, H, L

1P / 2P / 3P / 4P

Peak current

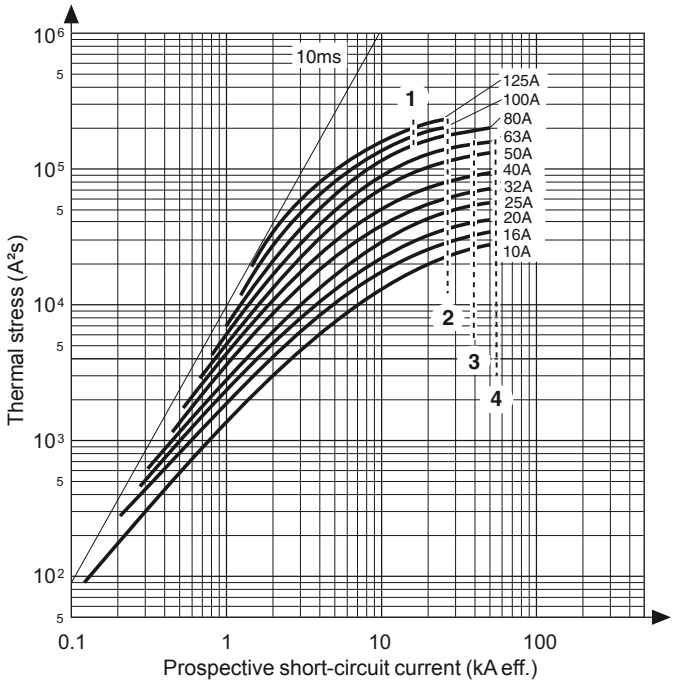
DB124299



- Circuit breaker type in accordance with the mark:
- ☐ 1: NG125a
- ☐ 2: NG125N
- ☐ 3: NG125H
- ☐ 4: NG125L
- ☐ 5: 10 -16 A
- ☐ 6: 20-25 A
- ☐ 7: 32-40 A
- ☐ 8: 50-63 A
- ☐ 9: 80-125 A

Thermal stress

DB405607



- Circuit breaker type in accordance with the mark:
- ☐ 1: NG125a 80-100-125 A
- ☐ 2: NG125N
- ☐ 3: NG125H
- ☐ 4: NG125L

Short-circuit current limiting (cont.)

Ue: 440 V AC

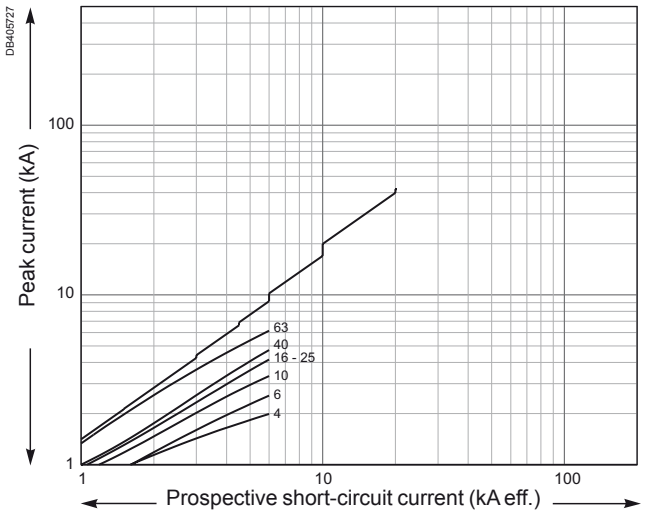
Limitation curves for network

Ue: 440 V AC

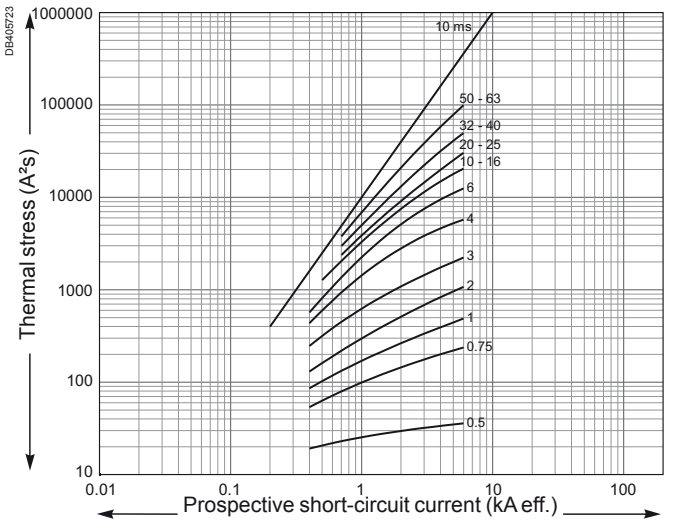
C60N

2P / 3P / 4P

Peak current



Thermal stress



Short-circuit current limiting (cont.)

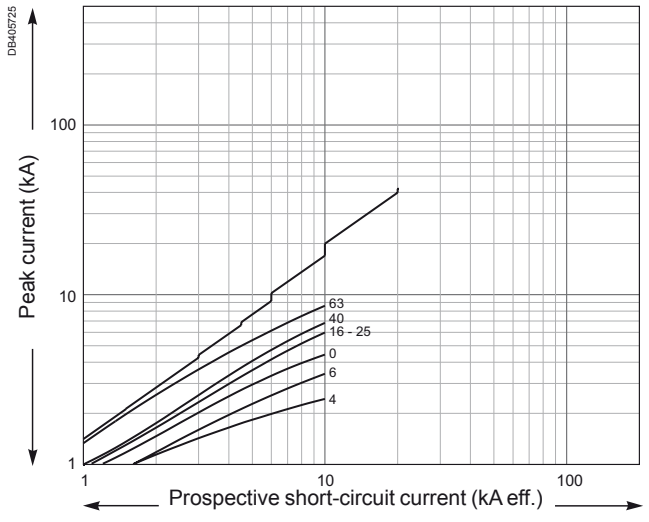
Ue: 440 V AC

Limitation curves for network
Ue: 440 V AC

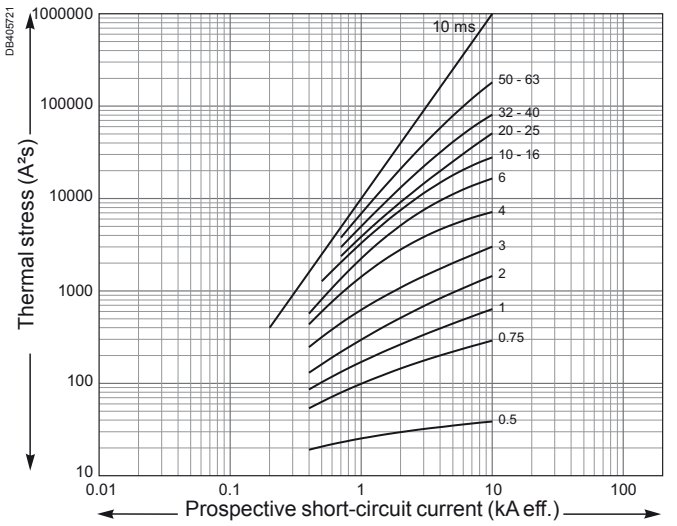
C60H

2P / 3P / 4P

Peak current



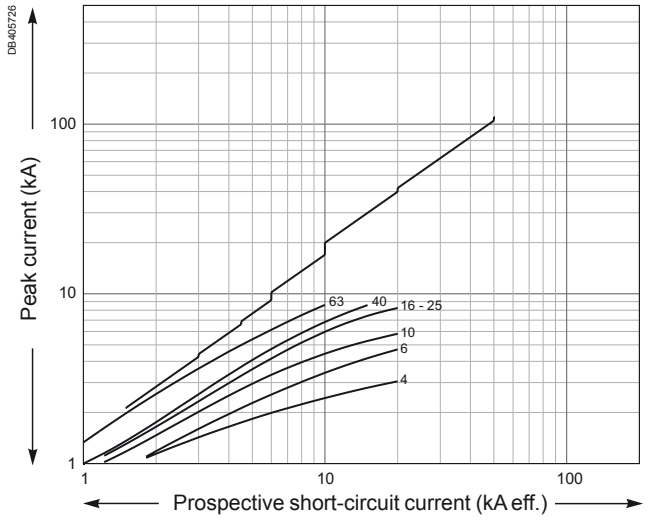
Thermal stress



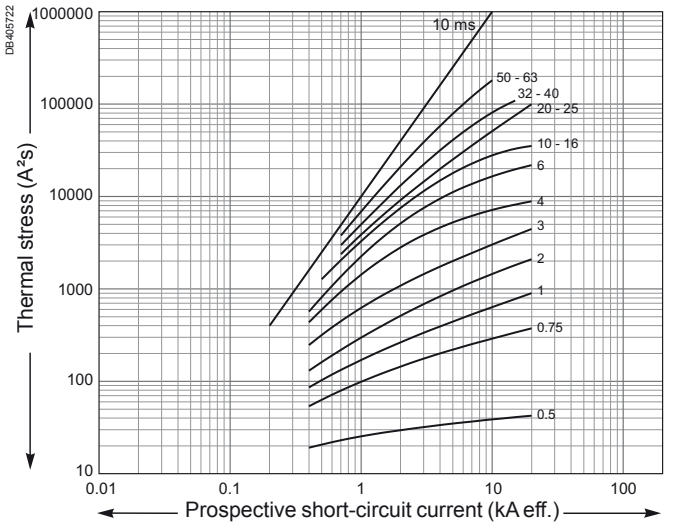
C60L

2P / 3P / 4P

Peak current



Thermal stress



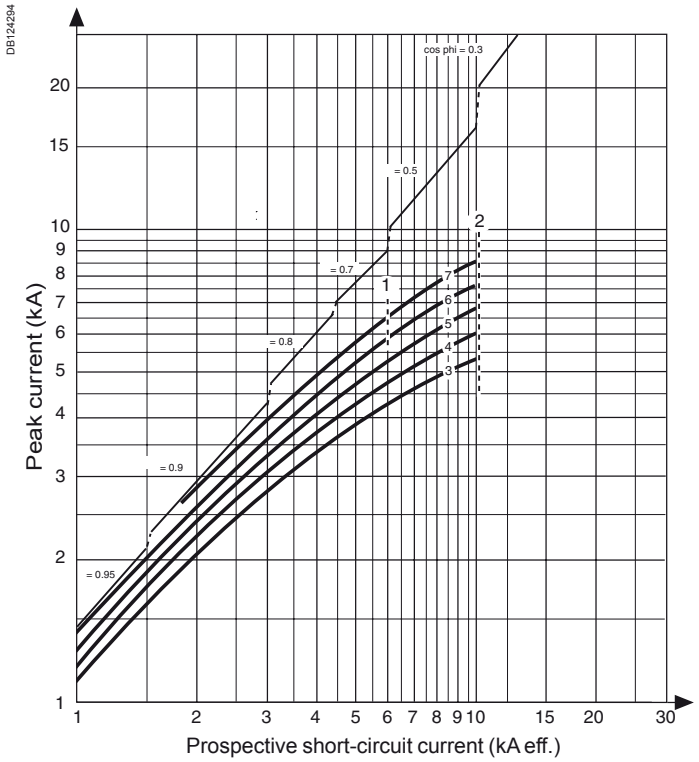
Short-circuit current limiting (cont.)
Ue: 440 V AC

Limitation curves for network
Ue: 440 V AC

C120N, H

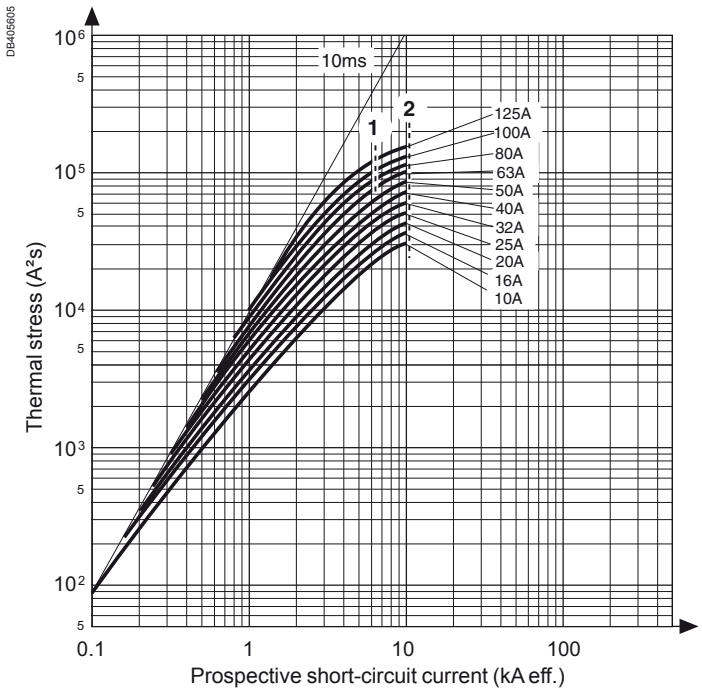
2P / 3P / 4P

Peak current



■ Circuit breaker type in accordance with the mark:
□ 1: C120N
□ 2: C120H
□ 3: 0-16 A
□ 4: 20-25 A
□ 5: 32-40 A
□ 6: 50-63 A
□ 7: 80-125 A

Thermal stress



■ Circuit breaker type in accordance with the mark:
□ 1: C120N
□ 2: C120H

Short-circuit current limiting (cont.)
Ue: 500 V AC

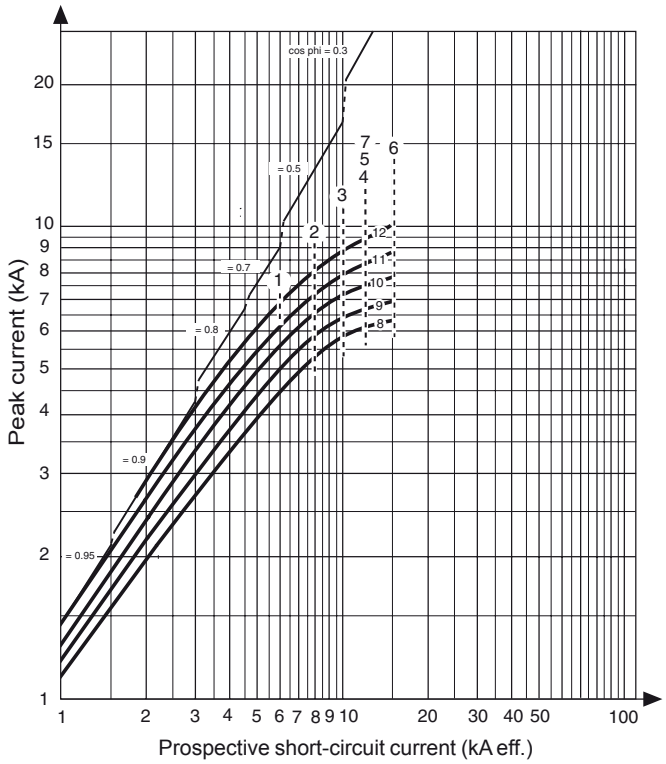
Limitation curves for network
Ue: 500 V AC

NG125a, N, H, L

2P / 3P / 4P

Peak current

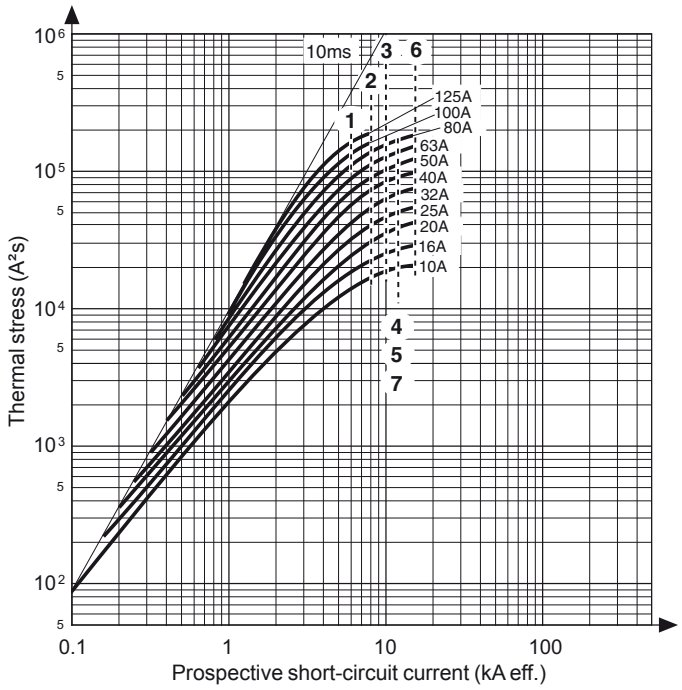
DB124300



■ Circuit breaker type in accordance with the mark:
- □ 1: NG125a 3, 4P
- □ 2: NG125N 2, 3, 4P
- □ 3: NG125H 3, 4P
- □ 4-5: NG125H 2P/NG125L 3, 4P
- □ 6: NG125L 2P
- □ 7: NG125 LMA 2, 3, 4P
- □ 8: 10 -16 A
- □ 9: 20-25 A
- □ 10: 32-40 A
- □ 11: 50-63 A
- □ 12: 80-125 A

Thermal stress

DB405608



■ Circuit breaker type in accordance with the mark:
- □ 1: NG125a 3, 4P
- □ 2: NG125N 2, 3, 4P
- □ 3: NG125H 3, 4P
- □ 4-5: NG125H 2P/NG125L 3, 4P
- □ 6: NG125L 2P
- □ 7: NG125LMA 2, 3, 4P

Short-circuit current limiting (cont.)

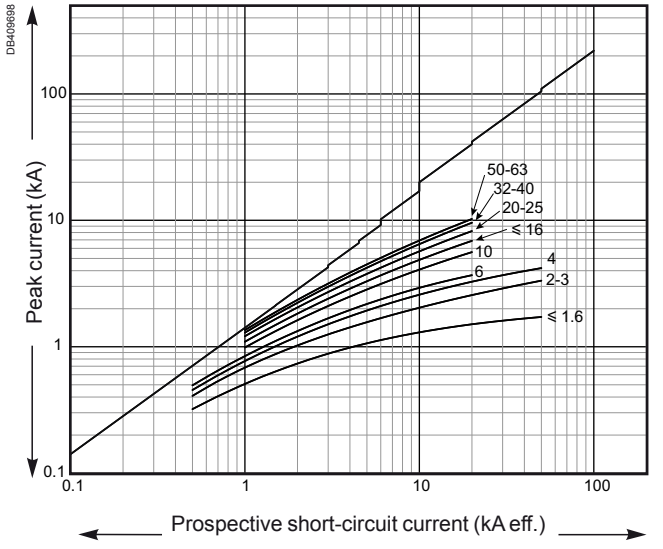
Ue: 220-240 V AC

Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

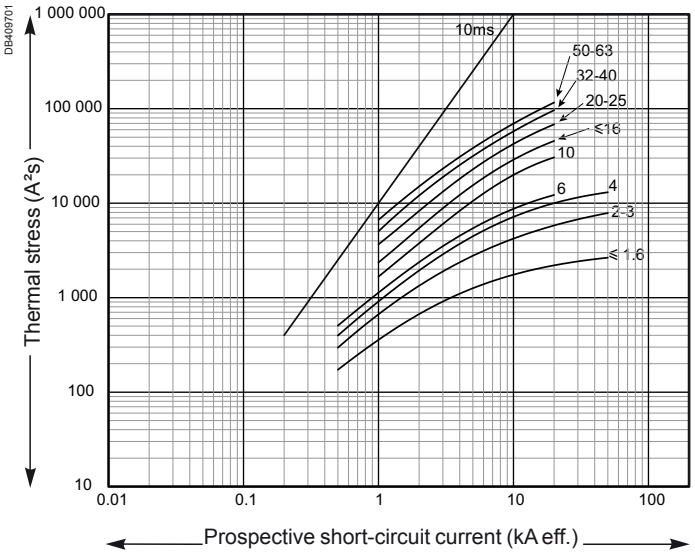
iC60N

1P / 1P+N / 2P / 3P / 4P

Peak current



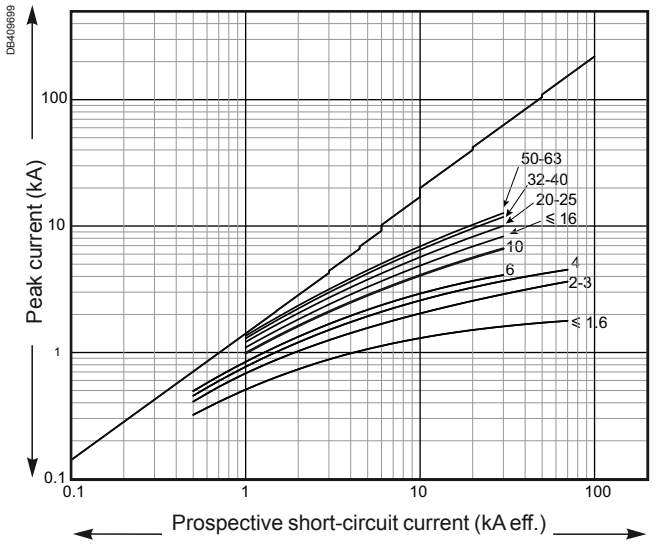
Thermal stress



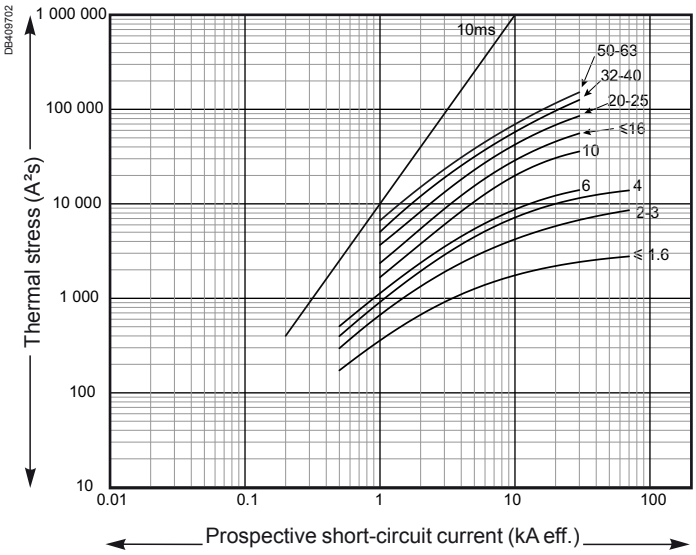
iC60H

1P / 1P+N / 2P / 3P / 4P

Peak current



Thermal stress



Short-circuit current limiting (cont.)

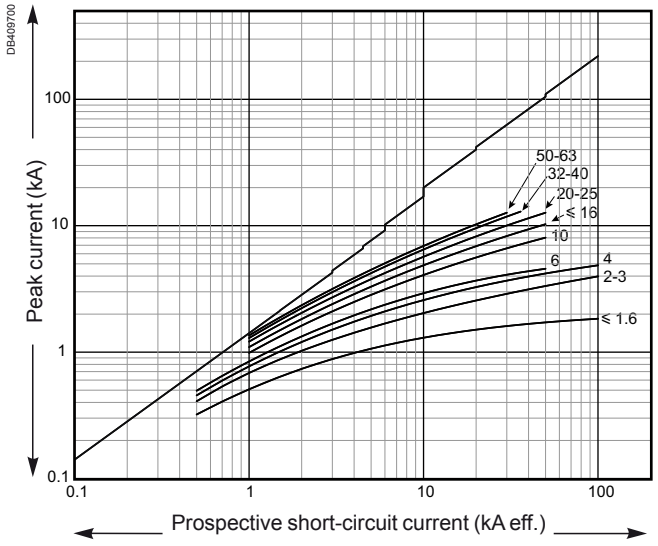
Ue: 220-240 V AC

Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

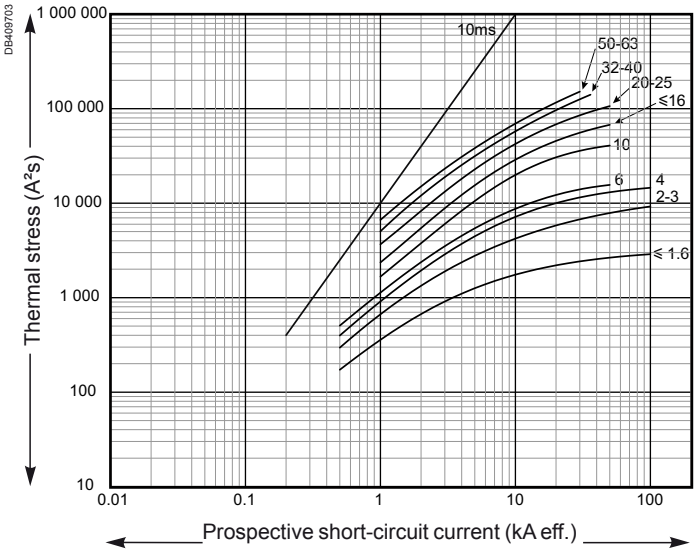
iC60L

1P / 2P / 3P / 4P

Peak current



Thermal stress



Short-circuit current limiting (cont.)

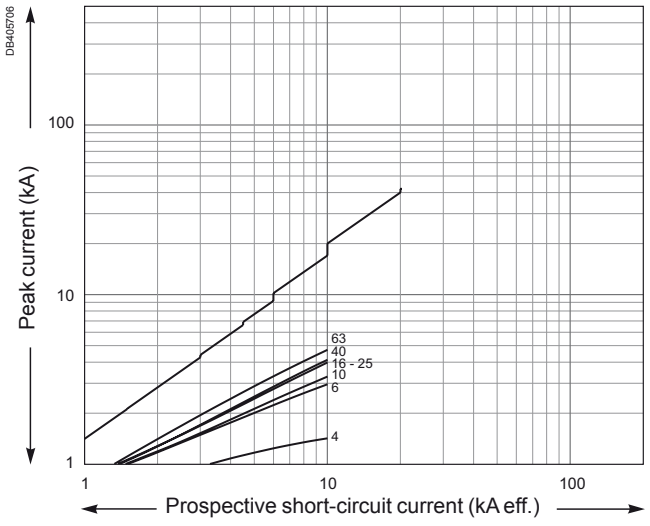
Ue: 220-240 V AC

Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

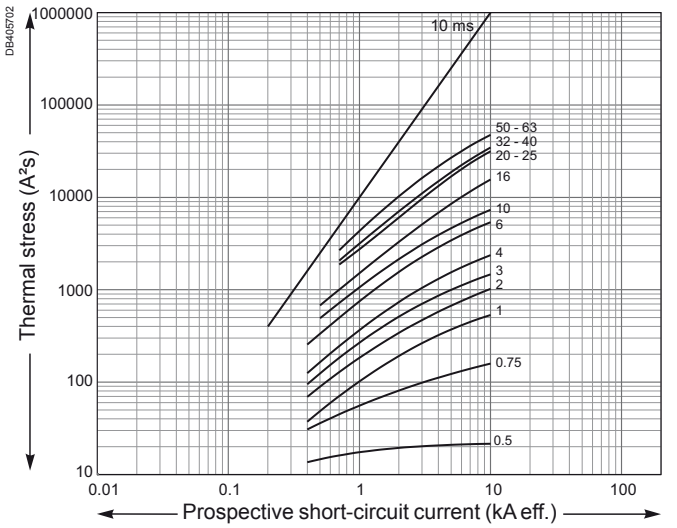
C60a

1P / 2P / 3P / 3P+N / 4P

Peak current



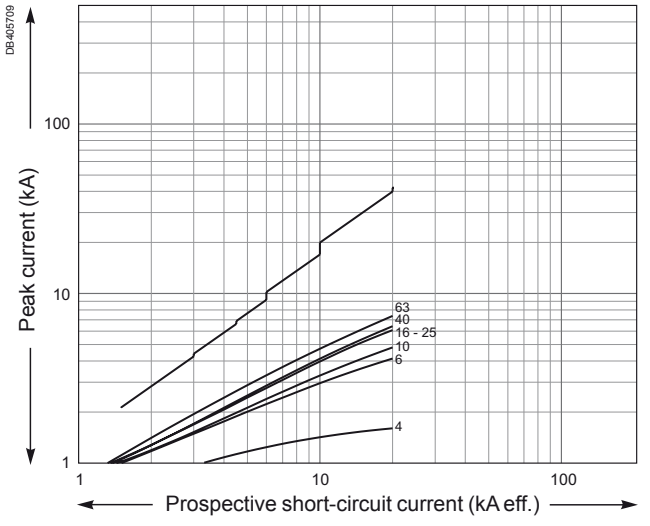
Thermal stress



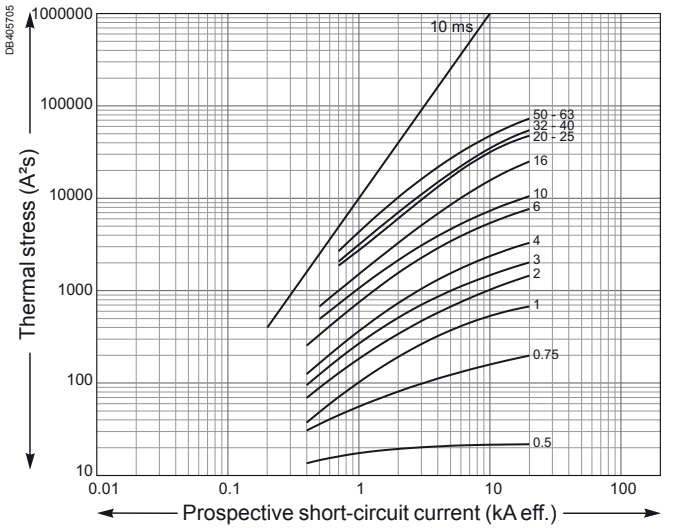
C60N

1P / 1P+N / 2P / 3P / 3P+N / 4P

Peak current



Thermal stress



Short-circuit current limiting (cont.)

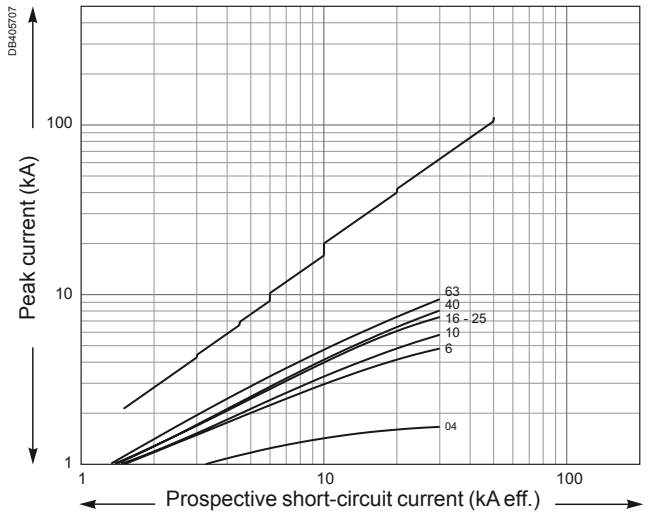
Ue: 220-240 V AC

Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

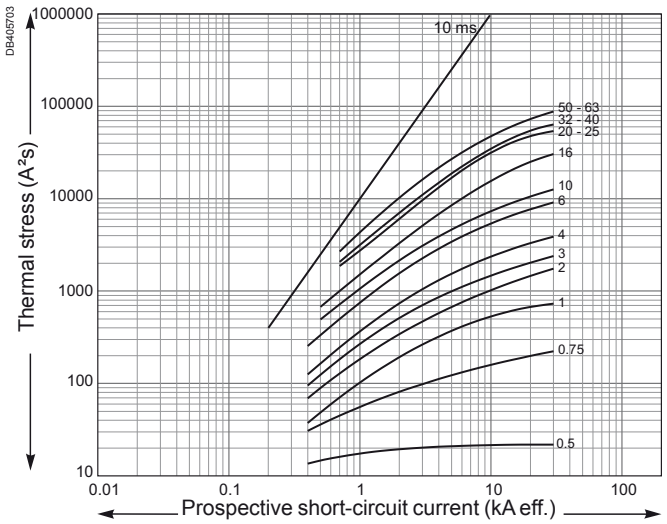
C60H

1P / 1P+N / 2P / 3P / 3P+N / 4P

Peak current



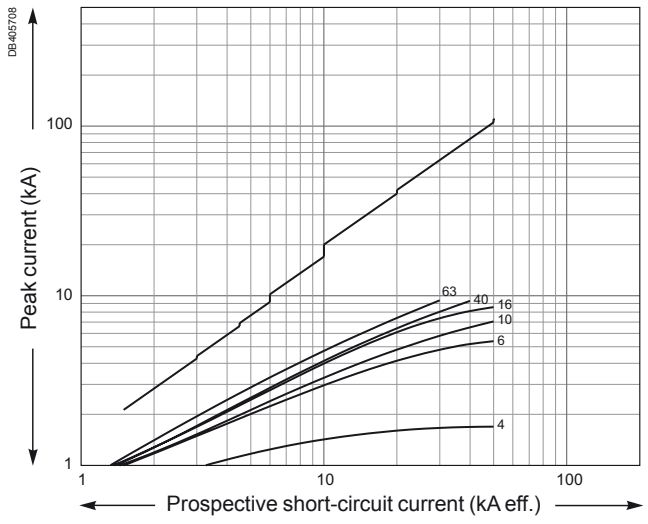
Thermal stress



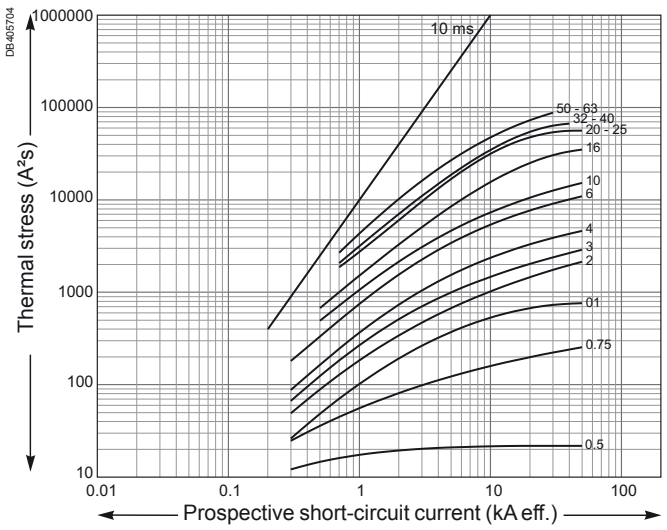
C60L

1P / 2P / 3P / 4P

Peak current



Thermal stress



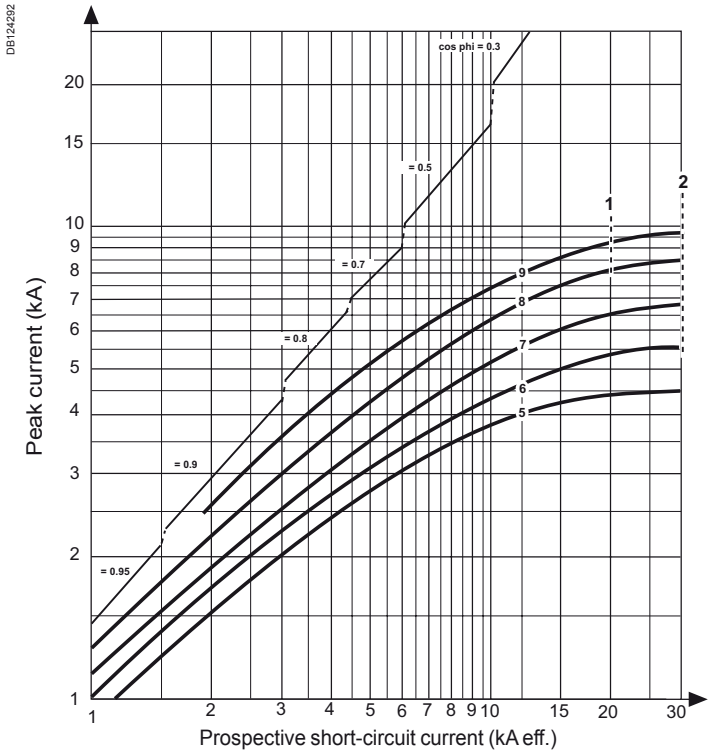
Short-circuit current limiting (cont.)
Ue: 220-240 V AC

Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

C120N, H

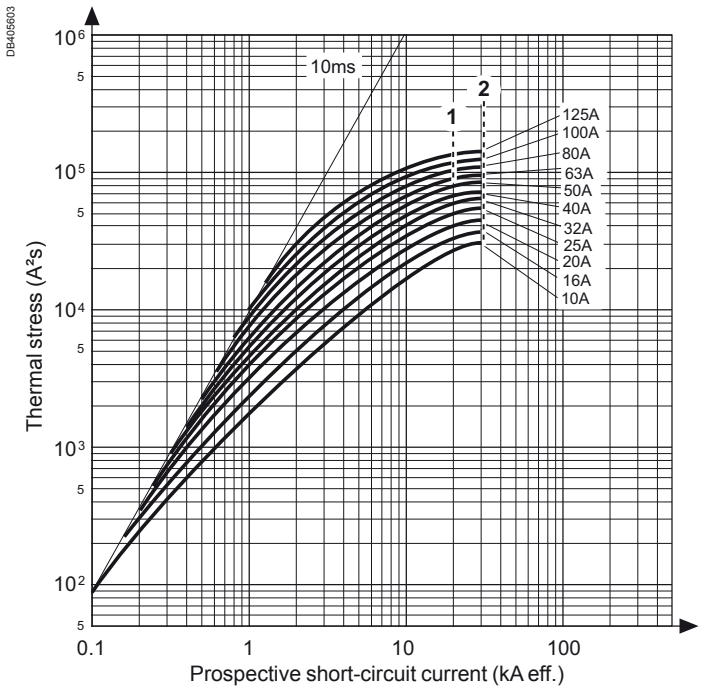
1P / 2P / 3P / 4P

Peak current



■ Circuit breaker type in accordance with the mark:
□ 1: C120N
□ 2: C120H
□ 5: 10-16 A
□ 6: 20-25 A
□ 7: 32-40 A
□ 8: 50-63 A
□ 9: 80-125 A

Thermal stress



■ Circuit breaker type in accordance with the mark:
□ 1: C120N
□ 2: C120H

Short-circuit current limiting (cont.)

Ue: 220-240 V AC

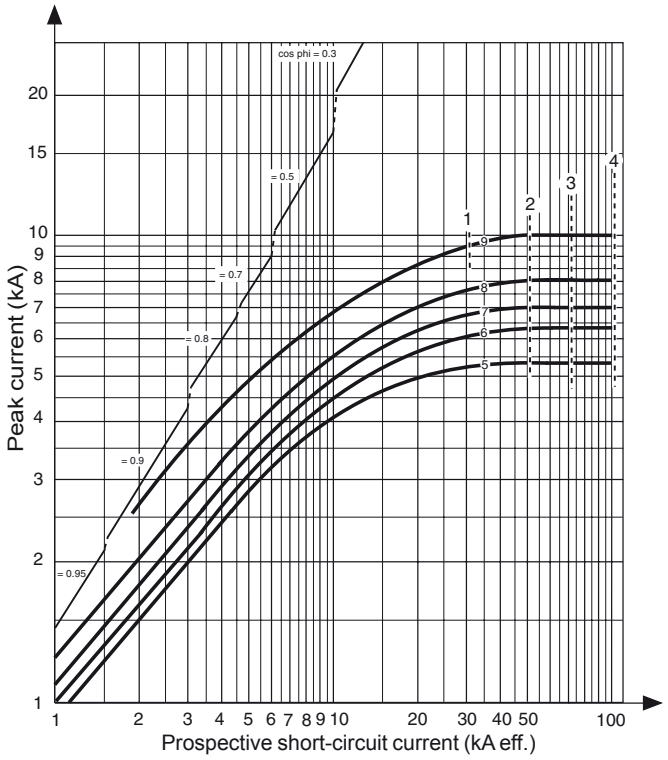
Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

NG125a, N, H, L

1P / 2P / 3P / 4P

Peak current

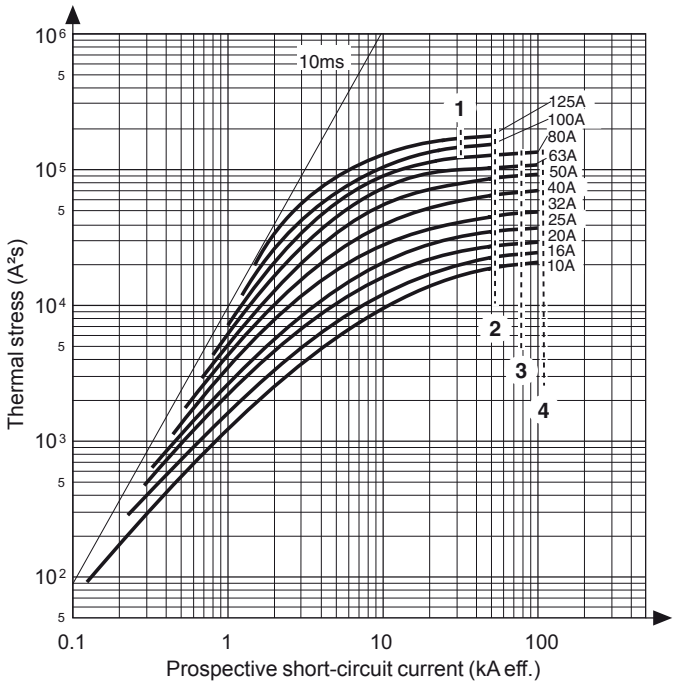
DB124298



■ Circuit breaker type in accordance with the mark:
- □ 1: NG125a
- □ 2: NG125N
- □ 3: NG125H
- □ 4: NG125L
- □ 5: 10-16 A
- □ 6: 20-25 A
- □ 7: 32-40 A
- □ 8: 50-63 A
- □ 9: 80-125 A

Thermal stress

DB405606



■ Circuit breaker type in accordance with the mark:
- □ 1: NG125a 80-100-125 A
- □ 2: NG125N
- □ 3: NG125H
- □ 4: NG125L

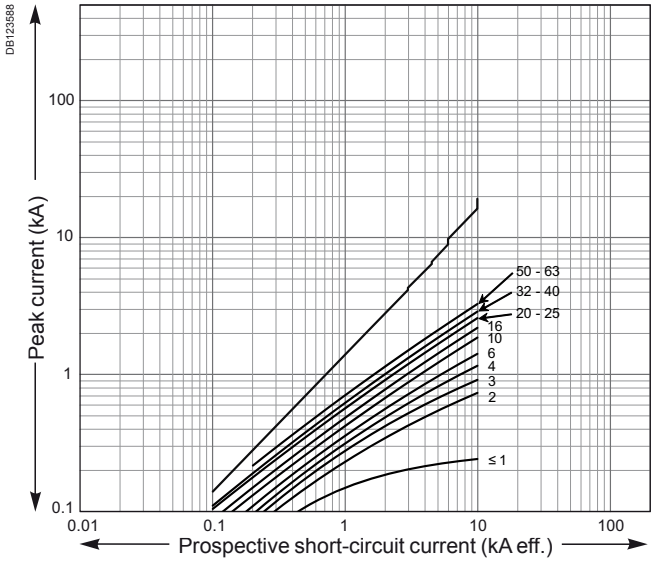
Short-circuit current limiting (cont.)
Direct current network

Limitation curves for direct current network

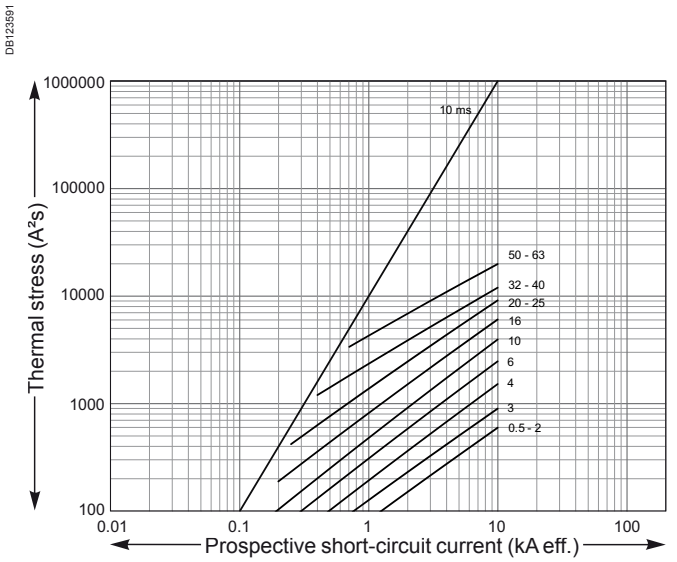
C60H-DC curve C

1P (220 V) - 2P (440 V)

Peak current



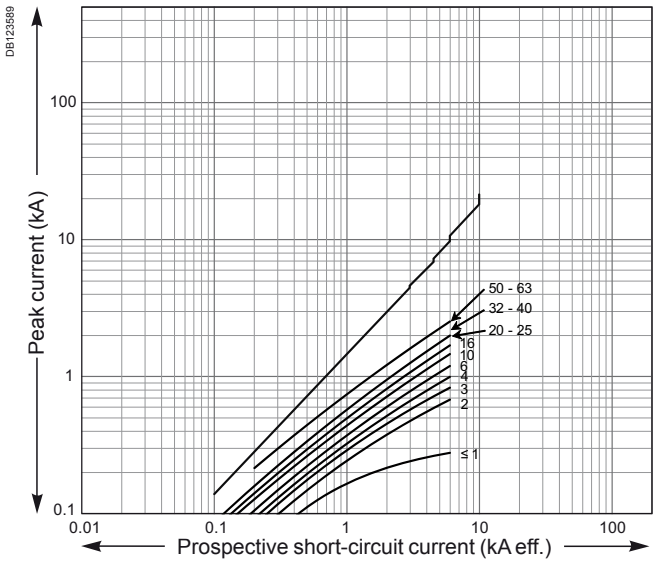
Thermal stress



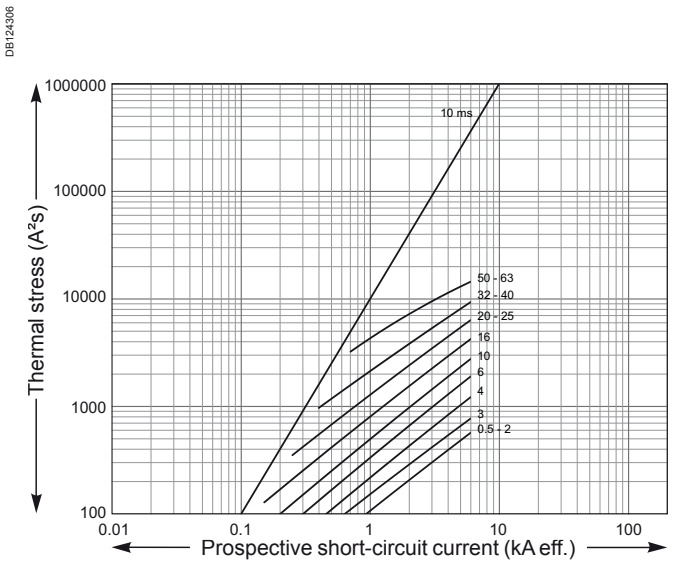
C60H-DC curve C

1P (250 V DC) - 2P (500 V DC)

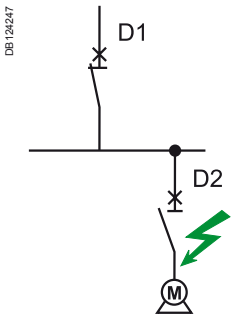
Peak current

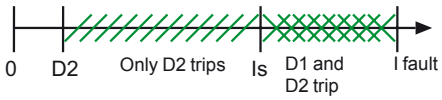


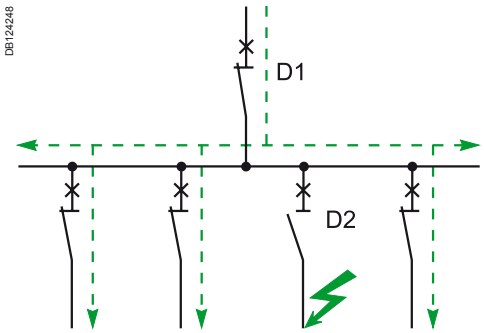
Thermal stress



Discrimination of the direct current circuit breakers







Continuity of service of the solutions

Discrimination of the direct current protection devices

Discrimination is a key element that must be taken into account right from the design stage of a low-voltage installation to allow continuity of service of the electrical power.

Discrimination involves coordination between two circuit breakers connected in series, so that in the event of a fault, only the circuit breaker positioned immediately upstream of the fault trips. A discrimination current Is is defined as:
- I fault < Is: only D2 removes the fault, discrimination ensured,
- I fault > Is: both circuit breakers may trip, discrimination not ensured.

Discrimination may be partial or total, up to the breaking capacity of the downstream circuit breaker. To ensure total discrimination, the characteristics of the upstream device must be higher than those of the downstream one.

The same principles apply to designing both direct current and alternating current installations. Only the limit currents change when direct current is used.

Once again, we find the same concepts of discrimination:
- **total**: up to the breaking capacity of the downstream device. Our tests have been performed at up to 25 kA depending on the breaking capacity of the devices in question (20 kA pour C60H-DC),
- **partial**: indication of the discrimination limit current **Is**. Discrimination is ensured below this value; above this value, the upstream device participates in the breaking process,
- **none**: no discrimination ensured, the upstream and downstream circuit breakers will trip.

Total discrimination solutions

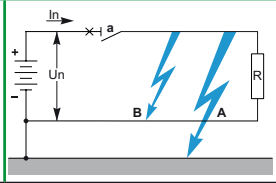
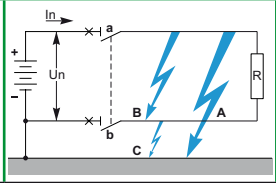
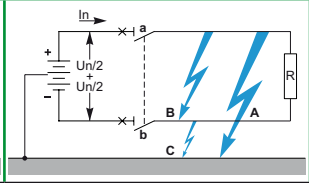
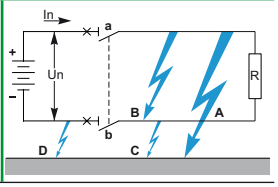
In the following tables, we offer you solutions that favour continuity of service (total discrimination between circuit breakers), for different short-circuit currents.

For further information about the discrimination concept for protection devices in general, refer to technical supplement 557E4300, "Discrimination of modular circuit breakers".

For further information about direct current applications, refer to technical supplement CA908032, "Circuit breakers for direct current applications".

Discrimination of the direct current circuit breakers

Choice of the discrimination table

Voltage Ue	Tables	Distribution with earthed polarity		Distribution with earthed mid-point	Distribution isolated from earth
		Protection non exigé	Protection exigée		
					
Up to 60 V DC	Tables 60 V page 617	iC60 1P + iC60 1P C120/NG125 1P + iC60 1P	iC60 2P + iC60 2P C120/NG125 2P + iC60 2P	iC60 2P + iC60 2P C120/NG125 2P + iC60 2P	
Up to 125 V DC	Tables 125 V page 623	C60H-DC 1P + C60H-DC 1P C120/NG125 1P + C60H-DC 1P iC60 2P + iC60 2P (see tables 60 V)	C60H-DC 2P + C60H-DC 2P C120/NG125 2P + C60H-DC 2P iC60 3P + iC60 3P (see tables 60 V)	C60H-DC 2P + C60H-DC 2P C120/NG125 2P + C60H-DC 2P iC60 2P + iC60 2P (see table 60 V) C120/NG125 2P + iC60 2P (see table 60 V)	C60H-DC 2P + C60H-DC 2P C120/NG125 2P + C60HDC 2P
Up to 250 V DC	Tables 125 V page 623	C60H-DC 2P + C60H-DC 2P C120/NG125 2P + C60H-DC 2P	C60H-DC 2P + C60H-DC 2P C120/NG125 3P + C60H-DC 2P	C60H-DC 2P + C60H-DC 2P C120/NG125 2P + C60H-DC 2P	C60H-DC 2P + C60H-DC 2P C120/NG125 4P + C60H-DC 2P

Discrimination table
Upstream : iC60 curve B
Downstream : iC60 curves B, C, D

60 V DC

Operating voltage (Ue): up to 60 V

Time constant (L/R): 2 ms to 15 ms

Upstream		iC60N/H/L Curve B										
In (A)		3	4	6	10	16	20	25	32	40	50	63
Downstream												
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**										
iC60N/H/L	B	1		T	T	T	T	T	T	T	T	T
		2				T	T	T	T	T	T	T
		3				150	1200	T	T	T	T	T
		4						500	900	T	T	T
		6							300	700	1000	1800	4000
		10								400	500	800	1000
		≥ 16											
	C	1		T	T	T	T	T	T	T	T	T	T
		2				T	T	T	T	T	T	T	T
		3				150	1200	T	T	T	T	T	T
		4						400	900	T	T	T	T
		6							300	700	1000	1800	3000
		10								300	500	700	800
		≥ 16											
	D	1			T	T	T	T	T	T	T	T	T
		2				1600	T	T	T	T	T	T	T
		3					900	11000	T	T	T	T	T
		4							700	T	T	T	T
		6								500	800	1800	3000
		10									400	600	800
		≥ 16											

Note: This table can be used up to 125 V DC if iC60 (Upstream/Downstream) have 2 poles in serial to cut the current.

T Total discrimination.

700 Discrimination limit = 700 A

Pas de sélectivité.

Discrimination table
Upstream : iC60 curve C
Downstream : iC60 curves B, C, D

60 V DC

Operating voltage (Ue): up to 60 V

Time constant (L/R): 2 ms to 15 ms

Upstream			iC60N/H/L Curve C										
In (A)			3	4	6	10	16	20	25	32	40	50	63
Downstream													
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**										
iC60N/H/L	B	1	T	T	T	T	T	T	T	T	T	T	T
		2			700	T	T	T	T	T	T	T	T
		3				900	T	T	T	T	T	T	T
		4					900	8000	T	T	T	T	T
		6							900	1800	3200	T	T
		10								700	800	1500	2000
		16										1000	1200
		≥ 20											
	C	1	T	T	T	T	T	T	T	T	T	T	T
		2			500	T	T	T	T	T	T	T	T
		3				900	T	T	T	T	T	T	T
		4					900	6700	T	T	T	T	T
		6							700	1400	3200	T	T
		10								700	800	1500	2000
		16										1000	1200
		≥ 20											
	D	1	T	T	T	T	T	T	T	T	T	T	T
		2			350	T	T	T	T	T	T	T	T
		3				700	T	T	T	T	T	T	T
		4					700	4000	T	T	T	T	T
		6							700	1400	3200	T	T
		10								500	800	1500	1800
		16										1000	1200
		≥ 20											

Note: This table can be used up to 125 V DC if iC60 (Upstream/Downstream) have 2 poles in serial to cut the current.

T — Total discrimination.

700 — Discrimination limit = 700 A

Pas de sélectivité.

Discrimination table
Upstream : iC60 curve D
Downstream : iC60 curves B, C, D

60 V DC

Operating voltage (Ue): up to 60 V

Time constant (L/R): 2 ms to 15 ms

Upstream			iC60N/H/L										
			Curve D										
In (A)			3	4	6	10	16	20	25	32	40	50	63
Downstream													
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**										
iC60N/H/L	B	1	T	T	T	T	T	T	T	T	T	T	T
		2		1500	T	T	T	T	T	T	T	T	T
		3			400	T	T	T	T	T	T	T	T
		4				700	T	T	T	T	T	T	T
		6					700	1000	2500	T	T	T	T
		10							700	1400	1600	3600	9000
		16								900	1000	1900	2700
		≥ 20											
	C	1	T	T	T	T	T	T	T	T	T	T	T
		2		1000	T	T	T	T	T	T	T	T	T
		3			350	T	T	T	T	T	T	T	T
		4				700	T	T	T	T	T	T	T
		6					700	1000	2000	T	T	T	T
		10							700	1400	1600	3600	9000
		16								900	1000	1500	2100
		≥ 20											
	D	1	T	T	T	T	T	T	T	T	T	T	T
		2		700	T	T	T	T	T	T	T	T	T
		3			350	T	T	T	T	T	T	T	T
		4				700	T	T	T	T	T	T	T
		6					700	1000	2000	T	T	T	T
		10							700	1400	1600	3600	7400
		16								900	1000	1500	2100
		≥ 20											

Note: This table can be used up to 125 V DC if iC60 (Upstream/Downstream) have 2 poles in serial to cut the current.

T Total discrimination.

700 Discrimination limit = 700 A

Pas de sélectivité.

Discrimination table
Upstream : C120, NG125 curve B
Downstream : iC60 curves B, C, D

60 V DC

Operating voltage (Ue): up to 60 V

Time constant (L/R): 2 ms to 15 ms

Upstream			C120N/H/L, NG125N/H/L										
			Curve B										
In (A)			10	16	20	25	32	40	50	63	80	100	125
Downstream													
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**										
iC60N/H/L	B	1	T	T	T	T	T	T	T	T	T	T	T
		2	T	T	T	T	T	T	T	T	T	T	T
		3	150	T	T	T	T	T	T	T	T	T	T
		4		300	500	1000	1250	T	T	T	T	T	T
		6			300	500	600	1800	2000	5500	T	T	T
		10						700	700	1900	5000	9500	T
		16									2000	3500	8500
		20										2000	4200
		≥ 25											
	C	1	T	T	T	T	T	T	T	T	T	T	T
		2	T	T	T	T	T	T	T	T	T	T	T
		3	120	T	T	T	T	T	T	T	T	T	T
		4		250	900	1100	1300	T	T	T	T	T	T
		6				500	500	1400	2000	4500	T	T	T
		10						500	600	1500	5000	9000	T
		16									1800	3000	7000
		20										2000	3500
		≥ 25											
	D	1	T	T	T	T	T	T	T	T	T	T	T
		2	5000	T	T	T	T	T	T	T	T	T	T
		3		600	T	T	T	T	T	T	T	T	T
		4			500	800	1000	T	T	T	T	T	T
		6				300	300	1100	1600	3500	T	T	T
		10						400	400	1200	4000	8000	T
		16							250	400	1400	2500	6000
		20									600	1400	3500
		≥ 25											

Note: This table can be used up to 125 V DC if C120/NG125 and iC60 (Upstream/Downstream) have 2 poles in serial to cut the current.

T Total discrimination.

700 Discrimination limit = 700 A

Pas de sélectivité.

Discrimination table
Upstream : C120, NG125 curve C
Downstream : iC60 curves B, C, D

60 V DC

Operating voltage (Ue): up to 60 V

Time constant (L/R): 2 ms to 15 ms

Upstream			C120N/H/L, NG125N/H/L Curve C										
In (A)			10	16	20	25	32	40	50	63	80	100	125
Downstream													
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**										
iC60N/H/L	B	1	T	T	T	T	T	T	T	T	T	T	T
		2	T	T	T	T	T	T	T	T	T	T	T
		3	5000	T	T	T	T	T	T	T	T	T	T
		4		1500	2000	T	T	T	T	T	T	T	T
		6			400	1500	3000	T	T	T	T	T	T
		10						1800	3000	8000	T	T	T
		16						1000	1400	2500	15000	T	T
		20									6500	11500	T
		25									4500	8500	15000
		32										5000	8000
		≥ 40											
	C	1	T	T	T	T	T	T	T	T	T	T	T
		2	T	T	T	T	T	T	T	T	T	T	T
		3	5000	T	T	T	T	T	T	T	T	T	T
		4		1000	1400	T	T	T	T	T	T	T	T
		6			400	1000	2400	T	T	T	T	T	T
		10					800	1500	3000	8500	T	T	T
		16						800	1400	3000	15000	T	T
		20								1700	6500	11000	T
		25									4500	8500	12000
		32									3000	5000	7000
		≥ 40											
	D	1	T	T	T	T	T	T	T	T	T	T	T
		2	T	T	T	T	T	T	T	T	T	T	T
		3	4000	T	T	T	T	T	T	T	T	T	T
		4		500	1000	T	T	T	T	T	T	T	T
		6				800	1900	T	T	T	T	T	T
		10					600	1200	2500	7000	T	T	T
		16						500	1000	2500	12000	T	T
		20								1400	5500	9000	T
		25									3500	7500	11000
		32										3500	6000
		≥ 40											

Note: This table can be used up to 125 V DC if C120/NG125 and iC60 (Upstream/Downstream) have 2 poles in serial to cut the current.

T Total discrimination.

500 Discrimination limit = 500 A

Pas de sélectivité.

Discrimination table

Upstream : C120, NG125 curve D
Downstream : iC60 curves B, C, D

60 V DC

Operating voltage (Ue): up to 60 V

Time constant (L/R): 2 ms to 15 ms

Upstream			C120N/H/L, NG125N/H/L										
			Curve D										
In (A)			10	16	20	25	32	40	50	63	80	100	125
Downstream													
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**										
iC60N/H/L	B	1	T	T	T	T	T	T	T	T	T	T	T
		2	T	T	T	T	T	T	T	T	T	T	T
		3	T	T	T	T	T	T	T	T	T	T	T
		4	5000	T	T	T	T	T	T	T	T	T	T
		6		1000	2000	T	T	T	T	T	T	T	T
		10			1000	9000	1400	3500	5000	T	T	T	T
		16						1500	2500	6000	T	T	T
		20							2000	3500	T	T	T
		25									15000	T	T
		32									9000	T	T
		40									7000	10000	T
		50											10000
		63											5000
	C	1	T	T	T	T	T	T	T	T	T	T	T
		2	T	T	T	T	T	T	T	T	T	T	T
		3	T	T	T	T	T	T	T	T	T	T	T
		4	5000	T	T	T	T	T	T	T	T	T	T
		6		1000	2000	T	T	T	T	T	T	T	T
		10			1000	9000	1400	3000	4000	15000	T	T	T
		16						1500	2000	6000	T	T	T
		20								3000	T	T	T
		25									12000	T	T
		32									8000	T	T
		40									5000	9000	T
		50											9000
		63											4000
	D	1	T	T	T	T	T	T	T	T	T	T	T
		2	T	T	T	T	T	T	T	T	T	T	T
		3	T	T	T	T	T	T	T	T	T	T	T
		4	5000	T	T	T	T	T	T	T	T	T	T
		6		1000	2000	T	T	T	T	T	T	T	T
		10			1000	9000	1400	3000	4000	15000	T	T	T
		16						1500	2000	6000	T	T	T
		20								3000	T	T	T
		25									12000	T	T
		32									8000	T	T
		40									5000	9000	T
		50											9000
		63											4000

Note: This table can be used up to 125 V DC if C120/NG125 and iC60 (Upstream/Downstream) have 2 poles in serial to cut the current.

T Total discrimination.

5000 Discrimination limit = 5000 A

Pas de sélectivité.

Discrimination table
Upstream : C60H-DC curve C
Downstream : C60H-DC curve C

125 V DC

Operating voltage (Ue): up to 125 V

Time constant (L/R): 2 ms to 15 ms

Upstream	C60H-DC												
	Curve C												
In (A)	1	2	3	4	6	10	16	20	25	32	40	50	63
Downstream													
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**											
C60H-DC	C	0.5	T	T	T	T	T	T	T	T	T	T	T	T
		1					250	T	T	T	T	T	T	T
		2						250	900	1800	11000	T	T	T
		3							300	500	700	1800	5000	T
		4										900	1300	3000	6000
		6												1200	1800
		⩾ 10													

Note: This table can be used up to 250 V DC if C60H-DC (Upstream/Downstream) have 2 poles in serial to cut the current.

T Total discrimination.

500 Discrimination limit = 500 A

Pas de sélectivité.

Discrimination table

Upstream : C120, NG125 curves B, C, D
Downstream : C60H-DC curve C

125 V DC

Operating voltage (Ue): up to 125 V

Time constant (L/R): 2 ms to 15 ms

Upstream			C120N/H/L, NG125N/H/L Curve B										
In (A)			10	16	20	25	32	40	50	63	80	100	125
Downstream													
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**										
C60H-DC	C	0.5	500	T	T	T	T	T	T	T	T	T	T
		1		450	T	T	T	T	T	T	T	T	T
		2			500	800	2500	T	T	T	T	T	T
		3						2400	4000	5000	T	T	T
		4						800	1000	1500	5000	T	T
		6									1800	3000	7000
		10										1500	3500
		16											2500
		⩾ 20											

Upstream			C120N/H/L, NG125N/H/L Curve C										
In (A)			10	16	20	25	32	40	50	63	80	100	125
Downstream													
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**										
C60H-DC	C	0.5	T	T	T	T	T	T	T	T	T	T	T
		1	1000	T	T	T	T	T	T	T	T	T	T
		2		5000	T	T	T	T	T	T	T	T	T
		3			1800	T	T	T	T	T	T	T	T
		4				1300	5500	12000	T	T	T	T	T
		6					2400	3000	6000	7000	12000	T	T
		10								3500	5500	8500	T
		16										5500	9000
		20											6000
		25											5000
		⩾ 32											

Upstream			C120N/H/L, NG125N/H/L Curve D										
In (A)			10	16	20	25	32	40	50	63	80	100	125
Downstream													
Circuit breaker	**Curve**	**Rating (A)**	**Discrimination limit (A)**										
C60H-DC	C	0.5	T	T	T	T	T	T	T	T	T	T	T
		1	T	T	T	T	T	T	T	T	T	T	T
		2	2500	6000	T	T	T	T	T	T	T	T	T
		3	700	1500	7000	T	T	T	T	T	T	T	T
		4			1800	10000	12000	T	T	T	T	T	T
		6				2500	3000	4000	6000	7000	T	T	T
		10							2000	3000	T	T	T
		16									9000	T	T
		20									5000	T	T
		25										10000	T
		32										5000	12000
		40											6000
		⩾ 50											

Note: These tables can be used up to 250 V DC if C120/NG125 and C60H-DC (Upstream/Downstream) have 2 poles in serial to cut the current.

T — Total discrimination.

500 — Discrimination limit = 500 A

Pas de sélectivité.

Cascading

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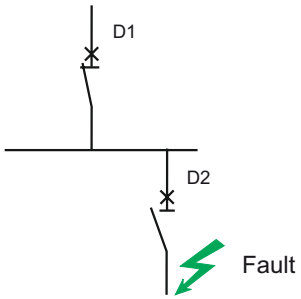

D1 and D2 in series.

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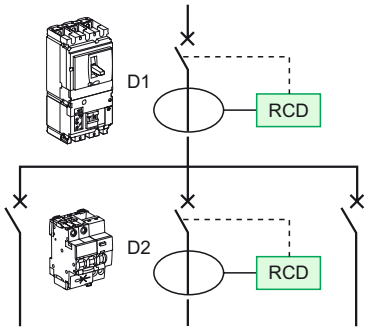

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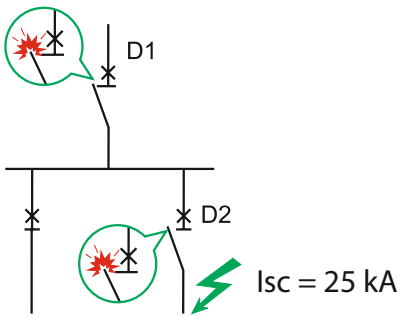


IEC 60947-2, Annex A
IEC 60364-4-43 § 434.5.1

What is cascading?

Cascading is the use of the current limiting capacity of circuit breakers at a given point to permit installation of lower-rated and therefore lower-cost circuit breakers downstream.
The upstream Compact circuit breakers acts as a barrier against short-circuit currents. In this way, downstream circuit breakers with lower breaking capacities than the prospective short-circuit (at their point of installation) operate under their normal breaking conditions.
Since the current is limited throughout the circuit controlled by the limiting circuit breaker, cascading applies to all switchgear downstream. It is not restricted to two consecutive devices.

General use of cascading

With cascading, the devices can be installed in different switchboards. Thus, in general, cascading refers to any combination of circuit breakers where a circuit breaker with a breaking capacity less than the prospective Isc at its point of installation can be used. Of course, the breaking capacity of the upstream circuit breaker must be greater than or equal to the prospective short-circuit current at its point of installation.
The combination of two circuit breakers in cascading configuration is covered by the following standards of:

- design and manufacture of circuit breakers (IEC 60947-2, Annex A),
- electrical distribution networks (IEC 60364-4-43 § 434.5.1).

Coordination between circuit breakers

The use of a protective device possessing a breaking capacity less than the prospective short-circuit current at its installation point is permitted as long as another device is installed upstream with at least the necessary breaking capacity.
In this case, the characteristics of the two devices must be coordinated in such a way that the energy let through by the upstream device is not more than that which can be withstood by the downstream device and the cables protected by these devices without damage.
Cascading can only be checked by laboratory tests and the possible combinations can be specified only by the circuit breaker manufacturer.

Cascading and protection discrimination

In cascading configurations, due to the Roto-active breaking technique, discrimination is maintained and, in some cases, even enhanced. Consult the enhanced discrimination tables on page 648 for data on discrimination limits.

Cascading tables

Schneider Electric cascading tables are:

- drawn up on the basis of calculations (comparison between the energy limited by the upstream device and the maximum permissible thermal stress for the downstream device)
- verified experimentally in accordance with IEC standard 60947-2.

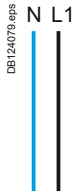
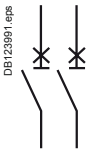
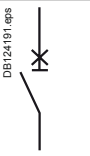
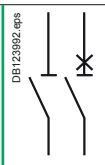
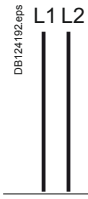
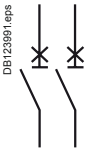
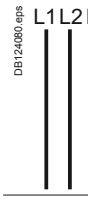
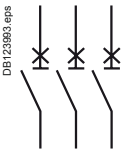
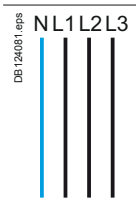
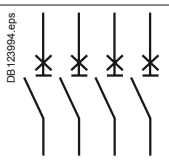
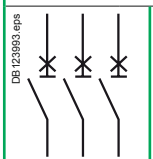
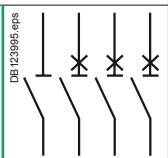
For 50/60 Hz distribution systems with 220-240 V, 380-415 V and 440 V between phases, the tables of the following pages indicate cascading possibilities between upstream Compact and downstream Acti 9 and Compact circuit breakers as well as between upstream Masterpact and downstream Compact circuit breakers.
Circuit breaker with Vigi module (Add-On Residual Current Device - RCD):
When circuit breakers are equipped with Vigi module, the following cascading tables are still applicable.

Cascading

Using the cascading tables

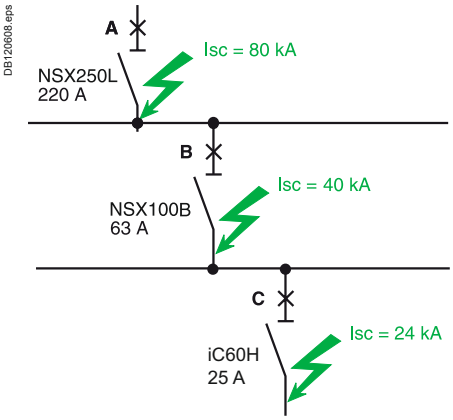
This table takes in account all types of faults: between phases, phase and neutral, phase and earth in all earthing systems.
In IT the following cascading tables can not be used to improve performances in case of "double fault" between two different phases and earth in two different locations of the installation. Each breaker shall comply to IEC60947-2 Annex H to be used in such a system.
Depending on the network and the type of downstream circuit breaker, the selection table below indicates which table should be consulted to find out the cascading value.

Selection table

		Upstream network					
							
Type of Downstream network	**Type of Downstream protection device**	**Type of circuit breaker upstream device: 1P, 2P, 3P or 4P circuit breaker**					
		Ph/N 110-130 V	**Ph/N 220-240 V**	**Ph/N 110-130 V Ph/Ph 220-240 V**	**Ph/N 220-240 V Ph/Ph 380-415 V**	**Ph/Ph 220-240 V**	**Ph/Ph 380-415 V**
	 *2P*	*See table Ue: 220-240 V*	*(1)* *See table Ue: 380-415 V*	*See table Ue: 220-240 V*	*(1)* *See table Ue: 380-415 V*		
	 *1P*  *1P + N*	*See table Ue: 220-240 V*	*(2)* *See table Ue: 380-415 V*	*See table Ue: 220-240 V*	*(2)* *See table Ue: 380-415 V*		
	 *2P*			*See table Ue: 220-240 V*	*See table Ue: 380-415 V*	*See table Ue: 220-240 V*	*See table Ue: 380-415 V*
	 *3P*			*See table Ue: 220-240 V*	*See table Ue: 380-415 V*	*See table Ue: 220-240 V*	*See table Ue: 380-415 V*
	 *4P*			*See table Ue: 220-240 V*	*See table Ue: 380-415 V*		
	 *3P*  *3P+N*			*See table Ue: 220-240 V*	*See table Ue: 380-415 V*		

(1) For fault phase-neutral with upstream protection of neutral, please consult the table Ue: 220-240 V.
(2) For iC60 1P+N circuit breaker connected between phase and neutral under 220-240 V, consult the table Ue: 220-240 V (only for faults between phase and neutral).

Cascading



Example of three level cascading

Consider three circuit breakers A, B and C connected in series. The criteria for cascading are fulfilled in the following two cases:

- the upstream device A is coordinated for cascading with both devices B and C (even if the cascading criteria are not fulfilled between B and C). It is simply necessary to check that the combinations A + B and A + C have the required breaking capacity
- each pair of successive devices is coordinated, i.e. A with B and B with C (even if the cascading criteria are not fulfilled between A and C). It is simply necessary to check that the combinations A + B and B + C have the required breaking capacity.

The upstream breaker A is a NSX250L (breaking capacity 150 kA) for a prospective Isc of 80 kA across its output terminals.

A NSX100B (breaking capacity 25 kA) can be used for circuit breaker B for a prospective Isc of 40 kA across its output terminals, since the "reinforced" breaking capacity provided by cascading with the upstream NSX250L is 50 kA.

A C60H (breaking capacity 15 kA) can be used for circuit breaker C for a prospective Isc of 24 kA across its output terminals since the "reinforced" breaking capacity provided by cascading with the upstream NSX250L is 25 kA.

Note that the "reinforced" breaking capacity of the C60H with the NSX100B upstream is only 20 kA, but:

- A + B = 50 kA
- A + C = 25 kA.

Cascading
Contents

Downstream	Upstream							
Type	**iDPN**	**iC60**	**C120**	**NG125**	**NG160**	**NSX100**	**NSX160**	**NSX250**
380-415 V (Ph/N 220-240 V)								
iDPN 230 Ph/N	page 630	page 630	page 630	page 630	page 630	page 631	page 631	page 632
iC60	page 630	page 630	page 630	page 630	page 630	page 631	page 631	page 632
C120	page 630	page 630	page 630	page 630	page 630	page 631	page 631	page 632
NG125	-	-	-	page 630	page 630	page 631	page 631	page 632
NG160	-	-	-	-	-	page 631	page 631	page 632
NSX100	-	-	-	-	-	page 631	page 631	page 632
NSX160	-	-	-	-	-	-	page 631	page 632
NSX250	-	-	-	-	-	-	-	page 632
440 V								
iC60	-	page 637	-	page 637	-	page 637	page 637	-
NG125	-	page 637	-	page 637	-	page 637	page 637	page 638
NG160	-	-	-	-	-	-	page 637	page 638
NSX100	-		-	-	-	page 637	page 637	page 638
NSX160	-	-	-	-	-	-	page 637	page 638
NSX250	-	-	-	-	-	-	-	page 638
220-240 V (Ph/N 110-130 V)								
iDPN 130 Ph/N	page 642	page 642	page 642	page 642	page 642	page 642	page 643	page 644
iC60	page 642	page 642	page 642	page 642	page 642	page 642	page 643	page 644
C120	page 642	page 642	page 642	page 642	page 642	page 642	page 643	page 644
NG125	page 642	page 642	page 642	page 642	page 642	page 642	page 643	page 644
NG160	-	-	-	-	page 642	page 642	page 643	page 644
NSX100	-	-	-	-	page 642	page 642	page 643	page 644
NSX160	-	-	-	-	-	-	page 643	page 644
NSX250	-	-	-	-	-	-	-	page 644

Discrimination enhanced by cascading

Downstream	Upstream			
Type	**NG160**	**NSX100**	**NSX160**	**NSX250**
380-415 V (Ph/N 220-240 V)				
iC60	page 649	page 651	page 650-651	page 650-652
C120	-	-	-	page 650-652
NG125	-	-	page 650	page 650-652
NG160	-	-	-	page 652
NSX100	-	-	-	page 652
440 V				
iC60	-	page 656	page 655	-
NG125	-	page 656	page 655	page 655
NSX100	-	page 656	-	page 655
220-240 V (Ph/N 110-130 V)				
iC60	-	page 660	page 659-660	page 659-661
C120	-	-	-	page 659-661
NG125	-	-	page 659	page 659-661
NG160	-	-	-	page 662
NSX100	-	-	-	page 662

Cascading
Contents

Downstream	Upstream							
Type	NSX400	NSX630	NS630b	NS800	NS1000 H/L	NS1250 NS1600 H	NS2000 NS2500 NS3200	Masterpact
380-415 V (Ph/N 220-240 V)								
NG160	page 633	page 634	page 635	-	-	-	-	-
NSX100	page 633	page 634	page 635	page 635	page 636	page 636	page 636	page 636
NSX160	page 633	page 634	page 635	page 635	page 636	page 636	page 636	page 636
NSX250	page 633	page 634	page 635	page 635	page 636	page 636	page 636	page 636
NSX400	page 633	page 634	page 635	page 635	page 636	page 636	page 636	page 636
NSX630	-	page 634	page 635	page 635	page 636	page 636	page 636	page 636
NS630b	-	-	page 635	page 635	page 636	page 636	page 636	page 636
NS800	-	-	page 635	page 635	page 636	page 636	page 636	page 636
NS1000	-	-	page 635	page 635	page 636	page 636	page 636	page 636
NS1250	-	-	-	-	page 636	page 636	page 636	page 636
NS1600	-	-	-	-	page 636	page 636	page 636	page 636
440 V								
NG160	page 638	page 639	-	-	-	-	-	-
NSX100	page 638	page 639	page 640	page 640	page 641	page 641	page 641	page 641
NSX160	page 638	page 639	page 640	page 640	page 641	page 641	page 641	page 641
NSX250	page 638	page 639	page 640	page 640	page 641	page 641	page 641	page 641
NSX400	page 638	page 639	page 640	page 640	page 641	page 641	page 641	page 641
NSX630	-	page 639	page 640	page 640	page 641	page 641	page 641	page 641
NS630b	-	-	page 640	page 640	page 641	page 641	page 641	page 641
NS800	-	-	page 640	page 640	page 641	page 641	page 641	page 641
NS1000	-	-	-	-	page 641	page 641	page 641	page 641
NS1250	-	-	-	-	page 641	page 641	page 641	page 641
NS1600	-	-	-	-	page 641	page 641	page 641	page 641
220-240 V (Ph/N 110-130 V)								
NG160	page 645	page 646	-	-	-	-	-	-
NSX100	page 645	page 646	page 647	page 647	page 647	-	-	page 647
NSX160	page 645	page 646	page 647	page 647	page 647	-	-	page 647
NSX250	page 645	page 646	page 647	page 647	page 647	-	-	page 647
NSX400	page 645	page 646	page 647	page 647	page 647	-	-	page 647
NSX630	-	page 646	page 647	page 647	page 647	-	-	page 647

Discrimination enhanced by cascading

Downstream	Upstream					
Type	NSX400	NSX630	NS800	NS1000	NS1250	NS1600
380-415 V (Ph/N 220-240 V)						
NG160	page 653	page 653	-	-	-	-
NSX100	page 653	page 653	page 654	page 654	page 654	page 654
NSX160	page 653	page 653	page 654	page 654	page 654	page 654
NSX250	page 653	page 653	page 654	page 654	page 654	page 654
NSX400	-	-	page 654	page 654	page 654	page 654
NSX630	-	-	page 654	page 654	page 654	page 654
440 V						
NSX100	page 657	page 657	page 658	page 658	page 658	page 658
NSX160	page 657	page 657	page 658	page 658	page 658	page 658
NSX250	page 657	page 657	page 658	page 658	page 658	page 658
NSX400	-	-	page 658	page 658	page 658	page 658
NSX630	-	-	page 658	page 658	page 658	page 658
220-240 V (Ph/N 110-130 V)						
NG160	page 663	page 663	page 663	page 663	-	-
NSX100	page 663	page 663	page 663	page 663	-	-
NSX160	page 663	page 663	page 663	page 663	-	-
NSX250	page 663	page 663	page 663	page 663	-	-
NSX400	page 663	page 663	page 663	page 663	-	-
NSX630	page 663	page 663	page 663	page 663	-	-

Cascading

Upstream: iDPN, iC60, C120, NG125, NG160, NSX100

Downstream: iDPN, iC60, C120, NG125, NG160, NSX100

Upstream	iDPN	iC60					C120		NG125		
	iDPN N	iC60N	iC60H	iC60L			C120N	C120H	NG125N	NG125H	NG125L
				≤ 25 A	32/40 A	50/63 A					
Breaking capacity (kA)	10	10	15	25	20	15	10	15	25	36	50

Downstream													
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)										
iDPN	16	6	10	10	10	20	15	10	10	10	10	16	20
	40	6	10	10	10	15	10	10	10	10	10	16	20
iDPNN	16	10			15	25	20	15		15	20	20	25
	40	10			15	20	15	15		15	16	20	25
iC60N	25	10			15	25	20	15		15	25	25	25
	40	10			15		20	15		15	25	25	25
	63	10			15			15		15	25	25	25
iC60H	25	15				25	20				25	36	36
	40	15					20				25	36	36
	63	15									25	36	36
iC60L	25	25										36	50
	40	20									25	36	50
	63	15									25	36	36
C120N	125	10								15	25	25	36
C120H	125	15									25	25	36
NG125N	125	25										36	36
NG125H	80	36											50

Upstream	NG160			NSX100					
	NG160E	NG160N	NG160H	NSX100B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L
Breaking capacity (kA)	16	25	36	25	36	50	70	100	150

Downstream											
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)								
iDPN	40	6	10	10	10	10	10	10	10	10	10
iDPNN	16	10	16	20	20	20	20	20	20	20	20
	40	10	16	16	16	16	16	16	16	16	16
iC60N	63	10	16	20	25	20	25	30	30	30	30
iC60H	40	15	16	25	25	25	36	40	40	40	40
	63	15	16	25	25	25	36	36	36	36	36
iC60L	25	25					36	40	40	40	40
	40	20		25	25	25	36	40	40	40	40
	63	15	16	25	25	25	36	36	36	36	36
C120N	125	10	16	25	25	25	25	25	25	25	25
C120H	125	15	16	25	25	25	25	25	25	25	25
NG125N	125	25			36		36	36	36	50	70
NG125H	80	36					36	40	50	70	100
NG125L	80	50							70	100	150
NSX100B		25					36	36	50	50	50
NSX100F		36						50	70	100	150
NSX100N		50							70	100	150
NSX100H		70								100	150
NSX100S		100									150

Cascading

Upstream: NSX160
Downstream: iDPN, iC60, C120, NG125, NG160, NSX100, NSX160

Upstream	NSX160					
	NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)	25	36	50	70	100	150

Downstream								
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)					
iDPN	40	6	10	10	10	10	10	10
iDPNN	16	10	20	20	20	20	20	20
	40	10	16	16	16	16	16	16
iC60N	63	10	20	25	30	30	30	30
iC60H	40	15	25	36	40	40	40	40
	63	15	25	30	30	30	30	30
iC60L	25	25		36	40	40	40	40
	40	20	25	36	40	40	40	40
	63	15	25	30	36	36	36	36
C120N	125	10	25	25	25	25	25	25
C120H	125	15	25	25	25	25	25	25
NG125N	125	25		36	36	36	50	70
NG125H	80	36			40	50	70	100
NG125L	80	50				70	100	150
NG160E		16	25	25	30	30	30	30
NG160N		25		36	36	50	50	50
NG160H		36			50	50	50	50
NSX100B		25		36	36	50	50	50
NSX100F		36			50	70	100	150
NSX100H		70					100	150
NSX100S		100						150
NSX160B		25		36	36	50	50	50
NSX160F		36			50	70	100	150
NSX160N		50				70	100	150
NSX160H		70					100	150
NSX160S		100						150

Cascading

Upstream: NSX250
Downstream: iDPN, iC60, C120, NG125, NG160, NSX100, NSX160, NSX250

Upstream	NSX250					
	NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	25	36	50	70	100	150

Downstream								
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)					
iDPN	40	6	10	10	10	10	10	10
iDPNN	16	10	20	20	20	20	20	20
	40	10	16	16	16	16	16	16
iC60N	40	10	20	25	30	30	30	30
	63	10	20	25	25	25	25	25
iC60H	40	15	25	30	30	30	30	30
	63	15	25	25	25	25	25	25
iC60L	25	25		30	30	30	30	30
	40	20	25	30	30	30	30	30
	63	15	25	25	25	25	25	25
C120N	125	10	25	25	25	25	25	25
C120H	125	15	25	25	25	25	25	25
NG125N	125	25		36	36	36	50	70
NG125H	80	36			40	50	70	100
NG125L	80	50				70	100	150
NG160E		16	25	25	30	30	30	30
NG160N		25		36	36	50	50	50
NG160H		36			50	50	50	50
NSX100B		25		36	36	50	50	50
NSX100F		36			50	70	100	150
NSX100N		50				70	100	150
NSX100H		70					100	150
NSX100S		100						150
NSX160B		25		36	36	50	50	50
NSX160F		36			50	70	100	150
NSX160N		50				70	100	150
NSX160H		70					100	150
NSX160S		100						150
NSX250B		25		36	36	50	50	50
NSX250F		36			50	70	100	150
NSX250N		50				70	100	150
NSX250H		70					100	150
NSX250S		100						150

Cascading

Upstream: NSX400
Downstream: NG160, NSX100, NSX160, NSX250, NSX400

Upstream	NSX400				
	NSX400F	NSX400N	NSX400H	NSX400S	NSX400L
Breaking capacity (kA)	36	50	70	100	150

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	16	25	25	30	30	30
NG160N	25		36	50	50	50
NG160H	36		50	50	50	50
NSX100B	25	36	36	50	50	50
NSX100F	36		50	70	100	150
NSX100N	50			70	100	150
NSX100H	70				100	150
NSX100S	100					150
NSX160B	25	36	36	50	50	50
NSX160F	36		50	70	100	150
NSX160N	50			70	100	150
NSX160H	70				100	150
NSX160S	100					150
NSX250B	25	36	36	50	50	50
NSX250F	36		50	70	100	150
NSX250N	50			70	100	150
NSX250H	70				100	150
NSX250S	100					150
NSX400F	36		50	70	100	150
NSX400N	50			70	100	150
NSX400H	70				100	150
NSX400S	100					150

Cascading

Upstream: NSX630
Downstream: NG160, NSX100, NSX160, NSX250, NSX400, NSX630

Upstream	NSX630				
	NSX630F	NSX630N	NSX630H	NSX630S	NSX630L
Breaking capacity (kA)	36	50	70	100	150

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	16	25	25	30	30	30
NG160N	25		36	50	50	50
NG160H	36		50	50	50	50
NSX100B	25	36	36	50	50	50
NSX100F	36		50	70	100	150
NSX100N	50			70	100	150
NSX100H	70				100	150
NSX100S	100					150
NSX160B	25	36	36	50	50	50
NSX160F	36		50	70	100	150
NSX160N	50			70	100	150
NSX160H	70				100	150
NSX160S	100					150
NSX250B	25	36	36	50	50	50
NSX250F	36		50	70	100	150
NSX250N	50			70	100	150
NSX250H	70				100	150
NSX250S	100					150
NSX400F	36		50	70	100	150
NSX400N	50			70	100	150
NSX400H	70				100	150
NSX400S	100					150
NSX630F	36		50	70	100	150
NSX630N	50			70	100	150
NSX630H	70				100	150
NSX630S	100					150

Cascading

Upstream: NS630bN to NS1600N, NS630b, NS800
Downstream: NSX100, NSX160, NSX250, NSX400, NSX630, NS630b, NS800, NS1000

Upstream	NS630bN to NS1600N	NS630b			NS800		
		H	L	LB	H	L	LB
Breaking capacity (kA)	50	70	150	200	70	150	200
Downstream							
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
NSX100B	25	50	50	50	50	50	50	50
NSX100F	36	50	70	150	150	70	150	150
NSX100N	50		70	150	150	70	150	150
NSX100H	70			150	150		150	150
NSX100S	100			150	200		150	200
NSX100L	150				200			200
NSX160B	25	50	50	50	50	50	50	50
NSX160F	36	50	70	150	150	70	150	150
NSX160N	50		70	150	150	70	150	150
NSX160H	70			150	150		150	150
NSX160S	100			150	200		150	200
NSX160L	150				200			200
NSX250B	25	50	50	50	50	50	50	50
NSX250F	36	50	70	150	150	70	150	150
NSX250N	50		70	150	150	70	150	150
NSX250H	70			150	150		150	150
NSX250S	100			150	200		150	200
NSX250L	150				200			200
NSX400F	36	50	70	150	150	70	150	150
NSX400N	50		70	150	150	70	150	150
NSX400H	70			150	150		150	150
NSX400S	100			150	200		150	200
NSX400L	150				200			200
NSX630F	36	50	70	150	150	70	150	150
NSX630N	50		70	150	150	70	150	150
NSX630H	70			150	150		150	150
NSX630S	100			150	200		150	200
NSX630L	150				200			200
NS630bN	50		70	150	200	70	150	200
NS630bH	70			150	200		150	200
NS800N	50					70	150	200
NS800H	70						150	200
NS1000N	50							200
NS1000H	70							200

Cascading

Upstream: NS1000, NS1250, NS1600, NS2000, NS2500, NS3200, Masterpact
Downstream: NSX100-160-250-400-630, NS630b, NS800-1000-1250-1600

Upstream	NS1000		NS1250H NS1600H	NS2000N NS2500N NS3200N	Masterpact	
	H	L			NT L1	NW L1
Breaking capacity (kA)	70	150	70	70	150	150
Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NSX100B	25	50	50	50	50	
NSX100F	36	70	150	70	150	
NSX100N	50	70	150	70	150	
NSX100H	70		150		150	
NSX100S	100		150		150	
NSX100L	150					
NSX160B	25	50	50	50	50	
NSX160F	36	70	150	70	150	
NSX160N	50	70	150	70	150	
NSX160H	70		150		150	
NSX160S	100		150		150	
NSX160L	150					
NSX250B	25	50	50	50	50	
NSX250F	36	70	150	70	150	
NSX250N	50	70	150	70	150	
NSX250H	70		150		150	
NSX250S	100		150		150	
NSX250L	150					
NSX400F	36	70	150	70	150	
NSX400N	50	70	150	70	150	
NSX400H	70		150		150	
NSX400S	100		150		150	
NSX400L	150					
NSX630F	36	70	150	70	150	
NSX630N	50	70	150	70	150	
NSX630H	70		150		150	
NSX630S	100		150		150	
NSX630L	150					
NS630bN	50	70	150	70	150	65
NS630bH	70		150		150	
NS800N	50		150	70	150	65
NS800H	70		150		150	
NS1000N	50		150	70	150	65
NS1000H	70		150		150	
NS1250N	50			70		65
NS1600N	50			70		65

Cascading

Upstream: iC60, NG125, NSX100, NSX160
Downstream: iC60, C120, NG125, NSX100, NSX160

Ue: 440 V AC

Upstream		iC60					NG125		
		iC60N	iC60H	iC60L			NG125N	NG125H	NG125L
Breaking capacity (kA)		6	10	20	15	10	20	30	40
Downstream									
		Breaking capacity (kA)	Reinforced breaking capacity (kA)						
iC60N		6		10	20	15	10	20	20	20
iC60H		10			20	15		20	25	25
iC60L	≤ 25 A	20							30	40
	32-40 A	15						20	30	30
	50-63 A	10						20	25	25
NG125N		20							30	40
NG125H		30								40
NG125L		40								

Upstream		NSX100					
		NSX100B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L
Breaking capacity (kA)		20	35	50	65	90	130
Downstream							
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
iC60N		6	15	15	20	20	20	20
iC60H		10	20	20	25	25	25	25
iC60L	≤ 25 A	20			25	25	25	25
	32-40 A	15	20	20	25	25	25	25
	50-63 A	10						
NG125N		20		35	35	35	50	65
NG125H		30		35	40	50	65	90
NG125L		40			50	65	90	130
NSX100B		20		35	35	50	50	50
NSX100F		35			50	65	90	130
NSX100N		50				65	90	130
NSX100H		65					90	130
NSX100S		90						130

Upstream		NSX160					
		NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)		20	35	50	65	90	130
Downstream							
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
iC60N		6	15	15	20	20	20	20
iC60H		10	20	20	25	25	25	25
iC60L	≤ 25 A	20			25	25	25	25
	32-40 A	15	20	20	25	25	25	25
	50-63 A	10						
NG125N		20		35	35	35	50	65
NG125H		30		35	40	50	65	90
NG125L		40			50	65	90	130
NG160E		16	20	20	30	30	30	30
NG160N		25		35	35	50	50	50
NG160H		30			50	50	50	50
NSX100B		20		35	35	50	50	50
NSX100F		35			50	65	90	130
NSX100N		50				65	90	130
NSX100H		65					90	130
NSX100S		90						130
NSX160B		20		35	35	50	50	50
NSX160F		35			50	65	90	130
NSX160N		50				65	90	130
NSX160H		65					90	130
NSX160S		90						130

Cascading

Upstream: NSX250, NSX400
Downstream: NG125, NG160, NSX100, NSX160, NSX250, NSX400

Ue: 440 V AC

Upstream	NSX250					
	NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	20	35	50	65	90	130

Downstream							
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
NG125N	20		35	35	35	50	65
NG125H	30		35	40	50	65	90
NG125L	40			50	65	90	130
NG160E	16	20	20	30	30	30	30
NG160N	25		35	35	50	50	50
NG160H	30			50	50	50	50
NSX100B	20		35	35	50	50	50
NSX100F	35			50	65	90	130
NSX100N	50				65	90	130
NSX100H	65					90	130
NSX100S	90						130
NSX160B	20		35	35	50	50	50
NSX160F	35			50	65	90	130
NSX160N	50				65	90	130
NSX160H	65					90	130
NSX160S	90						130
NSX250B	20		35	35	50	50	50
NSX250F	35			50	65	90	130
NSX250N	50				65	90	130
NSX250H	65					90	130
NSX250S	90						130

Upstream	NSX400				
	NSX400F	NSX400N	NSX400H	NSX400S	NSX400L
Breaking capacity (kA)	30	42	65	90	130

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	16	20	30	30	30	30
NG160N	25	30	30	50	50	50
NG160H	30		42	50	50	50
NSX100B	20	30	30	50	50	50
NSX100F	35		42	65	90	130
NSX100N	50			65	90	130
NSX100H	65				90	130
NSX100S	90					130
NSX160B	20	30	30	50	50	50
NSX160F	35		42	65	90	130
NSX160N	50			65	90	130
NSX160H	65				90	130
NSX160S	90					130
NSX250B	20	30	30	50	50	50
NSX250F	35		42	65	90	130
NSX250N	50			65	90	130
NSX250H	65				90	130
NSX250S	90					130
NSX400F	30		42	65	90	130
NSX400N	42			65	90	130
NSX400H	65				90	130
NSX400S	90					130

Cascading

Upstream: NSX630
Downstream: NG160, NSX100, NSX160, NSX250, NSX400, NSX630

Ue: 440 V AC

Upstream	NSX630				
	NSX630F	NSX630N	NSX630H	NSX630S	NSX630L
Breaking capacity (kA)	30	42	65	90	130

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	16	20	30	30	30	30
NG160N	25	30	30	50	50	50
NG160H	30		42	50	50	50
NSX100B	20	30	30	50	50	50
NSX100F	35		42	65	90	130
NSX100N	50			65	90	130
NSX100H	65				90	130
NSX100S	90					130
NSX160B	20	35	30	50	50	50
NSX160F	35		42	65	90	130
NSX160N	50			65	90	130
NSX160H	65				90	130
NSX160S	90					130
NSX250B	20	35	30	50	50	50
NSX250F	35		42	65	90	130
NSX250N	50			65	90	130
NSX250H	65				90	130
NSX250S	90					130
NSX400F	30		42	65	90	130
NSX400N	42			65	90	130
NSX400H	65				90	130
NSX400S	90					130
NSX630F	30		42	65	90	130
NSX630N	42			65	90	130
NSX630H	65				90	130
NSX630S	90					130

Cascading

Upstream: NS630bN to NS1600N, NS630b, NS800
Downstream: NSX100, NSX160, NSX250, NSX400, NSX630, NS630b, NS800

Ue: 440 V AC

Upstream	NS630bN	NS630b			NS800		
	to NS1600N	H	L	LB	H	L	LB
Breaking capacity (kA)	50	65	130	200	65	130	200

Downstream								
	Breaking capacity (kA)	Reinforced breaking capacity (kA)						
NSX100B	20	50	50	50	50	50	50	50
NSX100F	35	50	65	130	130	65	130	130
NSX100N	50		65	130	130	65	130	130
NSX100H	65			130	130		130	130
NSX100S	90			130	200		130	200
NSX100L	130				200			200
NSX160B	20	50	50	50	50	50	50	50
NSX160F	35	50	65	130	130	65	130	130
NSX160N	50		65	130	130	65	130	130
NSX160H	65			130	130		130	130
NSX160S	90			130	200		130	200
NSX160L	130				200			200
NSX250B	20	50	50	50	50	50	50	50
NSX250F	35	50	65	130	130	65	130	130
NSX250N	50		65	130	130	65	130	130
NSX250H	65			130	130		130	130
NSX250S	90			130	200		130	200
NSX250L	130				200			200
NSX400F	30	50	65	130	130	65	130	130
NSX400N	42		65	130	130	65	130	130
NSX400H	65			130	130		130	130
NSX400S	90			130	200		130	200
NSX400L	130				200			200
NSX630F	30	50	65	130	130	65	130	130
NSX630N	42		65	130	130	65	130	130
NSX630H	65			130	130		130	130
NSX630S	90			130	200		130	200
NSX630L	130				200			200
NS630bN	50		65	130	200	65	130	200
NS630bH	65			130	200		130	200
NS800N	50					65	130	200
NS800H	65						130	200

Cascading

Upstream: NS1000, NS1250, NS1600, NS2000, NS2500, NS3200, Masterpact
Downstream: NSX100, NSX160, NSX250, NSX400, NSX630, NS630b, NS800-1000-1250-1600

Ue: 440 V AC

Upstream	NS1000		NS1250H NS1600H	NS2000N NS2500N NS3200N	Masterpact	
	H	L			NT L1	NW L1
Breaking capacity (kA)	65	130	65	65	130	150

Downstream							
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
NSX100B	20	50	50	50		50	
NSX100F	35	65	130	65		130	
NSX100N	50	65	130	65		130	
NSX100H	65		130			130	
NSX100S	90		130			130	
NSX100L	130						
NSX160B	20	50	50	50		50	
NSX160F	35	65	130	65		130	
NSX160N	50	65	130	65		130	
NSX160H	65		130			130	
NSX160S	90		130			130	
NSX160L	130						
NSX250B	20	50	50	50		50	
NSX250F	35	65	130	65		130	
NSX250N	50	65	130	65		130	
NSX250H	65		130			130	
NSX250S	90		130			130	
NSX250L	130						
NSX400F	30	65	130	65		130	
NSX400N	42	65	130	65		130	
NSX400H	65		130			130	
NSX400S	90		130			130	
NSX400L	130						
NSX630F	30	65	130	65		130	
NSX630N	42	65	130	65		130	
NSX630H	65		130			130	
NSX630S	90		130			130	
NSX630L	130						
NS630bN	50	65	130	65	65	130	65
NS630bH	65		130			130	
NS800N	50	65	130	65	65	130	65
NS800H	65		130			130	
NS1000N	50	65	130	65	65	130	65
NS1000H	65		130			130	
NS1250N	50			65	65		65
NS1600N	50						65

Cascading

Upstream: iDPN, iC60, C120, NG125, NG160, NSX100

Downstream: iDPN, iC60, C120, NG125, NG160 , NSX100

Upstream	iDPN	iC60					C120		NG125		
	iDPNN	iC60N	iC60H	iC60L			C120N	C120H	NG125N	NG125H	NG125L
				≤ 25 A	32/40 A	50/63 A					
Breaking capacity (kA)	15	20	30	50	36	30	20	30	50	70	100

Downstream													
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)										
iDPN	40	10	10	15	20	30	25	20	15	20	20	40	50
iDPNN	40	15		20	30	50	36	30	20	30	30	40	50
iC60N	25	20			30	50	36	30		30	50	50	50
	40	20			30		36	30		30	50	50	50
	63	20			30			30		30	50	50	50
iC60H	25	30				50	36				50	70	70
	40	30					36				50	70	70
	63	30									50	70	70
iC60L	25	50										70	100
	40	36									50	70	100
	63	30									50	70	70
C120N	125	20								30	50	70	70
C120H	125	30									50	70	70
NG125N	125	50										70	70
NG125H	80	70											100

Upstream	NG160			NSX100					
	NG160E	NG160N	NG160H	NSX100B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L
Breaking capacity (kA)	25	40	50	40	85	90	100	120	150

Downstream											
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)								
iDPN	16	10	20	20	20	20	20	20	20	20	20
	40	10	10	10	10	20	20	20	20	20	20
iDPNN	16	15	30	30	30	30	30	30	30	30	30
	40	15	15	15	15	30	30	30	30	30	30
iC60N	63	20	25	40	50	40	40	60	60	60	60
iC60H	63	30		40	50	40	50	80	80	80	80
iC60L	25	50		40	50		65	80	80	80	80
	40	36		40	50	40	65	80	80	80	80
	63	30		40	50	40	65	80	80	80	80
C120N	125	20	25	40	40	40	40	50	50	70	70
C120H	125	30		40	40	40	40	50	50	70	70
NG125N	125	50					60	70	70	85	85
NG125H	80	70					85	85	85	100	100
NG125L	80	100								120	150
NG160E		25			50						
NG160N		40									
NG160H		50									
NSX100B		40					85	90	90	100	100
NSX100F		85						90	100	120	150
NSX100N		90							100	120	150
NSX100H		100								120	150
NSX100S		120									150

Cascading

Upstream: NSX160

Downstream: iDPN, iC60, C120, NG125, NG160, NSX100, NSX160

Upstream			NSX160					
			NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)			40	85	90	100	120	150
Downstream								
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)					
iDPN	**40**	**10**	20	20	20	20	20	20
iDPNN	**40**	**15**	30	30	30	30	30	30
iC60N	**63**	**20**	40	40	60	60	60	60
iC60H	**63**	**30**	40	50	80	80	80	80
iC60L	**25**	**50**		65	80	80	80	80
	40	**36**	40	65	80	80	80	80
	63	**30**	40	65	80	80	80	80
C120N	**125**	**20**	40	40	50	50	70	70
C120H	**125**	**30**	40	40	50	50	70	70
NG125N	**125**	**50**		60	70	70	85	85
NG125H	**80**	**70**		85	85	85	100	100
NG125L	**80**	**100**					120	150
NG160E		**25**	40	50	50	50	60	60
NG160N		**40**		85	90	100	100	100
NG160H		**50**		85	90	100	100	100
NSX100B		**40**		85	90	90	100	100
NSX100F		**85**			90	100	120	150
NSX100N		**90**				100	120	150
NSX100H		**100**					120	150
NSX100S		**120**						150
NSX160B		**40**		85	90	90	100	100
NSX160F		**85**			90	100	120	150
NSX160N		**90**				100	120	150
NSX160H		**100**					120	150
NSX160S		**120**						150

Cascading

Upstream: NSX250
Downstream: iDPN, iC60, C120, NG125, NG160, NSX100, NSX160, NSX250

Upstream	NSX250					
	NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	40	85	90	100	120	150

Downstream								
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)					
iDPN	40	10	20	20	20	20	20	20
iDPNN	40	15	30	30	30	30	30	30
iC60N	63	20	40	40	60	60	60	60
iC60H	63	30	40	50	65	65	65	65
iC60L	25	50		65	80	80	80	80
	40	36	40	65	80	80	80	80
	63	30	40	50	65	65	65	65
C120N	125	20	40	40	50	50	70	70
C120H	125	30	40	40	50	50	70	70
NG125N	125	50		60	70	70	85	85
NG125H	80	70		85	85	85	100	100
NG125L	80	100					120	150
NG160E		25	40	50	50	50	60	60
NG160N		40		85	90	100	100	100
NG160H		50		85	90	100	100	100
NSX100B		40		85	90	90	100	100
NSX100F		85			90	100	120	150
NSX100N		90				100	120	150
NSX100H		100					120	150
NSX100S		120						150
NSX160B		40		85	90	90	100	100
NSX160F		85			90	100	120	150
NSX160N		90				100	120	150
NSX160H		100					120	150
NSX160S		120						150
NSX250B		40		85	90	90	100	100
NSX250F		85			90	100	120	150
NSX250N		90				100	120	150
NSX250H		100					120	150
NSX250S		120						150

Cascading

Upstream: NSX400
Downstream: NG160, NSX100, NSX160, NSX250, NSX400

Upstream	NSX400				
	NSX400F	NSX400N	NSX400H	NSX400S	NSX400L
Breaking capacity (kA)	40	85	100	120	150

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	25	40	50	50	60	60
NG160N	40		85	90	100	100
NG160H	50		85	90	100	100
NSX100B	40		85	90	100	100
NSX100F	85			100	120	150
NSX100N	90			100	120	150
NSX100H	100				120	150
NSX100S	120					150
NSX160B	40		85	90	100	100
NSX160F	85			100	120	150
NSX160N	90			100	120	150
NSX160H	100				120	150
NSX160S	120					150
NSX250B	40		85	90	100	100
NSX250F	85			100	120	150
NSX250N	90			100	120	150
NSX250H	100				120	150
NSX250S	120					150
NSX400F	40		85	100	120	150
NSX400N	85			100	120	150
NSX400H	100				120	150
NSX400S	120					150

Cascading

Upstream: NSX630
Downstream: NG160, NSX100, NSX160, NSX250, NSX400, NSX630

Upstream	NSX630				
	NSX630F	NSX630N	NSX630H	NSX630S	NSX630L
Breaking capacity (kA)	40	85	100	120	150

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	25	40	50	50	60	60
NG160N	40	40	85	90	100	100
NG160H	50	40	85	90	100	100
NSX100B	40		85	90	100	100
NSX100F	85			100	120	150
NSX100N	90			100	120	150
NSX100H	100				120	150
NSX100S	120					150
NSX160B	40		85	90	100	100
NSX160F	85			100	120	150
NSX160N	90			100	120	150
NSX160H	100				120	150
NSX160S	120					150
NSX250B	40		85	90	100	100
NSX250F	85			100	120	150
NSX250N	90			100	120	150
NSX250H	100				120	150
NSX250S	120					150
NSX400F	40		85	100	120	150
NSX400N	85			100	120	150
NSX400H	100			100	120	150
NSX400S	120				120	150
NSX630F	40		85	100	120	150
NSX630N	85			100	120	150
NSX630H	100			100	120	150
NSX630S	120				120	150

Cascading

Upstream: NS630, NS800, NS1000, Masterpact
Downstream: NSX100-160-250-400-630

Ue: 220-240 V AC (Ph/N 110-130 V AC)

Upstream	NS630		NS800-1000			Masterpact	
	NS630bL	NS630LB	NS800L	NS800LB	NS1000L	NT L1	NW L1
Breaking capacity (kA)	150	200	150	200	150	150	150
Downstream							
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
NSX100B	40	50	50	50	50	50	50	
NSX100F	85	150	150	150	150	150	150	
NSX100N	90	150	150	150	150	150	150	
NSX100H	100	150	150	150	150	150	150	
NSX100S	120	150	200	150	200	150	150	
NSX100L	150		200		200			
NSX160B	40	50	50	50	50	50	50	
NSX160F	85	150	150	150	150	150	150	
NSX160N	90	150	150	150	150	150	150	
NSX160H	100	150	150	150	150	150	150	
NSX160S	120	150	200	150	200	150	150	
NSX160L	150		200		200			
NSX250B	40	50	50	50	50	50	50	
NSX250F	85	150	150	150	150	150	150	
NSX250N	90	150	150	150	150	150	150	
NSX250H	100	150	150	150	150	150	150	
NSX250S	120	150	200	150	200	150	150	
NSX250L			200		200			
NSX400F	40	150	150	150	150	150	150	
NSX400N	85	150	150	150	150	150	150	100
NSX400H	100	150	150	150	150	150	150	
NSX400S	120	150	200	150	200	150	150	
NSX400L	150		200		200			
NSX630F	40	150	150	150	150	150	150	
NSX630N	85	150	150	150	150	150	150	100
NSX630H	100	150	150	150	150	150	150	
NSX630S	120	150	200	150	200	150	150	
NSX630L	150		200		200			

Discrimination enhanced by cascading

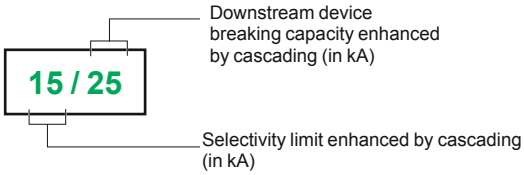
With traditional circuit breakers, cascading between two devices generally results in the look of discrimination.
With Compact circuit breakers, the discrimination characteristics in the tables remain applicable and are in some cases even enhanced. Protection discrimination is ensured for short-circuit currents greater than the rated breaking capacity of the circuit breaker and even, in some cases, for its enhanced breaking capacity. In the later case, **protection discrimination is total**, i.e. only the downstream device trips for any and all possible faults at its point in the installation.

Example
Consider a combination between:
- a Compact NSX250H with trip unit TM250D
- a Compact NSX100F with trip unit TM25D.

The discrimination tables indicate total discrimination. Protection discrimination is therefore ensured up to the breaking capacity of the NSX100F, i.e. **36 kA**.
The cascading tables indicate an enhanced breaking capacity of **70 kA**.
The enhanced discrimination tables indicate that in a cascading configuration, discrimination is ensured up to **70 kA**, i.e. for any and all possible faults at that point in the installation.

Enhanced discrimination tables - 380-415 V

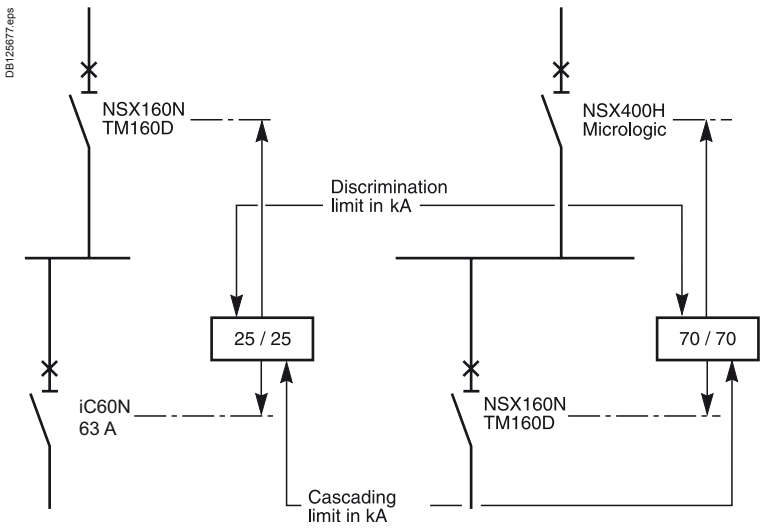
For each combination of two circuit breakers, the tables indicate the:



In a table, a box containing two equal values indicates that discrimination is provided up to the reinforced breaking capacity of the downstream device.
These tables apply only to cases with combined discrimination and cascading between two devices. For all other cases, refer to the normal cascading and discrimination tables.

Technical principle

Enhanced discrimination is the result of the exclusive Compact NSX Roto-active breaking technique which operates as follows:
- due to the short-circuit current (electrodynamic forces), the contacts in both devices simultaneously separate. The result is major limitation of the short-circuit current
- the dissipated energy provokes the reflex tripping of the downstream device, but is insufficient to trip the upstream device.



Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.

Discrimination enhanced by cascading

Upstream: NG160, TM-D
Downstream: iC60

Upstream	NG160 NG160E	NG160N
Breaking capacity (kA)	16	25
Trip unit	TM-D	TM-D

Downstream											
Rating (A)			63	80	100	125	160	63	80	100	125	160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)									
iC60N	≤ 20 A	10	10/16	16/16	16/16	16/16	16/16	10/20	16/20	20/20	20/20	20/20
	25 A	10	6/16	6/16	16/16	16/16	16/16	6/20	6/20	20/20	20/20	20/20
	32 A	10	4/16	4/16	7/16	16/16	16/16	4/20	4/20	7/20	20/20	20/20
	40 A	10		4/16	7/16	8/16	8/16		4/20	7/20	8/20	8/20
	50 A	10			5/16	8/16	8/16			5/20	8/20	8/20
	63 A	10				6/16	6/16				6/20	6/20
iC60H	≤ 20 A	15	10/16	16/16	16/16	16/16	16/16	10/25	15/25	25/25	25/25	25/25
	25 A	15	6/16	6/16	16/16	16/16	16/16	6/25	6/25	25/25	25/25	25/25
	32 A	15	4/16	4/16	7/16	16/16	16/16	4/25	4/25	7/25	25/25	25/25
	40 A	15		4/16	7/16	8/16	8/16		4/25	7/25	8/25	8/25
	50 A	15			5/16	8/16	8/16			5/25	8/25	8/25
	63 A	15				6/16	6/16				6/25	6/25
iC60L	≤ 20 A	25						10/25	15/25	25/25	25/25	25/25
	25 A	25						6/25	6/25	25/25	25/25	25/25
	32 A	20						4/25	4/25	7/25	25/25	25/25
	40 A	20							4/25	7/25	8/25	8/25
	50 A	15			5/16	8/16	8/16			5/25	8/25	8/25
	63 A	15				6/16	6/16				6/25	6/25

Upstream	NG160H
Breaking capacity (kA)	36
Trip unit	TM-D

Downstream							
Rating (A)			63	80	100	125	160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
iC60N	≤ 20 A	10	10/25	15/25	20/25	20/25	20/25
	25 A	10	6/25	6/25	20/25	20/25	20/25
	32 A	10	4/25	4/25	7/25	20/25	20/25
	40 A	10		4/25	7/25	8/25	8/25
	50 A	10			5/25	8/25	8/25
	63 A	10				6/25	6/25
iC60H	≤ 20 A	15	10/25	15/25	25/25	25/25	25/25
	25 A	15	6/25	6/25	25/25	25/25	25/25
	32 A	15	4/25	4/25	7/25	25/25	25/25
	40 A	15		4/25	7/25	8/25	8/25
	50 A	15			5/25	8/25	8/25
	63 A	15				6/25	6/25
iC60L	≤ 20 A	25	10/25	15/25	25/25	25/25	25/25
	25 A	25	6/25	6/25	25/25	25/25	25/25
	32 A	20	4/25	4/25	7/25	25/25	25/25
	40 A	20		4/25	7/25	8/25	8/25
	50 A	15			5/25	8/25	8/25
	63 A	15				6/25	6/25

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.*

Discrimination enhanced by cascading

Upstream: NSX160, NSX250, TM-D
Downstream: iC60, C120, NG125

Upstream		NSX160											
		NSX160B		NSX160F		NSX160N		NSX160H		NSX160S		NSX160L	
Breaking capacity (kA)		25		36		50		70		100		150	
Trip unit		TM-D		TM-D		TM-D		TM-D		TM-D		TM-D	
Downstream													
Rating (A)		80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)										
iC60N		10		20/20		25/25		30/30		30/30		30/30		30/30
iC60H	⩽ 40 A	15		25/25		36/36		40/40		40/40		40/40		40/40
	50-63 A	15		25/25		30/30		30/30		30/30		30/30		30/30
iC60L	⩽ 25 A	25				36/36		40/40		40/40		40/40		40/40
	32-40 A	20		25/25		36/36		40/40		40/40		40/40		40/40
	50-63 A	15		25/25		30/30		36/36		36/36		36/36		36/36
NG125N	⩽ 20 A	25				36/36		36/36		36/36		50/50		70/70
	25 to 125 A	25												
NG125H	⩽ 20 A	36						40/40		50/50		70/70		100/100
	25 to 80 A	36												
NG125L	⩽ 20 A	50								70/70		100/100		150/150
	25 to 80 A	50												

Upstream		NSX250											
		NSX250B		NSX250F		NSX250N		NSX250H		NSX250S		NSX250L	
Breaking capacity (kA)		25		36		50		70		100		150	
Trip unit		TM-D		TM-D		TM-D		TM-D		TM-D		TM-D	
Downstream													
Rating (A)		200-250		200-250		200-250		200-250		200-250		200-250	
		Breaking capacity (kA)		Reinforced breaking capacity (kA)									
iC60N	⩽ 40 A	10		20/20		25/25		30/30		30/30		30/30	
	50-63 A	10		20/20		25/25		25/25		25/25		25/25	
iC60H	⩽ 40 A	15		25/25		30/30		30/30		30/30		30/30	
	50-63 A	15		25/25		25/25		25/25		25/25		25/25	
iC60L	⩽ 25 A	25				30/30		30/30		30/30		30/30	
	32-40 A	20		25/25		30/30		30/30		30/30		30/30	
	50-63 A	15		25/25		25/25		25/25		25/25		25/25	
C120N/H		10/15		25/25		25/25		25/25		25/25		25/25	
NG125N		25				36/36		36/36		36/36		50/50		70/70
NG125H		36						40/40		50/50		70/70		100/100
NG125L		50								70/70		100/100		150/150
NG160E		16				25/25		30/30		30/30		30/30		30/30
NG160N		25				36/36		36/36		50/50		50/50		50/50
NG160H		36						50/50		50/50		50/50		50/50
NSX100B, TM-D	⩽ 25 A	25				36/36		36/36		50/50		50/50		50/50
	40-100 A	25				36/36		36/36		36/50		36/50		36/50
NSX100F, TM-D	⩽ 25 A	36						50/50		70/70		100/100		150/150
	40-100 A	36						36/50		36/70		36/100		36/150
NSX100N, TM-D	⩽ 25 A	50								70/70		100/100		150/150
	40-100 A	50								36/70		36/100		36/150
NSX100H, TM-D	⩽ 25 A	70										100/100		150/150
	40-100 A	70										36/100		36/150
NSX100S, TM-D	⩽ 25 A	100												150/150
	40-100 A	100												36/150
NSX100B	Micrologic	25				2/36		2/36		2/50		2/50		2/50
NSX100F	Micrologic	36						2/50		2/70		2/100		2/150
NSX100N	Micrologic	50								2/70		2/100		2/150
NSX100H	Micrologic	70										2/100		2/150
NSX100S	Micrologic	100												2/150

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.

Discrimination enhanced by cascading

Upstream: NSX100, NSX160, Micrologic
Downstream: iC60

Upstream			NSX100											
			NSX100B		NSX100F		NSX100N		NSX100H		NSX100S		NSX100L	
Breaking capacity (kA)			25		36		50		70		100		150	
Trip unit			Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Downstream														
Rating (A)			40	100	40	100	40	100	40	100	40	100	40	100
		Breaking capacity (kA)	Reinforced breaking capacity (kA)											
iC60N	≤ 25 A	10	20/20	20/20	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30
	32-40 A	10		20/20		25/25		30/30		30/30		30/30		30/30
	50-63 A	10												
iC60H	≤ 25 A	15	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	32-40 A	15		25/25		36/36		36/36		36/36		36/36		36/36
	50-63 A	15												
iC60L	≤ 25 A	25			36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	32-40 A	20		25/25		36/36		40/40		40/40		40/40		40/40
	50-63 A	15												

Upstream			NSX160											
			NSX160B		NSX160F		NSX160N		NSX160H		NSX160S		NSX160L	
Breaking capacity (kA)			25		36		50		70		100		150	
Trip unit			Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Downstream														
Rating (A)			80	160	80	160	80	160	80	160	80	160	80	160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)											
iC60N	≤ 50 A	10	20/20	20/20	25/25	25/25	25/25	30/30	25/25	30/30	25/25	30/30	25/25	30/30
	63 A	10		20/20		25/25		30/30		30/30		30/30		30/30
iC60H	≤ 40 A	15	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	50 A	15	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30
	63 A	15		25/25		30/30		30/30		30/30		30/30		30/30
iC60L	≤ 25 A	25			36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	32-40 A	20	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	50 A	15	25/25	25/25	30/30	30/30	30/30	36/36	30/30	36/36	30/30	36/36	30/30	36/36
	63 A	15		25/25		30/30		36/36		36/36		36/36		36/36

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.

Complementary technical information

Ue: 380-415 V AC (Ph/N 220-240 V AC)

Discrimination enhanced by cascading

Upstream: NSX250, Micrologic
Downstream: iC60, C120, NG125, NG160, NSX100

Upstream		NSX250					
		NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)		25	36	50	70	100	150
Trip unit		Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)		250	250	250	250	250	250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
iC60N	≤ 40 A	10	20/20	25/25	30/30	30/30	30/30	30/30
	50-63 A	10	20/20	25/25	25/25	25/25	25/25	25/25
iC60H	≤ 40 A	15	25/25	30/30	30/30	30/30	30/30	30/30
	50-63 A	15	25/25	25/25	25/25	25/25	25/25	25/25
iC60L	≤ 25 A	25		30/30	30/30	30/30	30/30	30/30
	32-40 A	20	25/25	30/30	30/30	30/30	30/30	30/30
	50-63 A	15	25/25	25/25	25/25	25/25	25/25	25/25
C120N/H		10/15	25/25	25/25	25/25	25/25	25/25	25/25
NG125N		25		36/36	36/36	36/36	50/50	70/70
NG125H		36			40/40	50/50	70/70	100/100
NG125L NG125LMA		50				70/70	100/100	150/150
NG160E		16		25/25	30/30	30/30	30/30	30/30
NG160N		25		36/36	36/36	50/50	50/50	50/50
NG160H		36			50/50	50/50	50/50	50/50
NSX100B, TM-D	≤ 25 A	25		36/36	36/36	50/50	50/50	50/50
	40-100 A	25		36/36	36/36	36/50	36/50	36/50
NSX100F, TM-D	≤ 25 A	36			50/50	70/70	100/100	150/150
	40-100 A	36			36/50	36/70	36/100	36/150
NSX100N, TM-D	≤ 25 A	50				70/70	100/100	150/150
	40-100 A	50				36/70	36/100	36/150
NSX100H, TM-D	≤ 25 A	70					100/100	150/150
	40-100 A	70					36/100	36/150
NSX100S, TM-D	≤ 25 A	100						150/150
	40-100 A	100						36/150
NSX100B	Micrologic	25		36/36	36/36	36/50	36/50	36/50
NSX100F	Micrologic	36			36/50	36/70	36/100	36/150
NSX100N	Micrologic	50				36/70	36/100	36/150
NSX100H	Micrologic	70					36/100	36/150
NSX100S	Micrologic	100						36/150

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.

Discrimination enhanced by cascading

Upstream: NSX400-630, Micrologic
Downstream: NG160, NSX100-250

Upstream		NSX400					NSX630				
		F	N	H	S	L	F	N	H	S	L
Breaking capacity (kA)		36	50	70	100	150	36	50	70	100	150
Trip unit		Micrologic					Micrologic				
Downstream											
Rating (A)		400	400	400	400	400	630	630	630	630	630
	Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NG160E	16	25/25	30/30	30/30	30/30	30/30	25/25	30/30	30/30	30/30	30/30
NG160N	25	36/36	36/36	50/50	50/50	50/50	36/36	36/36	50/50	50/50	50/50
NG160H	36		50/50	50/50	50/50	50/50		50/50	50/50	50/50	50/50
NSX100B, TM-D	25	36/36	36/36	50/50	50/50	50/50	36/36	36/36	50/50	50/50	50/50
NSX100F, TM-D	36		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX100N, TM-D	50			70/70	100/100	150/150			70/70	100/100	150/150
NSX100H, TM-D	70				100/100	150/150				100/100	150/150
NSX100S, TM-D	100					150/150					150/150
NSX160B, TM-D	25	36/36	36/36	50/50	50/50	50/50	36/36	36/36	50/50	50/50	50/50
NSX160F, TM-D	36		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX160N, TM-D	50			70/70	100/100	150/150			70/70	100/100	150/150
NSX160H, TM-D	70				100/100	150/150				100/100	150/150
NSX160S, TM-D	100					150/150					150/150
NSX250B, TM-D	25						36/36	36/36	50/50	50/50	50/50
NSX250F, TM-D	36							50/50	70/70	100/100	150/150
NSX250N, TM-D	50								70/70	100/100	150/150
NSX250H, TM-D	70									100/100	150/150
NSX250S, TM-D	100										150/150
NSX100B Micrologic	25	36/36	50/50	50/50	50/50	50/50	36/36	50/50	50/50	50/50	50/50
NSX100F Micrologic	36		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX100N Micrologic	50			70/70	100/100	150/150			70/70	100/100	150/150
NSX100H Micrologic	70				100/100	150/150				100/100	150/150
NSX100S Micrologic	100					150/150					150/150
NSX160B Micrologic	25	36/36	50/50	50/50	50/50	50/50	36/36	50/50	50/50	50/50	50/50
NSX160F Micrologic	36		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX160N Micrologic	50			70/70	100/100	150/150			70/70	100/100	150/150
NSX160H Micrologic	70				100/100	150/150				100/100	150/150
NSX160S Micrologic	100					150/150					150/150
NSX250B Micrologic	25						36/36	50/50	50/50	50/50	50/50
NSX250F Micrologic	36							50/50	70/70	100/100	150/150
NSX250N Micrologic	50								70/70	100/100	150/150
NSX250H Micrologic	70									100/100	150/150
NSX250S Micrologic	100										150/150

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.

Discrimination enhanced by cascading

Upstream: NS800-1000-1250-1600, Micrologic
Downstream: NSX100-630

Upstream		NS800				NS1000			NS1250		NS1600	
		N	H	L	LB	N	H	L	N	H	N	H
Breaking capacity (kA)		50	70	150	200	50	70	150	50	70	50	70
Trip unit		Micrologic				Micrologic			Micrologic		Micrologic	
Downstream												
Rating (A)		800	800	800	800	1000	1000	1000	1250	1250	1600	1600
	Breaking capacity (kA)	Reinforced breaking capacity (kA)										
NSX100B, TM-D/Micrologic	**25**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX100F, TM-D/Micrologic	**36**	50/50	70/70	150/150	150/150	50/50	70/70	150/150	50/50	70/70	50/50	70/70
NSX100N, TM-D/Micrologic	**50**		70/70	150/150	150/150		70/70	150/150		70/70		70/70
NSX100H, TM-D/Micrologic	**70**			150/150	150/150			150/150				
NSX100S, TM-D/Micrologic	**100**			150/150	200/200			150/150				
NSX100L, TM-D/ Micrologic	**150**				200/200							
NSX160B, TM-D/ Micrologic	**25**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX160F, TM-D/Micrologic	**36**	50/50	70/70	150/150	150/150	50/50	70/70	150/150	50/50	70/70	50/50	70/70
NSX160N, TM-D/Micrologic	**50**		70/70	150/150	150/150		70/70	150/150		70/70		70/70
NSX160H, TM-D/Micrologic	**70**			150/150	150/150			150/150				
NSX160S, TM-D/Micrologic	**100**			150/150	200/200			150/150				
NSX160L, TM-D/Micrologic	**150**				200/200							
NSX250B, TM-D/Micrologic	**25**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX250F, TM-D/ Micrologic	**36**	50/50	70/70	150/150	150/150	50/50	70/70	150/150	50/50	70/70	50/50	70/70
NSX250N, TM-D/Micrologic	**50**		70/70	150/150	150/150		70/70	150/150		70/70		70/70
NSX250H, TM-D/ Micrologic	**70**			150/150	150/150			150/150				
NSX250S, TM-D/Micrologic	**100**			150/150	200/200			150/150				
NSX250L, TM-D/Micrologic	**150**				200/200							
NSX400F Micrologic	**36**	50/50	70/70	10/150	10/150	50/50	70/70	15/150	50/50	70/70	50/50	70/70
NSX400N Micrologic	**50**		70/70	10/150	10/150		70/70	15/150		70/70		70/70
NSX400H Micrologic	**70**			10/150	10/150			15/150				
NSX400S Micrologic	**100**			10/150	10/200			15/150				
NSX400L Micrologic	**150**				10/200							
NSX630F Micrologic	**36**					50/50	65/70	10/150	50/50	65/70	50/50	65/70
NSX630N Micrologic	**50**						65/70	10/150		65/70		65/70
NSX630H Micrologic	**70**							10/150				
NSX630S Micrologic	**100**							10/150				

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.*

Discrimination enhanced by cascading

Upstream: NSX160, NSX250, TM-D
Downstream: iC60, NG125, NSX100

Ue: 440 V AC

Upstream		NSX160 NSX160B		NSX160F		NSX160N		NSX160H		NSX160S		NSX160L	
Breaking capacity (kA)		25		36		50		70		100		150	
Trip unit		TM-D		TM-D		TM-D		TM-D		TM-D		TM-D	
Downstream													
Rating (A)		80-100	125/160	80-100	125/160	80-100	125/160	80-100	125/160	80-100	125/160	80-100	125/160
		Reinforced breaking capacity (kA)											
iC60N	≤ 40 A		15/15		15/15		20/20		20/20		20/20		20/20
	50-63 A		15/15		15/15		20/20		20/20		20/20		20/20
iC60H	≤ 40 A		20/20		20/20		25/25		25/25		25/25		25/25
	50-63 A		20/20		20/20		25/25		25/25		25/25		25/25
iC60L	≤ 40 A		20/20		20/20		25/25		25/25		25/25		25/25
	50-63 A		20/20		20/20		25/25		25/25		25/25		25/25
NG125N	≤ 20 A				35/35		35/35		35/35		50/50		65/65
	> 20 A												
NG125H	≤ 20 A				35/25		40/40		50/50		65/65		90/90
	> 20 A												
NG125L	≤ 20 A						50/50		65/65		90/90		130/130
	>20 A												

Upstream		NSX250 NSX250F		NSX250N		NSX250H		NSX250S		NSX250L	
Breaking capacity (kA)		35		50		65		90		130	
Trip unit		TM-D		TM-D		TM-D		TM-D		TM-D	
Downstream											
Rating (A)		200	250	200	250	200	250	200	250	200	250
	Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NG125N		20	35/35	35/35	35/35	35/35	35/35	35/35	50/50	50/50	65/65	65/65
NG125H		30	35/35	35/35	40/40	40/40	50/50	50/50	65/65	65/65	90/90	90/90
NG125L		40			50/50	50/50	65/65	65/65	90/90	90/90	130/130	130/130
NSX100B, TM-D	≤ 25 A	20	35/35	35/35	35/35	35/35	50/50	50/50	50/50	50/50	50/50	50/50
	40-100 A	20	35/35	35/35	35/35	35/35	35/50	35/50	35/50	35/50	35/50	35/50
NSX100F, TM-D	≤ 25 A	35			35/35	35/35	65/65	65/65	90/90	90/90	130/130	130/130
	40-100 A	35			35/35	35/35	35/65	35/65	35/90	35/90	35/130	35/130
NSX100N, TM-D	≤ 25 A	50					65/65	65/65	90/90	90/90	130/130	130/130
	40-100 A	50					35/65	35/65	35/90	35/90	35/130	35/130
NSX100H, TM-D	≤ 25 A	65							90/90	90/90	130/130	130/130
	40-100 A	65							35/90	35/90	35/130	35/130
NSX100S, TM-D	≤ 25 A	90									130/130	130/130
	40-100 A	90									35/130	35/130
NSX100B	Micrologic	20	2/35	2/35	2/35	2/35	2/50	2/50	2/50	2/50	2/50	2/50
NSX100F	Micrologic	35			2/50	2/50	2/50	2/50	2/50	2/50	2/50	2/50
NSX100N	Micrologic	50					2/65	2/65	2/90	2/90	2/130	2/130
NSX100H	Micrologic	65							2/90	2/90	2/130	2/130
NSX100S	Micrologic	90									2/130	2/130

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.

Discrimination enhanced by cascading

Upstream: NSX100-250, Micrologic
Downstream: iC60, NG125, NSX100

Ue: 440 V AC

Upstream		NSX100					
		NSX100B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L
Breaking capacity (kA)		25	36	50	70	100	150
Trip unit		Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)		160	160	160	160	160	160
		Reinforced breaking capacity (kA)					
iC60N	≤ 40 A	15/15	15/15	20/20	20/20	20/20	20/20
	50-63 A	6/15	6/15	6/20	6/20	6/20	6/20
iC60H	≤ 40 A	20/20	20/20	25/25	25/25	25/25	25/25
	50-63 A	6/20	6/20	6/25	6/25	6/25	6/25
iC60L	≤ 40 A	20/20	20/20	25/25	25/25	25/25	25/25
	50-63 A	6/20	6/20	6/25	6/25	6/25	6/25

Upstream		NSX160					
		NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)		25	36	50	70	100	150
Trip unit		Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)		160	160	160	160	160	160
iC60N	≤ 40 A	15/15	15/15	20/20	20/20	20/20	20/20
	50-63 A	15/15	15/15	20/20	20/20	20/20	20/20
iC60H	≤ 40 A	20/20	20/20	25/25	25/25	25/25	25/25
	50-63 A	20/20	20/20	25/25	25/25	25/25	25/25
iC60L	≤ 40 A	20/20	20/20	25/25	25/25	25/25	25/25
	50-63 A	20/20	20/20	25/25	25/25	25/25	25/25
NG125N	≤ 20 A		35/35	35/35	35/35	50/50	65/65
	>20 A						
NG125H	≤ 20 A		35/25	40/40	50/50	65/65	90/90
	>20 A						
NG125L	≤ 20 A			50/50	65/65	90/90	130/130
	>20 A						

Upstream			NSX250				
			NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)			35	50	65	90	130
Trip unit			Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)			250	250	250	250	250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG125N		20	35/35	35/35	35/35	50/50	65/65
NG125H		30	35/35	40/40	50/50	65/65	90/90
NG125L		40		50/50	65/65	90/90	130/130
NSX100B, TM-D	≤ 25 A	20	35/35	35/35	50/50	50/50	50/50
	40-100 A	20	35/35	35/35	35/50	35/50	35/50
NSX100F, TM-D	≤ 25 A	35		35/35	65/65	90/90	130/130
	40-100 A	35		35/35	35/65	35/90	35/130
NSX100N, TM-D	≤ 25 A	50			65/65	90/90	130/130
	40-100 A	50			35/65	35/90	35/130
NSX100H, TM-D	≤ 25 A	65				90/90	130/130
	40-100 A	65				35/90	35/130
NSX100S, TM-D	≤ 25 A	90					130/130
	40-100 A	90					35/130
NSX100B	Micrologic	20	35/35	35/35	35/50	35/50	35/50
NSX100F	Micrologic	35		35/50	35/50	35/50	35/50
NSX100N	Micrologic	50			35/65	35/90	35/130
NSX100H	Micrologic	65				35/90	35/130
NSX100S	Micrologic	90					35/130

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664.

Discrimination enhanced by cascading

Upstream: NSX400-630, Micrologic
Downstream: NSX100-250

Ue: 440 V AC

Upstream		NSX400					NSX630				
		F	N	H	S	L	F	N	H	S	L
Breaking capacity (kA)		30	42	65	90	130	30	42	65	90	130
Trip unit		Micrologic					Micrologic				
Downstream											
Rating (A)		400	400	400	400	400	630	630	630	630	630
	Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NSX100B	Micrologic	**20**	30/30	30/30	50/50	50/50	50/50	30/30	30/30	50/50	50/50	50/50
NSX100F	Micrologic	**35**		42/42	65/65	90/90	130/130		42/42	65/65	90/90	130/130
NSX100N	Micrologic	**50**			65/65	90/90	130/130			65/65	90/90	130/130
NSX100H	Micrologic	**65**				90/90	130/130				90/90	130/130
NSX100S	Micrologic	**90**					130/130					130/130
NSX160B	Micrologic	**20**	30/30	30/30	50/50	50/50	50/50	30/30	30/30	50/50	50/50	50/50
NSX160F	Micrologic	**35**		42/42	65/65	90/90	130/130		42/42	65/65	90/90	130/130
NSX160N	Micrologic	**50**			65/65	90/90	130/130			65/65	90/90	130/130
NSX160H	Micrologic	**65**				90/90	130/130				90/90	130/130
NSX160S	Micrologic	**90**					130/130					130/130
NSX250B	Micrologic	**20**						35/35	30/30	50/50	50/50	50/50
NSX250F	Micrologic	**35**							42/42	65/65	90/90	130/130
NSX250N	Micrologic	**50**								65/65	90/90	130/130
NSX250H	Micrologic	**65**									90/90	130/130
NSX250S	Micrologic	**90**										130/130

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.*

Discrimination enhanced by cascading

Upstream: NS800-1000-1600, Micrologic
Downstream: NSX100-630

Ue: 440 V AC

Upstream	NS800				NS1000			NS1250		NS1600	
	N	H	L	LB	N	H	L	N	H	N	H
Breaking capacity (kA)	50	65	130	200	50	65	130	50	65	50	65
Trip unit	Micrologic				Micrologic			Micrologic		Micrologic	

Downstream												
Rating (A)		800	800	800	800	1000	1000	1000	1250	1250	1600	1600
	Breaking capacity (kA)	Reinforced breaking capacity (kA)										
NSX100B, TM-D/Micrologic	**20**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX100F, TM-D/Micrologic	**35**	50/50	65/65	130/130	130/130	50/50	65/65	130/130	50/50	65/65	50/50	65/65
NSX100N, TM-D/Micrologic	**50**		65/65	130/130	130/130		65/65	130/130		65/65		65/65
NSX100H, TM-D/Micrologic	**65**			130/130	130/130			130/130				
NSX100S, TM-D/Micrologic	**90**			130/130	200/200			130/130				
NSX100L, TM-D/Micrologic	**130**				200/200							
NSX160B, TM-D/Micrologic	**20**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX160F, TM-D/Micrologic	**35**	50/50	65/65	130/130	130/130	50/50	65/65	130/130	50/50	65/65	50/50	65/65
NSX160N, TM-D/Micrologic	**50**		65/65	130/130	130/130		65/65	130/130		65/65		65/65
NSX160H, TM-D/Micrologic	**65**			130/130	130/130			130/130				
NSX160S, TM-D/Micrologic	**90**			130/130	200/200			130/130				
NSX160L, TM-D/Micrologic	**130**				200/200							
NSX250B, TM-D/Micrologic	**20**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX250F, TM-D/Micrologic	**35**	50/50	65/65	130/130	130/130	50/50	65/65	130/130	50/50	65/65	50/50	65/65
NSX250N, TM-D/Micrologic	**50**		65/65	130/130	130/130		65/65	130/130		65/65		65/65
NSX250H, TM-D/Micrologic	**65**			130/130	130/130			130/130				
NSX250S, TM-D/Micrologic	**90**			130/130	200/200			130/130				
NSX250L, TM-D/Micrologic	**130**				200/200							
NSX400F Micrologic	**30**	50/50	65/65	10/130	10/200	50/50	65/65	15/130	50/50	65/65	50/50	65/65
NSX400N Micrologic	**42**		65/65	10/130	10/200		65/65	15/130		65/65		65/65
NSX400H Micrologic	**65**			10/130	10/200			15/130				
NSX400S Micrologic	**90**			10/130	10/200			15/130				
NSX400L Micrologic	**130**				10/200							
NSX630F Micrologic	**30**					50/50	65/65	10/130	50/50	65/65	50/50	65/65
NSX630N Micrologic	**42**						65/65	10/130		65/65		65/65
NSX630H Micrologic	**65**							10/130				
NSX630S Micrologic	**90**							10/130				

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.*

Discrimination enhanced by cascading

Upstream: NSX160, NSX250, TM-D
Downstream: iC60, C120, NG125

Upstream		NSX160					
		NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)		40	85	90	100	120	150
Trip unit		TM-D	TM-D	TM-D	TM-D	TM-D	TM-D
Downstream							
Rating (A)		80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160
	Breaking capacity (kA)	Reinforced breaking capacity (kA)											
iC60N		20		30/30		40/40		60/60		60/60		60/60		60/60
iC60H		30		40/40		50/50		80/80		80/80		80/80		80/80
iC60L	≤ 25 A	50				65/65		80/80		80/80		80/80		80/80
	32-40 A	36		40/40		65/65		80/80		80/80		80/80		80/80
	50-63 A	30		40/40		65/65		80/80		80/80		80/80		80/80
NG125N	≤ 20 A	50				60/60		70/70		70/70		85/85		85/85
	25 to 125 A	50												
NG125H	≤ 20 A	70				85/85		85/85		85/85		100/100		100/100
	25 to 80 A	70												

Upstream		NSX250					
		NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)		40	85	90	100	120	150
Trip unit		TM-D	TM-D	TM-D	TM-D	TM-D	TM-D
Downstream							
Rating (A)		200-250	200-250	200-250	200-250	200-250	200-250
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
iC60N		20	30/30	40/40	60/60	60/60	60/60	60/60
iC60H		30	40/40	50/50	65/65	65/65	65/65	65/65
iC60L	≤ 25 A	50		65/65	80/80	80/80	80/80	80/80
	32-40 A	36	40/40	65/65	80/80	80/80	80/80	80/80
	50-63 A	30	40/40	40/40	65/65	65/65	65/65	65/65
C120N/H	≤ 100 A	20/30	40/40	40/40	50/50	50/50	70/70	70/70
	125 A	20/30						
NG125N	≤ 100 A	50		60/60	70/70	70/70	85/85	85/85
	125 A	50						
NG125H		70		85/85	85/85	85/85	100/100	100/100

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.

Discrimination enhanced by cascading

Upstream: NSX100, NSX160, Micrologic
Downstream: iC60

Upstream		NSX100											
		NSX100B		NSX100F		NSX100N		NSX100H		NSX100S		NSX100L	
Breaking capacity (kA)		40		85		90		100		120		150	
Trip unit		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Downstream													
Rating (A)		40	100	40	100	40	100	40	100	40	100	40	100
		Breaking capacity (kA)	Reinforced breaking capacity (kA)										
iC60N	≤ 25 A	20	40/40	40/40	40/40	40/40	60/60	60/60	60/60	60/60	60/60	60/60	60/60	60/60
	32-40 A	20		40/40		40/40		60/60		60/60		60/60		60/60
	50-63 A	20												
iC60H	≤ 25 A	30	40/40	40/40	50/50	50/50	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	32-40 A	30		40/40		50/50		80/80		80/80		80/80		80/80
	50-63 A	30												
iC60L	≤ 25 A	50			65/65	65/65	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	32-40 A	36				65/65		80/80		80/80		80/80		80/80
	50-63 A	30												

Upstream		NSX160											
		NSX160B		NSX160F		NSX160N		NSX160H		NSX160S		NSX160L	
Breaking capacity (kA)		40		85		90		100		120		150	
Trip unit		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Downstream													
Rating (A)		80	160	80	160	80	160	80	160	80	160	80	160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)										
iC60N	≤ 50 A	20	40/40	40/40	40/40	40/40	60/60	60/60	60/60	60/60	60/60	60/60	60/60	60/60
	63 A	20		40/40		40/40		60/60		60/60		60/60		60/60
iC60H	≤ 50 A	30	40/40	40/40	50/50	50/50	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	63 A	30		40/40		50/50		80/80		80/80		80/80		80/80
iC60L	≤ 40 A	36			65/65	65/65	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	50 A	30	40/40	40/40	65/65	65/65	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	63 A	30		40/40		65/65		80/80		80/80		80/80		80/80

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.

Discrimination enhanced by cascading

Upstream: NSX250, Micrologic
Downstream: iC60, C120, NG125

Upstream		NSX250					
		NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)		40	85	90	100	120	150
Trip unit		Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)		250	250	250	250	250	250
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
iC60N	20	40/40	40/40	60/60	60/60	60/60	60/60
iC60H	30	40/40	50/50	65/65	65/65	65/65	65/65
iC60L ≤ 25 A	50		65/65	80/80	80/80	80/80	80/80
32-40 A	36		65/65	80/80	80/80	80/80	80/80
50-63 A	30	40/40	65/65	65/65	65/65	65/65	65/65
C120N/H	20/30	40/40	40/40	50/50	50/50	70/70	70/70
NG125N	50		60/60	70/70	70/70	85/85	85/85
NG125H	70		85/85	85/85	85/85	100/100	100/100

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.*

Discrimination enhanced by cascading

Upstream: NSX250, TM-D-Micrologic
Downstream: NG160, NSX100

Upstream	NSX250				
	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	85	90	100	120	150
Trip unit	TM-D	TM-D	TM-D	TM-D	TM-D

Downstream												
Rating (A)			160	200-250	160	200-250	160	200-250	160	200-250	160	200-250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NG160E		25		40/40		50/50		50/50		60/60		60/60
NG160N/H		50		85/85		90/90		100/100		100/100		100/100
NSX100B, TM-D	≤ 25 A	40		85/85		90/90		100/100		100/100		100/100
	40-100 A	40		36/85		36/90		36/100		36/120		36/150
NSX100F, TM-D	≤ 25 A	85				90/90		100/100		120/120		150/150
	40-100 A	85				36/90		36/100		36/120		36/150
NSX100N, TM-D	≤ 25 A	90						100/100		120/120		150/150
	40-100 A	90						36/100		36/120		36/150
NSX100H, TM-D	≤ 25 A	100								120/120		150/150
	40-100 A	100								36/120		36/150
NSX100S, TM-D	≤ 25 A	120										150/150
	40-100 A	120										36/150
NSX100B	Micrologic	40		2/85		2/90		2/100		2/120		2/100
NSX100F	Micrologic	85				2/90		2/100		2/120		2/150
NSX100N	Micrologic	90						2/100		2/120		2/150
NSX100H	Micrologic	100								2/120		2/150
NSX100S	Micrologic	120										2/150

Upstream	NSX250				
	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	85	90	100	120	150
Trip unit	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic

Downstream												
Rating (A)			160	200-250	160	200-250	160	200-250	160	200-250	160	200-250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NG160E		25	40/40	40/40	50/50	50/50	50/50	50/50	60/60	60/60	60/60	60/60
NG160N/H		50	85/85	85/85	90/90	90/90	100/100	100/100	100/100	100/100	100/100	100/100
NSX100B, TM-D	≤ 25 A	40	85/85	85/85	90/90	90/90	100/100	100/100	100/100	100/100	100/100	100/100
	40-100 A	40	36/85	36/85	36/90	36/90	36/100	36/100	36/120	36/120	36/150	36/150
NSX100F, TM-D	≤ 25 A	85			90/90	90/90	100/100	100/100	120/120	120/120	150/150	150/150
	40-100 A	85			36/90	36/90	36/100	36/100	36/120	36/120	36/150	36/150
NSX100N, TM-D	≤ 25 A	90					100/100	100/100	120/120	120/120	150/150	150/150
	40-100 A	90					36/100	36/100	36/120	36/120	36/150	36/150
NSX100H, TM-D	≤ 25 A	100							120/120	120/120	150/150	150/150
	40-100 A	100							36/120	36/120	36/150	36/150
NSX100S, TM-D	≤ 25 A	120									150/150	150/150
	40-100 A	120									36/150	36/150
NSX100B	Micrologic	40	36/85	36/85	36/90	36/90	36/100	36/100	36/100	36/100	36/100	36/100
NSX100F	Micrologic	85			36/90	36/90	36/100	36/100	36/120	36/120	36/150	36/150
NSX100N	Micrologic	90					36/100	36/100	36/120	36/120	36/150	36/150
NSX100H	Micrologic	100							36/120	36/120	36/150	36/150
NSX100S	Micrologic	120									36/150	36/150

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.

Discrimination enhanced by cascading

Upstream: NSX400-630, NS800-1000, Micrologic
Downstream: NG160, NSX100-630

Upstream		NSX400				NSX630				NS800		NS1000
		N	H	S	L	N	H	S	L	L	LB	L
Breaking capacity (kA)		85	100	120	150	85	100	120	150	150	200	150
Trip unit		Micrologic				Micrologic				Micrologic		Micrologic
Downstream												
Rating (A)		400	400	400	400	630	630	630	630	800		1000
	Breaking capacity (kA)	Reinforced breaking capacity (kA)										
NG160E	25	50/50	50/50	60/60	60/60	50/50	50/50	60/60	60/60			
NG160N/H	50	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100			
NSX100B, TM-D	40	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX100F, TM-D	85		90/90	120/120	150/150		90/90	120/120	150/150	150/150	150/150	150/150
NSX100N, TM-D	90		100/100	120/120	150/150		100/100	120/120	150/150	150/150	150/150	150/150
NSX100H, TM-D	100			120/120	150/150			120/120	150/150	150/150	150/150	150/150
NSX100S, TM-D	120				150/150				150/150	150/150	200/200	150/150
NSX100L, TM-D	150										200/200	
NSX160B, TM-D	40	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX160F, TM-D	85		90/90	120/120	150/150		90/90	120/120	150/150	150/150	150/150	150/150
NSX160N, TM-D	90		100/100	120/120	150/150		100/100	120/120	150/150	150/150	150/150	150/150
NSX160H, TM-D	100			120/120	150/150			120/120	150/150	150/150	150/150	150/150
NSX160S, TM-D	120				150/150				150/150	150/150	200/200	150/150
NSX160L, TM-D	150										200/200	
NSX250B, TM-D	40					85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX250F, TM-D	85						90/90	120/120	150/150	150/150	150/150	150/150
NSX250N, TM-D	90						100/100	120/120	150/150	150/150	150/150	150/150
NSX250H, TM-D	100							120/120	150/150	150/150	150/150	150/150
NSX250S, TM-D	120								150/150	150/150	200/200	150/150
NSX250L, TM-D	150										200/200	
NSX100B Micrologic	40	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX100F Micrologic	85		90/90	120/120	150/150		90/90	120/120	150/150	150/150	150/150	150/150
NSX100N Micrologic	90		100/100	120/120	150/150		100/100	120/120	150/150	150/150	150/150	150/150
NSX100H Micrologic	100			120/120	150/150			120/120	150/150	150/150	150/150	150/150
NSX100S Micrologic	120				150/150				150/150	150/150	200/200	150/150
NSX100L Micrologic	150										200/200	
NSX160B Micrologic	40	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX160F Micrologic	85		90/90	120/120	150/150		90/90	120/120	150/150	150/150	150/150	150/150
NSX160N Micrologic	90		100/100	120/120	150/150		100/100	120/120	150/150	150/150	150/150	150/150
NSX160H Micrologic	100			120/120	150/150			120/120	150/150	150/150	150/150	150/150
NSX160S Micrologic	120				150/150				150/150	150/150	200/200	150/150
NSX160L Micrologic	150										200/200	
NSX250B Micrologic	40					85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX250F Micrologic	85						90/90	120/120	150/150	150/150	150/150	150/150
NSX250N Micrologic	90						100/100	120/120	150/150	150/150	150/150	150/150
NSX250H Micrologic	100							120/120	150/150	150/150	150/150	150/150
NSX250S Micrologic	120								150/150	150/150	200/200	150/150
NSX250L Micrologic	150										200/200	
NSX400F Micrologic	40									10/150	10/150	15/150
NSX400N Micrologic	85									10/150	10/150	15/150
NSX400H Micrologic	100									10/150	10/150	15/150
NSX400S Micrologic	120									10/150	10/200	15/150
NSX400L Micrologic	150										10/200	
NSX630F Micrologic	40											10/150
NSX630N Micrologic	85											10/150
NSX630H Micrologic	100											10/150
NSX630S Micrologic	120											10/150

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see 557E4300.indd/664 and 557E4305.indd/670.*

Coordination between circuit breakers

Discrimination (Selectivity)

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IEC/EN 60947-2

What is discrimination?

It is the coordination of automatic cut-off devices for a fault that occurs at any point in the network to be eliminated by the upstream circuit breaker, the circuit breaker that is immediately upstream of the fault and by that circuit breaker alone!

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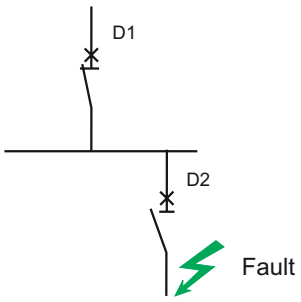

D1 and D2 in series.

Continuity of service

Discrimination is an essential element that must be taken into account as early as in the design of a low voltage installation to enable continuity of the electricity service.

Production and safety

Discrimination provides much convenience for all users, but it is an essential requirement when continuity of service is of utmost importance.

Discrimination means that only the part with the fault is disconnected. It enables:
- continuity of supply for adjacent circuits,
- localization of the faulty circuit.

For some installations or installation parts:
- operating theatre in clinics and hospitals,
- marine,
- safety equipment,
- production site.

The requirements for continuous electricity often make it necessary to verify the discrimination between upstream and downstream protection devices.
If there is a total lack of discrimination, it will be necessary to try to achieve partial discrimination. Likewise, if there is a limit to the level of discrimination and this proves satisfactory in the majority of cases, it can still be attempted to make it total.
Of course, any modification must be made while observing the following main parameters:
- protection of personnel,
- are the thermal stresses I^2t of the cables always taken into account?
- are the breaking capacities of the devices higher than the prospective Isc?

Finally, when it is not possible to achieve discrimination and it is essential for the correct operation of the installation, the installation of uninterruptible power supplies (UPS) must be considered. Generator units, inverters, etc. are then used.

There are several types of discrimination that can be used separately or together. For protection against overcurrent, this generally concerns current discrimination and time discrimination.
The principle is as follows.

Coordination between circuit breakers

Discrimination (Selectivity)

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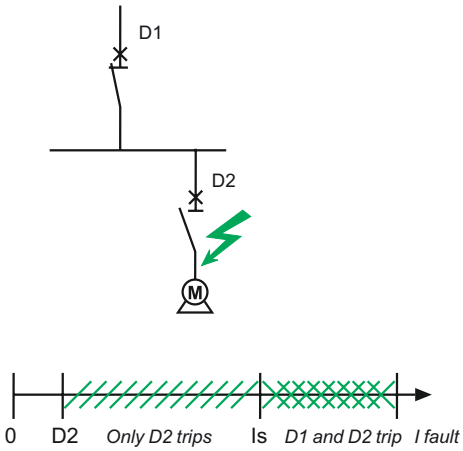

Current and energy discrimination

Discrimination involves ensuring coordination between two circuit breakers in series, so that, in the event of a fault, only one circuit breaker, located immediately upstream of the fault, trips. A discrimination current Is is defined so that:

- Ifault < Is: only D2 eliminates the fault, discrimination is ensured,
- Ifault > Is: both circuit breakers may trip, discrimination is not ensured.

Slight overcurrent or overload

Under the effect of an abnormal inrush current, for example an increase in the resistive torque of a motor, the current going through the circuit is higher than the rated current. These currents may damage the installation (risk of an electrical fire). Devices to protect against overcurrent can be characterized by their operating curves as a function of prospective current Ip:

- the operating curve is time-based when the breaking time is greater than 50 ms (curve t = f (Ip). Discrimination is achieved if the In upstream / In downstream operation threshold ratio is > 1.3 and if the current offset of the magnetic curves is observed.

This is current discrimination

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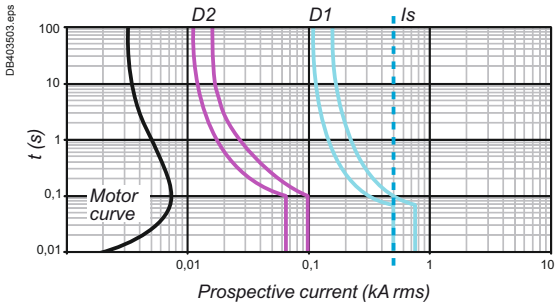

The greater the difference between the ratings of the upstream and downstream circuit breakers, the more “extensive” the discrimination.

Short circuit

For example when there is contact between two phases we are faced with a full insulation fault which risks damaging the installation.
The function that makes it possible to protect against this type of fault is magnetic protection.
To ensure discrimination, we must maintain a ratio between the upstream and downstream protection devices. This is energy discrimination.

- Energy: when the intervention time is less than 50 ms and more particularly less than the time of one half wave (10 ms) of current with limiting circuit breakers.

This is energy discrimination

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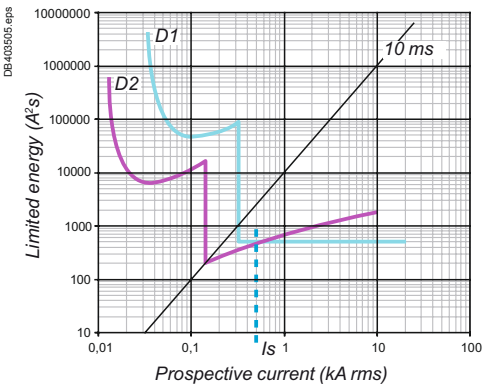
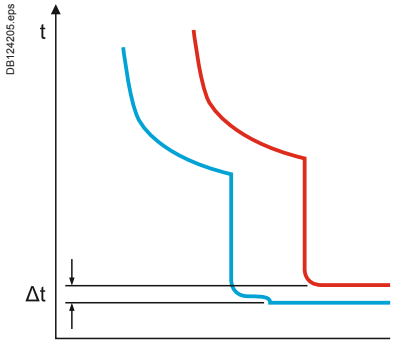


Coordination between circuit breakers

Discrimination (Selectivity)



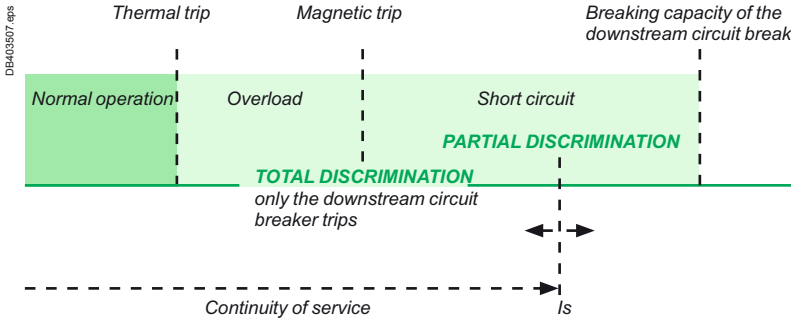
Time discrimination

The principle is based on the time difference (Δt) of the upstream magnetic curve.

To achieve this, it is necessary to have an upstream circuit breaker with time-delay bands.
The delay introduced must make it possible to improve discrimination without endangering the cable or busbars which would then have to withstand the overcurrent for longer (greater thermal effects I^2t and electrodynamic stresses).

Total or partial discrimination

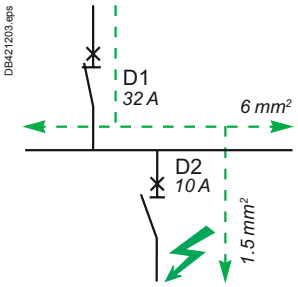
Discrimination may be partial or total, up to the breaking capacity of the downstream circuit breaker. For total discrimination, the characteristics of the upstream device must be higher than those of the downstream device (higher than the breaking capacity of the downstream circuit breaker MCCB).



Standard IEC 60947-2 on industrial circuit breakers, and in particular Appendix A, deals with coordination between a circuit-breaker and another device to protect against short circuits combined in the same circuit.
This protection device may be a fuse or another circuit breaker.

Coordination between circuit breakers

Discrimination (Selectivity)



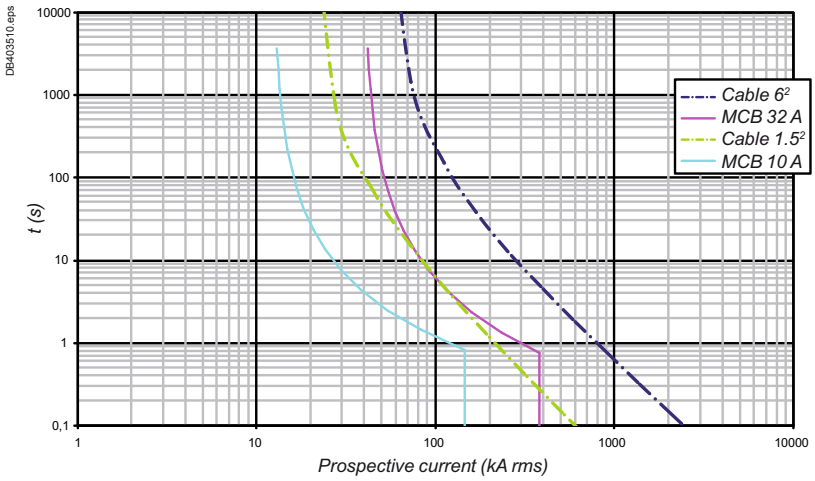
Discrimination between modular circuit breakers

We use two types of discrimination when these circuit breakers are combined:
- current discrimination,
- energy discrimination.

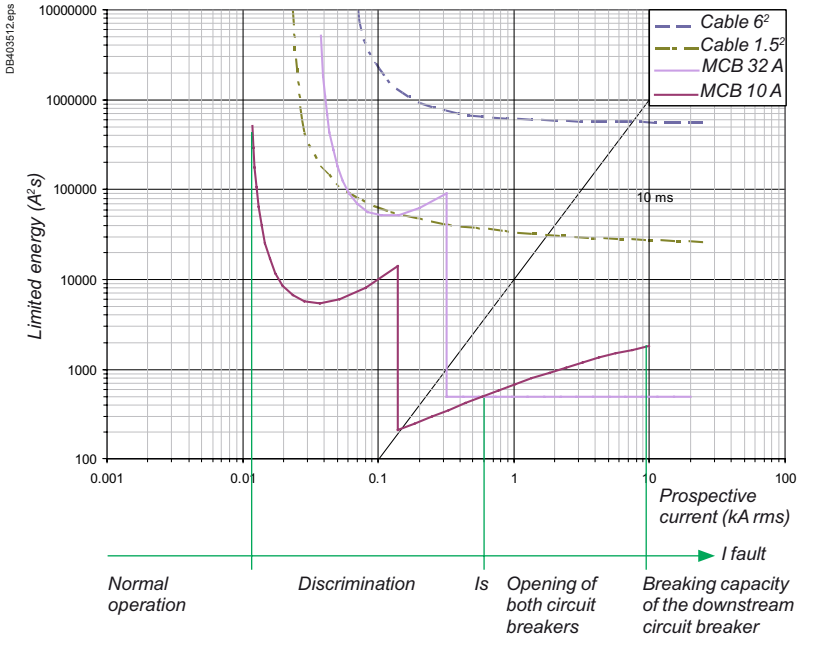
For discrimination to be ensured whatever the prospective fault current, 3 conditions have to be fulfilled:
- the upstream and downstream circuit breakers must have different ratings (ratio > 1.3),
- the envelope of their magnetic curves must be different,
- the energy allowed to pass through the downstream circuit breaker when it cuts off must still be less than the operating energy of the upstream trip.

Example

- Let us take the example of a single phase network where we have a 32 A curve D circuit breaker in series with a 10 A curve D circuit breaker:
  - the 32 A circuit breaker protects the 6^2 cables and the 10 A circuit breaker protects the 1.5^2 cables. This combination allows discrimination, but up to what threshold?
  - if current discrimination is considered (t = f (Ip)) it can be seen that the tripping curve of the downstream circuit breaker is well below the non-tripping curve of the upstream circuit breaker,
  - furthermore, each circuit breaker is well below the maximum stress permitted by the cables.



When considering energy discrimination, it is necessary to compare the maximum stresses characterized by the integrals ft relative to the development of the arc in the downstream device and by the sensitivity of the trip unit, still in ft, of the upstream device (curves $I^2t = f(Ip)$).



Coordination between circuit breakers

Discrimination (Selectivity)

Discrimination between Compact NSX upstream and modular circuit breakers downstream

Compact NSX circuit breakers have been designed to ensure total discrimination with Acti9 range.

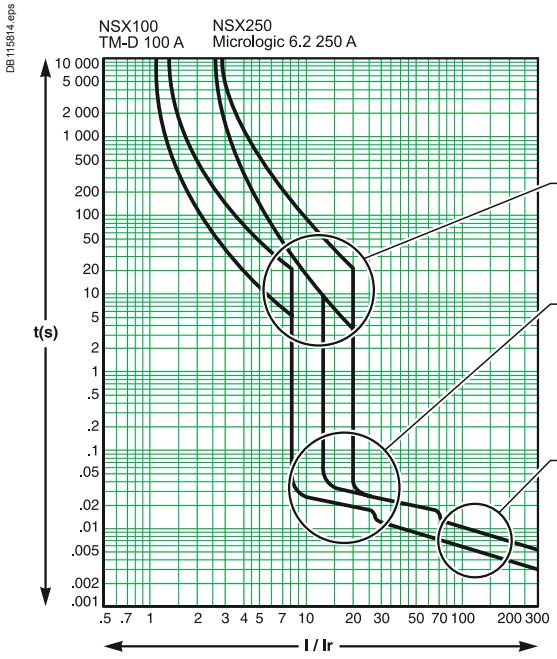
- Total discrimination between Compact NSX 100 A with electronic trip unit and Acti9 circuit breaker up to 40 A.
- Total discrimination between Compact NSX ≥ 160 A with TMD trip unit ≥125 A or electronic trip unit and Acti9 up to 63 A.

Discrimination between Compact NSX circuit breakers

Thanks to the Roto-Active breaking principle in the Compact NSX, a combination of Schneider Electric circuit breakers provides an exceptional level of discrimination between protection devices.

This performance is due to the combination and optimization of 3 principles:

- current discrimination,
- energy discrimination,
- time discrimination.



Protection against overloads: current discrimination

The protection is selective if the ratio between the setting thresholds is higher than 1.6 (in the case of two distribution circuit breakers).

Protection against weak short circuits: time discrimination

Tripping of the upstream device has a slight time delay; tripping of the downstream device is faster.

The protection is selective if the ratio between the short-circuit protection thresholds is no less than 1.5.

Protection against high short circuits: energy discrimination

This principle combines the exceptional limiting power of the Compact NSX devices and reflex release, sensitive to the energy dissipated by the short circuit in the device.

When a short circuit is high, if it is seen by two devices, the downstream device limits it greatly. The energy dissipated in the upstream device is insufficient to cause it to trip: there is discrimination whatever the value of the short circuit.

The range has been designed to ensure energy discrimination between NSX630/NSX250/ NSX100 or NSX400/NSX160.

Discrimination between Masterpact or Compact NS ≥ 630 A upstream and Compact NSX downstream

Thanks to their high-performance control units and a very innovative design, Masterpact and Compact NS ≥ 630 A devices offer, as standard, a very high level of discrimination with downstream Compact NSX up to 630 A

Respect the basic rules of discrimination for overload and short-circuit, or check that curves do not overlap with Ecodial software.

Check the discrimination limit in tables for high short-circuit current or when using limiter circuit breakers (Masterpact NT L1 or Compact NS L or LB) upstream.

Discrimination between Masterpact or Compact NS ≥ 630 A upstream and downstream

The utilization category of these devices (excepted limiters ones) is B according to IEC 60947 standard. Discrimination is ensured by a combination of current discrimination and time discrimination.

Respect the basic rules of discrimination for overload and short-circuit, or check that curves do not overlap with Ecodial software.

Check the discrimination limit in tables for high short-circuit current or when using limiter circuit breakers (Masterpact NT L1 or Compact NS L or LB).

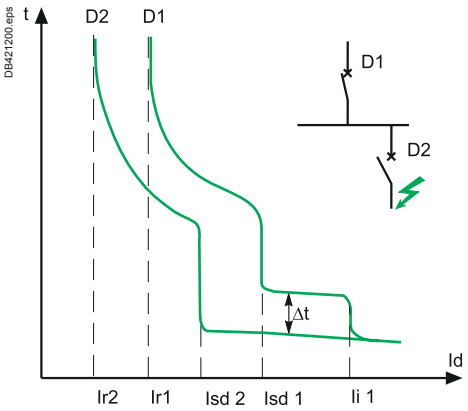
Basic rules of discrimination for overload and short-circuit

Upstream	Downstream	Thermal protection	Magnetic protection
		Ir upstream / Ir downstream	Im upstream / Im downstream
TM	TM or MCB	≥ 1.6	≥ 2
	Micrologic	≥ 1.6	≥ 1.5
Micrologic	TM or MCB	≥ 1.6	≥ 1.5
	Micrologic	≥ 1.3	≥ 1.5 (1)

(1) See "Additional conditions according to the trip units".

Coordination between circuit breakers

Discrimination (Selectivity)



Additional conditions according to the trip units

Short time trip pickup current (Isd)

The tables show the limit of discrimination assuming the short time trip pickup current Isd = 10 x Ir.

In many cases, when discrimination is total, a different adjustment may be used provided that the ratio between the magnetic thresholds indicated above is observed.

When downstream breaker is a Compact NSX:

■ upstream circuit breaker magnetic setting shall be higher than downstream instantenous protection:

NSX 2.2 ou 2.3	Mic 2.2 40	Mic 2.2 100	Mic 2.2 160	Mic 2.2 250	Mic 2.3 400	Mic 2.3 630
Inst.	600 A	1500 A	2400 A	3000 A	4800 A	6900 A

■ or upstream circuit breaker shall be equipped with micrologic type 5 with tsd ⩾ 0.1.

When downstream circuit breaker is a Masterpact with micrologic 2, upstream circuit breaker shall be equipped with micrologic type 5 and tsd ⩾ 0,1 and Ii Off.

When the limit of discrimination indicated in the table is 10 x Ir, the limit of discrimination is in fact the upstream magnetic threshold Isd.

Instantaneous trip pickup current (Ii)

The tables show the limit of discrimination assuming the instantaneous trip pickup current set to its maximum value and when it is inhibited (category B circuit breaker only).

■ When the limit of discrimination indicated in the table is 15 x In of the upstream device, the limit of discrimination is in fact the instantaneous trip pickup current of the upstream device.

■ When the upstream device is a type B circuit breaker and the downstream device is type A, the instantaneous trip pickup current of the upstream device may be set to below 15 x In as long as it remains higher than the reflex release threshold of the downstream device.

Short time tripping delay (Tsd)

When the upstream and downstream circuit breakers are fitted with a Micrologic 5.x, 6.x, 7.x: trip unit, the minimum non-tripping time of the upstream device must be greater than the maximum tripping time of the downstream device.

Tsd D1 > Tsd D2 (One band)

I^2t Off / On

The tables show the limit of discrimination assuming function I^2t OFF. If this is not the case, the user must verify that the curves do not overlap.

Ground Fault Protection (GFP) (Ig, Tg)

When the upstream and downstream circuit breakers are fitted with a Micrologic 6.x trip unit, the user must verify current and time discrimination:

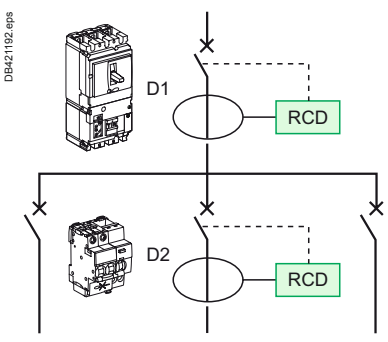
current discrimination

The setting of the tripping threshold of the upstream GFP is greater than that of the downstream GFP. Because of the tolerances on the settings, a difference of 30 % between the upstream threshold and the downstream threshold is sufficient.

time discrimination

The intentional time-delay setting for the upstream GFP is higher than the opening time of the downstream protection device. Furthermore, it is essential that the intentional time-delay applied to the upstream protection device observes the maximum insulation fault elimination time defined by NEC § 230.95 (i.e. 1 s for 3000 A).

Ig D1 ⩾ 1.3 Ig D2 Tg D1 > Tg D2 (One band)



Circuit breaker with vigi module (Add-On Residual Current Device - RCD):

When circuit breakers are equipped with vigi module, discrimination tables are valid for short-circuit. To ensure discrimination in case of earth fault, upstream and downstream vigi modules shall satisfy the following conditions:

■ the sensitivity of the upstream residual current device must be at least equal to three times the sensitivity of the downstream residual current device (IΔn D1 ⩾ 3 x IΔn D2),

■ the upstream residual current device must be:

□ of the selective (S) type (or setting) if the downstream residual current device is an instantaneous type,

□ of the delayed (R) type (or setting) if the downstream residual current device is a selective type.

The minimum non-tripping time of the upstream device will therefore be greater than the maximum tripping time of the downstream device for all current values (Δt (D1) > Δt (D2)).

Coordination between circuit breakers

Discrimination of modular circuit breakers

Using the discrimination tables

Depending on the network and the type of downstream circuit breaker, the selection table below indicates which table should be consulted to find out the discrimination value.

The discrimination values are given in colour-coded tables.

■ For 220-240 V/380-415 V 50/60 Hz systems:

□ in the case of a 2P downstream circuit breaker in a single-phase network (220-240 V), refer to the light green tables,

□ in the case of 1P, 1P+N, 3P, 3P+N, 4P and 2P circuit breakers in a two-phase network (380-415 V), refer to the dark green tables.

Selection table

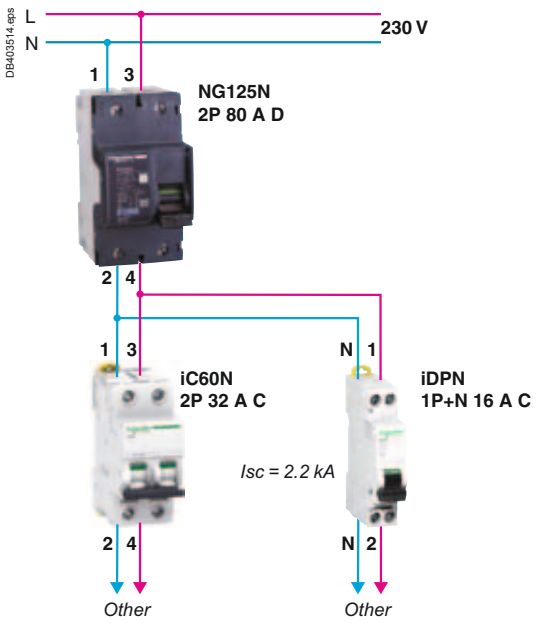
		Upstream network		
		DB123996.eps L1 N	DB123998.eps L1 L2 L3 N	DB123997.eps L1 L2 L3
Type of Downstream network	**Type of Downstream protection device**	**Ph/N 220-240 V**	**Ph/N 220-240 V** **Ph/Ph 380-415 V**	**Ph/Ph 380-415 V**
DB124079.eps N L1	DB123991.eps 2P			
	DB124191.eps 1P DB123992.eps 1P+N			
DB124192.eps L1 L2	DB123991.eps 2P			
DB124080.eps L1 L2 L3	DB123993.eps 3P			
DB124081.eps N L1 L2 L3	DB123994.eps 4P			
	DB123993.eps 3P DB123995.eps 3P+N			

Note: *this selection table shows you the colour.*
By taking your downstream protection device, the type of upstream network and its voltage you can refer to the corresponding discrimination table.

Coordination between circuit breakers

Discrimination of modular circuit breakers

Example: solution diagram



Upstream we have a NG125N 80 A 2P curve D and downstream an iC60N 32 A 2P curve C. The network is 230 V between phase and neutral.
By referring to the light green table on the discrimination page for NG125N curve D with iC60 downstream, we find 2200 A.

If the downstream product is replaced by an iDPN 1P+N curve C, you will use the dark green table for NG125N curve D and iDPN1P+N downstream.
The discrimination level is 2400 A for a 16 A.

Specifications

We want to achieve continuity of service in the event of a fault downstream of the NG125N 80 A. This circuit has an Isc of 2.2 kA under a voltage of 230 V.
By referring to the table for 230 V, 1P+N network, we find that for an upstream NG125N curve D with a rating of 80 A, we can have total discrimination up to 16 A if we use an iC60N 1P+N and up to 32 A with an iC60N 2P.

Upstream		**NG125N/H/L** Curve D										
In (A)		**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	T	T	T	T	T	T	T	T	T	T	T
	2	1200	T	T	T	T	T	T	T	T	T	T
	3	21	3400	3400	T	T	T	T	T	T	T	T
	4	18	1200	1300	5800	5600	T	T	T	T	T	T
	6	15	700	720	1900	1900	6000	11000	T	T	T	T
	10		22	480	1200	1200	2200	4200	10000	T	T	T
	13			28	51	900	1800	3000	7300	8000	T	T
	16				35	740	1300	2200	4700	5400	T	T
	20					46	88	1700	3500	3500	6900	T
	25						56	600	2500	2500	4600	6800
	32							80	2000	2200	3400	4400
	40								756	1900	2900	3500
	50									960	2300	2800
	63										2300	2800

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Is > Isc
Total discrimination

Coordination between circuit breakers

Discrimination of modular circuit breakers

Contents

Discrimination between circuit breakers

In the following tables we show the level of discrimination between two LV circuits that are protected by circuit breakers.
This discrimination will be either:

- total: represented by a T (up to the breaking capacity of the downstream device),
- partial: discrimination limit current (Is) indicated. Below this value discrimination is ensured, above this value the upstream device is also involved in breaking,
- zero: no discrimination ensured.

Discrimination table

Upstream: iDPN, iDPN N curve B
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iDPN, iDPN N Curve B										
In (A)		1	2	3	4	6	10	16	20	25	32	40
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN iDPN N Curve B	**1**		8	12	20	30	70	150	250	350	610	980
	2			12	16	30	60	110	180	240	340	450
	3					30	40	64	140	190	280	350
	4					10	40	64	120	160	220	280
	6						40	64	80	100	130	160
	10							64	80	100	130	160
	16									100	130	160
	20										130	160
	25											160
Discrimination limit (A)												
iDPN iDPN N Curve C	**1**		6	12	20	30	70	150	250	350	610	980
	2				12	30	60	110	180	240	340	450
	3					13	40	64	140	190	280	350
	4						32	64	120	160	220	280
	6							51	80	100	130	160
	10								64	80	130	160
	16										102	128
	20											128
Discrimination limit (A)												
iDPN iDPN N Curve D	**1**				12	30	70	150	250	350	610	980
	2					19	60	110	180	240	340	450
	3						32	64	140	190	280	350
	4							51	120	160	220	280
	6								64	80	130	160
	10										102	128
	16											128

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: iDPN, iDPN N curve C
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iDPN, iDPN N Curve C										
In (A)		1	2	3	4	6	10	16	20	25	32	40
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN iDPN N Curve B	**1**		16	24	32	70	180	400	630	1200	T	T
	2			24	32	48	140	270	350	510	820	830
	3				32	48	80	210	290	380	630	650
	4					48	80	130	240	320	480	510
	6						80	130	160	200	320	380
	10							130	160	200	260	320
	16								160	200	260	320
	20										260	320
	25											320
	32											
Discrimination limit (A)												
iDPN iDPN N Curve C	**1**		16	24	32	70	180	400	630	1200	T	T
	2			24	32	48	140	270	350	510	820	830
	3				9	48	80	210	290	380	630	650
	4					10	80	130	240	320	480	510
	6						80	130	160	200	320	380
	10							130	160	200	260	320
	16								45	200	260	320
	20										260	320
	25											320
Discrimination limit (A)												
iDPN iDPN N Curve D	**1**		16	24	32	70	180	400	630	1200	T	T
	2				25	48	140	270	350	510	820	830
	3					13	80	210	290	380	630	650
	4						80	130	240	320	480	510
	6							128	160	200	320	380
	10								128	200	260	320
	16									141	153	320
	20											256

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iDPN, iDPN N curve D
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iDPN, iDPN N Curve D										
In (A)		1	2	3	4	6	10	16	20	25	32	40
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN iDPN N Curve B	**1**		24	36	70	170	380	1200	T	T	T	T
	2			36	48	130	250	490	780	1100	1600	2300
	3				48	72	210	410	640	890	1400	1900
	4					72	120	330	500	670	970	1400
	6						120	190	390	520	740	1000
	10							190	240	300	580	810
	16									300	380	480
	20										380	480
	25											480
	32											480
	40											
Discrimination limit (A)												
iDPN iDPN N Curve C	**1**		24	36	70	170	380	1200	T	T	T	T
	2			36	48	130	250	490	780	1100	1600	2300
	3				9	72	210	410	640	890	1400	1900
	4					10	120	330	500	670	970	1400
	6							190	390	520	740	1000
	10							190	240	300	580	810
	16									300	380	480
	20										380	480
	25											480
Discrimination limit (A)												
iDPN iDPN N Curve D	**1**		24	36	70	170	380	1200	T	T	T	T
	2			36	48	130	250	490	780	1100	1600	2300
	3					14	210	410	640	890	1400	1900
	4					10	120	330	500	670	970	1400
	6						120	190	390	520	740	1000
	10							190	240	300	580	810
	16									300	380	480
	20										380	480
	25											480

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve B
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve B												
In (A)		2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P+N** **3P, 3P+N**													
Discrimination limit (A)														
iDPN **iDPN N** Curve B	**1**	8	12	16	30	60	80	110	130	150	270	410	450	620
	2		12	16	24	40	50	90	80	100	220	300	330	440
	3				24	40	50	64	80	100	210	270	300	410
	4				14	40	50	64	80	100	190	270	300	380
	6					40	50	64	80	100	130	240	250	250
	10							64	80	100	130	160	200	250
	16									100	130	160	200	250
	20										130	160	200	250
	25											160	200	250
	32												200	250
	40													250
Discrimination limit (A)														
iDPN **iDPN N** Curve C	**1**		12	16	30	60	80	110	130	150	270	410	450	620
	2			5	24	40	50	90	80	100	220	300	330	440
	3				17	40	50	64	80	100	210	270	300	410
	4					34	50	64	80	100	190	270	300	380
	6							47	80	100	130	240	250	250
	10								64	80	130	160	200	250
	16										102	128	200	250
	20											128	160	250
	25												160	201
	32													201
Discrimination limit (A)														
iDPN **iDPN N** Curve D	**1**			12	30	60	80	110	130	150	270	410	450	620
	2				19	40	50	90	80	100	220	300	330	440
	3					32	50	64	80	100	210	270	300	410
	4							51	80	100	190	270	300	380
	6								59	78	130	240	250	250
	10										102	128	200	250
	16											128	160	201
	20												160	201
	25													201

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve C
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve C													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P+N 3P, 3P+N**														
Discrimination limit (A)															
iDPN **iDPN N** Curve B	**1**		16	24	32	48	80	100	210	270	390	540	790	1500	1600
	2			24	32	48	80	100	130	160	300	410	540	910	930
	3				5	48	80	100	130	160	200	260	510	750	760
	4					48	80	100	130	160	200	260	480	720	760
	6						80	100	130	160	200	260	320	400	500
	10							100	130	160	200	260	320	400	500
	16										200	260	320	400	500
	20											260	320	400	500
	25												320	400	500
	32													400	500
	40														500
Discrimination limit (A)															
iDPN **iDPN N** Curve C	**1**		16	24	32	48	80	100	210	270	390	540	790	1500	1600
	2			24	32	48	80	100	130	160	300	410	540	910	930
	3					48	80	100	130	160	200	260	510	750	760
	4					14	80	100	130	160	200	260	480	720	760
	6						80	100	130	160	200	260	320	400	500
	10								130	160	200	260	320	400	500
	16										83	260	320	400	500
	20											260	320	400	500
	25												124	400	500
	32													163	500
	40														186
Discrimination limit (A)															
iDPN **iDPN N** Curve D	**1**		16	24	32	48	80	100	210	270	390	540	790	1500	1600
	2				25	48	80	100	130	160	300	410	540	910	930
	3						80	100	130	160	200	260	510	750	760
	4						80	100	130	160	200	260	480	720	760
	6							100	130	160	200	260	320	400	500
	10										200	260	320	400	500
	16										83	165	320	400	500
	20												151	400	500
	25													176	500
	32														255

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve D
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve D													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P+N**														
	3P, 3P+N														
Discrimination limit (A)															
iDPN	**1**		30	50	70	72	120	260	350	540	700	1100	1500	2000	2000
iDPN N	**2**			36	48	72	120	160	190	390	510	700	960	1500	2000
Curve B	**3**				5	72	120	160	190	360	450	580	840	1200	1500
	4					72	120	160	190	240	450	580	780	1100	1400
	6						120	160	190	240	300	380	720	1000	1200
	10							160	190	240	300	380	480	600	760
	16										300	380	480	600	760
	20											380	480	600	760
	25												480	600	760
	32													600	760
	40														760
Discrimination limit (A)															
iDPN	**1**		30	50	70	72	120	260	350	540	700	1100	1500	2000	2000
iDPN N	**2**			36	48	72	120	160	190	390	510	700	960	1500	2000
Curve C	**3**				5	72	120	160	190	360	450	580	840	1200	1500
	4					14	120	160	190	240	450	580	780	1100	1400
	6						120	160	190	240	300	380	720	1000	1200
	10							34	190	240	300	380	480	600	760
	16										300	380	480	600	760
	20											380	480	600	760
	25												124	600	760
	32													163	760
	40														186
Discrimination limit (A)															
iDPN	**1**		30	50	70	72	120	260	350	540	700	1100	1500	2000	2000
iDPN N	**2**			36	48	72	120	160	190	390	510	700	960	1500	2000
Curve D	**3**					17	120	160	190	360	450	580	840	1200	1500
	4					14	120	160	190	240	450	580	780	1100	1400
	6						120	160	190	240	300	380	720	1000	1200
	10								57	240	300	380	480	600	760
	16										83	380	480	600	760
	20											155	151	600	760
	25												124	180	760
	32													163	760
	40														186

Note: *if you cannot find your combination, refer to the selection table on page 2.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve B
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve B													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	4	10	40	60	T	T	T	T	T	T	T	T	T	T
	1		10	12	16	40	70	120	170	210	300	780	1300	1700	4000
	2			12	16	30	60	90	130	140	200	370	520	630	960
	3					30	40	70	90	120	150	250	380	460	670
	4					30	40	52	90	80	100	250	310	380	470
	6						40	52	64	80	100	190	290	300	440
	10								64	80	100	130	240	200	380
	13									80	100	130	240	200	250
	16										100	130	160	200	250
	20											130	160	200	250
	25												160	200	250
	32													200	250
	40														250
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**		10	40	60	T	T	T	T	T	T	T	T	T	T
	1				16	30	70	120	170	210	300	780	1300	1700	4000
	2				16	18	60	90	130	160	200	370	520	630	960
	3					15	40	70	90	120	150	250	380	460	670
	4						27	52	90	80	100	250	310	380	470
	6								51	80	100	190	290	300	440
	10									64	80	130	240	200	250
	13											102	160	200	250
	16											102	128	200	250
	20												128	160	250
	25													160	200
	32														200
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**			30	50	T	T	T	T	T	T	T	T	T	T
	1				12	30	60	120	170	210	300	780	1300	1700	4000
	2					19	40	70	110	140	180	370	520	630	860
	3						31	41	90	120	150	250	380	460	670
	4								48	80	100	220	310	340	470
	6									64	80	190	240	300	380
	10											100	128	200	250
	13												128	160	250
	16												128	160	200
	20													160	200
	25														200

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve B
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve B													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**2P (220-240 V) single-phase network**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	4	210	T	T	T	T	T	T	T	T	T	T	T	T
	1		10	20	20	60	110	260	530	790	2000	T	T	T	T
	2			12	16	30	70	140	200	250	400	880	1700	2500	5300
	3					30	40	90	130	160	250	550	800	1100	1400
	4						40	70	110	120	180	370	520	630	960
	6						40	52	64	80	100	270	380	460	630
	10								64	80	100	190	290	300	440
	13									80	100	130	240	200	380
	16										100	130	240	200	250
	20											130	160	200	250
	25												160	200	250
	32													200	250
	40														250
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**		170	T	T	T	T	T	T	T	T	T	T	T	T
	1				20	60	110	260	530	790	2000	T	T	T	T
	2				16	18	70	140	200	250	400	880	1700	2500	5300
	3					15	40	90	130	160	230	550	800	1100	1400
	4						27	70	90	120	180	370	520	630	860
	6								51	80	100	230	380	410	630
	10									64	80	130	240	300	440
	13											102	240	200	380
	16											102	128	200	250
	20												128	160	250
	25													160	200
	32														200
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**			T	T	T	T	T	T	T	T	T	T	T	T
	1				12	50	110	260	530	790	2000	T	T	T	T
	2					19	60	120	200	250	350	1100	1700	2500	5300
	3						31	41	110	140	230	490	800	960	1400
	4								48	80	150	310	450	630	860
	6									64	80	230	330	410	500
	10											100	128	200	380
	13												128	160	250
	16												128	160	200
	20													160	200
	25														200

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: iC60N/H/L curve C
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve C													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	8	60	T	T	T	T	T	T	T	T	T	T	T	T
	1		16	24	32	70	180	210	370	590	1100	2400	7000	T	T
	2			24	32	48	140	160	220	310	460	780	1200	2000	2000
	3				5	48	120	104	190	280	380	580	820	1400	1400
	4					14	80	104	130	240	300	430	590	1000	1100
	6						80	104	130	160	200	380	480	770	850
	10							104	130	160	200	260	320	680	500
	13									160	200	260	320	600	500
	16										200	260	320	600	500
	20											260	320	400	500
	25												320	400	500
	32													400	500
	40														500
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**	8	50	T	T	T	T	T	T	T	T	T	T	T	T
	1		16	24	32	70	180	210	370	590	1100	2400	7900	T	T
	2			24	32	48	120	160	220	310	460	780	1200	2000	2000
	3					16	80	104	190	280	380	480	820	1400	1400
	4					14	80	104	130	160	300	430	590	1000	1100
	6						80	104	130	160	200	380	480	770	850
	10								130	160	200	260	320	680	500
	13									55	200	260	320	600	500
	16										71	260	320	400	500
	20											260	320	400	500
	25												127	400	500
	32													168	500
	40														500
	50														
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**		50	T	T	T	T	T	T	T	T	T	T	T	T
	1			24	32	70	180	210	370	590	1100	2400	7900	T	T
	2				25	48	120	160	220	310	460	680	1200	2000	2000
	3					15	80	104	130	240	380	480	710	1400	1400
	4						28	100	130	160	300	430	590	1000	910
	6								130	160	200	260	480	770	760
	10									73	200	260	320	600	500
	13										79	260	320	600	500
	16										71	194	320	400	500
	20												135	400	500
	25													174	500
	32														277
	40														

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve C
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve C													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**2P (220-240 V) single-phase network**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		20	40	50	120	540	940	2700	T	T	T	T	T	T
	2			24	32	70	210	260	430	800	1500	3600	7900	52000	53000
	3				5	48	140	180	250	450	710	1200	2100	11000	9800
	4					14	120	160	220	310	460	680	940	2000	2000
	6						80	104	130	240	350	510	770	1300	1100
	10							104	130	160	200	380	550	930	950
	13									160	200	260	480	770	760
	16										200	260	320	400	500
	20											260	320	400	500
	25												320	400	500
	32													400	500
	40														500
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		20	40	50	120	540	940	2700	T	T	T	T	T	T
	2			24	32	70	210	260	430	660	1500	3600	7900	60000	53000
	3					16	140	180	250	380	710	1200	2100	11000	9800
	4					14	120	104	190	310	460	680	940	2000	2000
	6						80	104	130	160	350	510	620	1300	1100
	10								130	160	200	260	480	770	850
	13									55	200	260	480	770	760
	16										78	260	320	400	500
	20											260	320	400	500
	25												127	400	500
	32													168	500
	40														500
	50														
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**		T	T	T	T	T	T	T	T	T	T	T	T	T
	1			30	50	120	540	940	2700	T	T	T	T	T	T
	2				25	48	210	260	430	800	1500	3600	7900	60000	53000
	3					15	120	160	250	380	630	1200	2100	11000	9800
	4						28	100	190	280	460	680	940	2000	2000
	6								130	160	300	450	620	1100	1100
	10									73	200	260	480	770	850
	13										79	260	320	680	760
	16										71	194	320	400	500
	20												135	400	500
	25													174	500
	32														277
	40														

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: iC60N/H/L curve D
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve D													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		30	50	70	150	290	510	770	2000	3900	T	T	T	T
	2			36	48	110	210	300	450	730	890	1400	2300	5000	6800
	3				5	72	180	230	330	550	670	1100	1300	2800	4300
	4					72	120	160	290	410	560	840	1000	2000	2400
	6						120	160	190	360	450	660	910	1300	1600
	10							28	190	240	300	380	720	1100	1400
	13									240	300	380	480	900	1100
	16										300	380	480	900	1100
	20											380	480	600	760
	25												480	600	760
	32													600	760
	40														760
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		30	50	70	150	290	510	770	2000	3900	T	T	T	T
	2			36	48	110	210	300	450	730	890	1600	2300	5000	6800
	3				5	15	120	230	330	550	670	1100	1300	2800	4300
	4					13	120	160	290	410	560	710	1000	2000	2400
	6						120	160	190	360	450	660	910	1300	1600
	10							28	49	240	300	380	720	1100	1100
	13									52	300	380	480	900	1100
	16										71	380	480	900	760
	20											380	480	600	760
	25												105	600	760
	32													153	760
	40														760
	50														
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		30	50	70	150	290	510	770	2000	3900	T	T	T	T
	2			36	48	110	210	300	370	640	890	1600	2300	5000	6800
	3					15	120	230	330	450	670	970	1300	2800	3800
	4					13	28	160	190	410	560	710	1000	1600	2400
	6						32	160	190	240	450	580	810	1300	1600
	10								49	73	300	380	480	1100	1100
	13									52	80	380	480	900	1100
	16										71	380	480	900	760
	20											105	135	600	760
	25												105	174	760
	32													153	760
	40														245
	50														

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve D
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve D													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**2P (220-240 V) single-phase network**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		50	100	130	340	1600	10000	T	T	T	T	T	T	T
	2			50	80	150	350	650	1100	2600	5800	16000	45000	T	T
	3				5	110	240	370	530	920	1600	3800	9500	T	T
	4					72	180	270	370	640	890	1400	2300	7100	12000
	6						120	160	290	480	590	900	1300	2200	2600
	10							28	190	360	450	660	910	1500	1900
	13									240	450	580	810	1300	1600
	16										300	380	720	1100	1400
	20											380	480	900	1100
	25												480	900	760
	32													600	760
	40														760
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		50	100	130	340	1600	10000	T	T	T	T	T	T	T
	2			50	70	150	350	580	1100	2600	5800	16000	45000	T	T
	3				5	15	240	370	530	920	1600	3800	9500	T	T
	4					13	180	270	370	640	890	1400	1900	7100	12000
	6						120	160	290	480	590	900	1300	2200	2600
	10							28	190	360	450	660	910	1500	1900
	13									52	300	580	810	1300	1600
	16										71	380	720	1100	1400
	20											380	480	900	1100
	25												105	600	760
	32													153	760
	40														760
	50														
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		40	80	130	340	1600	10000	T	T	T	T	T	T	T
	2			50	70	150	350	650	1200	2600	5800	16000	45000	T	T
	3					15	210	300	530	920	1600	3800	9500	T	T
	4					13	28	230	370	640	890	1400	1900	7100	12000
	6						32	160	190	420	590	900	1100	2200	2600
	10								49	73	450	660	910	1500	1900
	13									52	300	380	720	1300	1600
	16										71	380	480	1100	1400
	20											105	480	900	1100
	25												105	174	760
	32													153	760
	40														245
	50														

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1).*
If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: iDPN curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discriminaation limit (A)												
iDPN Curve B	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3	40	64	300	500	700	1000	1500	T	T	T	T
	4	40	64	80	400	500	700	800	3000	T	T	T
	6	40	64	80	400	500	700	800	3000	T	T	T
	10		64	80	100	130	500	600	1800	3000	T	T
	16				100	130	160	200	1000	2000	3300	3750
	20					52	160	200	1000	1600	2500	3700
	25						59	200	800	1300	2100	3700
	32							200	600	1000	1800	2700
	40								112	320	1600	2400
Discriminaation limit (A)												
iDPN Curve C	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3	40	64	300	500	700	1000	1500	T	T	T	T
	4	40	64	80	400	500	700	800	3000	T	T	T
	6		51	80	100	500	700	800	3000	T	T	T
	10				80	130	500	600	1800	3000	4000	T
	16					98	128	200	1000	2000	3300	3700
	20						128	160	1000	1600	2500	3700
	25							160	201	1300	2100	3700
	32								201	256	1800	2700
	40									255	320	2400
Discriminaation limit (A)												
iDPN Curve D	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3		64	300	500	700	1000	1500	T	T	T	T
	4			80	400	500	700	800	3000	T	T	T
	6					500	700	800	3000	T	T	T
	10							600	1800	3000	4000	T
	16								201	2000	3300	3700
	20								201	256	2500	3700
	25								201	256	320	3700
	32									256	320	400
	40										320	400

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discriminaation limit (A)												
iDPN N Curve B	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3	40	64	300	500	700	1000	1500	T	T	T	T
	4	40	64	80	400	500	700	800	3000	T	T	T
	6	40	64	80	400	500	700	800	3000	T	T	T
	10		64	80	100	130	500	600	1800	3000	T	T
	16				100	130	160	200	1000	2000	3300	3750
	20					52	160	200	1000	1600	2500	3700
	25						59	200	800	1300	2100	3700
	32							200	600	1000	1800	2700
	40								112	320	1600	2400
Discriminaation limit (A)												
iDPN N Curve C	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3	40	64	300	500	700	1000	1500	T	T	T	T
	4	40	64	80	400	500	700	800	3000	T	T	T
	6		51	80	100	500	700	800	3000	T	T	T
	10				80	130	500	600	1800	3000	4000	T
	16					98	128	200	1000	2000	3300	3700
	20						128	160	1000	1600	2500	3700
	25							160	201	1300	2100	3700
	32								201	256	1800	2700
	40									255	320	2400
Discriminaation limit (A)												
iDPN N Curve D	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3		64	300	500	700	1000	1500	T	T	T	T
	4			80	400	500	700	800	3000	T	T	T
	6					500	700	800	3000	T	T	T
	10							600	1800	3000	4000	T
	16								201	2000	3300	3700
	20								201	256	2500	3700
	25								201	256	320	3700
	32									256	320	400
	40										320	400

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: iDPN curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN Curve B	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	80	130	170	400	500	700	800	3000	T	T	T
	6	80	130	170	400	500	700	800	3000	T	T	T
	10		130	160	200	350	500	600	1800	3000	T	T
	16				200	270	340	450	1250	2000	3300	3700
	20					52	320	400	1000	1600	2500	3700
	25						59	400	800	1300	2100	3700
	32							95	600	1000	1800	2700
	40								112	700	1600	2400
Discrimination limit (A)												
iDPN Curve C	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	21	200	170	400	500	700	800	3000	4500	4500	T
	6	18	200	170	400	500	700	800	3000	4500	4500	T
	10		25	160	200	350	500	600	1800	3000	4500	4500
	16				200	270	340	450	1250	2000	3300	3700
	20					52	320	400	1000	1600	2500	3700
	25						59	400	800	1300	2100	3700
	32							95	800	1000	1800	2700
	40								112	257	1600	2400
Discrimination limit (A)												
iDPN Curve D	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	21	200	170	400	500	700	800	3000	4500	4500	T
	6				400	500	700	800	3000	4500	4500	T
	10				200	450	500	600	1800	3000	4500	4500
	16							450	1000	2000	3300	3700
	20								1000	1600	2500	3700
	25								800	1300	2100	3700
	32										1800	2700
	40											2400

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN N Curve B	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	80	130	170	400	500	700	800	3000	T	T	T
	6	80	130	170	400	500	700	800	3000	T	T	T
	10		130	160	200	350	500	600	1800	3000	T	T
	16				200	270	340	450	1250	2000	3300	3700
	20					52	320	400	1000	1600	2500	3700
	25						59	400	800	1300	2100	3700
	32							95	600	1000	1800	2700
	40								112	700	1600	2400
Discrimination limit (A)												
iDPN N Curve C	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	21	200	170	400	500	700	800	3000	4500	4500	T
	6	18	200	170	400	500	700	800	3000	4500	4500	T
	10		25	160	200	350	500	600	1800	3000	4500	4500
	16				200	270	340	450	1000	2000	3300	3700
	20					52	320	400	1000	1600	2500	3700
	25						59	400	800	1300	2100	3700
	32							95	800	1000	1800	2700
	40								112	257	1600	2400
Discrimination limit (A)												
iDPN N Curve D	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	21	200	170	400	500	700	800	3000	4500	4500	T
	6				400	500	700	800	3000	4500	4500	T
	10				200	450	500	600	1800	3000	4500	4500
	16							450	1000	2000	3300	3700
	20								1000	1600	2500	3700
	25								800	1300	2100	3700
	32										1800	2700
	40											2400

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: iDPN curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN Curve B	**1**	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	180	610	640	1600	1700	3800	T	T	T	T	T
	4	120	450	500	1000	1100	1900	4600	T	T	T	T
	6	120	340	360	730	740	1200	2600	4700	T	T	T
	10		192	240	550	580	860	1600	2800	3500	5600	T
	16				300	380	480	1200	1900	2400	3600	4200
	20					380	480	1000	1500	2000	2900	3300
	25						59	950	1400	1700	2600	2900
	32							600	1100	1600	2200	2600
	40								756	1400	2100	2400
Discrimination limit (A)												
iDPN Curve C	**1**	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	180	610	640	1600	1700	3800	T	T	T	T	T
	4	120	450	500	1000	1100	1900	4600	T	T	T	T
	6	18	192	360	730	740	1200	2600	4700	T	T	T
	10		29	240	550	580	860	1600	2800	3500	5600	T
	16				49	380	480	1200	1900	2400	3600	4200
	20					52	480	1000	1500	2000	2900	3300
	25						59	600	1400	1700	2600	2900
	32							95	1100	1600	2200	2600
	40								756	960	2100	2400
Discrimination limit (A)												
iDPN Curve D	**1**	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	120	610	640	1600	1700	3800	T	T	T	T	T
	4	21	450	500	1000	1100	1900	4600	T	T	T	T
	6	18	192	360	730	740	1200	2600	4700	T	T	T
	10		25	240	300	580	860	1600	2800	3500	5600	T
	16				49	380	480	1200	1900	2400	3600	4200
	20					52	480	1000	1500	2000	2900	3300
	25						59	600	756	1700	2600	2900
	32							95	756	1600	2200	2600
	40								756	960	2100	2400

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN N Curve B	1	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	180	610	640	1600	1700	3800	T	T	T	T	T
	4	120	450	500	1000	1100	1900	4600	T	T	T	T
	6	120	340	360	730	740	1200	2600	4700	6200	T	T
	10		192	240	550	580	860	1600	2800	3500	5600	7300
	16				300	380	480	1200	1900	2400	3600	4200
	20					380	480	1000	1500	2000	2900	3300
	25						59	950	1400	1700	2600	2900
	32							600	1100	1600	2200	2600
	40								756	1400	2100	2400
Discrimination limit (A)												
iDPN N Curve C	1	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	180	610	640	1600	1700	3800	T	T	T	T	T
	4	120	450	500	1000	1100	1900	4600	T	T	T	T
	6	18	192	360	730	740	1200	2600	4700	6200	T	T
	10		29	240	550	580	860	1600	2800	3500	5600	7300
	16				49	380	480	1200	1900	2400	3600	4200
	20					52	480	1000	1500	2000	2900	3300
	25						59	600	1400	1700	2600	2900
	32							95	1100	1600	2200	2600
	40								756	960	2100	2400
Discrimination limit (A)												
iDPN N Curve Da	1	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	120	610	640	1600	1700	3800	T	T	T	T	T
	4	21	450	500	1000	1100	1900	4600	T	T	T	T
	6	18	192	360	730	740	1200	2600	4700	6200	T	T
	10		25	240	300	580	860	1600	2800	3500	5600	7300
	16				49	380	480	1200	1900	2400	3600	4200
	20					52	480	1000	1500	2000	2900	3300
	25						59	600	756	1700	2600	2900
	32							95	756	1600	2200	2600
	40								756	960	2100	2400

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	70	150	210	350	550	2000	2500	T	T	T	T
	2	60	110	140	230	310	590	630	1200	2100	3900	9700
	3	40	90	120	180	220	380	460	770	1400	2000	5300
	4	40	64	80	150	190	310	380	570	940	1400	2400
	6	15	64	80	100	130	290	300	440	620	930	1700
	10		22	80	100	130	200	200	380	550	770	1300
	13			28	100	130	160	200	380	480	680	1100
	16				35	130	160	200	250	320	600	940
	20					46	160	200	250	320	400	850
	25						56	200	250	320	400	750
	32							80	250	320	400	500
	40								250	320	400	500
	50									320	400	500
	63											500
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	70	150	210	350	550	2000	2500	T	T	T	T
	2	40	110	140	230	250	590	630	1200	2100	3900	9700
	3	30	64	120	180	220	380	460	770	1400	2000	5300
	4		64	80	150	190	310	340	570	940	1400	2400
	6			80	100	130	290	300	440	620	930	1700
	10					130	160	200	380	550	770	1100
	13						160	200	250	480	680	940
	16							200	250	320	600	940
	20									320	400	850
	25									320	400	750
	32											500
	40											500
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	60	150	210	350	550	2000	2500	T	T	T	T
	2	40	90	140	200	250	520	630	1200	2100	3900	9700
	3		64	80	180	220	380	380	770	1200	2000	5300
	4			80	150	190	310	340	570	820	1100	2400
	6					130	240	200	440	620	930	1700
	10							200	380	480	770	1100
	13								250	480	680	940
	16									320	600	940
	20										400	750
	25											500
	32											

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	120	490	T	T	T	T	T	T	T	T	T
	2	60	160	350	500	1200	4200	8100	T	T	T	T
	3	40	110	170	250	520	1300	1900	6700	T	T	T
	4	40	64	80	190	280	630	750	1400	2700	6200	T
	6	15	64	80	150	150	350	430	810	1400	2100	6100
	10		22	80	100	130	160	200	500	840	1300	2500
	13			28	100	130	240	200	440	770	1100	1900
	16				35	130	160	200	380	520	770	1400
	20					46	160	200	250	320	600	1000
	25						56	200	250	320	400	890
	32							80	250	320	400	840
	40								250	320	400	790
	50									320	400	750
	63											500
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	120	490	T	T	T	T	T	T	T	T	T
	2	60	160	350	500	1200	4200	8100	T	T	T	T
	3	30	110	170	250	520	1300	1900	6700	T	T	T
	4		64	80	190	280	630	750	1400	2700	6200	T
	6			80	150	150	350	430	810	1400	2100	6100
	10					130	160	200	500	840	1300	2500
	13						160	200	440	620	1100	1900
	16							200	380	520	770	1400
	20									320	600	1000
	25									320	400	890
	32											840
	40											500
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	120	490	T	T	T	T	T	T	T	T	T
	2	60	160	350	500	1200	4200	8100	T	T	T	T
	3		110	170	250	520	1300	1900	6700	T	T	T
	4			80	190	280	630	750	1400	2700	6200	T
	6					150	350	430	810	1400	2100	6100
	10							200	500	840	1300	2500
	13								380	620	930	1900
	16									520	770	1400
	20										600	1000
	25											890
	32											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	140	490	920	2300	T	T	T	T	T	T	T
	2	80	250	380	550	1800	2400	8800	10000	13000	T	T
	3	80	190	280	380	1200	1400	4600	8000	8500	14000	T
	4	80	130	240	300	800	820	2000	2300	3400	7000	13000
	6	15	130	160	200	610	650	1400	2300	2300	3600	6400
	10		22	160	200	500	510	1100	1300	1600	2200	3600
	13			28	200	460	470	930	1100	1400	2000	2600
	16				35	380	430	770	950	1200	1700	2300
	20					46	320	680	850	960	1500	2100
	25						56	600	760	960	1200	1800
	32							80	500	640	1200	1500
	40								130	640	800	1500
	50									640	800	1500
	63										800	1000
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	140	490	920	2300	T	T	T	T	T	T	T
	2	80	250	380	550	2100	2400	8800	10000	13000	T	T
	3	80	190	280	380	1200	1400	4600	8000	8500	14000	T
	4	18	130	160	300	800	820	2000	2300	3400	6000	13000
	6	15	130	160	200	610	650	1400	2300	2300	3600	5500
	10		22	160	200	500	510	930	1300	1400	2200	3100
	13			28	51	420	430	770	1100	1200	2000	2600
	16				35	256	400	770	950	1200	1700	2300
	20					46	320	680	850	960	1500	1800
	25						56	400	760	960	1200	1800
	32							80	500	640	1200	1500
	40								500	640	800	1500
	50									640	800	1000
	63											1000
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	140	490	920	2300	T	T	T	T	T	T	T
	2	80	250	380	550	1800	2400	8800	10000	13000	T	T
	3	21	190	280	380	1200	1200	4600	8000	8500	14000	T
	4	18	130	160	300	740	740	2000	2300	3400	6000	13000
	6		130	160	200	570	600	1400	1900	1800	3600	5500
	10				200	450	480	930	1300	1400	2200	3100
	13					256	430	770	950	1200	1700	2600
	16						320	770	950	960	1500	2300
	20							400	760	960	1200	1800
	25									640	1200	1500
	32									640	800	1500
	40											1000
	50											

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	950	T	T	T	T	T	T	T	T	T	T
	2	210	1900	4200	10000	T	T	T	T	T	T	T
	3	120	780	1300	4700	T	T	T	T	T	T	T
	4	80	310	590	1100	4000	13000	T	T	T	T	T
	6	15	190	330	510	1500	2700	7200	9000	9000	T	T
	10		22	160	300	1000	1400	2700	3500	3500	7400	T
	13			28	200	760	910	2000	2700	2700	4900	8100
	16				35	620	620	1600	2700	2700	3600	5500
	20					46	480	1100	1600	1600	2200	3600
	25						56	930	1200	1200	2000	2600
	32							80	930	960	1700	2300
	40								130	960	1400	2000
	50									640	1200	1900
	63										1200	1700
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	950	T	T	T	T	T	T	T	T	T	T
	2	210	1900	3500	10000	T	T	T	T	T	T	T
	3	80	670	1300	4700	T	T	T	T	T	T	T
	4	18	310	590	1100	3600	13000	T	T	T	T	T
	6	15	190	290	510	1500	2700	7200	9000	9000	T	T
	10		22	160	200	890	1200	2700	3700	3700	6600	T
	13			28	51	760	770	2000	2700	2700	4000	7200
	16				35	256	620	1600	2700	2700	3600	4600
	20					46	320	1100	1400	1400	2200	3600
	25						56	400	1100	1200	2000	2600
	32							80	500	960	1400	2300
	40								500	640	1200	2000
	50									640	800	1700
	63											1000
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	950	T	T	T	T	T	T	T	T	T	T
	2	210	1700	3500	10000	T	T	T	T	T	T	T
	3	21	550	1300	4700	T	T	T	T	T	T	T
	4	18	310	520	960	3600	13000	T	T	T	T	T
	6		190	240	460	1500	2700	6400	9000	9000	T	T
	10				200	890	1100	2700	3700	3700	6600	T
	13					256	620	2000	2300	2300	4000	7200
	16						320	1400	2300	2300	3100	4600
	20							400	1400	1400	2200	3100
	25									960	1700	2600
	32									640	1400	2000
	40											1800
	50											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	410	3800	5200	T	T	T	T	T	T	T	T
	2	240	770	920	2600	2700	7400	14000	T	T	T	T
	3	180	610	640	1300	1600	3600	11000	T	T	T	T
	4	120	450	450	890	1100	1900	4100	11000	13000	T	T
	6	15	340	360	730	740	1300	2600	4700	6200	T	T
	10		22	240	590	660	910	1700	2600	3500	T	T
	13			28	300	580	810	1500	2100	2500	4600	T
	16				35	380	720	1300	1900	2400	3600	T
	20					46	480	1100	1600	2000	3000	3600
	25						56	900	1400	1700	2400	2900
	32							83	1100	1700	2400	2600
	40								1100	1400	2100	2300
	50									1400	2000	2300
	63										2000	2300
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	410	3800	5200	T	T	T	T	T	T	T	T
	2	240	770	920	2600	2700	7400	T	T	T	T	T
	3	21	530	640	1300	1600	3600	11000	T	T	T	T
	4	18	450	450	890	1100	1900	4100	11000	13000	T	T
	6	15	340	360	730	740	1300	2200	4700	6200	T	T
	10		22	240	590	580	910	1700	2600	3500	T	T
	13			28	51	580	720	1300	2100	2500	4100	T
	16				35	380	480	1100	1900	2400	3600	T
	20					46	88	1100	1600	2000	2700	2900
	25						56	600	1400	1700	2400	2900
	32							80	1100	1400	2400	2600
	40								756	1400	2100	2300
	50									960	2000	2300
	63										1800	2300
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	410	3800	5200	T	T	T	T	T	T	T	T
	2	240	770	920	2600	2700	6300	T	T	T	T	T
	3	21	530	550	1300	1600	3600	11000	T	T	T	T
	4	18	370	450	890	970	1600	3700	11000	13000	T	T
	6	15	340	360	730	740	1100	2200	4700	5400	T	T
	10		22	240	520	580	810	1500	2600	3000	T	T
	13			28	51	380	720	1300	2100	2500	4100	T
	16				35	380	480	1100	1900	2400	3600	T
	20					46	480	900	1400	1700	2700	2900
	25						56	600	1400	1700	2400	2600
	32							80	1100	1400	2100	2600
	40								756	1400	2100	2300
	50									960	1800	1500
	63										1800	1500

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	T	T	T	T	T	T	T	T	T	T	T
	2	1200	T	T	T	T	T	T	T	T	T	T
	3	520	3400	3400	T	T	T	T	T	T	T	T
	4	120	1200	1300	5800	5600	T	T	T	T	T	T
	6	15	700	720	1900	1900	6000	11000	T	T	T	T
	10		22	540	1200	1200	2600	4200	10000	T	T	T
	13			28	300	900	1800	3400	7300	8000	T	T
	16				35	740	1500	2200	4700	5400	T	T
	20					46	910	1700	3500	3500	6900	T
	25						56	1500	2500	2500	5200	6800
	32							83	2000	2400	3400	4400
	40								1800	1900	2900	4000
	50									1900	2800	3300
	63										2300	2800
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	T	T	T	T	T	T	T	T	T	T	T
	2	1200	T	T	T	T	T	T	T	T	T	T
	3	21	3400	3400	T	T	T	T	T	T	T	T
	4	18	1200	1300	5800	5600	T	T	T	T	T	T
	6	15	700	720	1900	1900	6000	11000	T	T	T	T
	10		22	480	1200	1200	2200	4200	10000	T	T	T
	13			28	51	900	1800	3000	7300	8000	T	T
	16				35	740	1300	2200	4700	5400	T	T
	20					46	88	1700	3500	3500	6900	T
	25						56	600	2500	2500	4600	6800
	32							80	2000	2200	3400	4400
	40								756	1900	2900	3500
	50									960	2300	2800
	63										2300	2800
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	T	T	T	T	T	T	T	T	T	T	T
	2	1200	T	T	T	T	T	T	T	T	T	T
	3	21	3000	3400	T	T	T	T	T	T	T	T
	4	18	1100	1300	5800	4500	T	T	T	T	T	T
	6	15	600	600	1600	1600	5300	11000	T	T	T	T
	10		22	420	1000	1100	2200	3400	10000	T	T	T
	13			28	51	900	1700	2600	6400	7100	T	T
	16				35	380	1300	2200	3900	4500	T	T
	20					46	480	1500	3000	3500	6000	T
	25						56	600	2100	2500	4100	5900
	32							80	1800	2200	3400	4400
	40								756	1700	2400	2900
	50									960	2300	2800
	63										2000	2300

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**			80	100	130	160	200	250	320	400	800
	16				100	130	160	200	250	320	400	750
	20					65	160	200	250	320	400	750
	25						160	200	250	320	400	500
	32							200	250	320	400	500
	40								250	320	400	500
	50									320	400	500
	63										400	500
	80											400
Discrimination limit (A)												
C120, NG125 Curve C	**10**					130	160	200	250	320	400	750
	16							200	250	320	400	500
	20								250	320	400	500
	25									320	400	500
	32										400	500
	40											500
Discrimination limit (A)												
C120, NG125 Curve D	**10**							200	250	320	400	750
	16									320	400	500
	20										400	500
	25											500
	32											

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream : NG125N/H/L, C120N/H curve B
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**			80	100	130	260	200	400	540	670	1100
	16				100	130	240	200	250	480	630	910
	20					65	160	200	250	320	600	830
	25						160	200	250	320	400	830
	32							200	250	320	400	750
	40								250	320	400	750
	50									320	400	500
	63										400	500
	80											400
Discrimination limit (A)												
C120, NG125 Curve C	**10**					130	240	200	250	480	670	980
	16							200	250	320	400	830
	20								250	320	400	830
	25									320	400	750
	32										400	500
	40											500
Discrimination limit (A)												
C120, NG125 Curve D	**10**							200	250	320	630	980
	16									320	400	750
	20										400	750
	25											500
	32											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**		130	160	200	260	320	650	820	960	1300	1700
	16				200	260	320	600	760	800	900	1500
	20					65	320	400	500	640	800	1500
	25						320	400	500	640	800	1000
	32							400	500	640	800	1000
	40								500	640	800	1000
	50									640	800	1000
	63										800	1000
	80											1000
	100											
Discrimination limit (A)												
C120, NG125 Curve C	**10**		39	160	200	260	320	650	760	900	1200	1700
	16				70	110	320	400	500	640	800	1500
	20					65	124	400	500	640	800	1000
	25						89	149	500	640	800	1000
	32							123	240	640	800	1000
	40								181	269	800	1000
	50									227	800	1000
	63										800	1000
	80											1000
Discrimination limit (A)												
C120, NG125 Curve D	**10**					260	320	600	760	900	1200	1600
	16						320	400	500	640	800	1000
	20							400	500	640	800	1000
	25								500	640	800	1000
	32										800	1000
	40											1000
	50											

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**		130	160	200	480	510	930	1100	1200	1700	2500
	16				200	260	320	800	990	1100	1400	2000
	20					65	320	730	910	1100	1400	1900
	25						320	730	830	960	1200	1600
	32							400	830	960	1200	1600
	40								500	640	800	1500
	50									640	800	1500
	63										800	1000
	80											1000
	100											
Discrimination limit (A)												
C120, NG125 Curve C	**10**		39	160	200	260	480	870	1100	1200	1700	2500
	16				70	110	320	730	910	1100	1400	2000
	20					65	124	670	830	960	1300	1700
	25						89	149	500	640	1200	1600
	32							123	240	640	800	1500
	40								181	269	800	1000
	50									227	800	1000
	63										800	1000
	80											1000
Discrimination limit (A)												
C120, NG125 Curve D	**10**					260	320	800	1100	1100	1600	2200
	16						320	630	830	960	1300	1900
	20							400	760	960	1300	1700
	25								500	640	800	1500
	32										800	1500
	40											1000
	50											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1).*
If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**		190	240	300	380	480	970	1300	1600	2200	2500
	16				300	380	480	600	1100	1400	2000	2300
	20					65	480	600	1100	1400	2000	2300
	25						480	600	760	960	1200	1500
	32							600	760	960	1200	1500
	40								760	960	1200	1500
	50									960	1200	1500
	63										1200	1500
	80											1500
	100											
Discrimination limit (A)												
C120, NG125 Curve C	**10**		190	240	300	380	480	970	1300	1600	2200	2500
	16				70	110	480	600	1100	1400	2000	2300
	20					65	124	600	1100	1400	2000	2300
	25						89	149	760	960	1200	1500
	32							123	240	960	1200	1500
	40								181	269	1200	1500
	50									227	1200	1500
	63										1200	1500
	80											1500
	100											
Discrimination limit (A)												
C120, NG125 Curve D	**10**		39	240	300	380	480	970	1300	1600	2200	2500
	16				70	110	480	600	1100	1400	2000	2300
	20					65	124	193	1100	1400	2000	2300
	25						89	149	236	960	1200	1500
	32							123	240	960	1200	1500
	40								181	269	1200	1500
	50									227	1200	1500
	63										1200	1500
	80											1500
	100											

Note: *if you cannot find your combination, refer to the selection table on page 670.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**		190	240	250	380	720	1300	2000	2400	3700	4800
	16				300	380	480	1100	1600	1900	2600	3200
	20					65	480	1100	1500	1800	2600	2900
	25						480	600	1200	1400	2100	2400
	32							600	1200	1400	2100	2400
	40								760	960	1200	1500
	50									960	1200	1500
	63										1200	1500
	80											1500
	100											
Discrimination limit (A)												
C120, NG125 Curve C	**10**		190	240	250	380	720	1300	2000	2400	3700	4800
	16				70	110	480	1100	1600	1900	2600	3200
	20					65	124	1100	1500	1800	2600	2900
	25						89	149	1200	1400	2100	2400
	32							123	240	1400	2100	2400
	40								181	269	1200	1500
	50									227	1200	1500
	63										1200	1500
	80											1500
	100											
Discrimination limit (A)												
C120, NG125 Curve D	**10**		39	240	250	380	720	1300	2000	2400	3700	4800
	16				70	110	480	1100	1600	1900	2600	3200
	20					65	124	193	1500	1800	2600	2900
	25						89	149	236	1400	2100	2400
	32							123	240	1400	2100	2400
	40								181	269	1200	1500
	50									227	1200	1500
	63										1200	1500
	80											1500
	100											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1).*
If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.

Discrimination table
Discrimination of circuit breakers

Ue ⩽ 440 V AC

Contents

Discrimination between circuit breakers

In the following tables we show the level of discrimination between two LV circuits that are protected by circuit breakers up to 440 V, 50/60 Hz systems.
This discrimination will be either:

- total: represented by a T (up to the breaking capacity of the downstream device),
- partial: discrimination limit current (Is) indicated. Below this value discrimination is ensured, above this value the upstream device is also involved in breaking,
- zero: no discrimination ensured.

Discrimination table

Upstream: NG160E/N/H
Downstream: iDPN, iC60, C120, NG125

Ue ⩽ 440 V AC

Upstream		NG160E/N/H									
In (A)		16	25	32	40	50	63	80	100	125	160
Downstream											
Discrimination limit (kA)											
iDPN Curves B, C	**⩽ 10**	5	5	5	5	5	T	T	T	T	T
	16			3	3	3	T	T	T	T	T
	20				3	3	T	T	T	T	T
	25					3	T	T	T	T	T
	32						4	4	T	T	T
	40							4	T	T	T
Discrimination limit (kA)											
iDPNN Curves C, D	**⩽ 10**	5	5	5	5	5	T	T	T	T	T
	16			3	3	3	T	T	T	T	T
	20				3	3	T	T	T	T	T
	25					3	6	6	T	T	T
	32						4	4	7	T	T
	40							4	7	8	8
Discrimination limit (kA)											
iC60N/H Curves B, C, D	**⩽ 10**	5	5	5	5	5	10	T	T	T	T
	16			3	3	3	10	T	T	T	T
	20				3	3	10	T	T	T	T
	25					3	6	6	T	T	T
	32						4	4	7	T	T
	40							4	7	8	8
	50								5	8	8
	63									6	6
iC60L Curves B-C-D-K-Z	**⩽ 10**	5	5	5	5	5	10	15	T	T	T
	16			3	3	3	10	15	T	T	T
	20				3	3	10	15	T	T	T
	25					3	6	6	T	T	T
	32						4	4	7	T	T
	40							4	7	8	8
	50								5	8	8
	63									6	6
Discrimination limit (kA)											
C120N/H Curves B, C, D	**63**									1.25	1.25
	80										1.25
	100										1.25
	125										
Discrimination limit (kA)											
NG125N/H/L Curves B, C, D	**10**	0.6	0.6	0.6	0.6	0.6	0.8	0.8	1	1.25	1.25
	16			0.6	0.6	0.6	0.8	0.8	1	1.25	1.25
	20			0.6	0.6	0.6	0.8	0.8	1	1.25	1.25
	25				0.6	0.6	0.8	0.8	1	1.25	1.25
	32						0.8	0.8	1	1.25	1.25
	40							0.8	1	1.25	1.25
	50							0.8	1	1.25	1.25
	63									1.25	1.25
	80										1.25
	100 (N)										1.25
	125 (N)										

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664.*

Discrimination table

Upstream: Compact NSX100-250 TM-D
Downstream: iDPN, iC60, C120, NG125-160

Ue ⩽ 440 V AC

Upstream		NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit		TM-D								TM-D				TM-D		
In (A)		16	25	32	40	50	63	80	100	80	100	125	160	160	200	250
Downstream																
Discrimination limit (kA)																
iDPN Curves B, C	**⩽ 10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	32						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	40						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
Discrimination limit (kA)																
iDPNN Curves C, D	**⩽ 10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	32						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	40						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
Discrimination limit (kA)																
iC60N/H Curves B, C, D	**⩽ 10**	0.19	0.3	0.4	0.9	0.9	0.9	1.3	3	1.3	3	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	1	2	1	2	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	1.5	0.63	1.5	T	T	T	T	T
iC60L Curves B-C-D-K-Z	**25**				0.5	0.5	0.5	0.63	1.5	0.63	1.5	T	T	T	T	T
	32						0.5	0.63	1	0.63	1	T	T	T	T	T
	40						0.5	0.63	1	0.63	1	T	T	T	T	T
	50							0.63	0.8	0.63	0.8	T	T	T	T	T
	63								0.8		0.8	T	T	T	T	T
Discrimination limit (kA)																
C120N/H Curves B, C, D	**63**								0.8		0.8	2.4	2.4	2.4	T	T
	80												2.4	2.4	T	T
	100														T	T
	125															T
Discrimination limit (kA)																
NG125N/H/L Curves B, C, D	**10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	2.4	2.4	2.4	T	T
	32						0.5	0.63	0.8	0.63	0.8	2.4	2.4	2.4	T	T
	40							0.63	0.8	0.63	0.8	2.4	2.4	2.4	T	T
	50							0.63	0.8	0.63	0.8	2.4	2.4	2.4	T	T
	63								0.8		0.8	2.4	2.4	2.4	T	T
	80												2.4	2.4	T	T
	100 (N)														T	T
	125 (N)															T
Discrimination limit (kA)																
NG160E/N/H	**16**			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	2	2	2	T	T
	25				0.5	0.5	0.5	0.63	0.8	0.63	0.8	2	2	2	T	T
	32						0.5	0.63	0.8	0.63	0.8	2	2	2	T	T
	40							0.63	0.8	0.63	0.8	2	2	2	T	T
	50							0.63	0.8	0.63	0.8	2	2	2	T	T
	63								0.8		0.8	2	2	2	T	T
	80											2	2	2	T	T
	100												2	2	T	T
	125														T	T
	160															T

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664.*

Discrimination table
Upstream: Compact NSX100-250 Micrologic
Downstream: iDPN, iC60, C120, NG125-160

Ue ⩽ 440 V AC

Upstream		NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit		Micrologic								Micrologic				Micrologic		
Downstream	**Rating (A)**	**40**				**100**				**160**				**250**		
	Setting Ir	**16**	**25**	**32**	**40**	**40**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**160**	**200**	**250**
Discrimination limit (kA)																
iDPN Curves B, C	**⩽ 10**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T
	40						T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)																
iDPNN Curves C, D	**⩽ 10**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T
	40						T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)																
iC60N/H Curves B, C, D	**⩽ 10**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T
iC60L Curves B-C-D-K-Z	**25**				T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T
	40						T	T	T	T	T	T	T	T	T	T
	50							6	6	T	T	T	T	T	T	T
	63								6		T	T	T	T	T	T
Discrimination limit (kA)																
C120N/H Curves B, C, D	**63**								1.5		2.4	2.4	2.4	T	T	T
	80											2.4	2.4	T	T	T
	100												2.4	T	T	T
	125														T	T
Discrimination limit (kA)																
NG125N/H/L Curves B, C, D	**10**	0.6	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T
	16		0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T
	20			0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T
	25				0.6	1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	32						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	40						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	50							1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	63								1.5		2.4	2.4	2.4	T	T	T
	80											2.4	2.4	T	T	T
	100 (N)												2.4	T	T	T
	125 (N)														T	T
Discrimination limit (kA)																
NG160E/N/H	**16**				0.6	1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	25					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	32						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	40							1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	50							1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	63								1.5		2.4	2.4	2.4	T	T	T
	80											2.4	2.4	T	T	T
	100												2.4	T	T	T
	125														T	T
	160															T

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664.*

Discrimination table

Upstream: Compact NSX100-250 TM-D
Downstream: Compact NSX100-250 TM-D - Micrologic

Ue ⩽ 440 V AC

Upstream		NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit		TM-D								TM-D				TM-D		
In (A)		16	25	32	40	50	63	80	100	80	100	125	160	160	200	250
Downstream																
Discrimination limit (kA)																
Compact NSX100 B/F TM-D	**16**				0.5	0.5	0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	32						0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	40							0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	50							0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	63								0.8		0.8	1.25	1.25	1.25	T	T
	80											1.25	1.25	1.25	T	T
	100												1.25	1.25	T	T
Discrimination limit (kA)																
Compact NSX100 N/H/S/L/R TM-D	**16**				0.5	0.5	0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	32						0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	36	36
	40							0.63	0.8	0.63	0.8	1.25	1.25	1.25	36	36
	50							0.63	0.8	0.63	0.8	1.25	1.25	1.25	36	36
	63								0.8		0.8	1.25	1.25	1.25	36	36
	80											1.25	1.25	1.25	36	36
	100												1.25	1.25	36	36
Discrimination limit (kA)																
Compact NSX160 B/F/N/H/S/L TM-D	**⩽ 63**											1.25	1.25	1.25	4	5
	80											1.25	1.25	1.25	4	5
	100												1.25	1.25	4	5
	160															5
Discrimination limit (kA)																
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 100**													1.25	2	2.5
	125														2	2.5
	160															2.5
	200															
Discrimination limit (kA)																
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**						0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	2	2.5
	100												1.25	1.25	2	2.5
Discrimination limit (kA)																
Compact NSX160 B/F/N/H/S/L Micrologic	**40**						0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	2	2.5
	100												1.25	1.25	2	2.5
	160															2.5
Discrimination limit (kA)																
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**													1.25	2	2.5
	160															2.5
	250															

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664.*

Discrimination table
Upstream: Compact NSX100-250 Micrologic
Downstream: Compact NSX100-250 TM-D - Micrologic

Ue ⩽ 440 V AC

Upstream		NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit		Micrologic								Micrologic				Micrologic		
Downstream	**Rating (A)**	**40**				**100**				**160**				**250**		
	Setting Ir	**16**	**25**	**32**	**40**	**40**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**160**	**200**	**250**
Discrimination limit (kA)																
Compact NSX100 B/F TM-D	**16**					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	25					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	32						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	40							1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	50								1.5	2.4	2.4	2.4	2.4	T	T	T
	63										2.4	2.4	2.4	T	T	T
	80											2.4	2.4	T	T	T
	100												2.4	T	T	T
Discrimination limit (kA)																
Compact NSX100 N/H/S/L/R TM-D	**16**					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	25					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	32						1.5	1.5	1.5	2.4	2.4	2.4	2.4	36	36	36
	40							1.5	1.5	2.4	2.4	2.4	2.4	36	36	36
	50								1.5	2.4	2.4	2.4	2.4	36	36	36
	63										2.4	2.4	2.4	36	36	36
	80											2.4	2.4	36	36	36
	100												2.4	36	36	36
Discrimination limit (kA)																
Compact NSX160 B/F/N/H/S/L TM-D	**⩽ 63**										2.4	2.4	2.4	3	3	3
	80											2.4	2.4	3	3	3
	100												2.4	3	3	3
	160															3
Discrimination limit (kA)																
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 100**													3	3	3
	125														3	3
	160															3
	200															
Discrimination limit (kA)																
Compact NSX100 B/F Micrologic	**40**						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	100												2.4	T	T	T
Compact NSX100 N/H/S/L/R Micrologic	**40**						1.5	1.5	1.5	2.4	2.4	2.4	2.4	36	36	36
	100												2.4	36	36	36
Discrimination limit (kA)																
Compact NSX160 B/F/N/H/S/L Micrologic	**40**									2.4	2.4	2.4	2.4	3	3	3
	100												2.4	3	3	3
	160															3
Discrimination limit (kA)																
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**													3	3	3
	160															3
	250															

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664.*

Discrimination table

Upstream: Compact NSX400-630 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-400

Ue ⩽ 440 V AC

Upstream		NSX400F/N/H/S/L/R					NSX630F/N/H/S/L/R				
Trip unit		Micrologic					Micrologic				
Downstream	**Rating (A)**	**400**					**630**				
	Setting Ir	**160**	**200**	**250**	**320**	**400**	**250**	**320**	**400**	**500**	**630**
Discrimination limit (kA)											
iDPN		T	T	T	T	T	T	T	T	T	T
iDPNN		T	T	T	T	T	T	T	T	T	T
iC60N/H/L		T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)											
C120N/H	**⩽ 80**	T	T	T	T	T	T	T	T	T	T
	100		T	T	T	T	T	T	T	T	T
	125			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
NG125N/H/L	**⩽ 80**	T	T	T	T	T	T	T	T	T	T
	100		T	T	T	T	T	T	T	T	T
	125			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
NG160E/N/H	**⩽ 80**	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
	125		T	T	T	T	T	T	T	T	T
	160			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX100 B/F/N/H/S/L/R TM-D	**⩽ 80**	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX160 B/F/N/H/S/L TM-D	**⩽ 100**	T	T	T	T	T	T	T	T	T	T
	125		T	T	T	T	T	T	T	T	T
	160			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 100**	4.8	4.8	4.8	4.8	4.8	T	T	T	T	T
	125		4.8	4.8	4.8	4.8	T	T	T	T	T
	160			4.8	4.8	4.8	T	T	T	T	T
	200				4.8	4.8		T	T	T	T
	250					4.8			T	T	T
Discrimination limit (kA)											
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX160 B/F/N/H/S/L Micrologic	**40**	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
	160			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**	4.8	4.8	4.8	4.8	4.8	T	T	T	T	T
	160			4.8	4.8	4.8	T	T	T	T	T
	250					4.8			T	T	T
Discrimination limit (kA)											
Compact NSX400 F/N/H/S/L/R Micrologic	**160**						6.9	6.9	6.9	6.9	6.9
	200							6.9	6.9	6.9	6.9
	250								6.9	6.9	6.9
	320									6.9	6.9
	400										6.9

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664.*

Discrimination table

Upstream: Masterpact NT06-16 H1/H2 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630

Ue ⩽ 440 V AC

Upstream		Masterpact NT06/08/12/16 H1/H2																				
Trip unit		Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In							Micrologic 5.0 - 6.0 - 7.0 Inst : OFF						
Downstream	**Rating (A)**	**630**			**800**	**1000**	**1250**	**1600**	**630**			**800**	**1000**	**1250**	**1600**	**630**			**800**	**1000**	**1250**	**1600**
	Setting Ir	**250**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**250**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**250**	**400**	**630**	**800**	**1000**	**1250**	**1600**
Discrimination limit (kA)																						
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 125**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	250		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250		T	T	T	T	T	T	T	T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX400 F/N/H/S/L/R Micrologic	**160**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	250		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	320			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	400			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
Compact NSX630 F/N/H/S/L/R Micrologic	**250**		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	320			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	400			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	500				T	T	T	T				T	T	T	T				T	T	T	T
	630					T	T	T					T	T	T					T	T	T

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-16 H1
Micrologic
Downstream: Compact NS630b-1600

Ue ⩽ 440 V AC

Upstream	Masterpact NT06/08/12/16 H1																	
Trip unit	Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**630**		**800**	**1000**	**1250**	**1600**	**630**		**800**	**1000**	**1250**	**1600**	**630**		**800**	**1000**	**1250**	**1600**
	Setting Ir	**400**	**630**	**800**	**1000**	**1250**	**1600**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**400**	**630**	**800**	**1000**	**1250**	**1600**
Discrimination limit (kA)																			
Compact NS630b N/H Micrologic	**250**	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18.7	24	T	T	T	T	T	T
	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
Compact NS800 N/H Micrologic	**320**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24			T	T	T	T
	800					12.5	16					18.7	24				T	T	T
Compact NS1000 N/H Micrologic	**400**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	1000						16						24						T
Compact NS1250 N/H Micrologic	**500**			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	1000						16						24						T
	1250																		
Compact NS1600 N/H Micrologic	**630**				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	960						16						24						T
	1250																		
	1600																		
Compact NS630b L/LB Micrologic	**250**	4	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	400		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	500			8	T	T	T			T	T	T	T			T	T	T	T
	630				T	T	T				T	T	T				T	T	T
Compact NS800 L/LB Micrologic	**320**		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	400		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	500			8	10	T	T			T	T	T	T			T	T	T	T
	630				10	T	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
Compact NS1000 L Micrologic	**400**		6.3	8	10	12.5	T		9.4	12	T	T	T		T	T	T	T	T
	500			8	10	12.5	T			12	T	T	T			T	T	T	T
	630				10	12.5	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
	1000						T						T						T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-16 H1 Micrologic
Downstream: Masterpact NT06-16

Ue ⩽ 440 V AC

Upstream		Masterpact NT06/08/12/16 H1																	
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	630		800	1000	1250	1600	630		800	1000	1250	1600	630		800	1000	1250	1600
	Setting Ir	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600
Discrimination limit (kA)																			
Masterpact NT06 H1/H2 Micrologic	250	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18.7	24	T	T	T	T	T	T
	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
Masterpact NT08 H1/H2 Micrologic	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24			T	T	T	T
	800					12.5	16					18.7	24				T	T	T
Masterpact NT10 H1/H2 Micrologic	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	1000						16						24						T
Masterpact NT12 H1/H2 Micrologic	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	1000						16						24						T
	1250																		
Masterpact NT16 H1/H2 Micrologic	630				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	960						16						24						T
	1250																		
	1600																		
Masterpact NT06 L1 Micrologic	250	4	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	400		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	500			8	T	T	T			T	T	T	T			T	T	T	T
	630				T	T	T				T	T	T				T	T	T
Masterpact NT08 L1 Micrologic	320		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	400		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	500			8	10	T	T			T	T	T	T			T	T	T	T
	630				10	T	T				T	T	T				T	T	T
	800					T	T					T	T					T	T
Masterpact NT10 L1 Micrologic	400		6.3	8	10	12.5	T		9.4	12	T	T	T		T	T	T	T	T
	500			8	10	12.5	T			12	T	T	T			T	T	T	T
	630				10	12.5	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
	1000						T						T						T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-16 H2 Micrologic
Downstream: Compact NS630b-1600

Ue ⩽ 440 V AC

Upstream	Masterpact NT06/08/12/16 H2																	
Trip unit	Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					

Downstream	Rating (A)	630		800	1000	1250	1600	630		800	1000	1250	1600	630		800	1000	1250	1600
	Setting Ir	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600
Discrimination limit (kA)																			
Compact NS630b N/H Micrologic	**250**	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18.7	24	42	42	42	42	42	42
	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
Compact NS800 N/H Micrologic	**320**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24			42	42	42	42
	800					12.5	16					18.7	24				42	42	42
Compact NS1000 N/H Micrologic	**400**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	1000						16						24						42
Compact NS1250 N/H Micrologic	**500**			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	1000						16						24						42
	1250																		
Compact NS1600 N/H Micrologic	**630**				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	960						16						24						42
	1250																		
	1600																		
Compact NS630b L/LB Micrologic	**250**	4	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	400		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	500			8	T	T	T			T	T	T	T			T	T	T	T
	630				T	T	T				T	T	T				T	T	T
Compact NS800 L/LB Micrologic	**320**		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	400		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	500			8	10	T	T			T	T	T	T			T	T	T	T
	630				10	T	T				T	T	T				T	T	T
	800					T	T					T	T					T	T
Compact NS1000 L Micrologic	**400**		6.3	8	10	12.5	T		9.4	12	T	T	T		T	T	T	T	T
	500			8	10	12.5	T			12	T	T	T			T	T	T	T
	630				10	12.5	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
	1000						T						T						T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-16 H2 Micrologic
Downstream: Masterpact NT06-16

Ue ⩽ 440 V AC

Upstream	Masterpact NT06/08/12/16 H2																	
Trip unit	Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**630**		**800**	**1000**	**1250**	**1600**	**630**		**800**	**1000**	**1250**	**1600**	**630**		**800**	**1000**	**1250**	**1600**
	Setting Ir	**400**	**630**	**800**	**1000**	**1250**	**1600**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**400**	**630**	**800**	**1000**	**1250**	**1600**
Discrimination limit (kA)																			
Masterpact NT06 H1/H2 Micrologic	**250**	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18.7	24	42	42	42	42	42	42
	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
Masterpact NT08 H1/H2 Micrologic	**320**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24			42	42	42	42
	800					12.5	16					18.7	24				42	42	42
Masterpact NT10 H1/H2 Micrologic	**400**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	1000						16						24						42
Masterpact NT12 H1/H2 Micrologic	**500**			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	1000						16						24						42
	1250																		
Masterpact NT16 H1/H2 Micrologic	**630**				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	960						16						24						42
	1250																		
	1600																		
Masterpact NT06 L1 Micrologic	**250**	4	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	400		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	500			8	T	T	T			T	T	T	T			T	T	T	T
	630				T	T	T				T	T	T				T	T	T
Masterpact NT08 L1 Micrologic	**320**		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	400		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	500			8	10	T	T			T	T	T	T			T	T	T	T
	630				10	T	T				T	T	T				T	T	T
	800					T	T					T	T					T	T
Masterpact NT10 L1 Micrologic	**400**		6.3	8	10	12.5	T		9.4	12	T	T	T		T	T	T	T	T
	500			8	10	12.5	T			12	T	T	T			T	T	T	T
	630				10	12.5	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
	1000						T						T						T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-10 L1 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630

Ue ⩽ 440 V AC

Upstream	Masterpact NT06/08/10 L1														
Trip unit	Micrologic 2.0					Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst : OFF				
Downstream	**Rating (A)**	**630**			**800**	**1000**	**630**			**800**	**1000**	**630**			**800**	**1000**
	Setting Ir	**250**	**400**	**630**	**800**	**1000**	**250**	**400**	**630**	**800**	**1000**	**250**	**400**	**630**	**800**	**1000**
Discrimination limit (kA)																
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX100 B/FN/H/S/L/R TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 N/H/S/L TM-D		36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
Compact NSX250 B/F/N//H/S/L/R TM-D	**⩽ 125**	20	20	20	T	T	20	20	20	T	T	20	20	20	T	T
	160	20	20	20	T	T	20	20	20	T	T	20	20	20	T	T
	200		20	20	T	T		20	20	T	T		20	20	T	T
	250		20	20	T	T		20	20	T	T		20	20	T	T
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T		T	T	T	T
Compact NSX160 N/H/S/L Micrologic	**40**	36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
	100	36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
	160	36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**	20	20	20	T	T	20	20	20	T	T	20	20	20	T	T
	160		20	20	T	T		20	20	T	T		20	20	T	T
	250		20	20	T	T		20	20	T	T		20	20	T	T
Compact NSX400 F/N/H/S/L/R Micrologic	**160**	6.3	6.3	6.3	10	15	6.3	6.3	6.3	10	15	6.3	6.3	6.3	10	15
	200		6.3	6.3	10	15		6.3	6.3	10	15		6.3	6.3	10	15
	250		6.3	6.3	10	15		6.3	6.3	10	15		6.3	6.3	10	15
	320		6.3	6.3	10	15			6.3	10	15			6.3	10	15
	400			6.3	10	15			6.3	10	15			6.3	10	15
Compact NSX630 F/N/H/S/L/R Micrologic	**250**		6.3	6.3	8	10		6.3	6.3	8	10		6.3	6.3	8	10
	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-10 L1 Micrologic
Downstream: Compact NS630b-1000, Masterpact NT06-10

Ue ⩽ 440 V AC

Upstream		Masterpact NT06/08/10 L1														
Trip unit		Micrologic 2.0					Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst : OFF				
Downstream	Rating (A)	630			800	1000	630			800	1000	630			800	1000
	Setting Ir	250	400	630	800	1000	250	400	630	800	1000	250	400	630	800	1000
Discrimination limit (kA)																
Compact NS630b N/H/L/LB Micrologic	250		6.3	6.3	8	10		6.3	6.3	8	10		6.3	6.3	8	10
	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
Compact NS800 N/H/L/LB Micrologic	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
	800															
Compact NS1000 N/H/L Micrologic	400					10					10			6.3	10	10
	500					10					10				10	10
	630					10					10					10
	800															
	1000															
Masterpact NT06 H1/H2/L1 Micrologic	250		6.3	6.3	8	10		6.3	6.3	8	10		6.3	6.3	8	10
	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
Masterpact NT08 H1/H2/L1 Micrologic	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
	800															
Masterpact NT10 H1/H2/L1 Micrologic	400					10					10			6.3	10	10
	500					10					10				10	10
	630					10					10					10
	800															
	1000															

4 *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 N1/H1/H2/L1 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630

Ue ⩽ 440 V AC

Upstream	Masterpact NW08/12/16/20 N1/H1/H2/L1																				
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In								Micrologic 5.0 - 6.0 - 7.0 Inst : OFF						
Downstream	Rating (A)	800			1000	1250	1600	2000	800			1000	1250	1600	2000	800			1000	1250	1600	2000
	Setting Ir	320	630	800	1000	1250	1600	2000	320	630	800	1000	1250	1600	2000	320	630	800	1000	1250	1600	2000
Discrimination limit (kA)																						
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R TM-D	⩽ 125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200	T	T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	250		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R Micrologic	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L Micrologic	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R Micrologic	⩽ 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250		T	T	T	T	T	T	T	T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX400 F/N/H/S/L/R Micrologic	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	400		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX630 F/N/H/S/L/R Micrologic	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	400		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	500			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	630				T	T	T	T				T	T	T	T				T	T	T	T

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 N1/H1/H2
Micrologic
Downstream: Compact NS630b-1600

Ue ⩽ 440 V AC

Upstream	Masterpact NW08/12/16/20 N1/H1/H2																		
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	800		1000	1250	1600	2000	800		1000	1250	1600	2000	800		1000	1250	1600	2000
	Setting Ir	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000
Discrimination limit (kA)																			
Compact NS630bN/H Micrologic	**250**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
Compact NS800N/H Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Compact NS1000N/H Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Compact NS1250N/H Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Compact NS1600N/H Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Compact NS630bL/LB Micrologic	**250**	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	T	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			T	T	T	T			T	T	T	T			T	T	T	T
Compact NS800 L/LB Micrologic	**320**	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	10	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			10	T	T	T			T	T	T	T			T	T	T	T
	800				T	T	T				T	T	T				T	T	T
Compact NS1000L Micrologic	**400**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
	1000					T	T					T	T					T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 N1/H1/H2
Micrologic
Downstream: Masterpact NT06-16

Ue ⩽ 440 V AC

Upstream	Masterpact NW08/12/16/20 N1/H1/H2																	
Trip unit	Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	800		1000	1250	1600	2000	800		1000	1250	1600	2000	800		1000	1250	1600	2000
	Setting Ir	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000
Discrimination limit (kA)																			
Masterpact NT06 H1/H2 Micrologic	**250**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
Masterpact NT08 H1/H2 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NT10 H1/H2 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NT12 H1/H2 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NT16 H1/H2 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NT06L Micrologic	**250**	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	T	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			T	T	T	T			T	T	T	T			T	T	T	T
Masterpact NT08L Micrologic	**320**	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	10	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			10	T	T	T			T	T	T	T			T	T	T	T
	800				T	T	T				T	T	T				T	T	T
Masterpact NT10L Micrologic	**400**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
	1000					T	T					T	T					T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 N1/H1 Micrologic
Downstream: Masterpact NW08-20

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Upstream	Masterpact NW08/12/16/20 N1/H1																		
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	800		1000	1250	1600	2000	800		1000	1250	1600	2000	800		1000	1250	1600	2000
	Setting Ir	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000
Discrimination limit (kA)																			
Masterpact NW08 N1/H1/L1 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NW10 N1/H1/L1 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NW12 N1/H1/L1 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NW16 N1/H1/L1 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW20 N1/H1/L1 Micrologic	**800**				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW08 H2 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NW1 0H2 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NW12 H2 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NW16 H2 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW20 H2 Micrologic	**800**				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
	1600																		

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 H2 Micrologic
Downstream: Masterpact NW08-20

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Upstream	Masterpact NW08/12/16/20 H2																		
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**
	Setting Ir	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**
Discrimination limit (kA)																			
Masterpact NW08 N1/H1/L1 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NW10 N1/H1/L1 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NW12 N1/H1/L1 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NW16 N1/H1/L1 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW20 N1/H1/L1 Micrologic	**800**				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW08 H2 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	500		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
Masterpact NW10 H2 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	500		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
Masterpact NW12 H2 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
	1250						20						30						82
Masterpact NW16 H2 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	960					16	20					24	30					82	82
	1250						20						30						82
	1600																		
Masterpact NW20 H2 Micrologic	**800**				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
	1250						20						30						82
	1600																		

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 L1 Micrologic
Downstream: Compact NS630b-1600

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Upstream		Masterpact NW08/12/16/20 L1																	
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	800		1000	1250	1600	2000	800		1000	1250	1600	2000	800		1000	1250	1600	2000
	Setting Ir	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000
Discrimination limit (kA)																			
Compact NS630bN/H Micrologic	**250**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
Compact NS800N/H Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
Compact NS1000N/H Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	1000					16	20					24	30					37	37
Compact NS1250N/H Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	1000					16	20					24	30					37	37
	1250						20						30						37
Compact NS1600N/H Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	960					16	20					24	30					37	37
	1250						20						30						37
	1600																		
Compact NS630bL/LB Micrologic	**250**	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	10	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			10	T	T	T			T	T	T	T			T	T	T	T
Compact NS800L/LB Micrologic	**320**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
Compact NS1000L Micrologic	**400**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
	1000					T	T					T	T					T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 H2 Micrologic
Downstream: Masterpact NW08-20

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Upstream	Masterpact NW08/12/16/20 H2																		
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**
	Setting Ir	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**
Discrimination limit (kA)																			
Masterpact NW08 N1/H1/L1 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NW10 N1/H1/L1 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NW12 N1/H1/L1 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NW16 N1/H1/L1 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW20 N1/H1/L1 Micrologic	**800**				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW08 H2 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	500		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
Masterpact NW10 H2 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	500		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
Masterpact NW12 H2 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
	1250						20						30						82
Masterpact NW16 H2 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	960					16	20					24	30					82	82
	1250						20						30						82
	1600																		
Masterpact NW20 H2 Micrologic	**800**				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
	1250						20						30						82
	1600																		

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 L1 Micrologic
Downstream: Compact NS630b-1600

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Upstream		Masterpact NW08/12/16/20 L1																	
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**
	Setting Ir	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**
Discrimination limit (kA)																			
Compact NS630bN/H Micrologic	**250**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
Compact NS800N/H Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
Compact NS1000N/H Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	1000					16	20					24	30					37	37
Compact NS1250N/H Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	1000					16	20					24	30					37	37
	1250						20						30						37
Compact NS1600N/H Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	960					16	20					24	30					37	37
	1250						20						30						37
	1600																		
Compact NS630bL/LB Micrologic	**250**	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	10	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			10	T	T	T			T	T	T	T			T	T	T	T
Compact NS800L/LB Micrologic	**320**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
Compact NS1000L Micrologic	**400**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
	1000					T	T					T	T					T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW25-40 H1/H2, Masterpact NW40b-63 H1 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630, NS630b-3200

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Upstream		Masterpact NW25/32/40 H1/H2			Masterpact NW40b 50/63 H1			Masterpact NW25/32/40 H1/H2			Masterpact NW40b 50/6 3H1			Masterpact NW25/32/40 H1/H2			Masterpact NW40b 50/63 H1		
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**
Discrimination limit (kA)																			
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H/L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX B/F/H/N/S/L/R TM-D	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/H/N/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX B/F/H/N/S/L/R Micrologic	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
F/H/N/S/L/R Micrologic	**NSX400**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX630	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/H/N/S/L Micrologic		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NS N Micrologic	**NS630b**	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NS800	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NS1000	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NS1250	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NS1600	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
Compact NS H Micrologic	**NS630b**	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS800	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS1000	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS1250	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS1600	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
Compact NS N Micrologic	**NS1600b**	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS2000	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS2500	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	T	T	T (1)	T	T	T	T	T
	NS3200		32 (1)	40	40	50	63		48 (1)	60	60	T	T		T (1)	T	T	T	T
Compact NS H Micrologic	**NS1600b**	25	32	40	40	50	63	37,5	48	60	60	75	T	T	T	T	T	T	T
	NS2000	25	32	40	40	50	63	37,5	48	60	60	75	T	T	T	T	T	T	T
	NS2500	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	75	T	T (1)	T	T	T	T	T
	NS3200		32 (1)	40	40	50	63		48 (1)	60	60	75	T		T (1)	T	T	T	T
Compact NS L Micrologic	**NS630b**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS800	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS1000	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NS LB Micrologic	**NS630b**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS800	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW25-40 H1 Micrologic
Downstream: Masterpact NT06-16, Masterpact NW08-20

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Upstream		Masterpact NW25/32/40 H1								
Trip unit		Micrologic 2.0			Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In			Micrologic 5.0 - 6.0 - 7.0 Inst : OFF		
Downstream	**Rating (kA)**	**2500**	**3200**	**4000**	**2500**	**3200**	**4000**	**2500**	**3200**	**4000**
Discrimination limit (A)										
Masterpact NT H1 Micrologic	**NT06**	25	32	40	37.5	T	T	T	T	T
	NT08	25	32	40	37.5	T	T	T	T	T
	NT10	25	32	40	37.5	T	T	T	T	T
	NT12	25	32	40	37.5	T	T	T	T	T
	NT16	25	32	40	37.5	T	T	T	T	T
Masterpact NT H2 Micrologic	**NT06**	25	32	40	37.5	48	T	T	T	T
	NT08	25	32	40	37.5	48	T	T	T	T
	NT10	25	32	40	37.5	48	T	T	T	T
	NT12	25	32	40	37.5	48	T	T	T	T
	NT16	25	32	40	37.5	48	T	T	T	T
Masterpact NW N1 Micrologic	**NW08**	25	32	40	37.5	T	T	T	T	T
	NW10	25	32	40	37.5	T	T	T	T	T
	NW12	25	32	40	37.5	T	T	T	T	T
	NW16	25	32	40	37.5	T	T	T	T	T
Masterpact NW H1 Micrologic	**NW08**	25	32	40	37.5	48	60	T	T	T
	NW10	25	32	40	37.5	48	60	T	T	T
	NW12	25	32	40	37.5	48	60	T	T	T
	NW16	25	32	40	37.5	48	60	T	T	T
	NW20	25	32	40	37.5	48	60	T	T	T
	NW25	25 (1)	32	40	37,5 (1)	48	60	T (1)	T	T
	NW32		32 (1)	40		48 (1)	60		T (1)	T
Masterpact NW H2 Micrologic	**NW08**	25	32	40	37,5	48	60	T	T	T
	NW10	25	32	40	37,5	48	60	T	T	T
	NW12	25	32	40	37,5	48	60	T	T	T
	NW16	25	32	40	37,5	48	60	T	T	T
	NW20	25	32	40	37,5	48	60	T	T	T
	NW25	25 (1)	32	40	37,5 (1)	48	60	T (1)	T	T
	NW32		32 (1)	40		48 (1)	60		T (1)	T
Masterpact NW H3 Micrologic	**NW20**	25	32	40	37,5	48	60	T	T	T
	NW25	25 (1)	32	40	37,5 (1)	48	60	T (1)	T	T
	NW32		32 (1)	40		48 (1)	60		T (1)	T
Masterpact NT L1 Micrologic	**NT06**	T	T	T	T	T	T	T	T	T
	NT08	T	T	T	T	T	T	T	T	T
	NT10	T	T	T	T	T	T	T	T	T
Masterpact NW L1 Micrologic	**NW08**	25	32	40	37.5	48	60	T	T	T
	NW10	25	32	40	37.5	48	60	T	T	T
	NW12	25	32	40	37.5	48	60	T	T	T
	NW16	25	32	40	37.5	48	60	T	T	T
	NW20	25	32	40	37.5	48	60	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW25-40 H2, Masterpact NW40b-63 H1 Micrologic
Downstream: Masterpact NT06-16, Masterpact NW08-50

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Upstream		Masterpact NW25/32/40 H2			Masterpact NW40b 50/63 H1			Masterpact NW25/32/40 H2			Masterpact NW40b 50/63 H1			Masterpact NW25/32/40 H2			Masterpact NW40b 50/63 H1		
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**
Discrimination limit (kA)																			
Masterpact NT H1 Micrologic	**NT06**	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NT08	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NT10	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NT12	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NT16	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
Masterpact NT H2 Micrologic	**NT06**	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NT08	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NT10	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NT12	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NT16	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
Masterpact NW N1 Micrologic	**NW08**	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NW10	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NW12	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NW16	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW H1 Micrologic	**NW08**	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW10	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW12	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW16	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW20	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW25	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	T	T	T (1)	T	T	T	T	T
	NW32		32 (1)	40	40	50	63		48 (1)	60	60	T	T		T (1)	T	T	T	T
	NW40			40 (1)	40 (1)	50	63			60 (1)	60	T	T			T (1)	T (1)	T	T
Masterpact NW H2 Micrologic	**NW08**	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW10	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW12	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW16	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW20	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW25	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	75	94	82 (1)	82	82	T	T	T
	NW32		32 (1)	40	40	50	63		48 (1)	60	60	75	94		82 (1)	82	T	T	T
	NW40			40 (1)	40 (1)	50	63			60 (1)	60	75	94			82 (1)	T (1)	T	T
Masterpact NW H1	**NW40b**			40 (1)	40 (1)	50	63			60 (1)	60 (1)	75	94			T (1)	T (1)	T	T
	NW50					50 (1)	63					75 (1)	94					T (1)	T
Masterpact NW H3 Micrologic	**NW20**	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW25	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	75	94	82 (1)	82	82	T	T	T
	NW32		32 (1)	40	40	50	63		48 (1)	60	60	75	94		82 (1)	82	T	T	T
	NW40			40 (1)	40 (1)	50	63			60 (1)		75	94			82 (1)	T (1)	T	T
Masterpact NW H2	**NW40b**				40 (1)	50	63			60 (1)	60 (1)	75	94			T (1)	T (1)	T	T
	NW50					50 (1)	63					75 (1)	94					T (1)	T
Masterpact NT L1 Micrologic	**NT06**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NT08	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NT10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW L1 Micrologic	**NW08**	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T
	NW10	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T
	NW12	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T
	NW16	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T
	NW20	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW20-40 H3, Masterpact NW40b-63 H2 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630, NS630b-3200

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Upstream		Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2			Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2			Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2		
Trip unit		Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In							Micrologic 5.0 - 6.0 - 7.0 Inst : OFF						
Downstream	**Rating (A)**	**2000**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2000**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2000**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**
Discrimination limit (kA)																						
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H/L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact B/F/H/N/S/L/R TM-D	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/H/N/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact B/F/H/N/S/L/R Micrologic	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/H/N/S/L Micrologic		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact F/H/N/S/L/R	**NSX400**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX630	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact N Micrologic	**NS630b**	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NS800	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NS1000	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NS1250	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NS1600	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
Compact H Micrologic	**NS630b**	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS800	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS1000	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS1250	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS1600	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
Compact N Micrologic	**NS1600b**	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS2000	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	T	T	65 (1)	65	65	65	T	T	T
	NS2500		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	T	T		65 (1)	65	65	T	T	T
	NS3200			32 (1)	40	40	50	63			48 (1)	60	60	T	T			65 (1)	65	T	T	T
Compact H Micrologic	**NS1600b**	20	25	32	40	40	50	63	30	37,5	48	60	60	75	T	65	65	65	65	T	T	T
	NS2000	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	75	T	65 (1)	65	65	65	T	T	T
	NS2500		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	75	T		65 (1)	65	65	T	T	T
	NS3200			32 (1)	40	40	50	63			48 (1)	60	60	75	T			65 (1)	65	T	T	T
Compact L Micrologic	**NS630b**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS800	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS1000	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact LB Micrologic	**NS630b**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS800	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW20-40 H3,
Masterpact NW40b-63 H2 Micrologic
Downstream: Masterpact NT06-16,
Masterpact NW08-50

Ue ⩽ 440 V AC

Upstream	Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2			Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2			Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2		
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In							Micrologic 5.0 - 6.0 - 7.0 Inst : OFF						
Downstream	**Rating (A)**	**2000**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2000**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2000**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**
Discrimination limit (kA)																						
Masterpact NT H1 Micrologic	**NT06**	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NT08	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NT10	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NT12	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NT16	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
Masterpact NT H2 Micrologic	**NT06**	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NT08	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NT10	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NT12	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NT16	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW N1 Micrologic	**NW08**	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NW10	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NW12	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NW16	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW H1 Micrologic	**NW08**	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	T	T	T	T	T	T	T
	NW10	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	T	T	T	T	T	T	T
	NW12	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	T	T	T	T	T	T	T
	NW16	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	T	T	T	T	T	T	T
	NW20	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	T	T	T (1)	T	T	T	T	T	T
	NW25		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	T	T		T (1)	T	T	T	T	T
	NW32			32 (1)	40	40	50	63			48 (1)	60	60	T	T			T (1)	T	T	T	T
	NW40				40 (1)	40 (1)	50	63				60 (1)	60	T	T				T (1)	T (1)	T	T
Masterpact NW H2 Micrologic	**NW08**	20	25	32	40	40	50	63	30	37,5	48	60	60	75	94	65	65	65	65	T	T	T
	NW10	20	25	32	40	40	50	63	30	37,5	48	60	60	75	94	65	65	65	65	T	T	T
	NW12	20	25	32	40	40	50	63	30	37,5	48	60	60	75	94	65	65	65	65	T	T	T
	NW16	20	25	32	40	40	50	63	30	37,5	48	60	60	75	94	65	65	65	65	T	T	T
	NW20	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	75	94	65 (1)	65	65	65	T	T	T
	NW25		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	75	94		65 (1)	65	65	T	T	T
	NW32			32 (1)	40	40	50	63			48 (1)	60	60	75	94			65 (1)	65	T	T	T
	NW40				40 (1)	40 (1)	50	63				60 (1)	60	75	94				65 (1)	T (1)	T	T
Masterpact NW H1	**NW40b**				40 (1)	40 (1)	50	63				60 (1)	75	94	94				65 (1)	T (1)	T	T
	NW50						50 (1)	63					75 (1)	94	94						T (1)	T
Masterpact NW H3 Micrologic	**NW20**	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	75	94	65 (1)	65	65	65	120	120	120
	NW25		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	75	94		65 (1)	65	65	120	120	120
	NW32			32 (1)	40	40	50	63			48 (1)	60	60	75	94			65 (1)	65	120	120	120
	NW40				40 (1)	40 (1)	50	63				60 (1)	60	75	94				65 (1)	120 (1)	120	120
Masterpact NW H2	**NW40b**				40 (1)	40 (1)	50	63				60 (1)	75	75	94				65 (1)	120 (1)	120	120
	NW50						50 (1)	63					75 (1)		94						120 (1)	120
Masterpact NT L1 Micrologic	**NT06**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NT08	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NT10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW L1 Micrologic	**NW08**	20	25	32	40	40	50	63	30	37.5	48	60	60	75	94	100	100	100	100	T	T	T
	NW10	20	25	32	40	40	50	63	30	37.5	48	60	60	75	94	100	100	100	100	T	T	T
	NW12	20	25	32	40	40	50	63	30	37.5	48	60	60	75	94	100	100	100	100	T	T	T
	NW16	20	25	32	40	40	50	63	30	37.5	48	60	60	75	94	100	100	100	100	T	T	T
	NW20	20	25	32	40	40	50	63		37.5	48	60	60	75	94		100	100	100	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

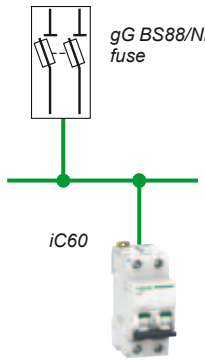
4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 557E4300.indd/664, or check curves with Curve Direct software.*

Discrimination table

Upstream: type gG BS88 and NH fuse
Downstream: iC60 circuit breaker



Selectivity

Selectivity between MCB iC60 and fuse gG in upstream according to the IEC 60947-2 annexe A.
The table below shows the limits of selectivity for a short-circuit current in kA with a fuse in upstream and a MCB iC60 in downstream.

Upstream		Fuse gG BS88 and NH												
	In (A)	16	20	25	32	40	50	63	80	100	125	160	200	250
Downstream	**Rating (A)**													
Discrimination limit (kA)														
iC60 Curve B	**1**	1.5	4.8	T	T	T	T	T	T	T	T	T	T	T
	2	0.6	1	2.1	4.5	8.7	29.5	T	T	T	T	T	T	T
	4		0.5	0.9	1.7	2.7	5.3	15.1	T	T	T	T	T	T
	6		0.4	0.7	1.2	1.9	3.4	6.9	19	T	T	T	T	T
	10			0.6	0.9	1.4	2.3	3.9	8.4	16	T	T	T	T
	16				0.7	1.1	1.8	2.8	5.3	9.3	17.5	T	T	T
	20					0.9	1.5	2.3	4.2	7.1	12	T	T	T
	25					0.8	1.3	2.1	3.7	6.1	9.7	T	T	T
	32						1.2	1.9	3.2	5.1	7.6	19.6	T	T
	40						1.1	1.7	2.9	4.6	6.7	13.8	T	T
	50							1.5	2.6	4.2	6.1	12.3	T	T
	63									4	6	11.7	T	T
Discrimination limit (kA)														
iC60 Curve C	**1**	1.5	4.8	T	T	T	T	T	T	T	T	T	T	T
	2	0.6	1	2.1	4.5	8.7	29.5	T	T	T	T	T	T	T
	4		0.5	0.9	1.7	2.7	5.3	15.1	T	T	T	T	T	T
	6		0.4	0.7	1.2	1.9	3.4	6.9	19	T	T	T	T	T
	10			0.6	0.9	1.4	2.3	3.9	8.4	16	T	T	T	T
	16					1.1	1.8	2.8	5.3	9.3	17.5	T	T	T
	20					0.9	1.5	2.3	4.2	7.1	12	T	T	T
	25						1.3	2.1	3.7	6.1	9.7	T	T	T
	32							1.9	3.2	5.1	7.6	19.6	T	T
	40								2.9	4.6	6.7	13.8	T	T
	50								2.6	4.2	6.1	12.3	T	T
	63									4	6	11.7	T	T
Discrimination limit (kA)														
iC60 Curve D	**1**	1.5	4.8	T	T	T	T	T	T	T	T	T	T	T
	2	0.6	1	2.1	4.5	8.7	29.5	T	T	T	T	T	T	T
	4		0.5	0.9	1.7	2.7	5.3	15.1	T	T	T	T	T	T
	6			0.7	1.2	1.9	3.4	6.9	19	T	T	T	T	T
	10				0.9	1.4	2.3	3.9	8.4	16	T	T	T	T
	16					1.1	1.8	2.8	5.3	9.3	17.5	T	T	T
	20						1.5	2.3	4.2	7.1	12	T	T	T
	25							2.1	3.7	6.1	9.7	T	T	T
	32								3.2	5.1	7.6	19.6	T	T
	40								2.9	4.6	6.7	13.8	T	T
	50									4.2	6.1	12.3	T	T
	63										6	11.7	T	T

19 *Please respect the breaking capacity of the circuit breaker (iC60N: 10 kA, iC60H: 15 kA)*

1.9 *Discrimination limit (kA) = 1.9 kA.*

T *Total discrimination.*

No discrimination.

Example:
Combination of a fuse gG 63 A in upstream with a MCB iC60 of 25 A B curve in downstream, selectivity up to a short circuit current of 2.1 kA.

Cascading

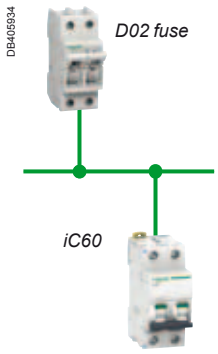
The table below shows the enhanced breaking capacity thanks to cascading of the iC60 MCB and the maximum rating of the upstream fuse.

Upstream		Fuse gG BS88 and NH		
	In (A)	16-100	125	160
Downstream device				
iC60N	10 kA	50 kA	35 kA	-
iC60H	15 kA			
iC60L	25-20-15 kA			

The enhanced breaking capacity is indicated in kA according to IEC 60947-2 annex A.

Discrimination table

Upstream: type gG Diazed D02 fuse
Downstream: iC60 circuit breaker



Selectivity

Selectivity between MCB iC60 and fuse gG in upstream according to the IEC 60947-2 annexe A.
The table below shows the limits of selectivity for a short-circuit current in kA with a fuse in upstream and a MCB iC60 in downstream.

Upstream		Type gG Diazed D02 fuse						
	In (A)	20	25	32	35	40	50	63
Downstream	**Rating (A)**							
Discrimination limit (kA)								
iC60 Curve B	**6**	0.7	1	1.9	2.2	3.7	5	6.7
	10	0.5	0.8	1.5	1.6	2.4	3.3	4.1
	13		0.7	1.2	1.5	2	2.6	3.5
	16		0.6	1.1	1.2	1.9	2.2	2.9
	20				1	1.6	1.9	2.4
	25					1.4	1.7	2
	32						1.6	1.9
	40						1.4	1.8
	50							1.6
	63							
Discrimination limit (kA)								
iC60 Curve C	**6**	0.7	1	1.9	2.2	3.7	5	6.7
	10			1.5	1.6	2.4	3.3	4.1
	13				1.5	2	2.6	3.5
	16					1.9	2.2	2.9
	20						1.9	2.4
	25						1.7	2
	32							1.9
	40							
Discrimination limit (kA)								
iC60 Curve D	**6**		1	1.9	2.2	3.7	5	6.7
	10				1.6	2.4	3.3	4.1
	13					2	2.6	3.5
	16						2.2	2.9
	20						1.9	2.4
	25							2
	32							

1.9 *Discrimination limit (kA) = 1.9 kA.*

No discrimination.

Example:
Combination of a fuse gG 63 A in upstream with a MCB iC60 of 25 A B curve in downstream, selectivity up to a short circuit current of 2 kA.

Cascading

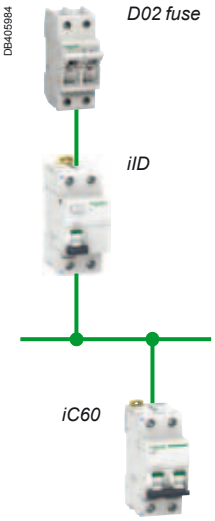
The table below shows the enhanced breaking capacity thanks to cascading of the iC60 MCB and the maximum rating of the upstream fuse.

Upstream		Type gG Diazed D02 fuse
	In (A)	20 – 63
Downstream device		
iC60N	10 kA	50 kA
iC60H	15 kA	
iC60L	25-20-15 kA	

The enhanced breaking capacity is indicated in kA according to IEC 60947-2 annex A.

Discrimination table

Upstream: type gG Diazed D02 fuse
Downstream: iC60 circuit breaker



Coordination with an iID RCCB

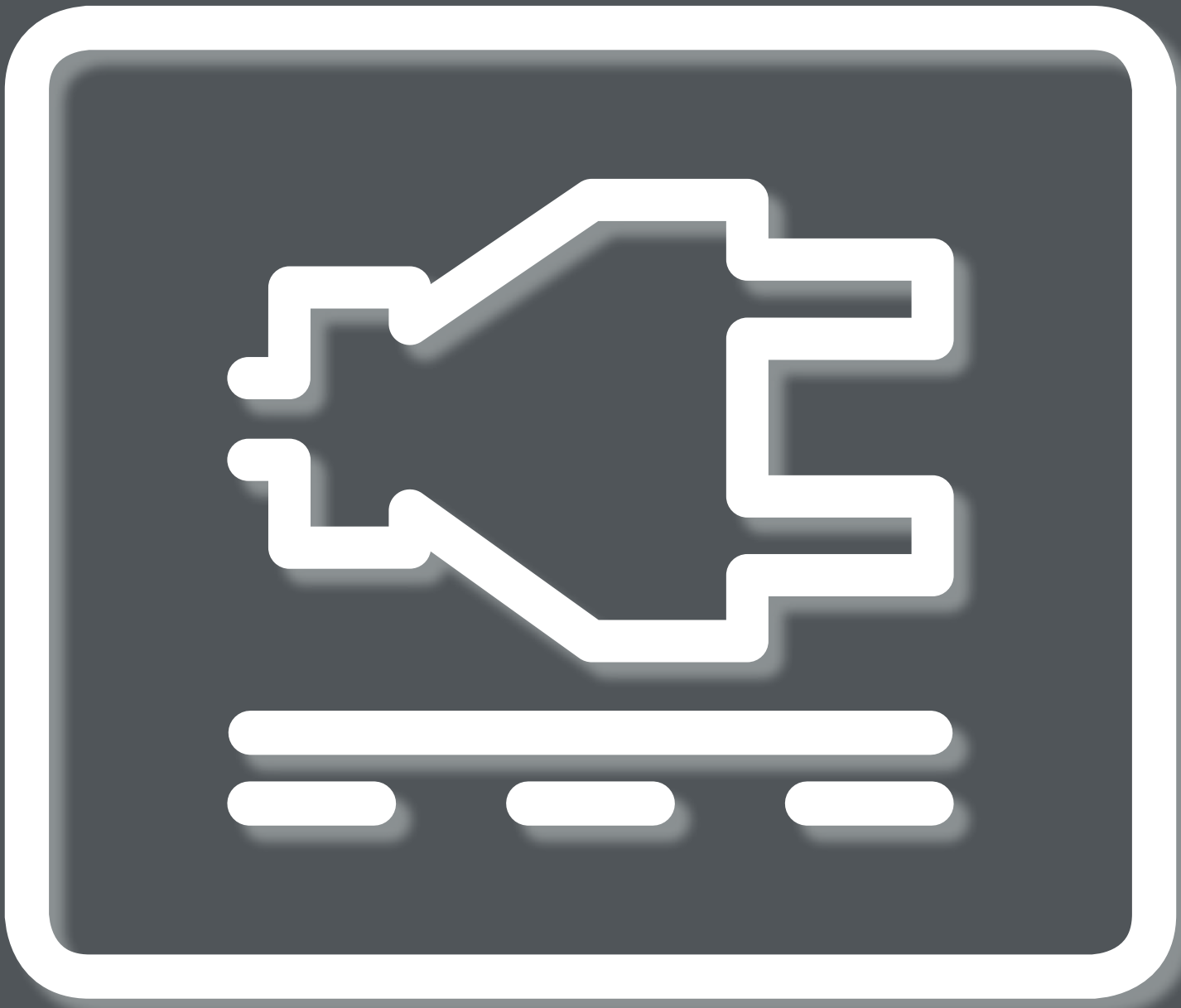
The table below shows the enhanced breaking capacity thanks to cascading of the iC60 MCB and the maximum rating of the upstream fuse, coordinated with an iID residual current circuit breaker.

Upstream		Type gG Diazed D02 fuse
	In (A)	20 – 63
iID		
	Downstream device	
	iC60N 10 kA	30 kA
	iC60H 15 kA	
	iC60L 25-20-15 kA	

The enhanced breaking capacity is indicated in kA according to IEC 60947-2 annex A.

Circuit breakers for direct current applications

Complementary technical information



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Circuit breakers for direct current applications
Contents

Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications

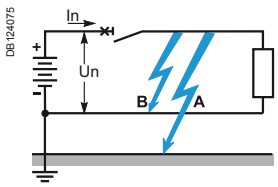
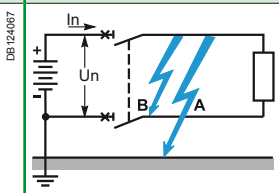
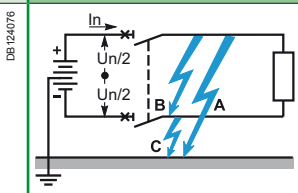
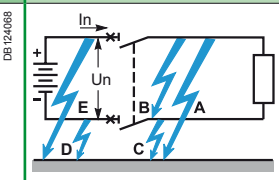
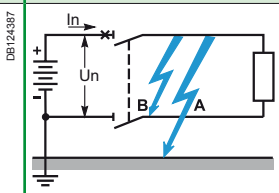
Typical applications

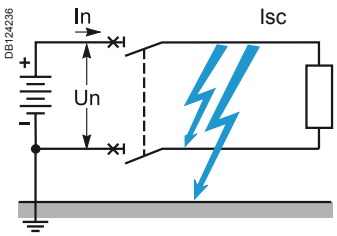
Direct current has been used for a long time, and in many fields. It offers major advantages, in particular immunity to electrical interference. Moreover, direct-current installations are now simpler, because they benefit from the development of power supplies with electronic converters and batteries.

- ■ Communication or measurement network:
  - □ 48 V DC switched telephone network,
  - □ 4-20 mA current loop.
- ■ Electrical supply for industrial PLCs:
  - □ PLCs and peripheral devices (24 or 48 V DC).
- ■ Auxiliary uninterruptible direct current power supply:
  - □ relays or electronic protection units for MV cubicles,
  - □ switchgear opening / closing trip units,
  - □ LV control and monitoring relays,
  - □ indicator lights,
  - □ circuit-breaker or on/off switch motor drives,
  - □ power contactor coils,
  - □ control/monitoring and supervision devices with communication that can be powered via a separate uninterruptible power supply.
- ■ 24 to 48 V DC wind application:
  - □ isolated homes,
  - □ cottages, bungalows, mountain refuges,
  - □ pumps, street lighting,
  - □ measuring instruments, data acquisition,
  - □ telecommunication relays,
  - □ industrial applications.

Types of direct current networks

According to the types of DC networks illustrated below, we can identify the risks to the installation and define the best means of protection.

<table>
<tr><th colspan="3">Earthed</th><th>Isolated from earth</th></tr>
<tr><td colspan="2">I: Earthed (or grounded) polarity (in this case negative)</td><td>II: Earthed mid-point</td><td>III: Isolated polarities</td></tr>
<tr><td>1 pole (1P isolation)</td><td>2 poles (2P isolation)</td><td>2 poles</td><td>2 poles</td></tr>
<tr><td> 
</td><td> 
</td><td> 
</td><td> 
</td></tr>
<tr><td></td><td>2 poles (1P isolation 1P+N)</td><td></td><td></td></tr>
<tr><td></td><td> 
</td><td></td><td></td></tr>
<tr><th colspan="4">Worst-case faults</th></tr>
<tr><td colspan="2">Fault A and fault B (if only one polarity is protected)</td><td>Fault B</td><td>Double fault A and D or C and E</td></tr>
</table>



For further information on the types of networks and the faults that characterise them, refer to the direct current circuit breaker (LV) selection guide, 220E2100.indd.

For all these configurations, we propose a single protection solution that depends only on the requirement for the nominal current In and the short-circuit current Isc at the installation point concerned.

The second important point in our solution is the fact that the protection is implemented by non-polarised circuit breakers that can operate efficiently, whatever the direction of the direct current.

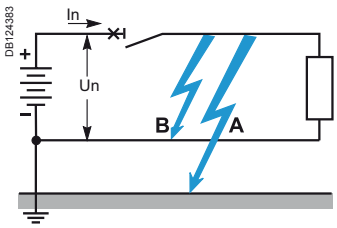
Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications

24 - 48 V direct current protection solution

The performance levels shown in the tables below correspond to the most critical faults according to the network configuration.

- Breaking on one pole.
- Fault between polarity and earth (Fault A).

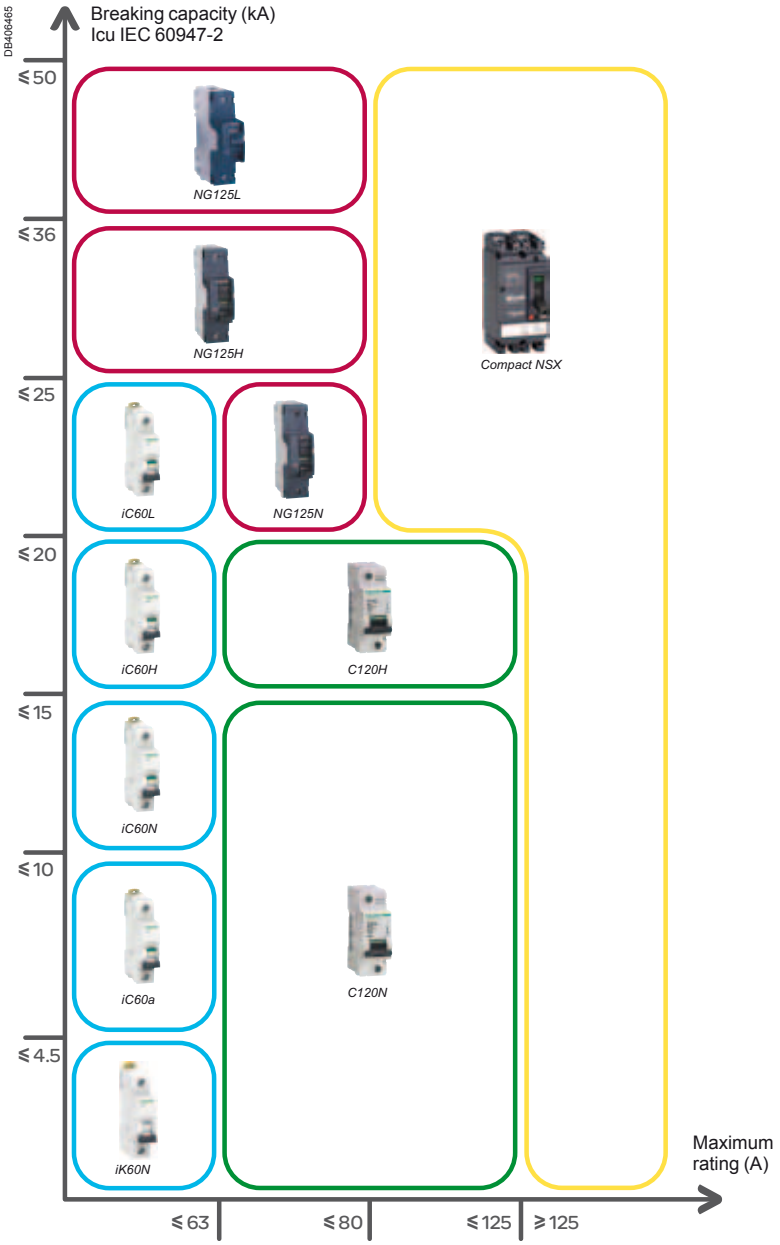


Standard solution depending on the network and the requirements of the installation (In / Isc)

In addition to the parameters shown on the following pages, the tables below illustrate our range of circuit breakers according to the nominal current of the load and short-circuit current at the point of installation.

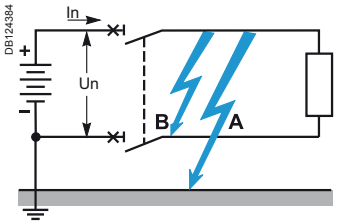
- Circuit breaker rating.
- Breaking capacity of the circuit breaker.

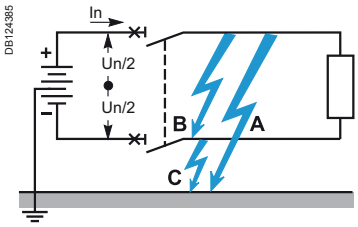
1 pole isolation solution (1P)

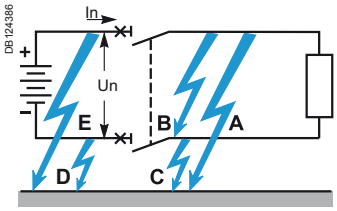


Circuit breakers for direct current applications (cont.)

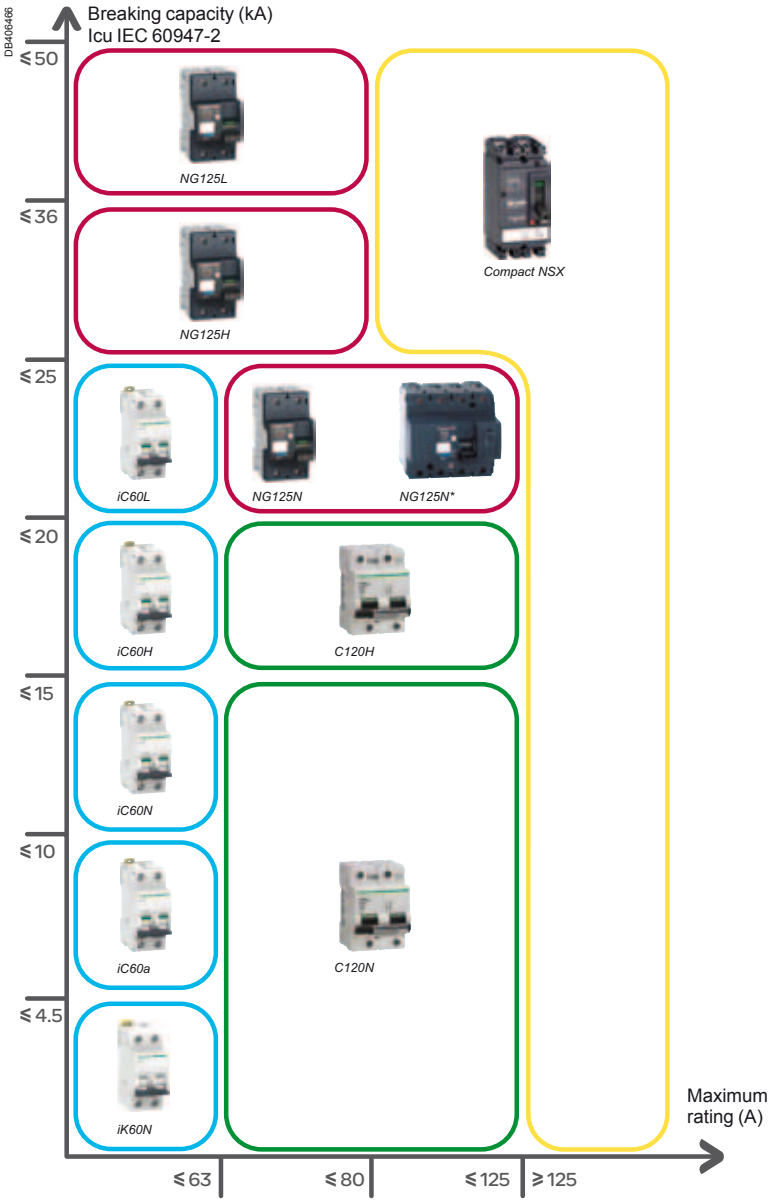
24 V - 48 V direct current applications







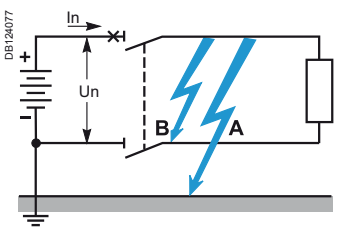
2 pôles isolation solution (2P)

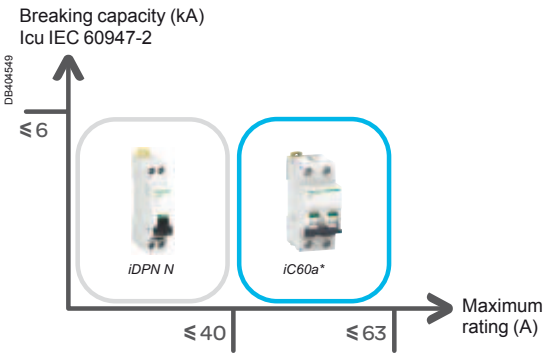


(*) 3P NG125N connected in a two-pole configuration to reach 125 A (1P / 2P NG125 has a maximum rating of 80 A).

1 pole isolation solution (1P+N)

Specific use of the iDPN range in a network with one polarity earthed and both poles isolated: compact solution (1P+N in 18 mm).





(*) iC60a breaking capacity Icu = 10 kA.

Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications

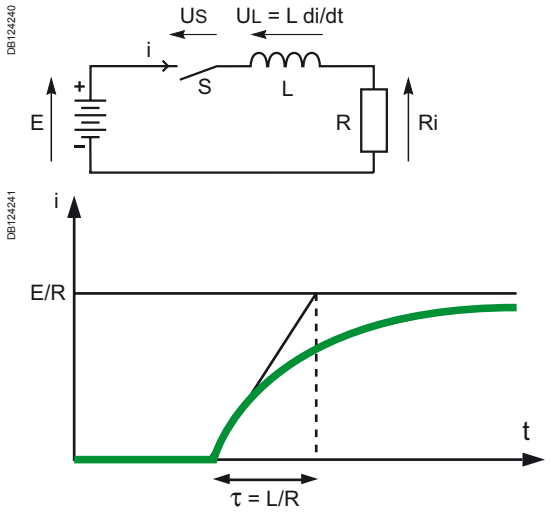
Constraints related to "direct current" applications

In direct current, inductors and capacitors do not disturb the operation of the installation in steady state. Capacitors are charged and inductors no longer oppose changes in the current.
However, they create transient phenomena when the circuit opens or closes, during which time the current varies. Actual loads have both characteristics and generate oscillatory phenomena.

Type of load

Inductive load

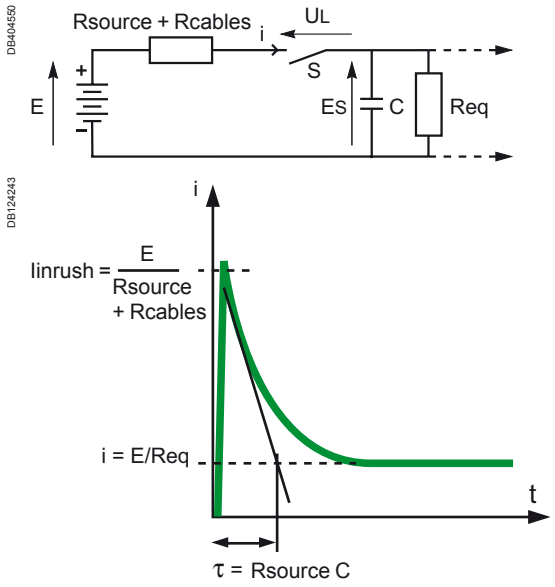
An inductive load will tend to lengthen the current interrupt or establishment time, because the inductance **L** then opposes the change in the current (**Ldi/dt**).
The transient phenomenon will mainly be characterised by a time constant imposed by the load and whose value corresponds approximately to the interrupt or closing time that the switchgear has to withstand. In addition, during the interrupt time, the switchgear must be able to withstand the additional energy stored in the inductor in steady state.
An inductive load therefore requires particular attention with respect to its time constant.
A low value (typically < 5 ms) facilitates interruption.



Inductive load

Capacitive load

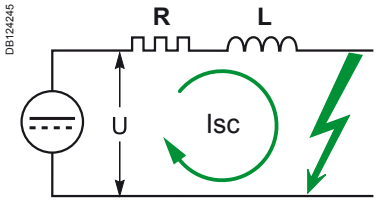
During a closing operation, a capacitive load will cause an inrush current due to the load on the capacitor, virtually under short-circuit condition at the beginning of the phenomenon.
On opening, it will tend to discharge. The time constant is generally very low (< 1 ms) and its effect is secondary with respect to the inrush current. A capacitive load will require particular attention to the inrush or discharge current surges.

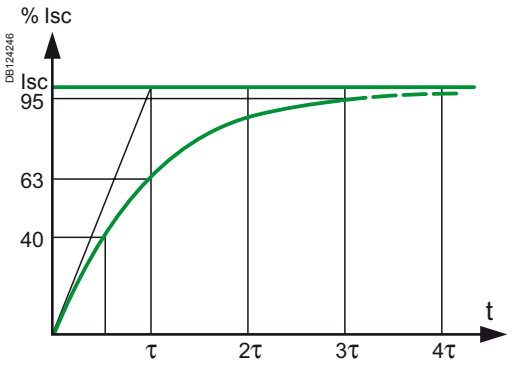


Capacitive load

Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications





Time constant L/R

When a short-circuit occurs across the terminals of a direct current circuit, the current increases from the operating current (< In) to the short-circuit current Isc during a time depending on the resistance **R** and the inductance **L** of the short-circuited loop.

The equation that governs the current in this loop is: **U = Ri + Ldi/dt**.

A short-circuit current is established (neglecting In with respect to Isc) by the equation:
i = Isc (1 - exp(-t/τ)),
where **τ = L/R** is the time constant used to establish the short-circuit.

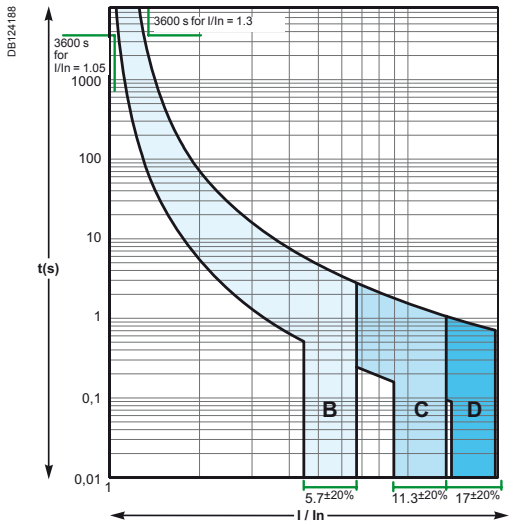
In practice, after a time **t = 3τ** the short-circuit is considered to be established, because the value of exp(-3) = 0.05 is negligible compared to 1.
The lower the corresponding time constant (e.g. battery circuit), the faster a short-circuit is established.

L/R	Description	DC applications
2 ms	Very fast short-circuit	■ Photovoltaic applications
5 ms	Fast short-circuit established	■ Resistive or slightly inductive circuits: □ indicator light □ trip units (MN, MX) □ motor armatures □ battery charger/uninterruptible power supply (UPS) ■ Capacitive circuits: electronic controller
15 ms	Standardised value used in standard IEC 60947-2	■ Inductive circuits: □ electromagnetic coil □ contactor coil □ motor inductor
30 ms	Slower short-circuit established	■ Highly inductive circuits: □ electromagnetic coil □ contactor coil □ motor inductor

In general, the system time constant is calculated under worst case conditions, across the terminals of the generator.

Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications



Curves B, C, D, ratings 6 A to 63 A

Tripping curves

We can choose our solution according to the inrush currents generated by our loads, in the same way as for alternating current. In direct current, the same thermal tripping curves are obtained as in alternating current. The only difference is that the magnetic thresholds are offset by a coefficient √2 compared to the curves obtained in alternating current.

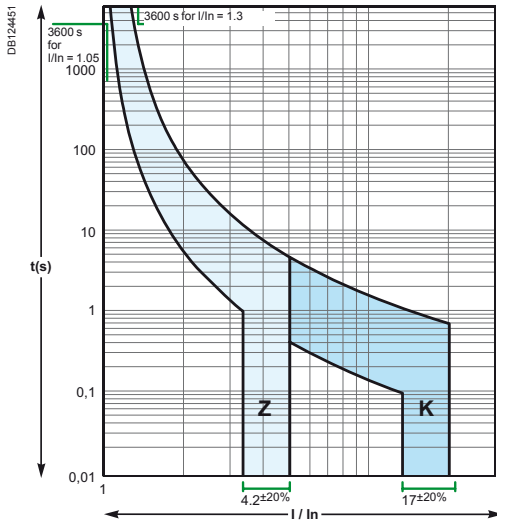
Characteristics of the various curves and their applications:

Curves	Magnetic thresholds		DC applications
	AC	DC	
Z	2.4 to 3.6 In	3.4 to 5 In	■ Resistive loads ■ Loads with electronic circuits
B	3.2 to 4.8 In	4.5 to 6.8 In	■ Motor inductor: starting current 2 to 4 In ■ Battery charger/Uninterruptible power supply (UPS)
C	6.4 to 9.6 In	9.05 to 13.6 In	■ Electronic controller
D and K	9.6 to 14.4 In	13.6 to 20.4 In	■ Electromagnetic coil: inrush overvoltage 10 to 20 Un ■ LV relay ■ Trip units (MN, MX) ■ Indicator light ■ PLCs (industrial programmable logic controllers)

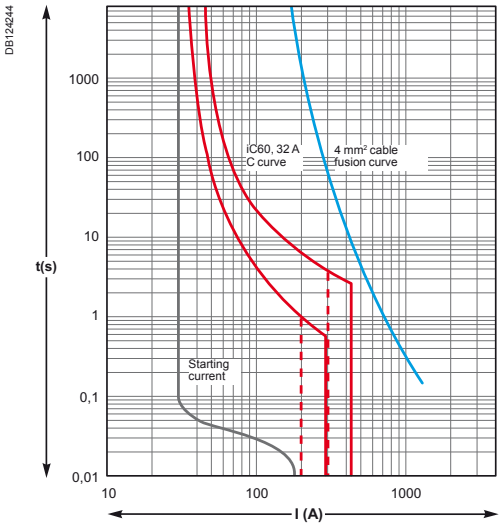
The figures opposite are iC60 tripping curves showing DC magnetic thresholds and normative limits

Example

Protection of the 4 mm² cable supplying a load at In = 30 A with a 32 A rating and a tripping curve that allows the starting current for this load to be absorbed.



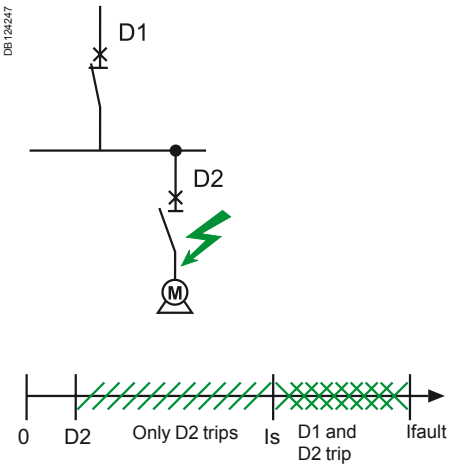
Curves Z, K, ratings 6 A to 63 A

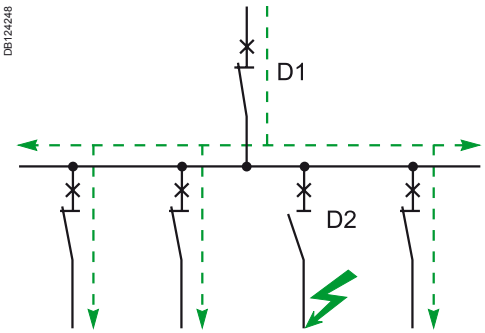


Curve C, rating 32 A (AC magnetic thresholds in dotted lines)

Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications





Continuity of service of the solutions

Discrimination of the direct current protection devices

Discrimination is a key element that must be taken into account right from the design stage of a low-voltage installation to allow continuity of service of the electrical power.

Discrimination involves coordination between two circuit breakers connected in series, so that in the event of a fault, only the circuit breaker positioned immediately upstream of the fault trips. A discrimination current Is is defined as:
- I fault < Is: only D2 removes the fault, discrimination ensured,
- I fault > Is: both circuit breakers may trip, discrimination not ensured.

Discrimination may be partial or total, up to the breaking capacity of the downstream circuit breaker. To ensure total discrimination, the characteristics of the upstream device must be higher than those of the downstream one.

The same principles apply to designing both direct current and alternating current installations. Only the limit currents change when direct current is used.

Once again, we find the same concepts of discrimination:
- **total**: up to the breaking capacity of the downstream device. Our tests have been performed at up to 25 kA or 50 kA depending on the breaking capacity of the devices in question.
- **partial**: indication of the discrimination limit current **Is**. Discrimination is ensured below this value; above this value, the upstream device participates in the breaking process,
- **none**: no discrimination ensured, the upstream and downstream circuit breakers will trip.

For further information about the discrimination concept for protection devices in general, refer to technical supplement 557E4300, "Discrimination of modular circuit breakers".

T Total discrimination.

No discrimination.

Circuit breakers for direct current applications (cont.)

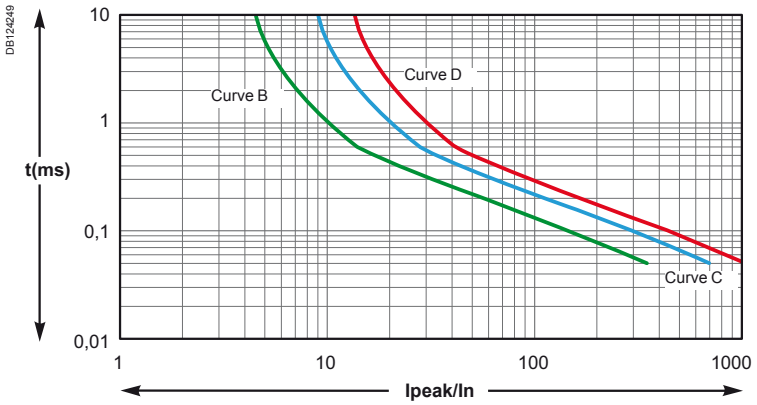
24 V - 48 V direct current applications

Coordination with loads

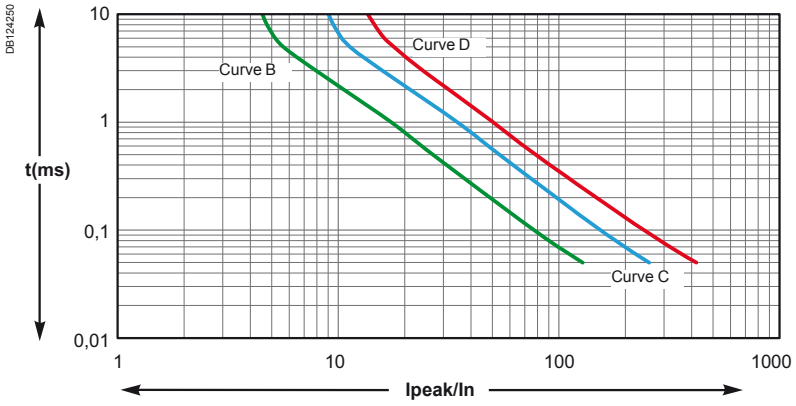
As seen above, the circuit-breaker characteristics chosen depend on the type of load downstream of the installation.
The rating depends on the size of the cables to be protected and the curves depend on the load inrush current.

Product selection according to the load inrush current
When certain "capacitive" loads are switched on, very high inrush currents appear during the first milliseconds of operation. The following graphs show the average DC non-tripping curves of our products for this time range (50 µs to 10 ms).

iC60



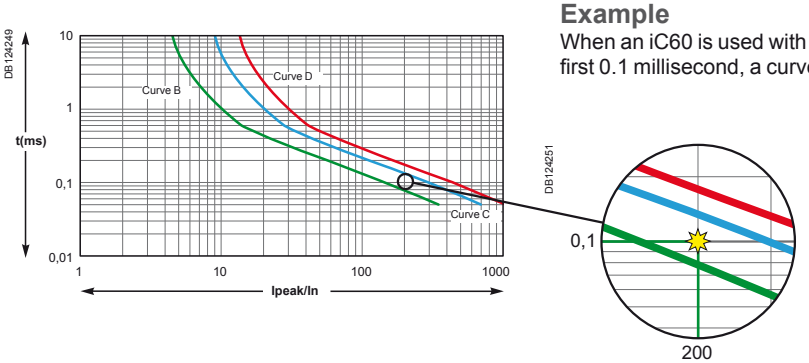
NG125 / C120



This information allows us to select the most appropriate product, according to the load specifications: curve and rating.

Example

When an iC60 is used with a load with current peaks in the order of 200 In during the first 0.1 millisecond, a curve C or D product must be installed.



Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications

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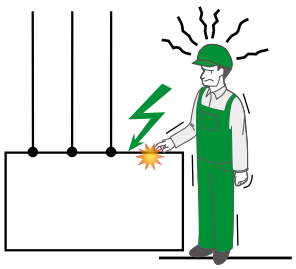

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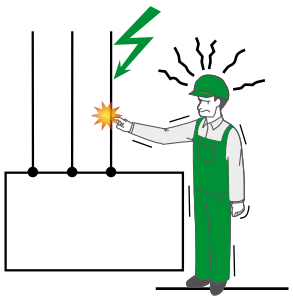

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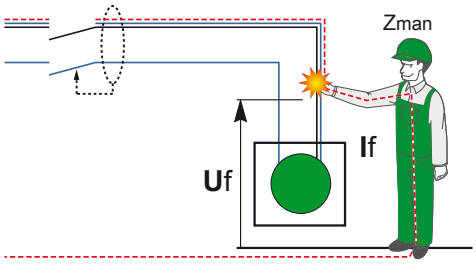


Standards: IEC 60479-2, NF C 15100, IEC 60755.

Personal protection

Personal protection (earth-leakage protection) is not mandatory for this voltage range (24-48 V DC).
In fact, according to the standards currently in force, the minimum ventricular fibrillation current **If** for human beings is in the order of 25 mA for alternating current (50 Hz), whereas for direct current, it is more than 50 mA.
The table below shows the data according to the standards and conditions:

Environment		Voltage specifications	
		AC	DC
Dry environment Zman = 2000 Ohm	Uf = Z x If	50 V	100 V
Wet environment Zman = 1000 Ohm	Uf = Z x If	25 V	50 V

With **Z** corresponding to the impedance of the human body in the different types of environment, **If** being the current passing through the body and **Uf** the minimum contact voltage required to reach the danger current.

Under normal operating conditions, this voltage range (< 50 V) is therefore not dangerous to human beings.

Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications

Examples of applications

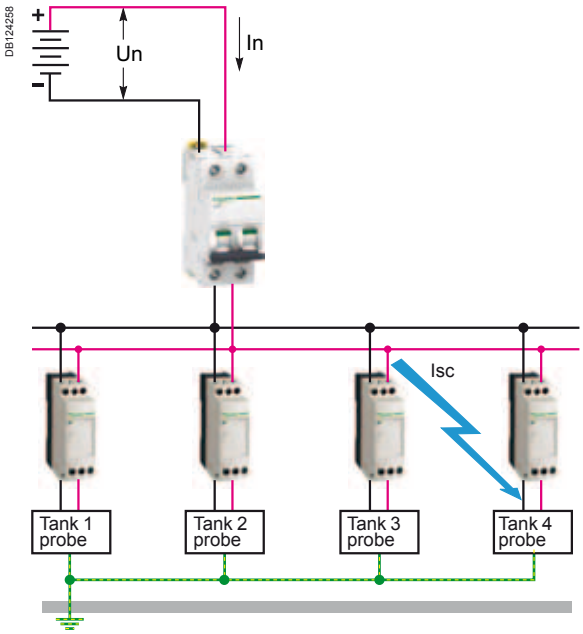
Industrial applications

Monitoring of agro-food tanks with 24 V DC converters for probes and other sensors

- ■ Isolated network:
- □ Isc = 25 kA,
- □ In = 40 A.

Solution

iC60L 2P 40 A + 24 V converters

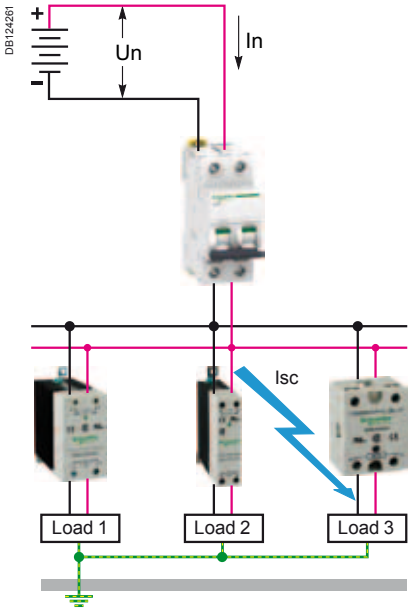


Control of industrial process measurement by 12/24/48 V DC control

- ■ Isolated network:
- □ Isc = 20 kA,
- □ In = 40 A.

Solution

iC60H 2P 40 A + DC solid-state relays



Circuit breakers for direct current applications (cont.)

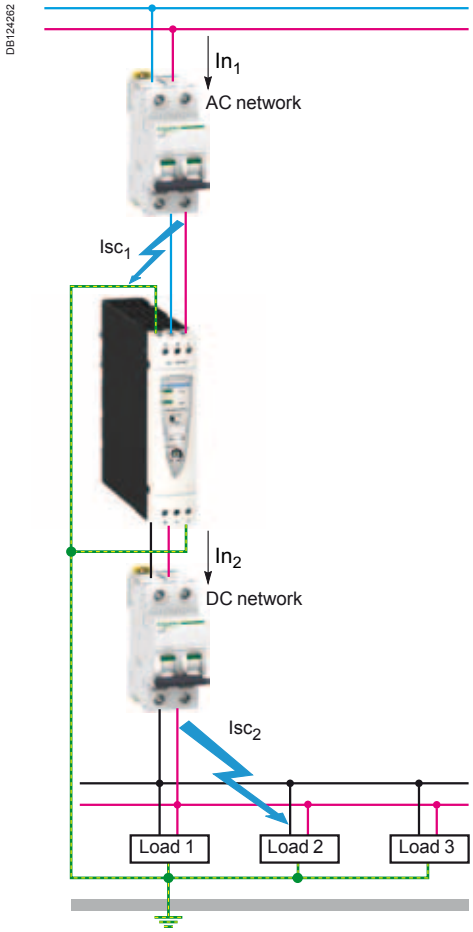
24 V - 48 V direct current applications

24 V DC generator power supply protection

- ■ Earthed network:
- □ Isc = 10 kA / In = 63 A,
- □ Isc = 10 kA / In = 20 A.

Solution

iC60N 2P 63 A + iC60N 2P 20 A + DC loads



Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications

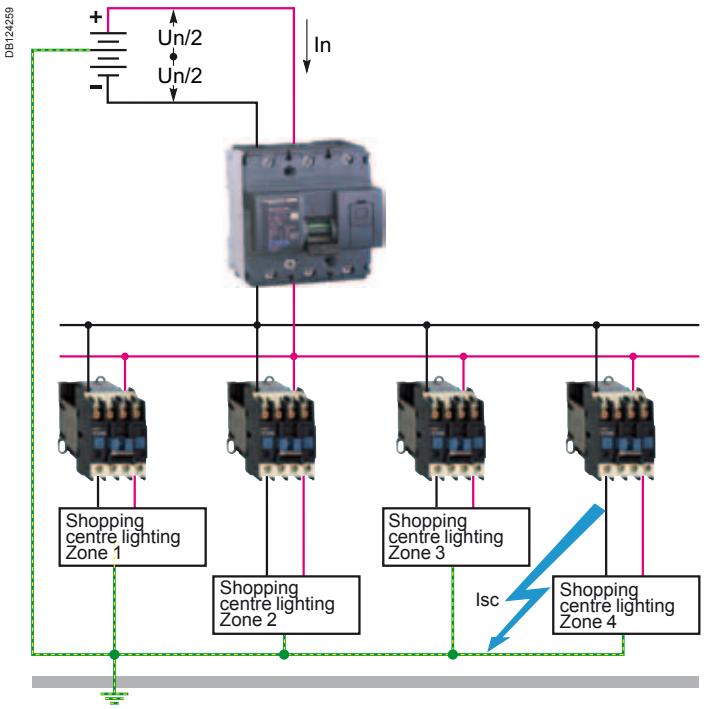
Tertiary applications

Control and monitoring of the 48 V DC emergency lighting distribution for a shopping centre

- ■ Mid-point of the network:
  - □ Isc = 20 kA,
  - □ In = 125 A.

Solution

NG125H 3P 125 A + power contactors

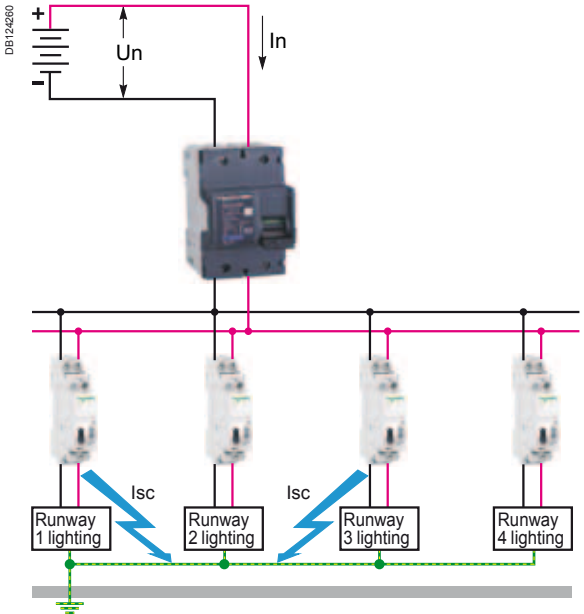


Major airport in France, 48 V DC emergency lighting for runways

- ■ Isolated network:
  - □ Isc = 50 kA,
  - □ In = 80 A.

Solution

NG125L 2P 80 A + impulse relays



Circuit breakers for direct current applications (cont.)

24 V - 48 V direct current applications

Power supply protection by 24 V DC direct current generator

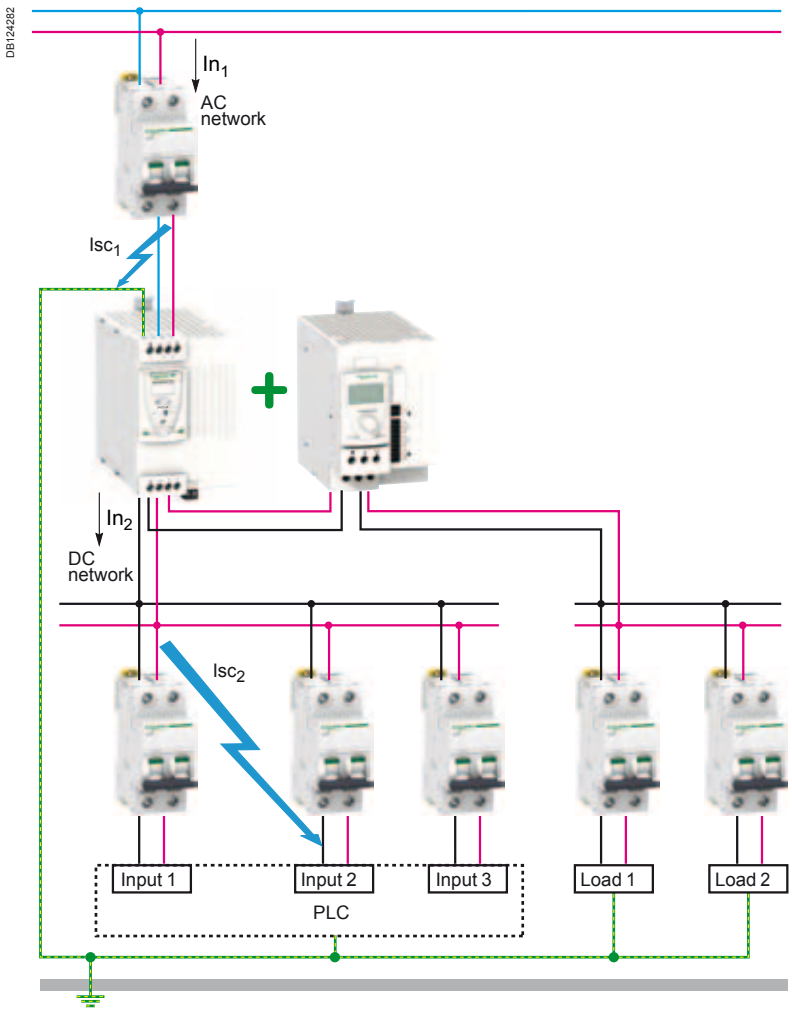
- Earthed network:
  - Isc_1 = 10 kA / In = 40 A,
  - Isc_2 = 10 kA / In = 2/4/6 A.

Solution

iC60N 2P 40 A + iC60N 2P 2/4/6 A + PLC inputs + DC loads

The Phaseo network failure solution provides the installation (or part thereof) with a 24 V DC power supply in the event of a mains voltage failure:

- throughout the mains failure, to ensure the continuity of service of the installation.
- during a limited time to allow:
  - data to be backed up,
  - actuators to be put in the fallback position,
  - a generating set to be started up,
  - the operating systems to be shut down,
  - remote supervision data to be transmitted.



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Document Number CA908032E

Direct current distribution

Choosing and implementing protective devices

Complementary
technical information

schneider-electric.com

Direct current distribution
Choosing and implementing circuit breakers

This document illustrates the use of the Acti 9 product range for the protection of direct current distribution applications of voltage less than **500 V.**

There is also a circuit breaker offer dedicated to photovoltaic applications: C60PV-DC (low breaking capacity 1.5 kA and higher voltage 800 V).

Choice

Choosing the rating

The thermal tripping curve of a circuit breaker is the same in direct current as in alternating current (50/60 Hz). The rule for choosing is therefore the same: to ensure protection against circuit overloads, choose a circuit breaker with a rating (In) less than or equal to the current (Iz) allowed to pass through the cable.

Circuits with momentary current direction reversal

In the case of circuits with momentary current direction reversal:
- **C60H-DC circuit breakers cannot be used**
- iC60 circuit breakers can be use

Examples of circuits with momentary current direction reversal

- Paralleled energy sources (photovoltaic cells, generators, generating sets, etc.).

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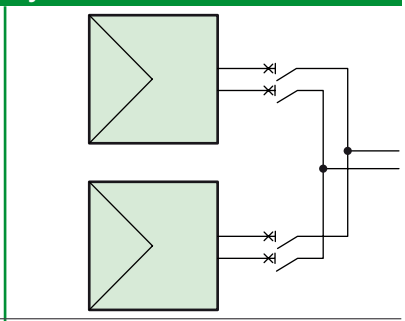

- Batteries with rectifier/charger.

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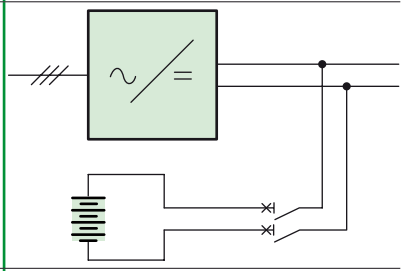

- Motor protective devices capable of operating as a generator.

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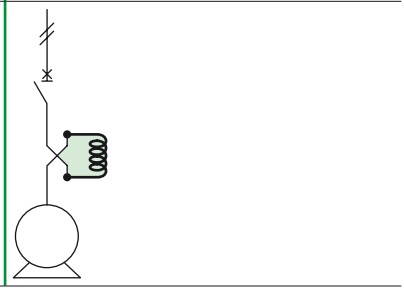
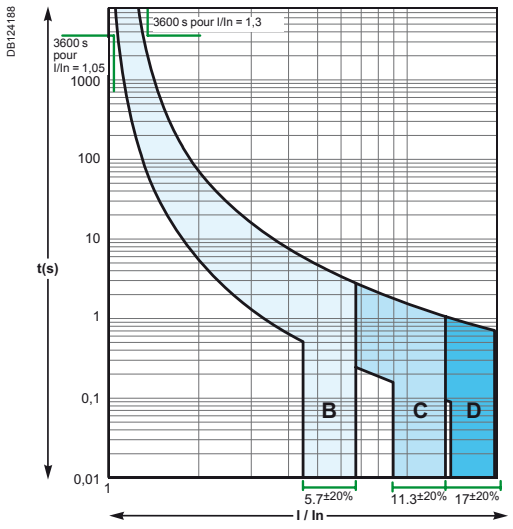


- Use of the C60PV-DC is specifically dedicated to photovoltaic (PV) applications (generally higher voltages with low breaking capacity).

Direct current distribution
Choosing and implementing circuit breakers



Example: iC60, B, C, D curves, ratings from 6 A to 63 A.

Choosing the curve

The magnetic tripping threshold must be:
- higher than the inrush currents due to loads (motors, capacitors, etc.)
- lower than the short-circuit current at the installation point, which depends on:
  - the short-circuit power of the source (indicated by the manufacturer),
  - the impedance of the supply line.

In direct current:
- the short-circuit power of the sources is generally low: batteries, photovoltaic panels, generators, electronic converters, etc
- the loads generate lower inrush currents than in alternating current (e.g. motor start-up: 2 to 4 times the rated current)
- the magnetic threshold of Acti 9 circuit breakers (relative to the rated current) is higher than in alternating current.

Circuit breaker	iC60 / C120 / NG125				C60H-DC
Curve	Z	B	C	D	C
Magnetic tripping threshold	3,4 …5 In	4,5 …7 In	9…14 In	14…20 In	7….10 In

> Generally, choose a C60H-DC circuit breaker or a B-curve iC60 circuit breaker.

Note: It may be necessary to choose a C curve or a D curve for very high inrush current applications (e.g., electronic equipment with particularly large capacitive filters).

Choosing the breaking capacity

The choice of circuit breaker with respect to the breaking capacity depends on:
- the earthing system
- the network voltage
- the short-circuit current at the installation point in question.

Note: The breaking capacities are given for a time constant (L/R) equal to 0.015 s..

Reading the tables

- Select the table according to the earthing system.
- Select the circuit breaker corresponding to the network:
  - the circuit breaker(s) to be installed is/are identified based on the rating and short-circuit current,
  - the type of connection (number of poles, position relative to the load, isolation of polarities) is indicated according to the voltage.

Direct current distribution
Choosing and implementing circuit breakers

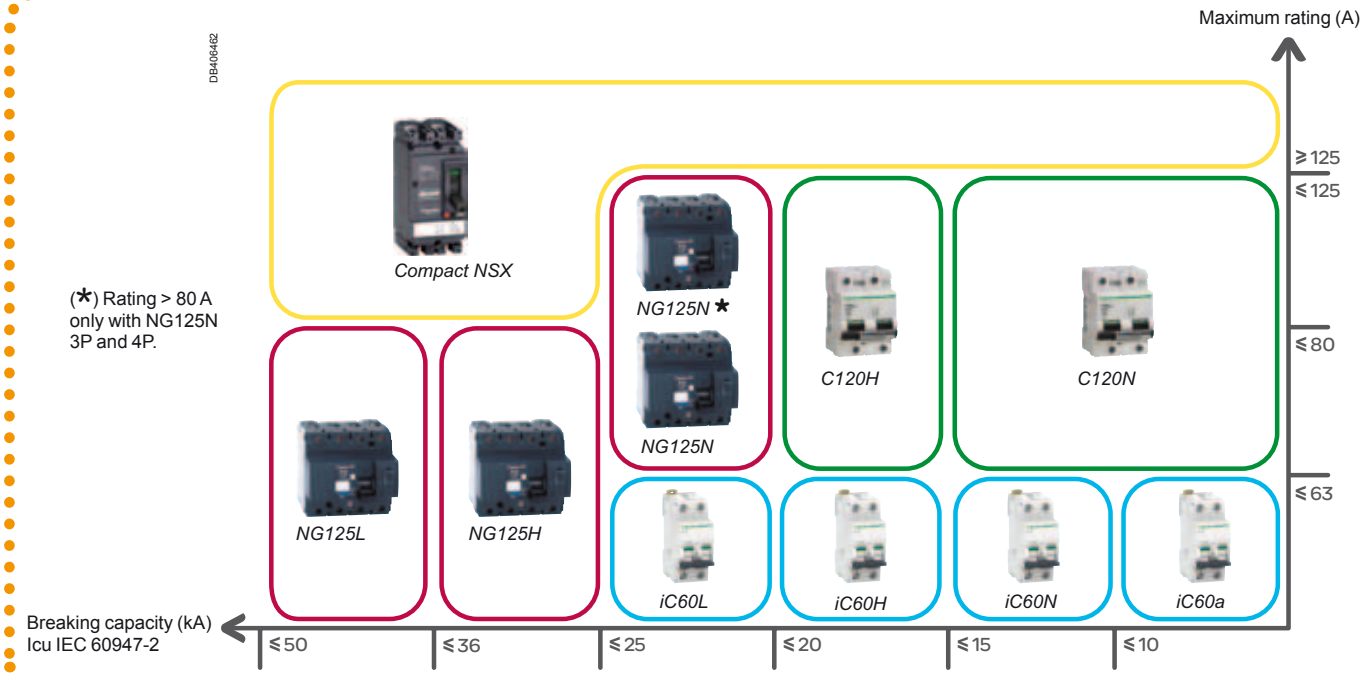
iC60, C120, NG125 offer

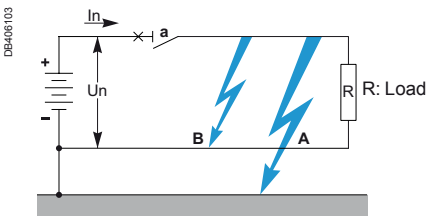
Choosing circuit breakers for distribution with earthed polarity

The following tables show the number of poles connected in series according to the DC network voltage, and the circuit breaking performance of our circuit breaker range.

Breaking capacity for a maximum voltage per pole of: 60 V DC for the iC60 offers and 125 V DC for the C120 and NG125 offers

Isc (kA)
In (A)
→ iC60, C120, NG125... ? → Product range





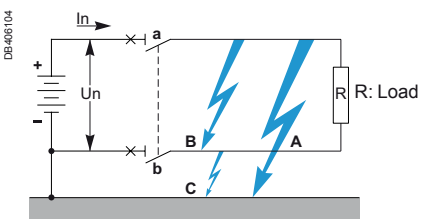
1 The figure shows a source with the negative polarity earthed.

Fault condition analysis 1

Fault	Fault current (max.)	Voltage	Poles involved in breaking	Breaking characteristics
A, B	Isc	Un	a	Isc at Un on the poles connected to the positive polarity

Isc: presumed short-circuit current.
Un: rated network voltage.

> All the circuit-breaker poles must be on the non-earthed polarity.



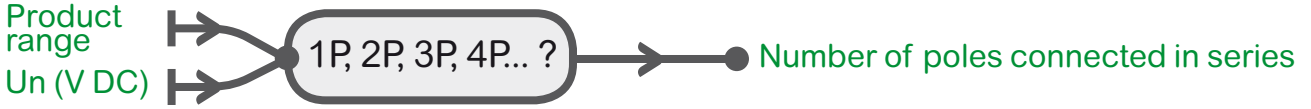
2 The figure shows a source with the negative polarity earthed.

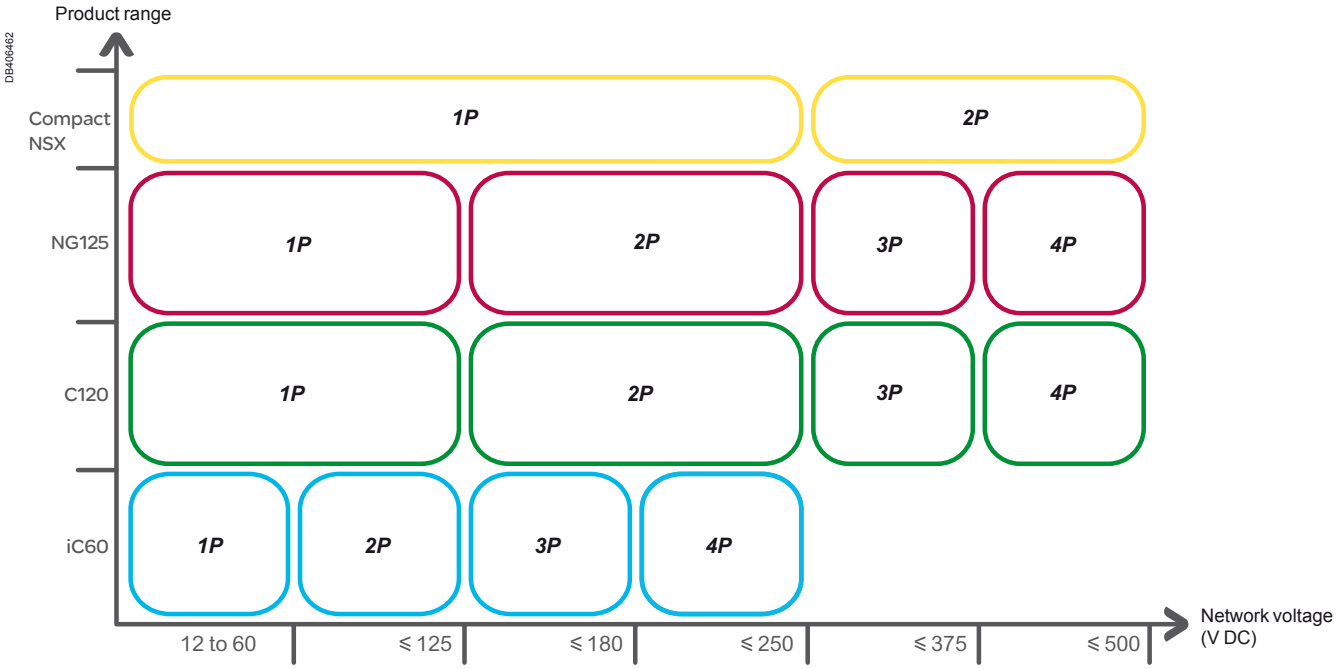
Fault condition analysis 2

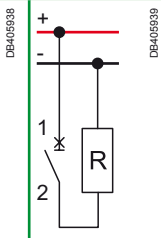
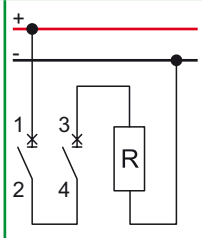
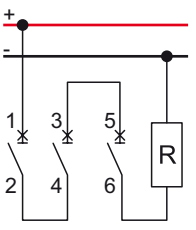
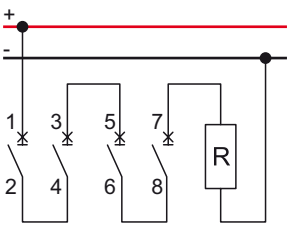
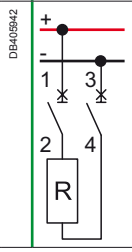
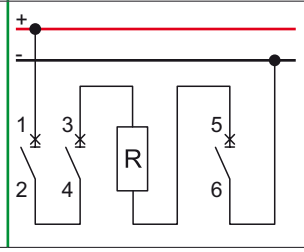
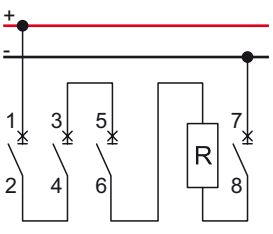
Fault	Fault current (max.)	Voltage	Poles involved in breaking	Breaking characteristics
A	Isc	Un	a	Isc at Un on the poles connected to the positive polarity
B	Isc	Un	a + b	Isc at Un on all the poles connected in series
C	-	-	b	No breaking needed

Isc: presumed short-circuit current.
Un: rated network voltage.

> All the circuit-breaker poles must be on the non-earthed polarity. One pole on the earthed polarity will allow isolation to be performed.





Isolation	Number of poles and connection diagram			
	1P	2P	3P	4P
Not required 1				
Required 2				

R: Load.

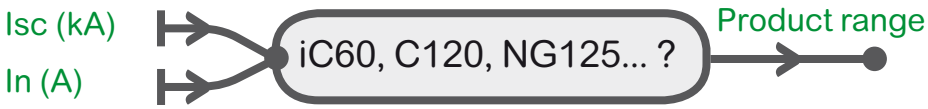
Direct current distribution
Choosing and implementing circuit breakers

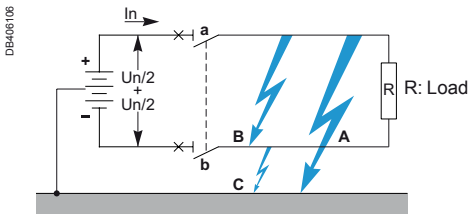
iC60, C120, NG125 offer

Choosing circuit breakers for distribution with earthed mid-point

The following tables show the number of poles connected in series according to the DC network voltage, and the circuit breaking performance of our circuit breaker range.

Breaking capacity for a maximum voltage per pole of: 60 V DC for the iC60 offers and 125 V DC for the C120 and NG125 offers





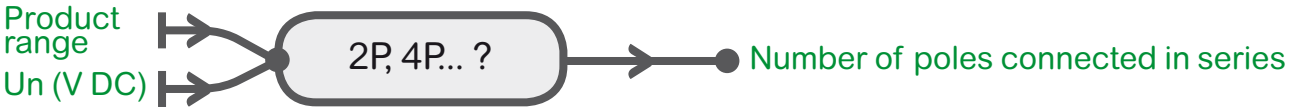
The figure shows a source with earthed mid-point.

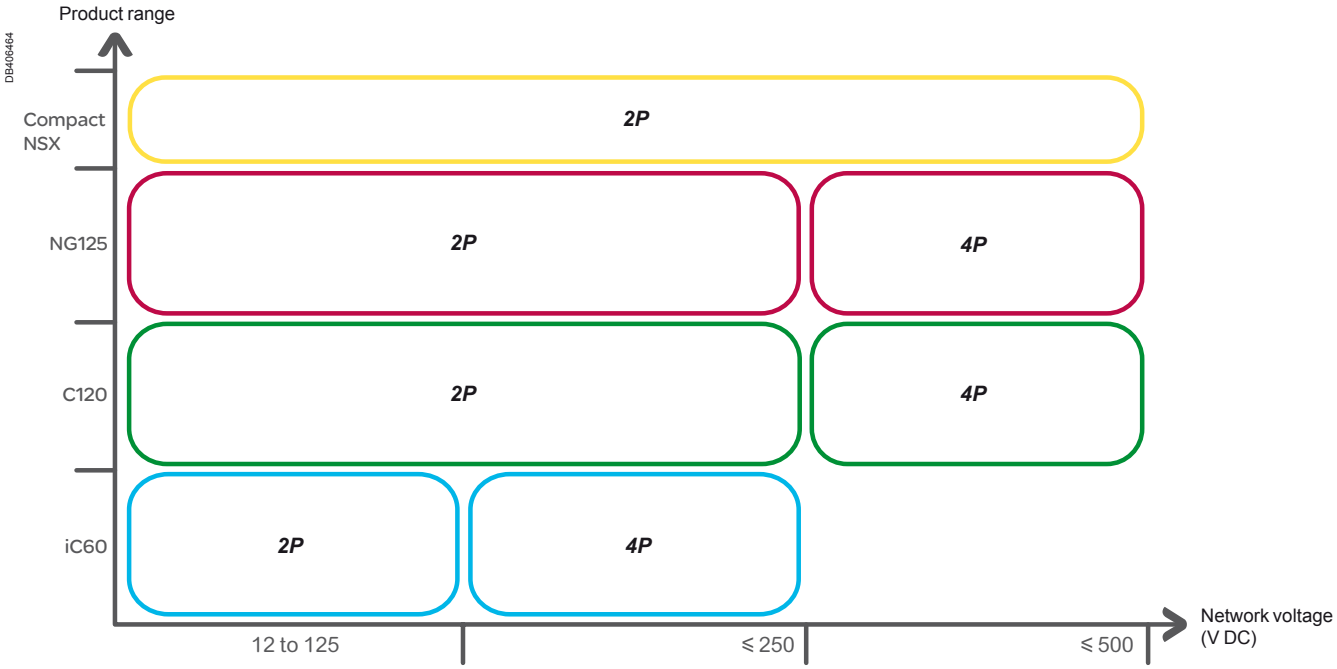
Fault condition analysis

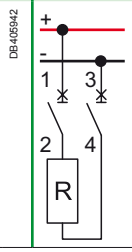
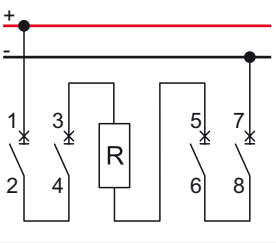
Fault	Fault current (max.)	Voltage	Poles involved in breaking	Breaking characteristics
A	Isc	Un/2	a	Isc at Un/2 on the poles connected to the positive polarity
B	Isc	Un	a + b	Isc at Un on all the poles connected in series
C	Isc	Un/2	b	IIsc at Un/2 on the poles connected to the negative polarity

Isc: presumed short-circuit current.
Un: rated network voltage.

> The circuit-breaker poles must be distributed symmetrically over the two polarities.
Obviously, this connection provides isolation.





Isolation	Number of poles and connection diagram	
	2P	4P
Required or not		

R: Load.

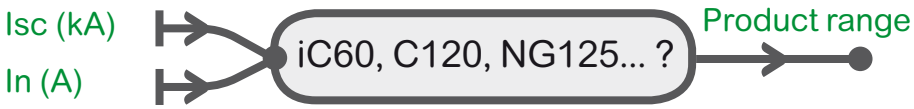
Direct current distribution
Choosing and implementing circuit breakers

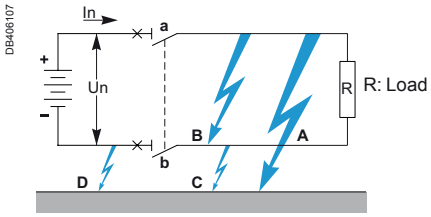
iC60, C120, NG125 offer

Choosing circuit breakers for distribution isolated from earth

The following tables show the number of poles connected in series according to the DC network voltage, and the circuit breaking performance of our circuit breaker range.

Breaking capacity for a maximum voltage per pole of: 60 V DC for the iC60 offers and 125 V DC for the C120 and NG125 offers





The figure shows a source in IT system with a second fault (D) on the negative polarity.

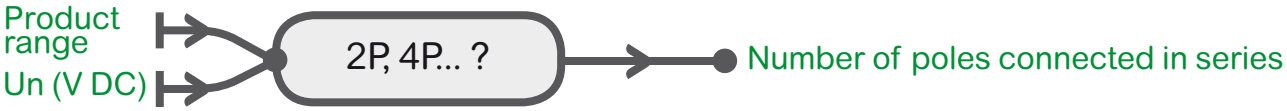
Fault condition analysis

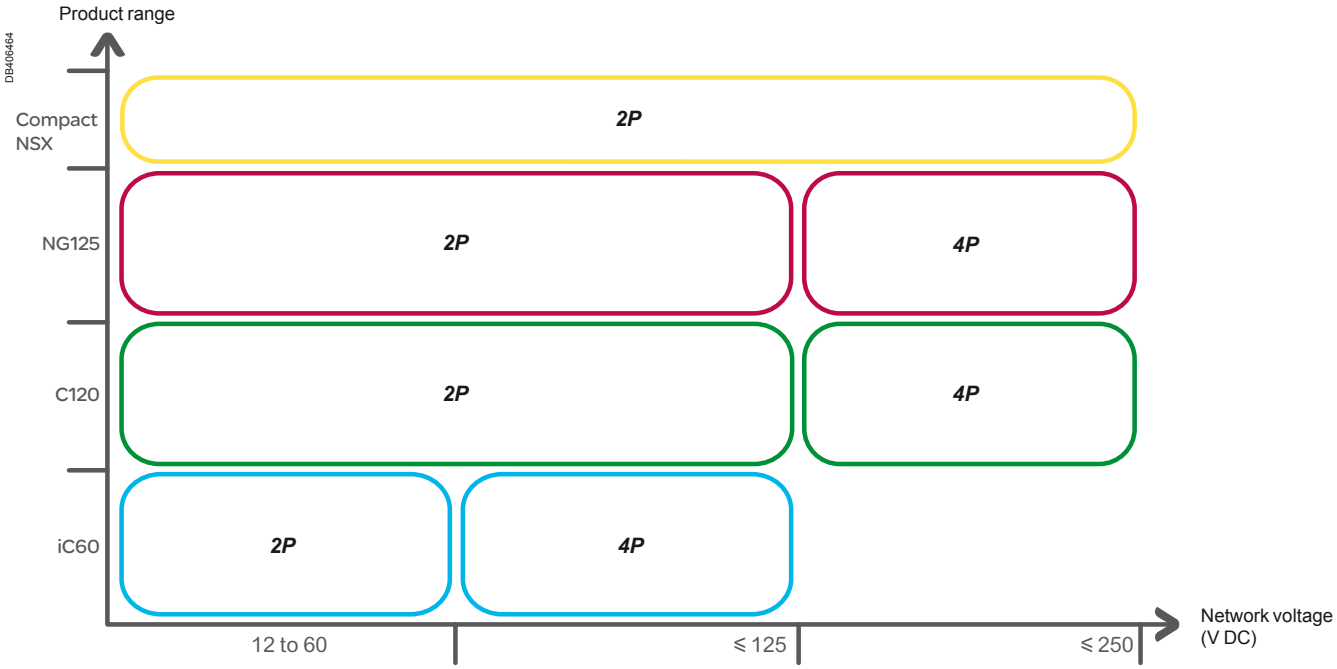
Fault	Fault current (max.)	Voltage	Poles involved in breaking	Breaking characteristics
A	Low	Low	a	No breaking needed
A and D	Id (1)	Un	a	Id at Un on the poles connected to the positive polarity
B	Isc	Un	a + b	Isc at Un on all the poles connected in series
C	Low	Low	b	No breaking needed

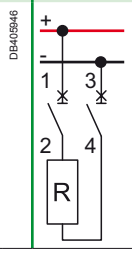
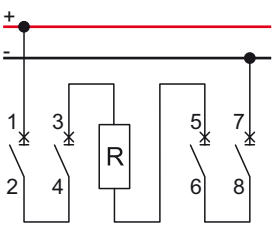
Isc: presumed short-circuit current.
Un: rated network voltage.

(1) Fault current values acceptable according to the installation rules.
- If Isc < 10 kA: fault current ≤ 0.15 Isc.
- If Isc > 10 kA: fault current ≤ 0.25 Isc.

> The circuit-breaker poles must be distributed symmetrically over the two polarities.
Obviously, this connection provides isolation.





Isolation	Number of poles and connection diagram	
	2P	4P
Required or not		

R: Load.

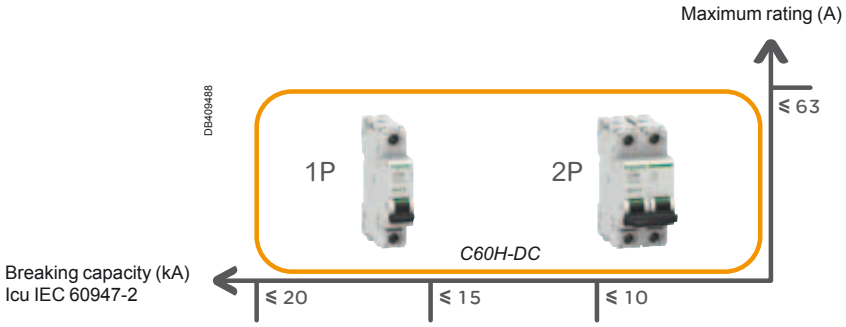
Direct current distribution
Choosing and implementing circuit breakers

C60H-DC offer

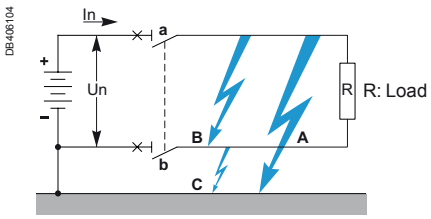
Choosing circuit breakers for distribution with earthed polarity

Unlike the preceding offers, the C60H-DC offer comprises polarised circuit breakers reserved exclusively for direct current applications.
As we saw earlier, it is therefore not compatible in the case of circuits with (even momentary) current direction reversal. The same applies to "mixed" networks operating successively in AC and DC (e.g. safety devices).

It is an offer corresponding to the C curve and ranging up to 63 A.



"-" polarity earthed



The figure shows a source with the negative polarity earthed.

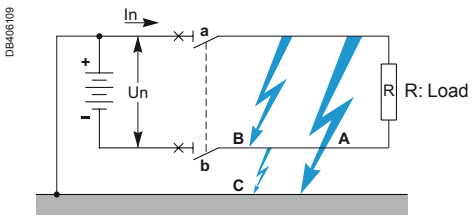
Fault condition analysis with "-" polarity earthed

Fault	Fault current (max.)	Voltage	Poles involved in breaking	Breaking characteristics
A	Isc	Un	a	Isc at Un on the pole connected to the positive polarity
B	Isc	Un	a + b	Isc at Un on the both poles
C	-	-	b	No breaking needed

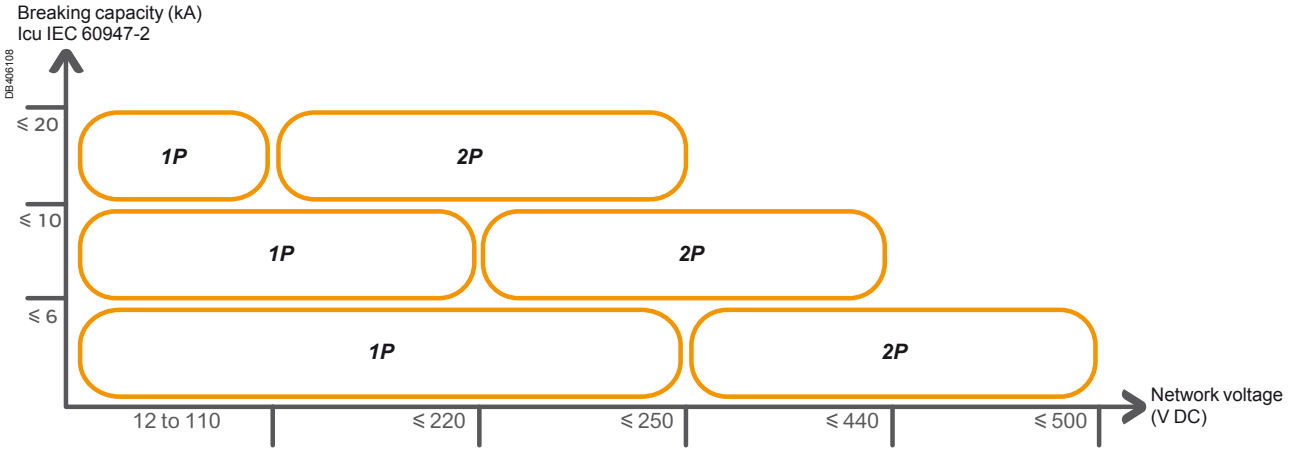
Isc: presumed short-circuit current.
Un: rated network voltage.

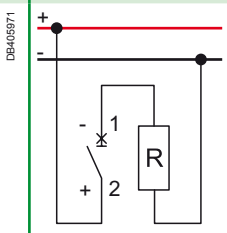
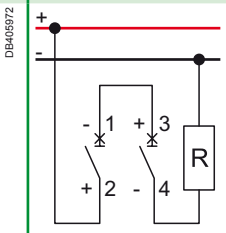
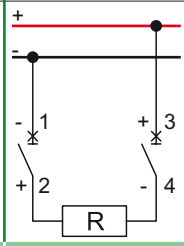
> All the circuit-breaker poles must be on the non-earthed polarity. One pole on the earthed polarity will allow isolation to be performed.

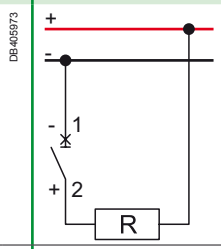
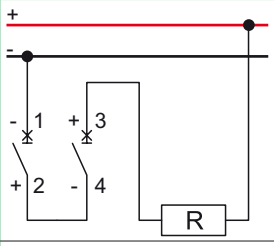
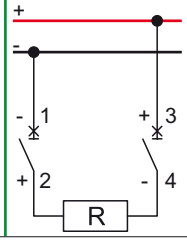
"+" polarity earthed



The figure shows a source with the positive polarity earthed.



Isolation	Number of poles and connection diagram	
"-" polarity earthed	1P	2P
Not required		
Required		

Isolation	Number of poles and connection diagram	
"+" polarity earthed	1P	2P
Not required		
Required		

R: Load.

Direct current distribution
Choosing and implementing circuit breakers

C60H-DC offer

Choosing circuit breakers for distribution with earthed mid-point

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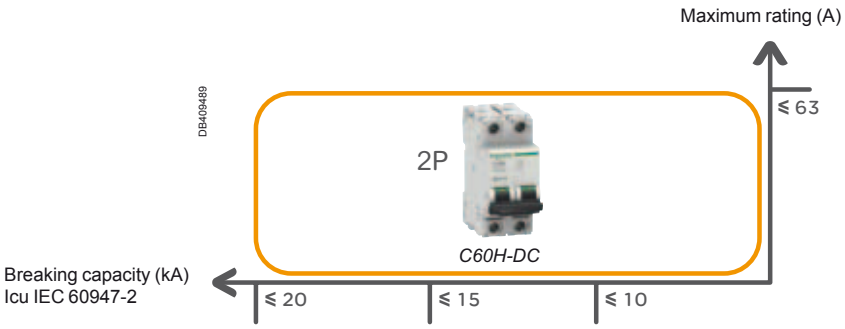
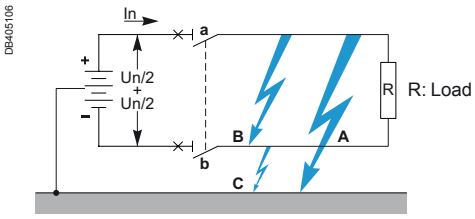
As we saw earlier, it is therefore not compatible in the case of circuits with (even momentary) current direction reversal. The same applies to "mixed" networks operating successively in AC and DC (e.g. safety devices).

It is an offer corresponding to the C curve and ranging up to 63 A.





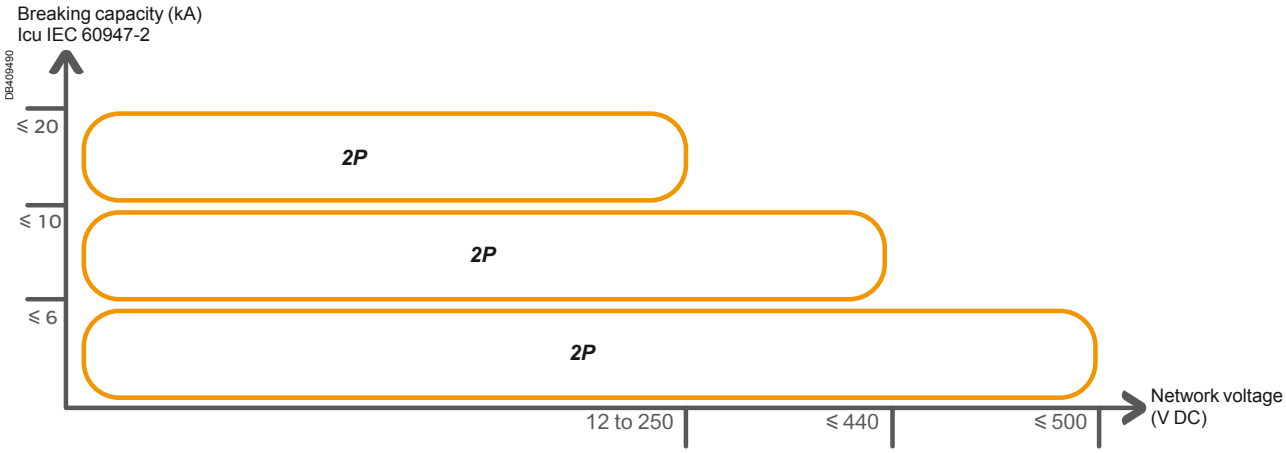
The figure shows a source with earthed mid-point.

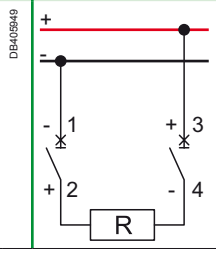
Fault condition analysis

Fault	Fault current (max.)	Voltage	Poles involved in breaking	Breaking characteristics
A	Isc	Un/2	a	Isc at Un/2 on the pole connected to the positive polarity
B	Isc	Un	a + b	Isc at Un on the both poles
C	Isc	Un/2	b	Isc at Un/2 on the pole connected to the negative polarity

Isc: presumed short-circuit current.
Un: rated network voltage.

> The circuit-breaker poles must be distributed symmetrically over the two polarities.
Obviously, this connection provides isolation.



Isolation	Number of poles and connection diagram
	2P
Required or not	

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Direct current distribution
Choosing and implementing circuit breakers

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Choosing circuit breakers for distribution isolated from earth

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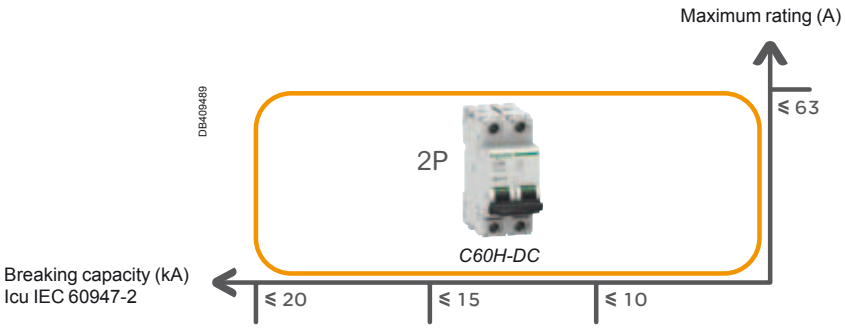

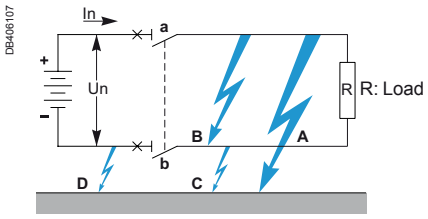

The figure shows a source in IT system with a second fault (D) on the negative polarity.

Fault condition analysis

Fault	Fault current (max.)	Voltage	Poles involved in breaking	Breaking characteristics
A	Low	Low	a	No breaking needed
A and D	Id (1)	Un	a	Id at Un on the pole connected to the positive polarity
B	Isc	Un	a + b	Isc at Un on the both poles
C	Low	Low	b	No breaking needed

Isc: presumed short-circuit current.
Un: rated network voltage.

(1) Fault current values acceptable according to the installation rules.
- If Isc < 10 kA: fault current ⩽ 0.15 Isc.
- If Isc > 10 kA: fault current ⩽ 0.25 Isc.

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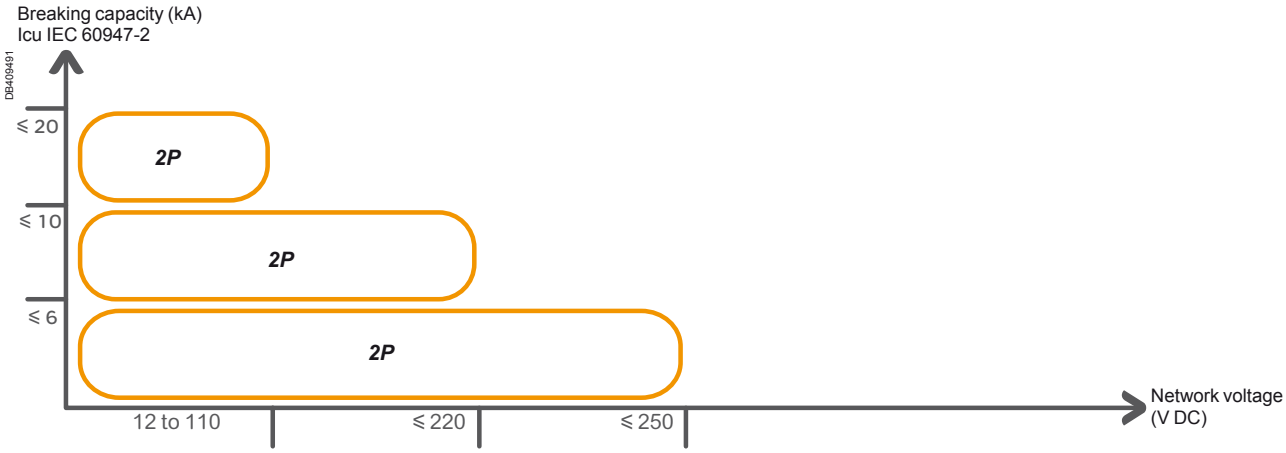
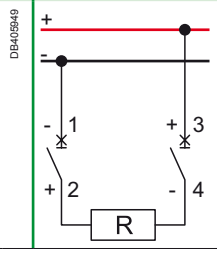


Isolation	Number of poles and connection diagram
	2P
Required or not	

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Direct current distribution
Choosing and implementing circuit breakers

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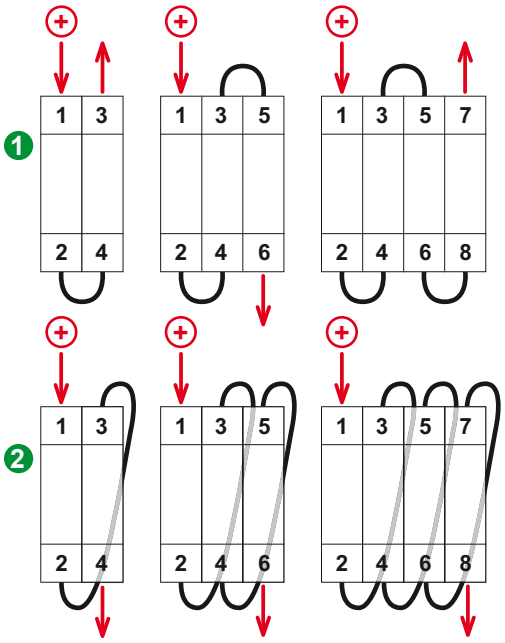


DB406089

Table G.52.1 – Voltage drop

Type of installation	Lighting %	Other uses %
A – Low voltage installations supplied directly from a public low voltage distribution system	3	5
B – Low voltage installation supplied from private LV supply*	6	8

* As far as possible, it is recommended that voltage drop within the final circuits do not exceed those indicated in installation type A.

When the main wiring systems of the installations are longer than 100 m, these voltage drops may be increased by 0.005 % per metre of wiring system beyond 100 m, without this supplement being greater than 0.5 %.

Voltage drop is determined from the demand by the current-using equipment, applying diversity factors where applicable, or from the values of the design current of the circuits.

IEC 60364-5-52 standard.

The multipolar low rating use (< 4 A) is not suitable for very low voltage networks (< 24 V DC).

Connection

Series connection

In the preceding offers we extensively used the principle of series connection of products. Series connection of the poles, by dividing the voltage per pole, optimizes the circuit breaking performance for high-voltage networks.
Series connection of the poles of a circuit breaker used in direct current therefore makes it possible to:
- divide the network voltage by the number of poles
- have the rated current for each pole
- have the circuit breaker's breaking capacity for all the poles.

Direction of cabling and cable length

In the case of series connection, the direction of cabling has a major impact on the product's performance.

Usually the first product cabling method 1.
will be used. For special applications where there is only a single possible current direction, the second cabling method 2 is preferable, especially for electrical endurance properties.
Subsequently the cable cross section and length combination should be optimized, depending on the loads. Generally, a greater length and cross section improves performance.

Rating (In)	Cross section (mm²)	Min. shunt length (mm)
⩽ 63 A	⩽ 16	500
	25	200
	35	100
⩽ 125 A	35	300
	50	200

Note: This table gives the minimum cable (shunt) lengths optimizing the equipment's performance according to the cable cross sections.

Clarification concerning voltage drops

Importance of allowing for voltage drops

Voltage drops are an issue that must be taken into account especially in direct current distribution due to:
- the common use of very low voltage (24, 48 or sometimes 12 V):
  - for a given resistance and current in a circuit, relative voltage drops increase as the voltage is lowered,
  - the natural voltage drop of batteries in power reserve mode, as they are discharged,
  - the criticality of the associated applications, often requiring a high level of security and continuity of service.

Cause of voltage drops

Voltage drops are caused by the sum of the resistances in series in the circuit:
- internal resistance (r) of the source
- resistance of connecting cables
- internal resistance of control and protection switchgear, often significant for circuit breakers of low rating (a few amperes) powered at very low voltage
- it is generally expressed in mΩ
- in the absence of data directly from the manufacturer, it can be calculated by dividing the power consumption by the square of the current: $r = P/I^2$
- spurious resistance of connections.

Voltage drops in the circuit must be less than the rated operating tolerances of the various loads in steady-state conditions and especially at start-up (inrush current).

Direct current distribution
Choosing and implementing circuit breakers

Examples of choices

Example 1

In a direct current distribution system, powered by a rectifier/charger of voltage 125 V with earthed "-" polarity, which circuit breakers should be installed to protect:
- the battery outgoing feeder of permissible current Iz = 69 A, operating current Ib = 55 A, and short-circuit current 10 kA?
- a lighting outgoing feeder of permissible current Iz = 22 A, operating current Ib = 18 A, and short-circuit current 10 kA?

If the battery outgoing feeder is with momentary current direction reversal, choose an iC60 circuit breaker:

Circuit to be protected	Choice of circuit breaker	
Ib = 55 A, Iz = 69 A	Rating	In = 63 A
No high current peak	Curve	B
Un = 125 V, Isc = 10 kA, "-" earthed	Breaking capacity	iC60N
	Connection	2 poles in series on "+"
Isolation required		1 pole on "-"

> Choose a B-curve iC60N 3P 63 A circuit breaker with 2 poles connected to the positive polarity.

If the lighting outgoing feeder is without momentary current direction reversal, choose a C60H-DC circuit breaker:

Circuit to be protected	Choice of circuit breaker	
Ib = 18 A, Iz = 22 A	Rating	In = 20 A
No high current peak	Curve	C
Un = 125 V, Isc = 10 kA, "-" earthed	Breaking capacity	C60H-DC
	Connection	1 pole on "+"
Isolation not required		No pole on "-"

> Choose a C60H-DC 1P 20 A circuit breaker with 1 pole connected to positive polarity.

Example 2

In a direct current distribution system, powered by a rectifier/charger of voltage 125 V, with earthed mid-point, which circuit breakers should be installed to protect:
- the battery outgoing feeder of permissible current Iz = 69 A, operating current Ib = 55 A, and short-circuit current 20 kA?
- a lighting outgoing feeder of permissible current Iz = 22 A, operating current Ib = 18 A, and short-circuit current 20 kA?

If the battery outgoing feeder is with momentary current direction reversal, choose an iC60 circuit breaker of characteristics in compliance with the installation:

Circuit to be protected	Choice of circuit breaker	
Ib = 55 A, Iz = 69 A	Rating	In = 63 A
No high current peak	Curve	B
Un = 125 V, Isc = 20 kA, earthed mid-point	Breaking capacity	iC60H
	Connection	1 pole on "+"
		1 pole on "-"
Isolation required		Provided by both poles

> Choose a B-curve iC60H 2P 63 A circuit breaker, connected symmetrically to the "+" and "-" polarities.

Direct current distribution
Choosing and implementing circuit breakers

If the lighting outgoing feeder is without momentary current direction reversal, choose a C60H-DC circuit breaker:

Circuit to be protected	Choice of circuit breaker	
Ib = 18 A, Iz = 22 A	Rating	In = 20 A
Un = 125 V, Isc = 20 kA, earthed mid-point	Breaking capacity	C60H-DC
	Connection	1 pole on "+"
		1 pole on "-"
Isolation not required		Provided by both poles

> Choose a C60H-DC 2P 20 A circuit breaker connected symmetrically to the "+" and "-" polarities.

Example 3

In a direct current distribution system powered by two rectifiers in parallel
Un = 250 V, Isc (2 sources) = 35 kA, in IT system, which circuit breakers should be installed to protect:
- the pair of rectifiers of permissible current Iz = 69 A and operating current Ib = 55 A?
- a lighting outgoing feeder of permissible current Iz = 22 A and operating current Ib = 18 A?

If the pair of rectifiers is with momentary current direction reversal, choose an iC60 circuit breaker:

Circuit to be protected	Choice of circuit breaker	
Ib = 55 A, Iz = 69 A	Rating	In = 63 A
No high current peak	Curve	B or C (the magnetic threshold is far lower than the short-circuit current)
Un = 250 V, Isc = 35 kA, IT system	Breaking capacity	NG125L
	Connection	2 poles on "+"
		2 poles on "-"
Isolation required		Provided by the 4 poles

> Choose an NG125L 4P 63 A circuit breaker connected symmetrically to the "+" and "-" polarities.

The lighting outgoing feeder is without momentary current direction reversal but the short-circuit current is too great to choose a C60H-DC circuit breaker.

Circuit to be protected	Choice of circuit breaker	
Ib = 18 A, Iz = 22 A	Rating	In = 20 A
No high current peak	Curve	B
Un = 250 V, Isc = 35 kA, IT system	Breaking capacity	NG125L
	Connection	2 poles on "+"
		2 poles on "-"
Isolation not required		Provided by the 4 poles

> Choose a B-curve NG125L 4P 20 A circuit breaker connected symmetrically to the two "+" and "-" polarities.

Direct current distribution
Earth leakage protection

Residual current devices do not work on a direct current distribution system.
Earth leakage protection can be provided by circuit breakers or residual current circuit breakers installed on the upstream AC distribution system.

Residual current devices

DC networks isolated from any AC network

Residual current devices will not work with a direct current distribution system powered directly by a battery, a generating set, photovoltaic cells, etc., or a rectifier with galvanic insulation. In this case protection for users is provided by choosing a network voltage that is not dangerous and an appropriate earthing system.

Safe direct current network voltage

Environment	TN-S system		IT system
	Earthed polarity	Earthed mid-point	
Dry	100 V	200 V	100 V
Wet	50 V	100 V	50 V
Immersed	25 V	50 V	25 V

DC networks connected to an AC network

In the case of a direct current distribution system powered by an AC/DC converter (without galvanic insulation), earth leakage protection can be provided by circuit breakers or residual current circuit breakers installed on the AC network upstream of the converter.

Protection against direct contact

Earth leakage protection of high sensitivity (IΔn = 30 mA) is compulsory if certain circuits operating on direct current entail risks of baring of live parts (see installation standards). This protection system should be chosen as follows:
- type A or si (bipolar), if the converter is powered by a single-phase supply
- type B, if the converter is powered by a three-phase supply.

Standard IEC 60479-1 determines applicable values for the protection of users.

The choice of this protection system does not depend on the earthing system.

Protection against indirect contact

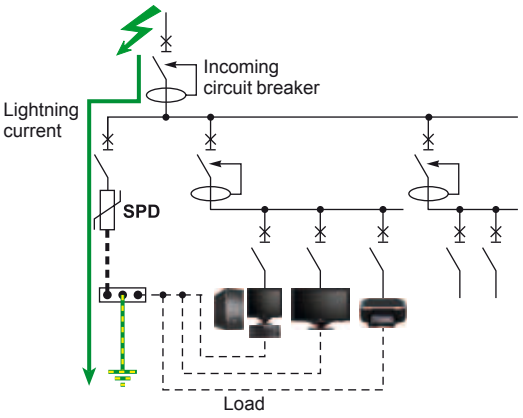
Protection against indirect contact		Medium-sensitivity earth leakage protection IΔn ≥ 300 mA		
Upstream power supply		Three-phase		Single-phase
Characteristics of direct-current circuits to be protected		Without double insulation	With double insulation	
Upstream earthing system	**TT** or **IT** with non-interconnected exposed conductive parts	**Type B**	**Type A**	
	TN-S	**Type A**		
	IT			

Fire protection

Fire protection	Medium-sensitivity earth leakage protection IΔn = 300 mA
Upstream power supply	Single-phase or three-phase
Characteristics of direct-current circuits to be protected	Humid or dusty environments, ancient installations and buildings
Upstream earthing system	No influence **Type A**

Direct current distribution
Lightning protection

DB405957



Type 1 surge protective device
The type 1 surge protective device is recommended in the specific case of service-sector and industrial buildings, protected by a lightning rod or a meshed cage. It protects electrical installations against direct lightning strokes. It can discharge the back-current from lightning spreading from the earth conductor to the network conductors.
Type 1 surge protective devices are characterized by a 10/350 µs current wave.

Type 2 surge protective device
The type 2 surge protective device is the main protection system for all low-voltage electrical installations. Installed in each electrical switchboard, it prevents the spread of overvoltages in the electrical installations and protects the loads.
Type 2 surge protective devices are characterized by an 8/20 µs current wave.

Type 3 surge protective device
These surge protective devices have a low discharge capacity. They must therefore mandatorily be installed as a supplement to type 2 surge protective devices and in the vicinity of sensitive loads.
Type 3 surge protective devices are characterized by a combination of voltage waves (1.2/50 µs) and current waves (8/20 µs).

Surge protective device
In fact the operating principle of the surge protective device remains identical in direct current; the surge protective devices capture and conduct to earth the current of electric overvoltages.
Particularly if the direct current is implemented by a rectifier without galvanic insulation and if the AC network already contains a surge protective device, there will be no need for a specific protective device.
Otherwise, the surge protective device should be adapted "finely" to the network voltage (and the overvoltage resistance of the loads, which is linked to the network voltage).

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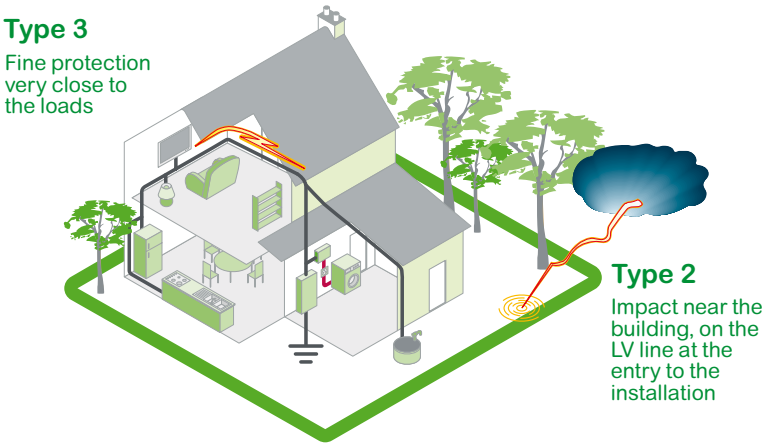

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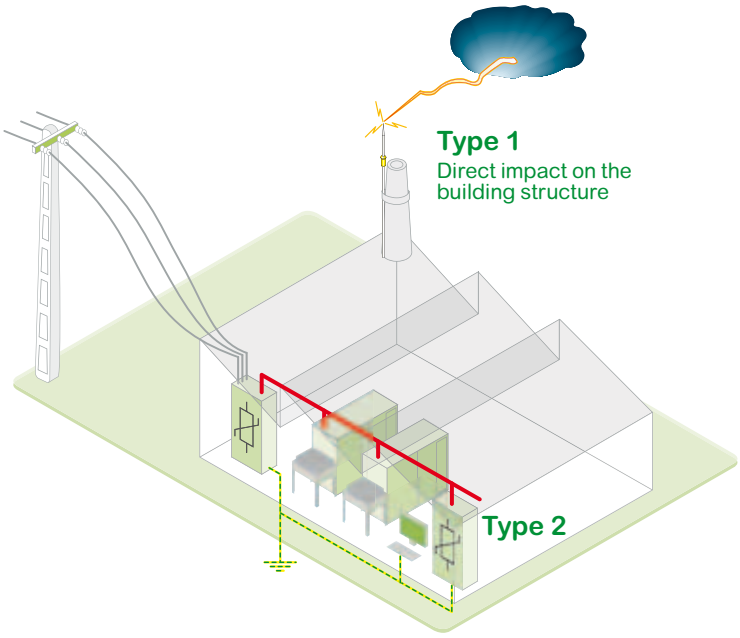


Generally the direct current switching voltage should be assigned a coefficient of √2 compared with alternating current. Apart from this the principle for choosing devices according to the networks remains the same.

Network voltage	Comments	Offer
24 / 48 V	Communication	iPRI
< 200 V	Communication	iPRC
200 to 400 V	**Type 2 and 3**	iPRD, iPF
200 to 400 V	**Type 1 and 2**	iPRF1, PRD1
200 to 400 V	**Type 1**	PRD1 Master, PRF1 Master
600 or 1000 V	PV applications	iPRD–DC

Coordination with disconnectors
A study is underway on the coordination of our surge protective devices on direct current networks; it will enable this document to be supplemented at a later stage.

Direct current distribution
Characteristics of the distribution system

DB406090

Table 6 – Equipment having a nominal voltage below 120 V a.c. or below 750 V d.c.

DC		AC	
Nominal values		Nominal values	
Preferred V	Supplementary V	Preferred V	Supplementary V
	2,4		
	3		
	4		
	4,5		
	5		5
6		6	
	7,5		
	9		
12		12	
	15		15
24		24	
	30		
36			36
	40		
48		48	
60			60
72			
	80		
96			
			100
110		110	
	125		
220			
	250		
440			
	600		

NOTE 1 Because the voltage of the primary and secondary cells is below 2,4 V, and the choice of the type of cell to be used in various applications will be based on properties other than the voltage, these values are not included in the table. The relevant IEC technical committees may specify types of cells and related voltages for specific applications.

NOTE 2 It is recognized that for technical and economic reasons, additional voltages may be required for certain specific fields of application.

IEC 60038 standard.

The installation rules of the IEC 60364 standard apply to direct current distribution systems.

Network voltage
24 V, 48 V, 60 V, 125 V, 250 V, 500 V, 750 V.
These voltages often depend on the application or the sources used, for example:
- batteries on single-phase DC charger: voltage 240 V DC,
- batteries on three-phase DC charger: voltage 440 V DC.

Overcurrent protection

Short-circuit current
The short-circuit current depends on the source. For a distribution system powered by a battery, it can be calculated by the formula Isc (in A) = kC with:
- C the battery capacity in Ah,
- k a coefficient close to 10 and in any case always less than 20.

Example
A 125 V battery of capacity 220 Ah delivers a short-circuit current Isc between 2.2 kA and 4.4 kA.
Note: Since the Isc current value is relatively low and the distribution system is not very extensive, the maximum short-circuit current Isc at any point of the installation is taken as equal to the short-circuit current Isc of the source (value by excess).

Overload protection
For a load of operating current Ib and a duct of permissible current Iz, the duct protection by a distribution circuit breaker must have a rating In such that: Ib ⩽ In ⩽ Iz.

Short-circuit protection
The installation standards impose no particular constraint: a magnetic tripping threshold Im such that 5 In ⩽ Im ⩽ 10 In is generally advisable.

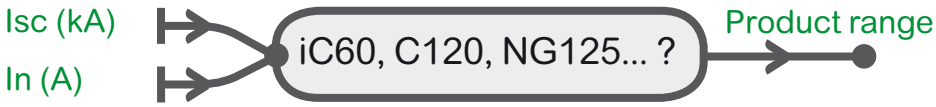
Appendix 1

iC60, C120, NG125 offer

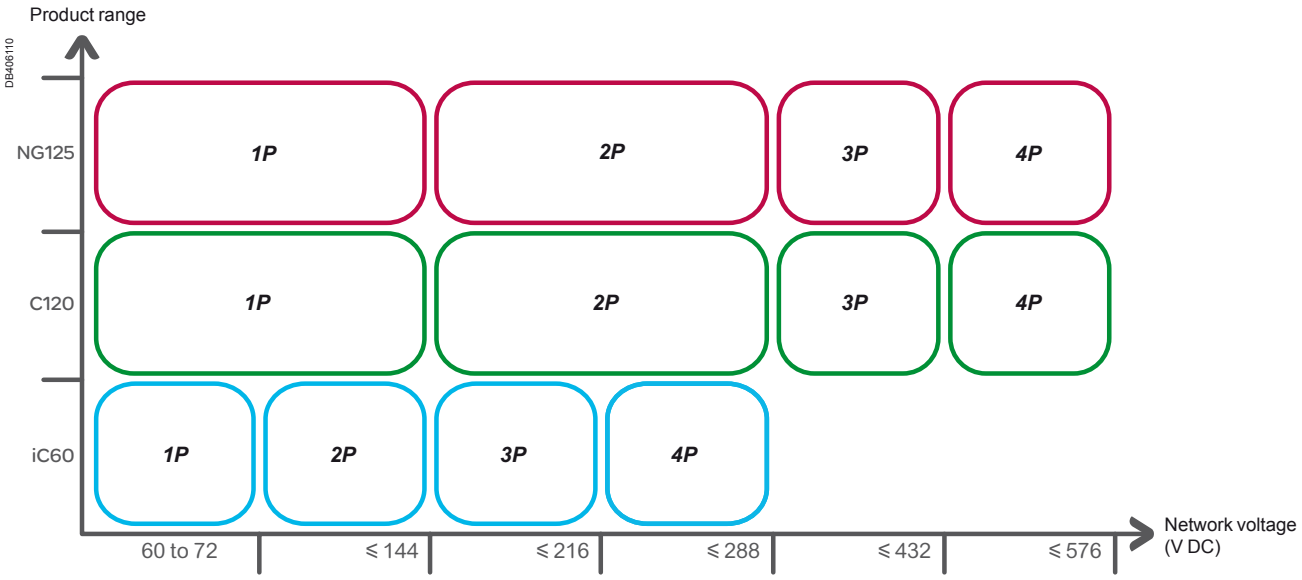
Choosing circuit breakers for distribution with earthed polarity

The following tables show the number of poles connected in series according to the DC network voltage, and the circuit breaking performance of our circuit breaker range.

Breaking capacity for a maximum voltage per pole of: 72 V DC for the iC60 offers and 144 V DC for the C120 and NG125 offers



Fault condition analysis, see page 754.



Isolation, number of poles and connection diagram, see page 755.

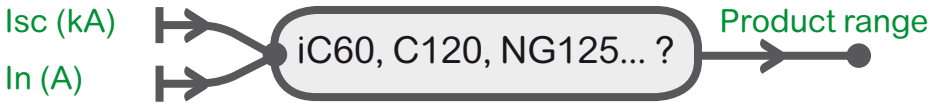
Appendix 2

iC60, C120, NG125 offer

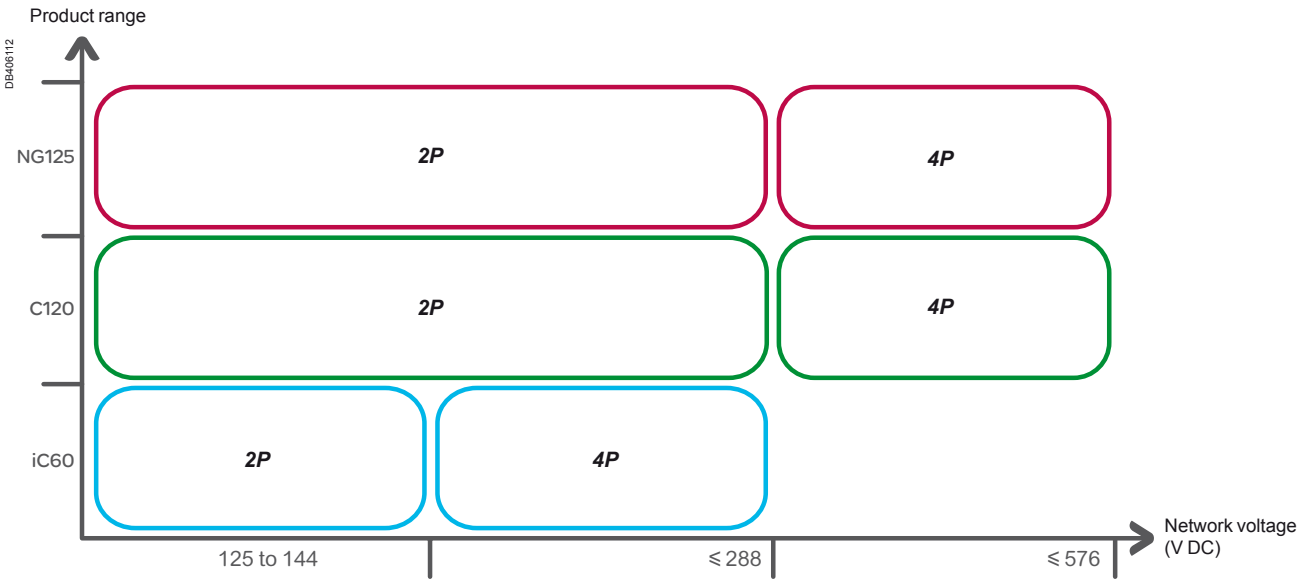
Choosing circuit breakers for distribution with earthed mid-point

The following tables show the number of poles connected in series according to the DC network voltage, and the circuit breaking performance of our circuit breaker range.

Breaking capacity for a maximum voltage per pole of: 72 V DC for the iC60 offers and 144 V DC for the C120 and NG125 offers



Fault condition analysis, see page 756.



Isolation, number of poles and connection diagram, see page 757.

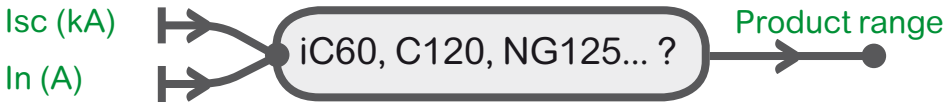
Appendix 3

iC60, C120, NG125 offer

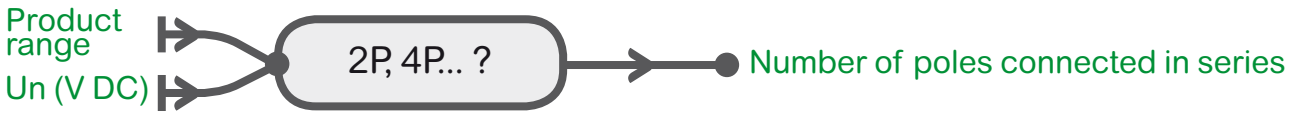
Choosing circuit breakers for distribution isolated from earth

The following tables show the number of poles connected in series according to the DC network voltage, and the circuit breaking performance of our circuit breaker range.

Breaking capacity for a maximum voltage per pole of: 72 V DC for the iC60 offers and 144 V DC for the C120 and NG125 offers



Fault condition analysis, see page 758.



Isolation, number of poles and connection diagram, see page 759.

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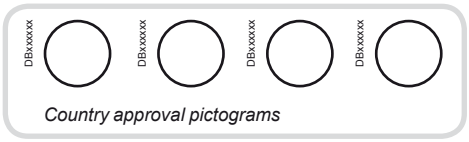
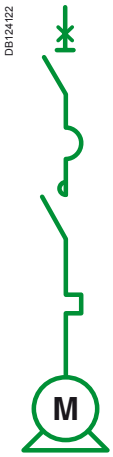
Document Number CA908006E

Motor protection
Circuit breaker + contactor combination



Country approval pictograms

(Basic functions)



IEC 60947-4-1

Types of co-ordination

Standard IEC 60947.4 defines tests at various current levels with the aim of placing the switchgear in extreme conditions. According to the state of components after testing. the standard defines 2 types of coordination.

■ Type 1:

Deterioration of the contactor and relay is accepted under 2 conditions:

□ there is no risk for the operator,

□ parts other than the contactor and relay must not be damaged.

■ Type 2:

Welding of the contactor or starter contacts is accepted only if they can easily be separated:

□ after type 2 coordination tests. the functions of the protection and control switchgear are operational.

Which type to choose?

The choice of coordination type depends on the operating parameters. It must be suitable for the user's needs and ensure optimised cost of the installation.

■ Type 1:

□ qualified maintenance service,

□ reduced volume and cost of switchgear,

□ continuity of supply not required or ensured by replacing the faulty motor rack.

■ Type 2:

□ continuity of supply vital,

□ reduced maintenance service,

□ specifications stipulating type 2.

The various thermal relay classes: the thermal relay class must be appropriate for the motor starting time.

Classes	Tripping time at 7.2 Ir (s)
10 /10 A	2 to 10
20	6 to 20

Type 1 of co-ordination

■ Starting: normal (Class 10).

■ Breaking performance: equal to the breaking capacity of the circuit breaker only.

■ Temperature: 40°C.

Catalogue numbers

Motor								Circuit breaker			Contactor	Thermal relay	
220 to 230 V		380 to 400 V		415 V		440 V(1)		Type	Rating (A)	Irm (A)	Type	Type	Irth
P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)						
-	-	0.37	1.2	0.37	1.1	0.37	1	**iC60LMA-NG125LMA**	1.6	20	**LC1-D09**	**LRD-06**	1 to 1.6
-	-	0.55	1.6	0.55	1.5	0.55	1.4	**iC60LMA-NG125LMA**	1.6	20	**LC1-D09**	**LRD-06**	1.25 to 2
0.37	2	0.75	2	0.75	1.8	0.75	1.7	**iC60LMA-NG125LMA**	2.5	30	**LC1-D09**	**LRD-07**	1.6 to 2.5
-	-	-	-	1.1	2.6	-	-	**iC60LMA-NG125LMA**	4	50	**LC1-D09**	**LRD-08**	2.5 to 4
0.55	2.8	1.1	2.8	1.5	3.4	1.5	3.1	**iC60LMA-NG125LMA**	4	50	**LC1-D09**	**LRD-08**	2.5 to 4
11	5	2.2	5.3	2.2	4.8	2.2	4.5	**iC60LMA-NG125LMA**	6.3	75	**LC1-D09**	**LRD-10**	4 to 6
1.5	6.5	3	7	3	6.5	3	5.8	**iC60LMA-NG125LMA**	10	120	**LC1-D09**	**LRD-12**	5.5 to 8
2.2	9	4	9	4	8.2	4	7.9	**iC60LMA-NG125LMA**	10	120	**LC1-D09**	**LRD-14**	7 to 10
-	-	5.5	12	5.5	11	-	-	**iC60LMA-NG125LMA**	12.5	150	**LC1-D12**	**LRD-16**	9 to 13
4	15	7.5	16	7.5	14	7.5	13.7	**iC60LMA-NG125LMA**	16	190	**LC1-D18**	**LRD-21**	12 to 18
-	-	-	-	9	17	9	16.9	**iC60LMA-NG125LMA**	25	300	**LC1-D18**	**LRD-21**	12 to 18
5.5	20	11	23	11	21	11	20.1	**iC60LMA-NG125LMA**	25	300	**LC1-D25**	**LRD-22**	16 to 24
7.5	28	15	30	15	28	15	26.5	**iC60LMA-NG125LMA**	40	480	**LC1-D32**	**LRD-32**	23 to 32
-	-	18.5	37	-	-	-	-	**iC60LMA-NG125LMA**	40	480	**LC1-D40A**	**LRD-340**	30 to 40
11	39	-	-	22	40	22	39	**iC60LMA-NG125LMA**	40	480	**LC1-D40A**	**LRD-350**	37 to 50
-	-	22	43	25	47	-	-	**NG125LMA**	63	750	**LC1-D40A**	**LRD-350**	37 to 50
15	52	-	-	-	-	30	51.5	**NG125LMA**	63	750	**LC1-D50A**	**LRD-365**	48 to 65

(1) 480 V Nema.

Photovoltaic
Examples of installation architectures

The examples of photovoltaic installation architectures presented in this document illustrate the use of direct current circuit breakers dedicated to protection of the modules and cables of the PV strings, to protect against overloads and short circuits. To ensure the safety of the photovoltaic installation it is necessary, in the cases described below, to combine the C60PV-DC circuit breaker with other protective or fault detection devices on the DC side.

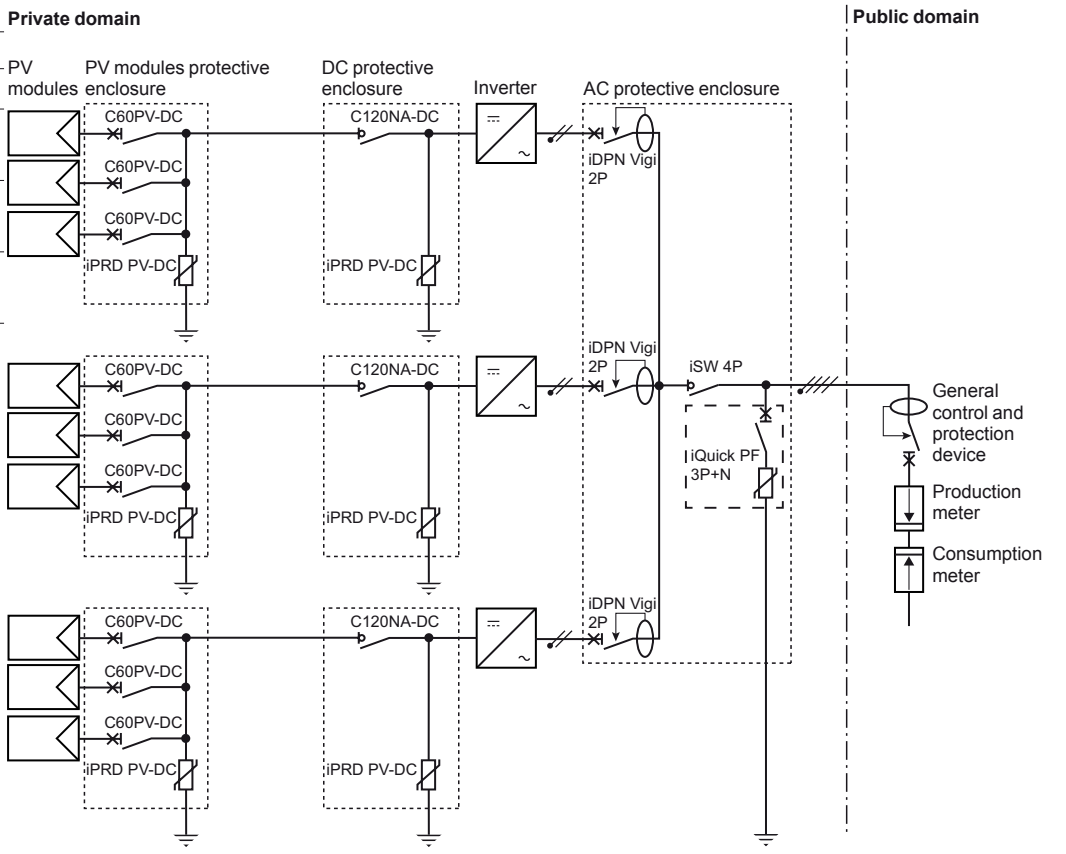
Installation from 10 to 100 kW - Ue ≤ 800 V DC

In the case of a **PV architecture without an earthed polarity on the DC side and with a PV inverter without galvanic isolation**, it is necessary to:
- protect each string of photovoltaic modules with a C60PV-DC installed in the junction box near the PV modules
- add a residual current device on the AC side of the PV inverter so that the latter trips as soon as an earth fault occurs on the DC side.

It is necessary to intervene immediatly on the site at the first default.
Restarting will be possible only after eliminating the fault.

DB406329

Earthing systems	TT	TNS	IT
	■	■	-
Inverter	Without integral transformer		
Installation at DC end	Without earthed polarity		
Insulation monitoring device	-		



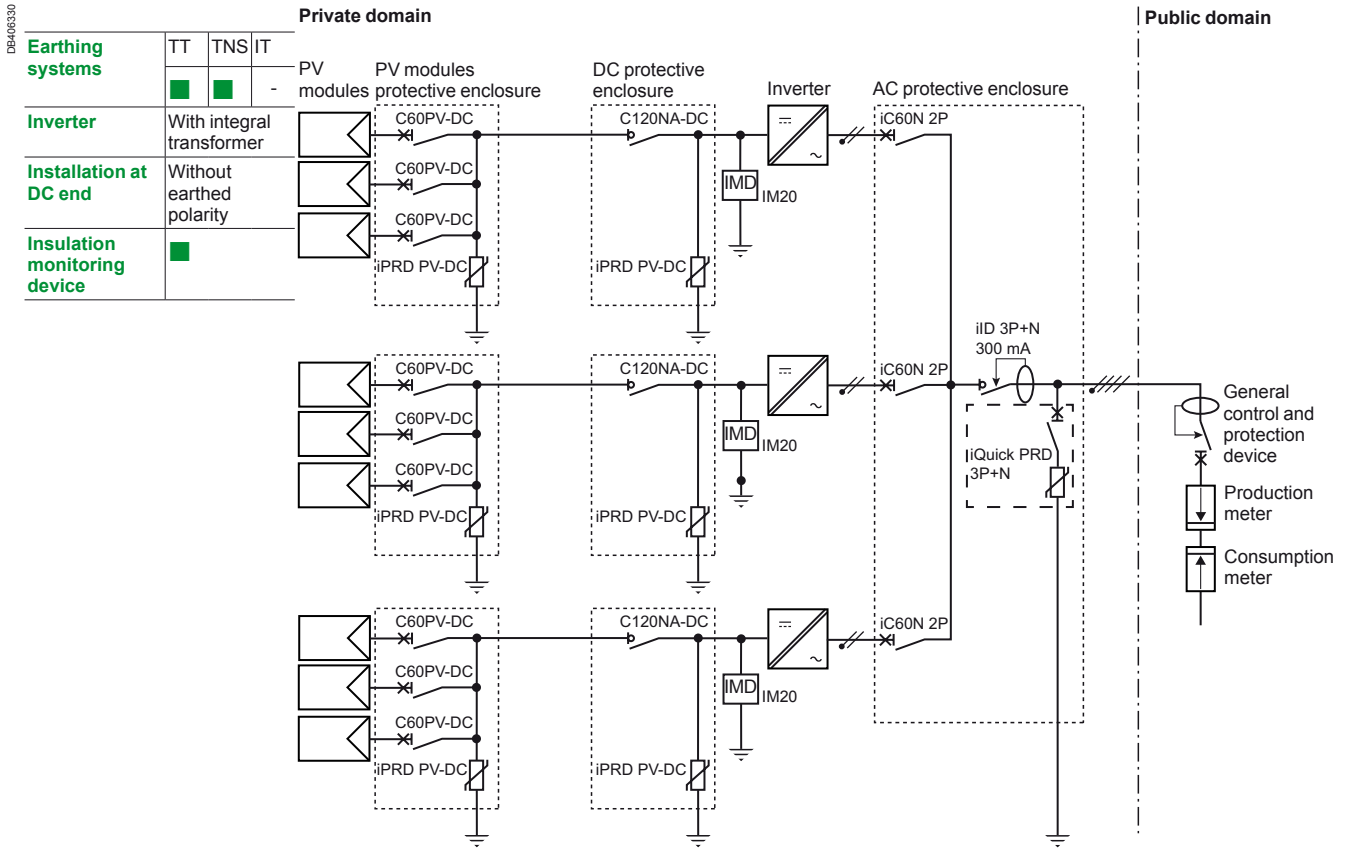
Photovoltaic (cont.)
Examples of installation architectures

Installation from 10 to 100 kW - Ue ≤ 800 V DC

In the case of a **PV architecture without an earthed polarity on the DC side and with a PV inverter or with galvanic isolation**, it is necessary to:
- protect each string of photovoltaic modules with a C60PV-DC installed in the junction box near the PV modules;
- add an insulation monitoring device on the DC side of the PV inverter in order to indicate a first earth fault and actuate stoppage of the inverter as soon as it occurs.

It is necessary to intervene immediatly on the site at the first default.
Restarting will be possible only after eliminating the fault.

Earthing systems	TT	TNS	IT
	■	■	-
Inverter	With integral transformer		
Installation at DC end	Without earthed polarity		
Insulation monitoring device	■		



Photovoltaic (cont.)
Examples of installation architectures

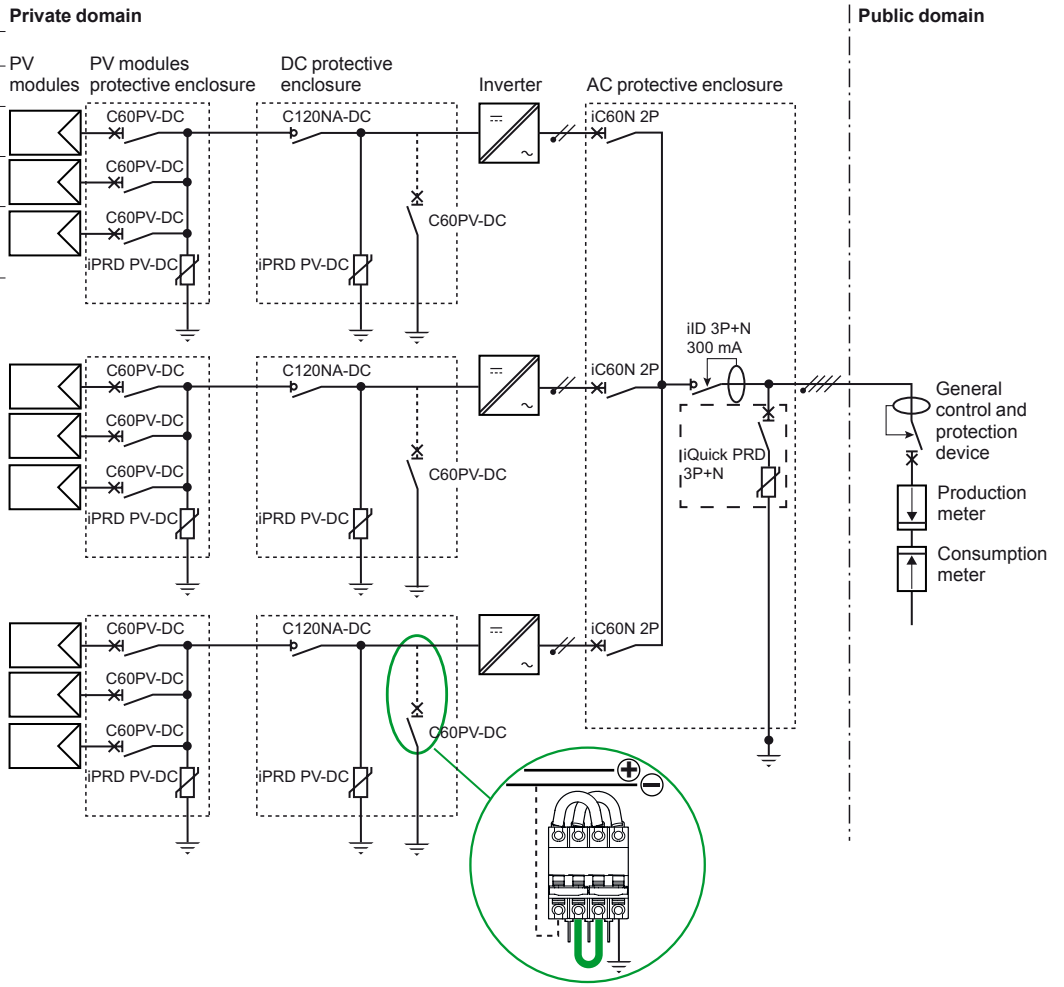
Installation from 10 to 100 kW - Ue ≤ 800 V DC

In the case of a **PV architecture with an earthed polarity on the DC side and with a PV inverter having galvanic isolation**, it is necessary to:
- protect each string of photovoltaic modules with a C60PV-DC installed in the junction box near the PV modules
- add a C60PV-DC earth protection circuit breaker, with all poles in series, on the DC side of the PV inverter.

PV inverter stoppage is actuated via an auxiliary contact combined with the earth protection circuit breaker. Polarity earthing and the protective device should not be implemented if the PV inverter already has an earthed polarity.
It is necessary to intervene immediatly on the site at the first default.
Restarting will be possible only after eliminating the fault.

DB406331

Earthing systems	TT	TNS	IT
	■	■	-
Inverter	With integral transformer		
Installation at DC end	Earthed polarity		
Insulation monitoring device	-		



Photovoltaic (cont.)
Examples of installation architectures

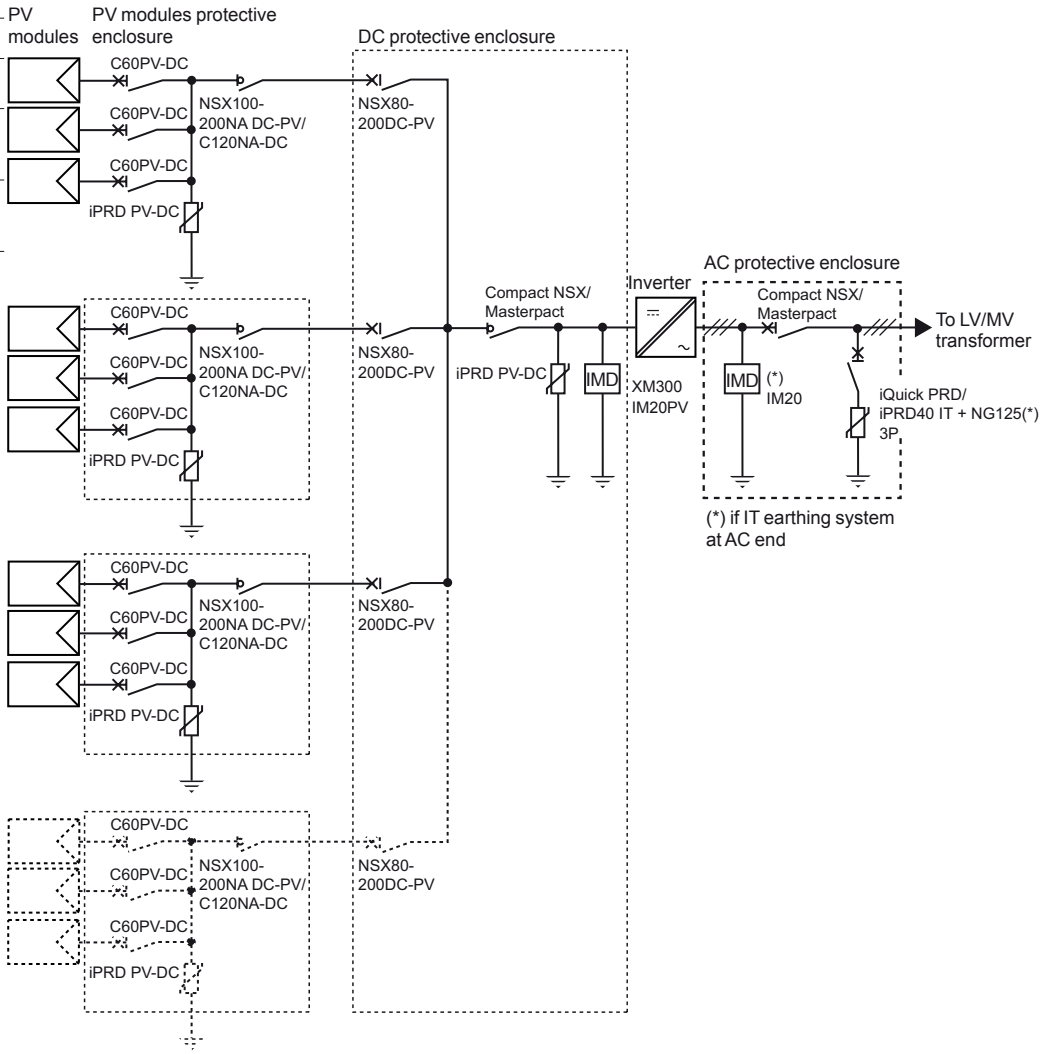
Installation > 100 kW - Ue ≤ 800 V DC

In the case of a **PV architecture without an earthed polarity on the DC side and a central PV inverter having galvanic isolation**, it is necessary to:
- protect each string of photovoltaic modules with a C60PV-DC installed in the protection cabinet for the PV strings located near the PV modules
- add an insulation monitoring device (IMD) on the DC side of the PV inverter (and on the AC side if IT earthing system on AC side) in order to indicate a first earth fault and actuate stoppage of the PV inverter as soon as it occurs.

It is necessary to intervene immediatly on the site at the first default.
Restarting will be possible only after eliminating the fault.

DB406332

Earthing systems	TT	TNS	IT
	■	■	■
Inverter	With integral transformer		
Installation at DC end	Without earthed polarity		
Insulation monitoring device	■		



Photovoltaic (cont.)
Examples of installation architectures

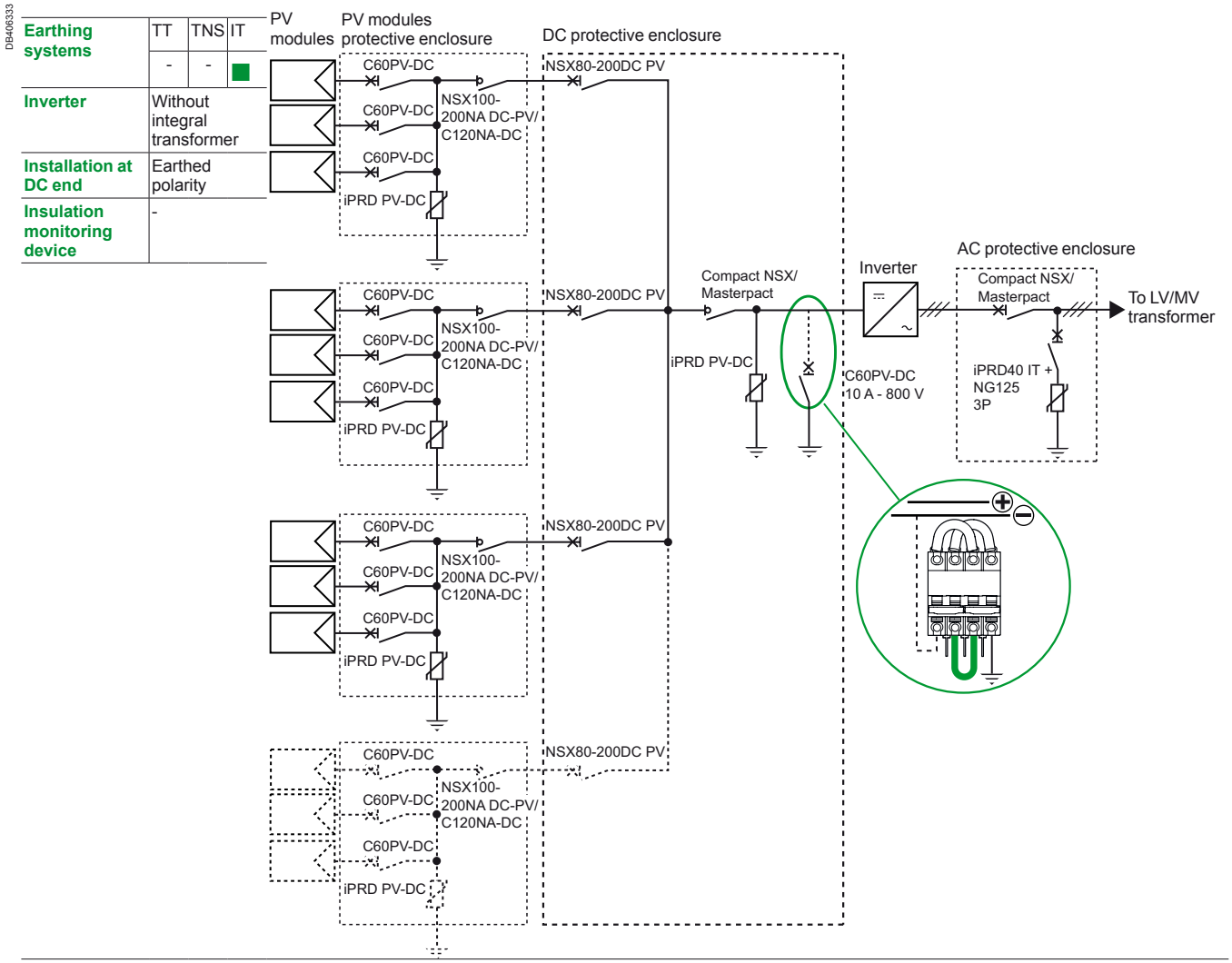
Installations > 100 kW - Ue ≤ 800 V DC

In the case of a **PV architecture with an earthed polarity on the DC side and a central inverter having galvanic isolation and an IT earthing system on the AC side**, it is necessary to:

- protect each string of photovoltaic modules with a C60PV-DC installed in the protection cabinet for the PV strings located near the PV modules
- add a C60PV-DC earth protection circuit breaker, with all poles in series, on the DC side of the PV inverter.

PV inverter stoppage is actuated via an auxiliary contact combined with the earth protection circuit breaker. Polarity earthing and the protective device should not be implemented if the PV inverter already has an earthed polarity.
If the Isc of the DC installation exceeds 1.5 kA, replace the C60PV-DC earth protection circuit breaker with an NSX80 DC PV provided with a 16 A release.
It is necessary to intervene immediatly on the site at the first default.
Restarting will be possible only after eliminating the fault.

Earthing systems	TT	TNS	IT
	-	-	■
Inverter	Without integral transformer		
Installation at DC end	Earthed polarity		
Insulation monitoring device	-		

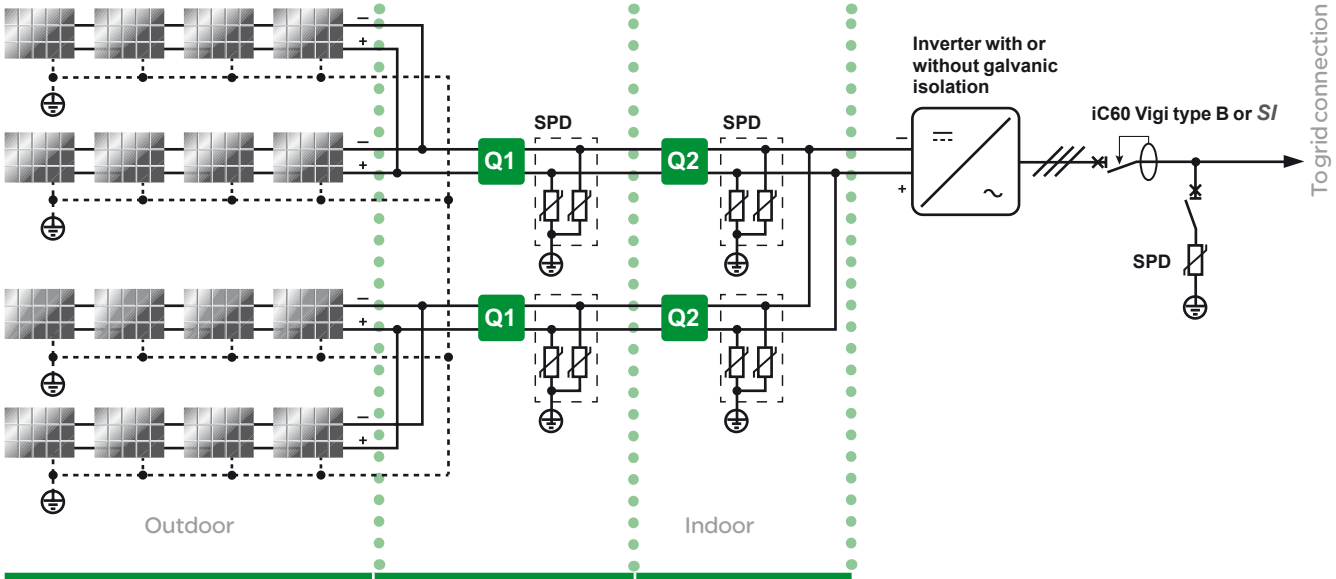


Examples of using C120NA-DC switch-disconnector
Architectures

10 kW-100 kW grid-connected PV system (small buildings)

Three-phase multi-input inverter without array box

Typically, 10 kW to 36 kW grid-connected inverters with $U_{OC\,MAX}$ probably higher than 600 V (i.e. 800 V or 1000 V) and I_{SCTC} < 125 A, I_{AC} < 63 A. In this range of power, inverters usually have between 2 and 4 maximum power point tracking (MPPT) inputs, so the number of strings in the same DC sub-network is equal to one or two. There is no need for string protection. A PV main switch for each MPPT input is necessary. When an inverter is indoors, additional remote-controlled switches at DC cable entry point are recommended for emergency services.



	String junction box	PV main switch
Needs	**Switchgears and control**	
Isolation	■	■ (b)
Switching (making and breaking rated current)	■ DC21B	■ (b) DC21B
Control	■ (a)	■ (b)
Schneider Electric offer	**"Q1"** C60NA-DC + MX / MN or **C120NA-DC** + MX / MN	**"Q2"** INS PV or C60NA-DC or **C120NA-DC**

(a) Remote switching for emergency services located as closely as possible to the PV modules or to the point of entry of DC cables in the building.
(b) Service and emergency switching.

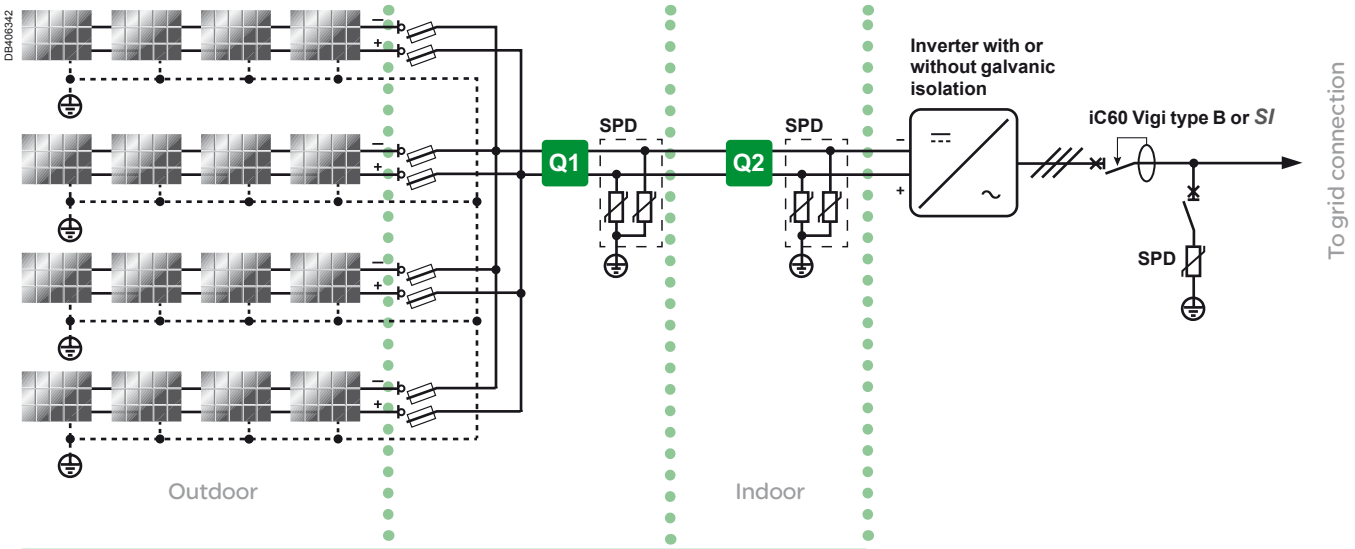
■ *If the inverter provides at least simple separation:*
□ *without functional earthing: insulation monitoring is necessary, it's usually done by the inverter in this range of power*
□ *with functional earthing: the earthing shall be done with a DC MCB breaker (C60PV 4P series 2 – 10 A) or a fuse.*

Examples of using C120NA-DC switch-disconnector
Architectures (cont.)

10 kW-100 kW grid-connected PV system (small buildings)

Three-phase inverter with one array box

Typically, 30 kW to 60 kW grid-connected inverters. $U_{OC\,MAX}$ is generally higher than 600 V (up to 1000 V), I_{SCTC} does not exceed 200 A, I_{AC} does not exceed 100 A. This design has more than 2 strings. Reverse current protection is therefore necessary. A main PV switch is required. When an inverter is inside, additional remote-controlled switches at DC cable entry point are recommended for emergencies.



	String / Array junction box	PV array main switch
Needs	**Switchgears and control**	
Isolation	■	■ (b)
Switching (Making & breaking rated current)	■ DC21B	■ (b) DC21B
Control	■ (a)	■ (b)
Schneider Electric offer	**"Q0"** TeSys DF **"Q1"** Compact NSX DC PV + MX / MN or **C120NA-DC** + MX / MN	**"Q2"** Compact NSX DC PV or **C120NA-DC**

(a) Remote switching for emergency services located as closely as possible to the PV modules or to the point of entry of DC cables in the building.
The main switch in array box can be equipped with tripping coil.
(b) Service and emergency switching.

■ *If the inverter provides at least simple separation:*
□ *without functional earthing: insulation monitoring is necessary*
□ *with functional earthing: the earthing shall be done with a DC MCB breaker (C60PV 4P series 2 – 10 A) or a fuse.*

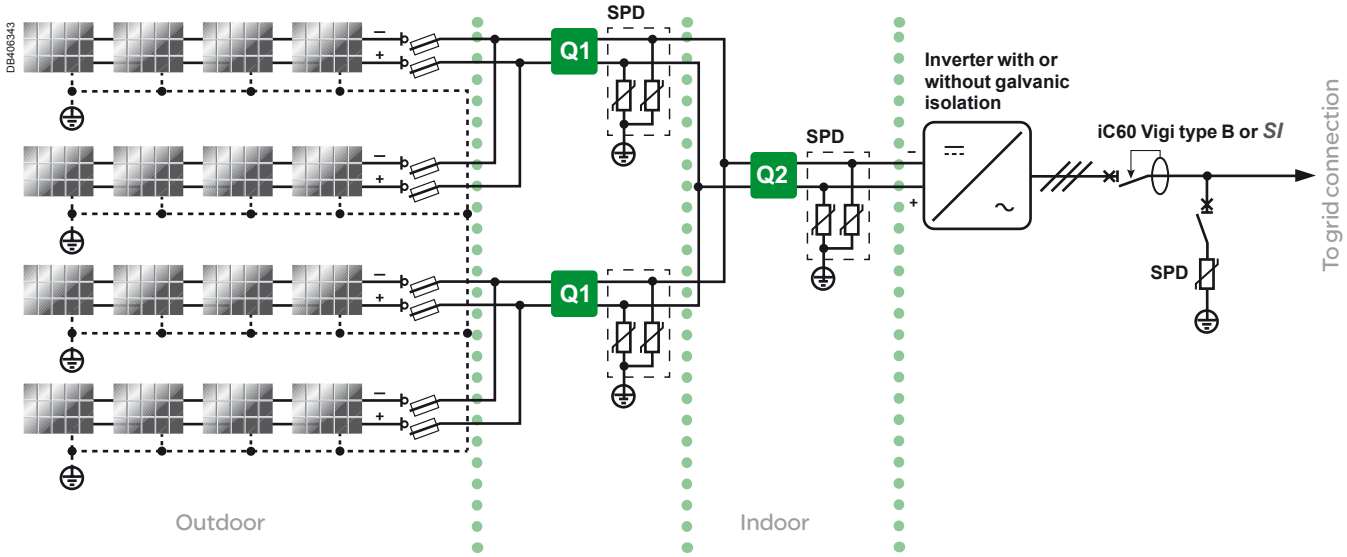
Examples of using C120NA-DC switch-disconnector

Architectures (cont.)

10 kW-100 kW grid-connected PV system (small buildings)

Three-phase inverter with two array boxes

Typically, 60 kW to 100 kW grid-connected inverters with 2 arrays. Array cable protection is not necessary for 2 or 3 arrays.
The I_{SCTC} array ⩽ 200 A, I_{SCTC} ⩽ 400 A, and $I_{AC\ MAX}$ ⩽ 200 A. A PV main switch is required close to the inverter. Remotely operated switches in array boxes allow disconnects to be located close to the PV modules in the event of emergencies.



	String	Array junction box	PV generator main switch
Needs	**Switchgears and control**		
Isolation	■	■	■ (b)
Switching (making and breaking rated current)		■ DC22A	■ (b) DC22A
Control		■ (a)	■ (b)
Schneider Electric offer	**"Q0"** TeSys DF	**"Q1"** Compact NSX NA DC PV or C60NA-DC or **C120NA-DC**	**"Q2"** **C120NA-DC** or Compact NSX NA DC PV

(a) If emergency service switching is required, switches in array boxes can be equipped with tripping coils and motor mechanisms for remote reclosing.
(b) Service and emergency switching.

■ *If the inverter provides at least simple separation:*
□ *without functional earthing: insulation monitoring is necessary*
□ *with functional earthing: the earthing shall be done with a DC MCB breaker (C60PV 4P series 2 – 10 A) or a fuse.*

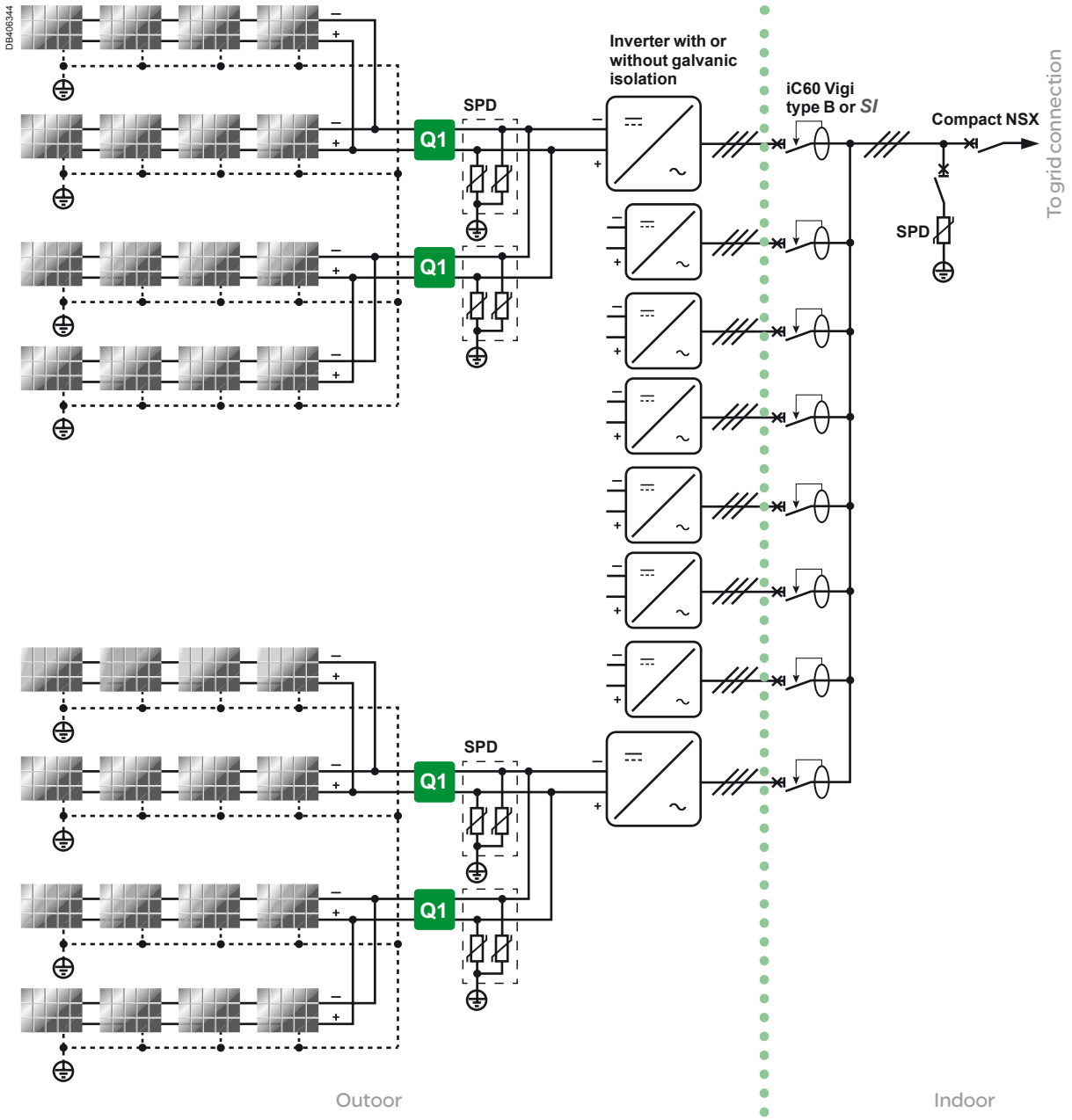
Examples of using C120NA-DC switch-disconnector

Architectures (cont.)

150 kW-500 kW grid-connected PV system (large buildings and farms)

Multi three-phase inverter design without array box

Typically, 10 x 20 to 20 x 30 kW grid-connected inverters. $U_{OC\ MAX} \leq 1000$ V.
One or two string per inverter. $I_{AC\ MAX}$ 50 A for one inverter.



String / Array junction box	
Needs	**Switchgears and control**
Schneider Electric offer	**"Q1"** C60NA-DC or **C120NA-DC** or SW60DC
	See 10 to 36 kW design

Compact NSX with Micrologic trip unit ensures full selectivity with iC60 up to 40 A and offer advanced measurement and communication capabilities.

Acti 9 Smartlink and enclosure/cubicle mounting compatibility

Enclosures configuration	Type of Acti 9 Smartlink mounting above DIN rail in all cases						TOP fed	
24-horizontal modules	Functional units Height in 50 mm Vertical modules	Power downstream cabling Power upstream cabling					DIN rail	Linergy FM 80 A
		Strands	Wiring band (cat. no. 04239)	Single cable trough support + cable trough 30 or 40	Adaptable cable trough support + cable trough 60	Cable trough behind the rail		
Pragma Evolution - Surface mounting								
	3 modules 150 mm	■					☑	☑
Prisma Plus Pack - 160 A and 250 A								
	3 modules 150 mm	■	■				☑	☑
Prisma Plus G - Enclosure and cubicle								
	3 modules 150 mm	■	■				☑	☑
	4 modules 200 mm	■	■	■			☑	☑
	5 modules 250 mm	■	■	■	■		☑	☑
Prisma Plus P – Cubicle								
	3 modules 150 mm	■	■			■	☑	☑
	4 modules 200 mm	■	■	■		■	☑	☑
	5 modules 250 mm	■	■	■	■	■	☑	☑

		Bottom fed			
	Linergy FM 200 A	DIN rail (without comb busbar)		DIN rail + comb busbar (bottom position only)	
		Downstream cabling (in foot band)	Downstream cabling (in cable trough)	Downstream cabling (in foot band)	Downstream cabling (in cable trough)
		☑			
		☑			
		☑			
		☑	☑	☑	
	☑	☑	☑	☑	☑
		☑			
		☑	☑	☑	☑
	☑	☑	☑	☑	☑

Key

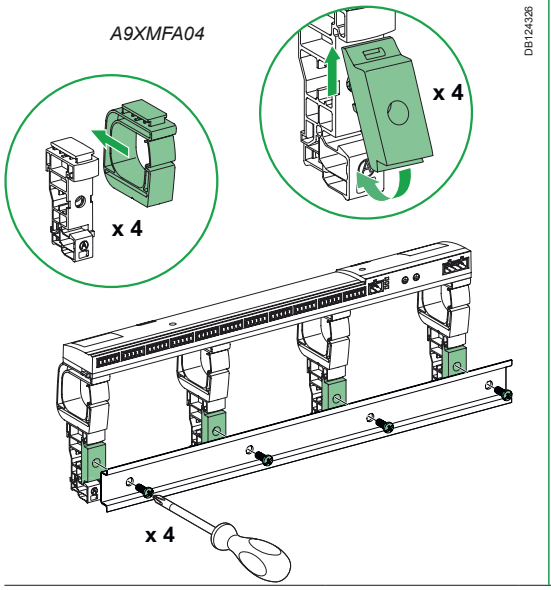
☑	Compatible
	Incompatible or not applicable

Acti 9 Smartlink (cont.)

Installation

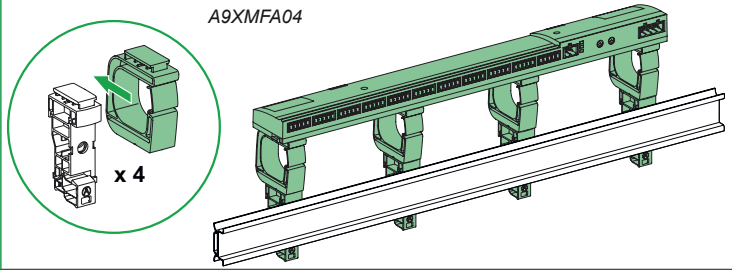
On DIN rail

DB124327



On asymmetrical DIN rail

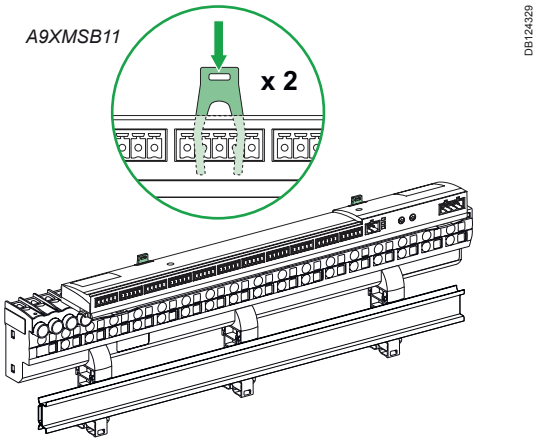
DB124326



PB107753-175

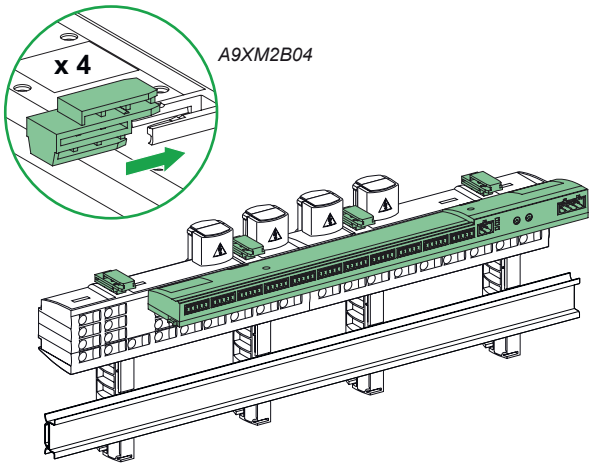
On Linergy FM 80 A cat. no.: 04000

DB124328

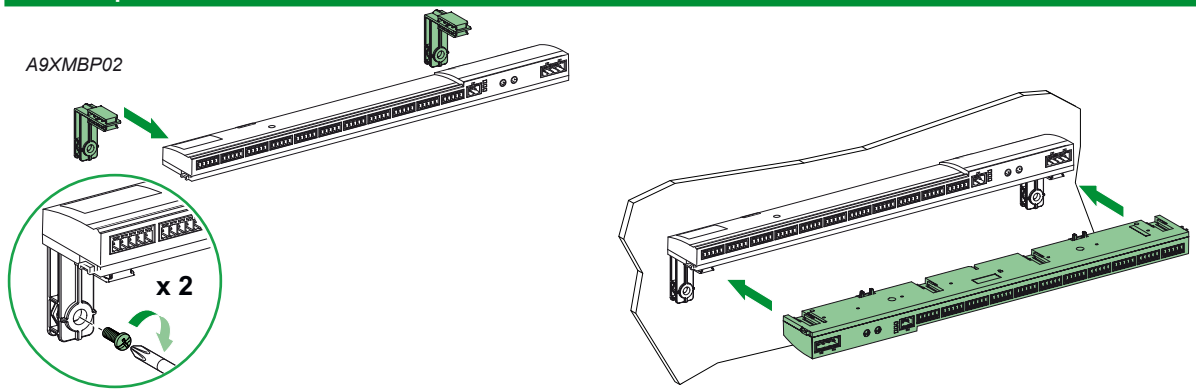


On Linergy FM 200 A cat. no.: 04012, 04013, 04014

DB124329



For back panel



PowerTag
Compatibility

PB115448-40

PB115447-40

PowerTags are electrical quantity measuring modules for 1P, 1P+N, 2P, 3P and 3P+N networks.
They are mounted directly on equipment of the Acti 9 or Multi 9 range at intervals of 18 mm up to 63 A.

"Single terminal" devices at modules of 18 mm, rating ⩽ 63A	
Circuit breakers	
iC60	☑
iC65	☑
Reflex iC60	☑
iK60	☑
i65N-K	☑
DT40/i DPN/C40	☒
DT60	☑
C32	☑
C45	☑
C60	☑
C65	☑
K60	☑
C120	☒
Residual current devices	
iC60 RCBO	☒
iKQE RCBO	☒
C60H RCBO	☒
iC60 Vigi	☒
ISW 20/32 A	☒
iID	☑
iID K	☑
RCCB-ID type B	☑ ⩽ 63 A
IDc/ITG40/C40	☒
DCP Vigi	☑
DPN Vigi K	☒
RED	☒
RCCB	☑
Switches	
iSW ⩾ 40 A	☑
iSW-NA	☑
I-NA	☑

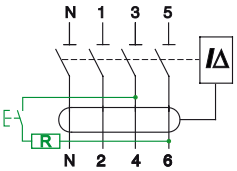
PowerTag
Compatibility (cont.)

"Single terminal" devices at modules of 18 mm, rating ⩽ 63A		
Resi 9 Belgium	**Upstream**	**Downstream**
Circuit breaker	☑	☒
RCCB	☑	☒
RCBO	☒	☒
Switches	☑	☒
Resi 9 International		
Circuit breaker	☒	☑
RCCB	☒	☑
RCBO	☒	☒
Switches	☒	☑
iKQ		
iKQ circuit breaker	☒	☑
iKQE RCBO	☒	☒

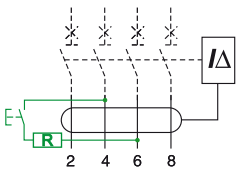
Earth leakage protection
Routine operating checks

Residual current devices are vital for the safety of people.
That is why:
■ the electrical installation operation and maintenance standards require these protection devices to be tested at regular intervals,
■ the product standards IEC 61008 and IEC 61009 require such devices to be fitted with a test button (marked "T") on the front panel.
The user can therefore check and be certain that the device is working correctly.

The test button provides reliable information about how the device is working: tripping as soon as the button is pressed guarantees that the protection is working properly. If the device fails to trip, it must be examined to determine the cause of this malfunction.



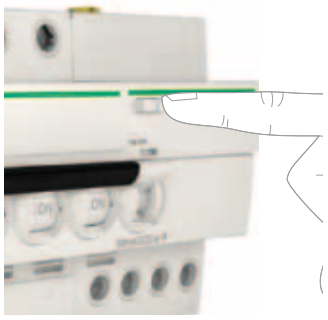
Example iID



Example Vigi iC60

Test frequency
The residual current devices must be tested as frequently as required by the installation regulations and/or the safety regulations currently in force.
In the absence of any regulations, Schneider Electric recommends the test to be carried out:
■ after initial connection and any subsequent reconnection,
■ every years, for devices recently installed in good environmental conditions (no dust, corrosion, humidity, etc.),
■ every 3 months, for devices that have been in use for seven years or more in good environmental conditions,
■ every months, for devices used in corrosive or harsh environmental conditions or highly exposed to lightning strikes.

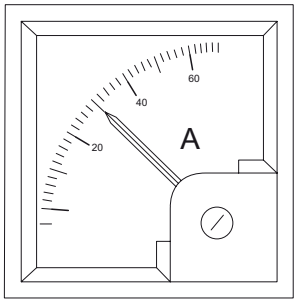
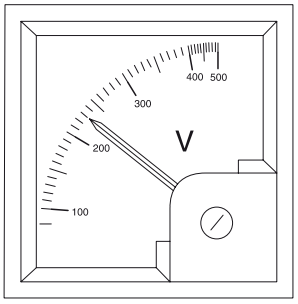
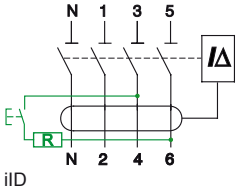
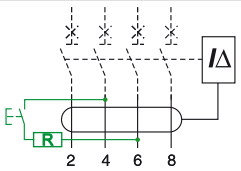
Procedure

The residual current device is powered on and the loads are connected.	**Briefly** press the test button marked "T" on the front panel. ⚠ Pressing the test button too long can seriously damage the device.	The residual current device should trip instantly. If it fails to trip, the additional checks described below should be performed.	When the test is finished, put the residual current device back into service.
			

Earth leakage protection
Routine operating checks

Failure to trip during the test

Failure to trip during the test is often due to a cause that is external to the residual current device.
The table below shows the possible causes, the additional checks and tests to be carried out and the corrective actions to be taken, depending on the results.
After a corrective action has been performed, repeat the test until a correct result is obtained.

Cause of the malfunction			
Network frequency	**Network voltage**	**Connection (three-pole or four-pole device)**	**Load leakage currents**
Additional test			
Check that the network frequency is the same as the frequency read on the device.	Check that the mains voltage is the same as that indicated on the front face of the device.	Measure the voltage between terminals: ■ 3 and 6 for iID ■ 4 and 6 for Vigi iC60. This voltage must be between 85 % and 110 % of the voltage indicated on the device.	Disconnect the loads and press the test button again.
		 iID  Vigi iC60	
Incorrect test result			
If the network frequency is different, the button test is not significant.	■ If the voltage measured is less than 85 % of that indicated on the device, the test button may not work, although the protection device will continue to function. ■ If the voltage measured is more than 110 % of the voltage indicated on the device there is a risk that the device will be destroyed.	The incorrect voltage may be due to a connection error (e.g. phase/neutral inversion/missing phase, etc.). The Acti 9 three-pole and four-pole residual current devices cannot be used on single-phase circuits. The Acti 9 four-pole residual current devices can be used normally on three-phase circuits without neutral.	If the device trips, the earth leakage protection is working correctly.
Corrective actions			
The device must be checked by an external device (see below).	**If the voltage measured is different from the rated voltage of the mains, look for the problem on the power supply or on the downstream circuits (lines, loads):** **■ if the rated voltage of the mains is lower than that indicated on the device it must be replaced by a device with a suitable rated voltage the next time it is shut down** **■ if the rated voltage of the mains is higher than the voltage indicated on the device it must immediately be replaced by a device with a suitable rated voltage.**	**Modify the connection to obtain the rated voltage (phase-phase) between terminals.**	**Measure the permanent leakage current of each load.** **■ in the event of abnormal load leakage, correct the insulation fault.** **■ otherwise, separate the circuits to reduce the permanent leakage currents seen by each residual current device.**

If none of the additional tests indicate a fault, the residual current device is faulty. Checking with an external device (see below) will show whether or not it has to be replaced urgently.

Test result	Positive	Negative
Diagnosis		
	■ the earth leakage protection device is working properly ■ the test circuit is faulty	Earth leakage protection is not working
Corrective actions		
	The residual current device must be replaced quickly (as soon as it is no longer being used).	**The residual current device must be replaced immediately**

Earth leakage protection
Routine operating checks

Some tertiary and industrial installation safety regulations require residual current devices to be checked with a specific device.

Checking with a specific test device
For the tests performed to be valid, these devices must comply with IEC 61557-6.

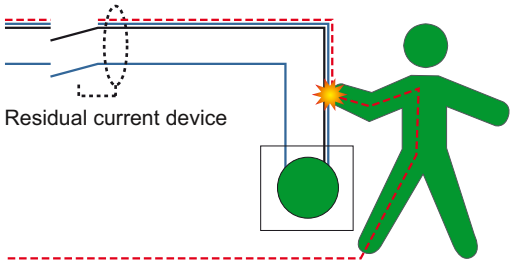
These devices are used to check:
- the operating voltage
- the tripping threshold (according to the sensitivity IΔn) of the residual current device
- the tripping times at IΔn, 2 x IΔn, 5 x IΔn, etc. The normal values are shown on pages CT6-1 and CT6-4.

With an IT earthing system (isolated neutral), a first insulation fault should be created artificially to allow a fault current to circulate during the tests.

Procedure
- Disconnect the fixed and mobile loads (if the residual current device protects the power outlets).
- Connect the test device to the downstream terminals of the residual current device or to a downstream power outlet.

Earth leakage protection
Response time of high-sensitivity residual current devices 30 mA

All the high-sensitivity residual current devices (30 mA) in the Acti 9 range conform to the IEC/EN 61008 and IEC/EN 61009 standards. The response times defined by these standards guarantee their effectiveness in protecting people against direct contacts.



Response time

The response time of a residual current device is the time between the appearance of a dangerous leakage current and circuit power down.

Types AC, A, *Si*

Fault current (mA)		Maximum response time (ms)
I∆n/2	15 mA	No tripping
I∆n	30 mA	300 ms
2 x I∆n	60 mA	150 ms
5 x I∆n	150 mA	40 ms

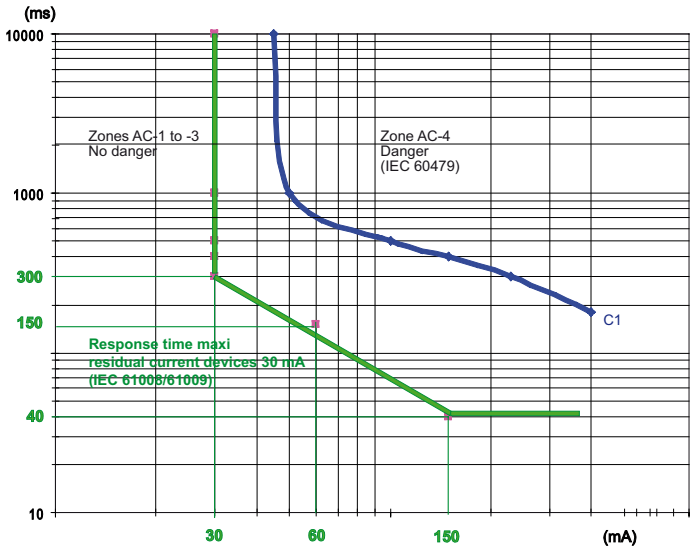
Type B, DC leakage current

Fault current (mA)		Maximum response time (ms)
I∆n/2	15 mA	No tripping
2 x I∆n	60 mA	300 ms
4 x I∆n	120 mA	150 ms
10 x I∆n	300 mA	40 ms

These response times conform to the specifications of the IEC/EN 61008, IEC/EN 61009 and IEC/EN 62423 (DC leakage current) standards.

They guarantee protection of people against direct contacts for the following reasons :

- when a person comes into direct contact with a live conductor, the current passes directly through the human body,
- this current, with the same magnitude, is detected by the residual current device.



- The IEC 60479 technical report studies the sensitivity of the human body to the electric current. Curve c1 defines for each current value the maximum time before the current causes injury to a person.
- Superimposing the two curves shows that the above response times protects the users.

Measuring the response time

If the user wishes to check the response time of his residual current devices, he should follow a specific procedure to:

- establish a leakage current of calibrated magnitude,
- measure the exact response time.

Procedure

The measuring instruments must conform to **IEC**/EN 61557-6.

Carry out the operations in the following order according to the safety instructions:

- disconnect the loads,
- install the measuring instrument downstream of the residual current device to be tested (for example on a power outlet),
- perform the measurement.

Earth leakage protection
Response time of medium-sensitivity residual current devices 100 mA...1000 mA

Response time of iC60 Vigi and iID residual current devices

The medium-sensitivity residual current devices (100…1000 mA) in the Acti 9 range conform to IEC/EN 61008, IEC/EN 61009 and IEC/EN 62423 (DC leakage current):
- their response time guarantees personal protection against indirect contacts and fire risks,
- in the case of selective versions (S), a "non-tripping time" guarantees discrimination with the residual current devices installed downstream.

Types AC, A, *Si*

Instantaneous residual current devices

Residual current device		Sensitivity (I∆n)			
		100 mA	300 mA	500 mA	
Fault current (mA)	I∆n/2	50	150	250	No tripping
					Max. response time
	I∆n	100	300	500	300 ms
	2 x I∆n	200	600	1000	150 ms
	5 x I∆n	500	1500	2500	40 ms
	500 A				40 ms

Selective (S) and time-delayed (R) residual current devices

Residual current device		Sensitivity (I∆n)				Type			
		100 mA	300 mA	500 mA	1000 mA	Selective (S)		Time-delayed (R)	
Fault current (mA)	I∆n/2	50	150	250	500	No tripping		No tripping	
						Non-tripping time	Response time	Non-tripping time	Response time
	I∆n	100	300	500	1000	130 ms	500 ms	300 ms	1000 ms
	2 x I∆n	200	600	1000	2000	60 ms	200 ms	150 ms	500 ms
	5 x I∆n	500	1500	2500	5000	50 ms	150 ms	150 ms	300 ms
	500 A					40 ms	150 ms	150 ms	300 ms

Type B, DC leakage current

Instantaneous residual current devices

Residual current device		Sensitivity (I∆n)		
		300 mA	500 mA	
Fault current (mA)	I∆n/2	150	250	No tripping
				Max. response time
	2 x I∆n	600	1000	300 ms
	4 x I∆n	1200	2000	150 ms
	10 x I∆n	3000	5000	40 ms
	5 A...200 A			40 ms

Selective (S) residual current devices

Residual current device		Sensitivity (I∆n)		
		300 mA		
Fault current (mA)	I∆n/2	150	No tripping	
			Non-tripping time	Response time
	2 x I∆n	600	130 ms	500 ms
	4 x I∆n	1200	60 ms	200 ms
	10 x I∆n	3000	50 ms	150 ms
	5 A...200 A		40 ms	150 ms

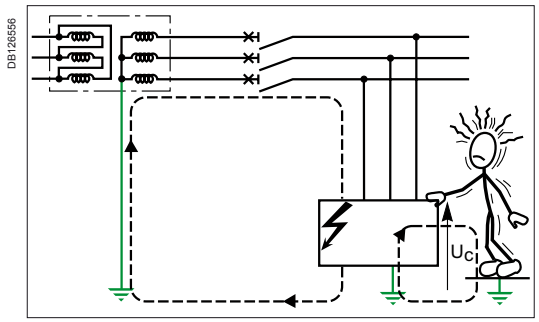
Definitions

Response time
Time between the appearance of a hazardous leakage current and circuit power down.

Non-tripping time
For selective and time-delayed devices, the non-tripping time is the time between the appearance of a hazardous leakage current and the device tripping.
If the leakage current disappears before this time, the device does not trip.
This fast disappearance of the leakage current can be due to:
- the transient nature of the fault (e.g. the current generated by a switching surge),
- the interruption of the fault current by another faster residual current device situated downstream.

Selective and time-delayed devices therefore afford the user:
- better immunity against nuisance tripping,
- total discrimination between residual current devices.

Earth leakage protection
Response time of medium-sensitivity residual current devices 100 mA...1000 mA



Protection against indirect contacts

The response times of residual current devices guarantee personal protection against indirect contacts, in conformance with the requirements of the installation standards (IEC 60364 or equivalent).

Indirect contacts

A person who comes into contact with an accidentally live frame caused by an insulation fault experiences an indirect contact: the contact voltage Uc creates a current that passes through the human body.

Maximum breaking time

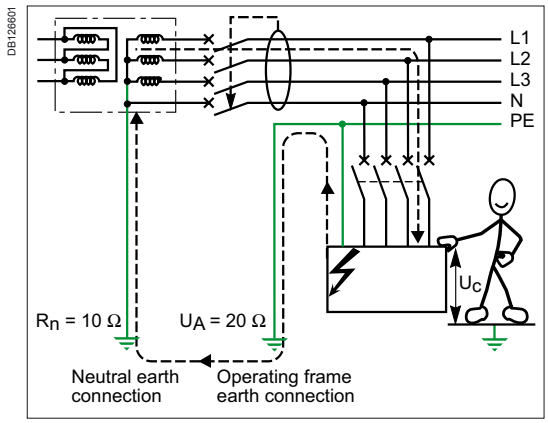
The maximum breaking time required by the installation standards, in the event of an insulation fault, depends on:
- the network voltage,
- the earthing system.

Maximum breaking time for terminating circuits (ms)

Earthing system	Network phase/neutral voltage			
	50...120V	120...230V	230...400V	> 400 V
TN or IT	800	400	200	100
TT	300	200	70	40

Note: a breaking time of no more than 5 s is permitted for distribution circuits to ensure discrimination with the devices installed on the terminating circuits.
This time should be reduced to the essential minimum.

These times are based on the maximum prospective values of the contact voltage Uc and on the contact times authorised by technical report IEC 60479.



Example

On a three-phase phase/neutral voltage network Uo = 230 V in a TT system:
- the resistance of the neutral earth connection Rn is 10 Ω,
- the resistance of the operating frame earth connection RA is 100 Ω.

In the event of an insulation fault, the leakage current Id is equal to: Uo/ (RA + Rn)
i.e. 230 V/110 Ω = 2.1 A.
The contact voltage Uc is therefore Id x RA i.e. 2.1 A x 100 Ω = 210 V.

Protection sensitivity

The residual current device must trip as soon as the leakage current corresponds to a hazardous situation, i.e. a contact voltage of 50 V (in a dry atmosphere).
Hence, IΔn = 50 V / RA, i.e. 50 V/100 Ω = 500 mA.

Maximum breaking time

For a 230 V phase/neutral voltage network in a TT system, the IEC 60364 standard requires a maximum breaking time of 200 ms.
For the 2.1 A leakage current:
□ an instantaneous residual current device with a sensitivity of 300 mA will power down the circuit in less than 40 ms,
□ an instantaneous residual current device with a sensitivity of 500 mA will power down the circuit in less than 60 ms.

Note: For well-designed and regularly maintained electrical installations, the resistance of the operating frame earth connection can be less than 100 Ω.

Use of the time-delayed residual current devices

In accordance with the breaking times required by the installation standards (above), the selective and time-delayed residual current devices can be used in the following cases:

Circuit	Network voltage (phase/neutral)	Residual current device		
		Instantaneous I	Selective S	Time-delayed R
Terminating circuit	≤ 230 V	■	■	(1)
	> 230 V	■		
Sub-distribution or general		■	■	■

(1) Only in a TN system for a phase/neutral voltage < 120 V.

Earth leakage protection

Response time of medium-sensitivity residual current devices 100 mA...1000 mA

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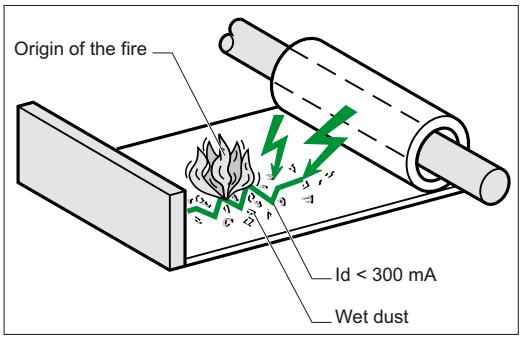

Protection against fire hazards

Most fires of electrical origin are caused by the creation and propagation of electric arcs in building materials, in the presence of moisture, dust, pollution, etc.
These arcs appear and develop due to the wear and tear or ageing of the insulating materials. The fire risk occurs when the leakage currents reach a few hundred milliamps for a few seconds.
For fault currents of this magnitude, residual current devices with a sensitivity of 300 or 500 mA trip in less than a second, whether they be instantaneous, selective or time-delayed.

The response times of residual current devices with a sensitivity of 300 mA guarantee protection against fires generated by leakage currents

IEC 60364-4-42 (subclause 422.3.10) states that it is mandatory to install a residual current device with a sensitivity less than or equal to 500 mA:
- on premises with a risk of explosion (BE3),
- on premises with a risk of fire (BE2),
- in agricultural and horticultural buildings,
- for circuits supplying fair, exhibition and entertainment equipment,
- on temporary outdoor leisure facilities.

In certain countries, the installation rules and/or local safety regulations require a sensitivity of 300 mA.

Earth leakage protection

Response time of medium-sensitivity residual current devices 100 mA...1000 mA

Discrimination of residual current devices

The non-tripping times of type (S) and (R) residual current devices ensure discrimination with the residual current devices located downstream.

Combination rules

To ensure discrimination between two cascading residual current devices, the following two conditions must be met simultaneously:

- the sensitivity of the upstream device must be at least 3 times the sensitivity of the downstream residual current device,
- the upstream residual current device must be one of the following types:
  - Selective (S) if the downstream residual current device is instantaneous,
  - Time-delayed (R) if the downstream residual current device is selective (S).

The figure below shows how compliance with these rules provides discrimination on three levels: whatever the value of the fault current, it will be interrupted by the device situated immediately upstream of the fault and only by this device.

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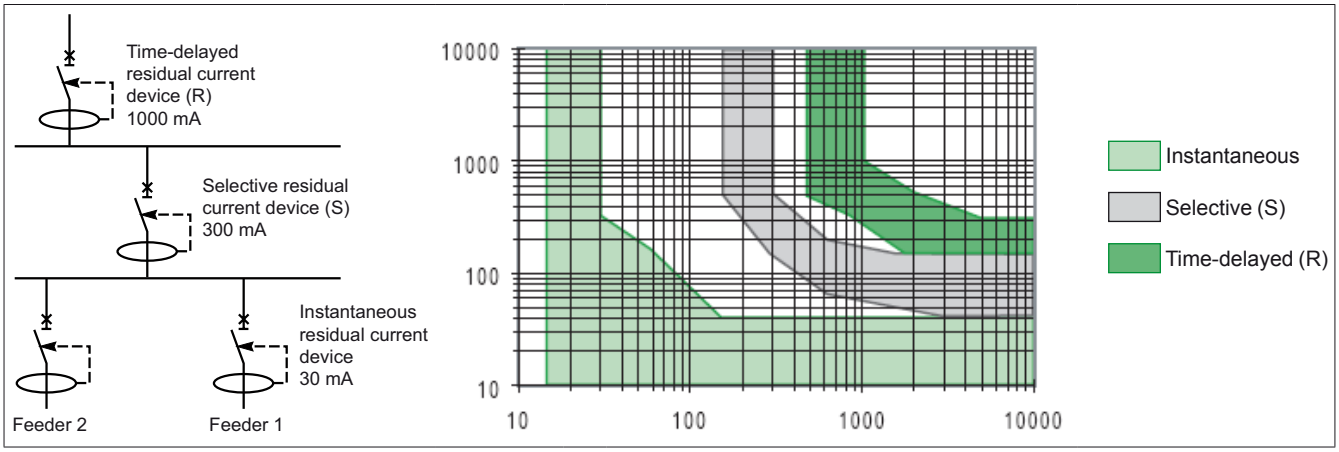


Example:

In the above diagram for a fault current of 1000 mA:

- if the fault occurs downstream of the 30 mA residual current device, the latter will interrupt the current in less than 40 ms, whereas type S and R devices "wait" for 80 ms and 200 ms respectively. Therefore, neither of the two devices trips,
- if the fault occurs downstream of the type S residual current device, the latter will interrupt the current in less than 175 ms, whereas the type R device "wait" for 200 ms and therefore does not trip.

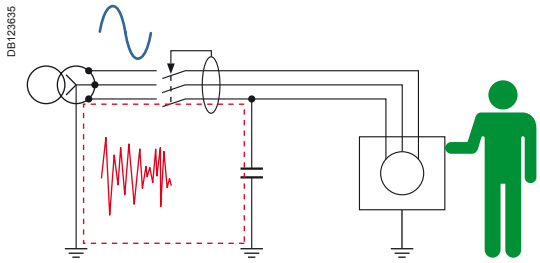
If these cascading combination rules are complied with, the level of continuity of service provided to the user depends on the way in which the "horizontal discrimination" is implemented: the terminal feeders must be divided into as many circuits as necessary, each protected by a residual current device.

Electrical and electromagnetic interference

Operation of earth leakage protection devices

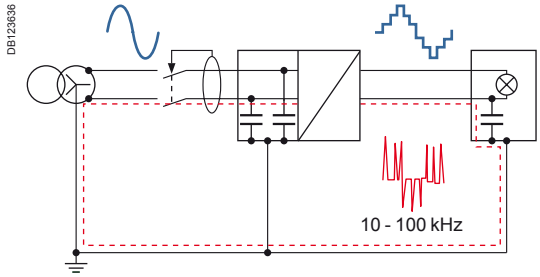
Some types of electrical and electromagnetic interference caused by the network or its environment may affect the operation of earth leakage protection devices and result in:
■ **Nuisance tripping** (tripping in a non-dangerous situation). Such tripping is often repetitive, which is highly detrimental to satisfying the user's energy requirements.
■ **Risk of non-tripping** in dangerous situations. This risk must be carefully analysed, because it affects people's safety. The standards define three categories of earth leakage protection devices according to their ability to control these types of situation.

■ The risk of interference must be taken into account when selecting earth leakage protection devices (see module CA902000), according to the loads supplied and the environment.
■ The explanations given below specify the main types of interference, their origin and how Schneider Electric's earth leakage protection devices respond, according to their type.



Nuisance tripping

This type of tripping is caused by the combination of two factors:
■ A transient or continuous high-frequency voltage that is superimposed on the normal network voltage (50 Hz).
■ The presence of capacitors between the electrical network and the earth (or frames). As these capacitors are exposed to a high-frequency voltage, a current which can trip an earth leakage protection device flows to earth.
The causes, duration and frequency spectra of such interference, which is often difficult to identify, can vary greatly, as shown in the examples below.



High-frequency harmonics

The current absorbed by non-linear loads such as IT equipment power supplies, frequency converters, variable speed drive motor controls, electronic ballast lights, etc. includes high-order harmonics.
If the natural capacitances of the protected circuit are significant (between the cables and earth, or between the live parts of the devices and their frames), earth leakage protection devices may be tripped, although no danger is present.
This risk of nuisance tripping is all the more likely to occur when a large number of identical loads are supplied in parallel and protected by the same earth leakage protection device.

Low-frequency continuous leakage currents

These leakage currents are mainly generated by the filtering capacitors in the power supply stage of electronic devices. Depending on the number of devices protected by the same earth leakage protection device, these leakage currents may:
■ Increase the risk of tripping in the event of high-frequency interference.
■ Cause frequent tripping

To guarantee satisfactory operation, these continuous leakage currents must not exceed 25% of the sensitivity (IΔn) of the earth leakage protection device, by limiting the number of "interfering" loads protected by the same earth leakage protection device.
■ If more accurate data is unavailable, the leakage current can be estimated on the following basis, for a 230 V, 50 Hz network:
□ heating floor: 1 mA / kW,
□ fax, printer: 1 mA,
□ PC, workstation: 2 mA,
□ photocopier: 1.5 mA.

If long cables are installed downstream of the earth leakage protection devices, it may be necessary to take the natural capacitance formed by the cable/earth pair into account (order of magnitude: at 230 V, approximately 1.5 mA for 100 m).

Electrical and electromagnetic interference

Operation of earth leakage protection devices (cont.)

Switching capacitive or inductive components

■ Switching on capacitors creates a transient inrush current similar to that shown in Fig. 1.
■ Switching off inductive components, such as power supply transformers used for lighting (halogen or fluorescent) creates brief voltage surges, the frequency of which can reach 10 MHz.

Common mode voltage surges

Electrical networks can be exposed to transient voltage surges caused by:
■ Lightning strikes: these voltage surges are represented normatively by a 1.2/50 µs voltage waveform (see Fig. 2). The currents induced by these voltage surges are represented by a normalised 8/20 µs waveform (see Fig. 3).
■ Sudden changes in network operating conditions (faults, blown fuses, inductive load switching, MV switchgear operations, etc.).

When a fault occurs in an IT system (isolated neutral), a transient leakage current is created due to the sudden change in potential with respect to earth.
A similar phenomenon can occur when a UPS switches between the mains supply and the battery supply, whilst the output neutral is briefly disconnected from the earth (then reconnected with a slight phase lag).

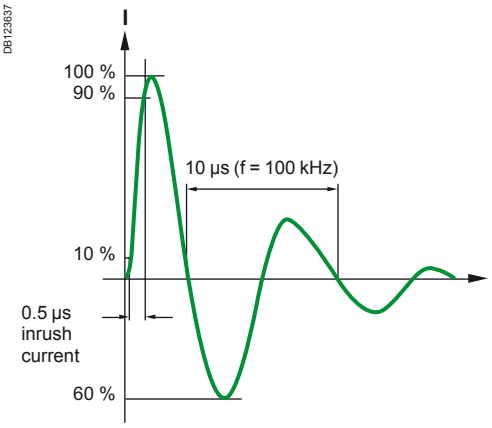


Fig. 1: 0.5 µs/100 kHz normalised current waveform

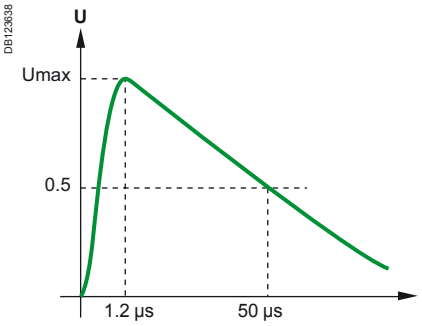


Fig. 2: 8/20 µs normalised current waveform

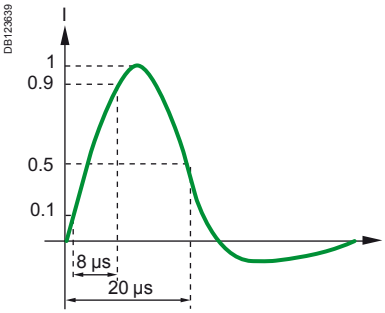


Fig. 3: 1.2/50 µs normalised voltage waveform

Immunity of Schneider Electric earth leakage protection devices

The ***SI*** earth leakage protection devices, exclusive to Schneider Electric, demonstrated their immunity to nuisance tripping in all the cases of interference indicated below:

Interference	Non-tripping test conditions	Performance required by the IEC 61008 / 61009 standards	Performance of Schneider Electric's *SI* type earth leakage protection devices
Continuous interference			
Flow of harmonic currents to earth	1 kHz sine wave	-	8 x IΔn
Transient interference			
Voltage surge induced by a lightning strike	1.2/50 µs pulse (IEC/EN 61000-4-5)	4 kV between 5 kV conductors / earth	4.5 kV between 5.5 kV conductors / earth
Current induced by a lightning strike	8/20 µs pulse (IEC/EN 61008)	250 Â	5 kÂ
Operating transient current; indirect lightning strike current	0.5 µs/100 kHz waveform (IEC/EN 61008)	200 Â	400 Â
Surge protective device operation downstream of the earth leakage protection device; switching on of capacitors	10 ms pulse	-	500 Â
Electromagnetic compatibility			
Switching of inductive loads, fluorescent lighting, motors, etc.	Repeated bursts (IEC 61000-4-4)	4 kV / 2.5 kHz	5 kV / 2.5 kHz 4 kV / 400 kHz
Fluorescent lighting, circuits controlled by thyristors	150 kHz to 230 MHz conducted RF waves (IEC 61000-4-16)	3 V (IEC) 10 V (EN)	30 V
Radio waves (TV and radios, transmitters, telecommunication, etc.)	80 MHz to 1 GHz transmitted RF waves (IEC 61000-4-3)	3 V / m (IEC) 10 V / m (EN)	30 V / m

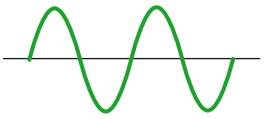
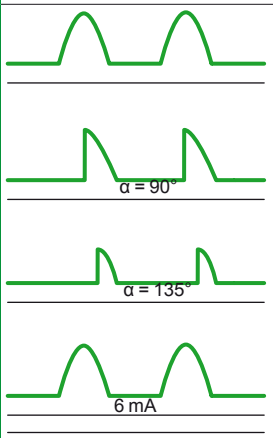
Electrical and electromagnetic interference

Operation of earth leakage protection devices (cont.)

Risk of non-tripping in a dangerous situation

When an insulation fault occurs in the DC stage of a switch-mode power supply (e.g. variable speed drive) or on a DC network supplied by a converter, the leakage current is rectified and is no longer a sine wave. This current waveform may not be transmitted correctly by the transformer located inside the earth leakage protection device. Consequently, a leakage current with a dangerous amplitude (greater than the nominal sensitivity of the earth leakage protection device) may not cause it to trip.

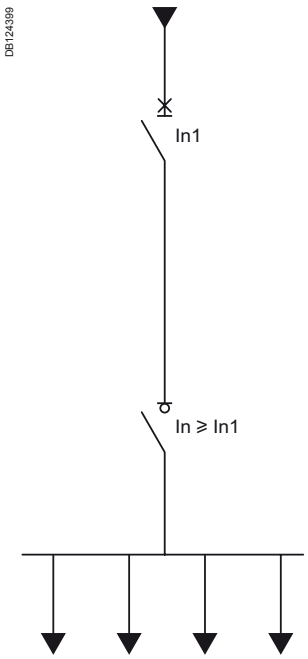
In order to select earth leakage protection devices that are appropriate to each situation, the IEC 60755 and IEC 61008 standards define three types of earth leakage protection devices, according to the waveforms that cause them to trip.

Type of earth leakage protection device	Checking fault-current tripping		Supply circuit protection
	Waveform	RMS value	
AC type DB123640		IΔn	Current loads
A type DB123641		1.4 IΔn	Single-phase loads with rectifiers (low-power variable speed drive, rectifier/charger, etc.)
B type DB123642		2 IΔn	Three-phase loads with rectifiers (three-phase high-power high-duty variable speed drive, three-phase rectifier/charger, etc.)

Schneider Electric's ***SI*** earth leakage protection devices are also protected against the risk of non-tripping due to atmospheric conditions:

- Very cold temperatures (risk of mechanical parts freezing up): up to -25°C.
- Corrosive chemical agents (risk of corrosion of alloys used to manufacture sensitive mechanical components). For information on using earth leakage protection devices in corrosive atmospheres, see module CA908027.

Coordination
Switches and residual current circuit breakers protection



Like all the components of the electrical installation, switches must be protected:
- against overloads;
- against short circuits.

Coordination between the switches and its protection device must be guaranteed and proved by the manufacturer.
Moreover, in a TN earthing, it must be ensured that the protection devices are capable of interrupting earth fault currents of high amperage.

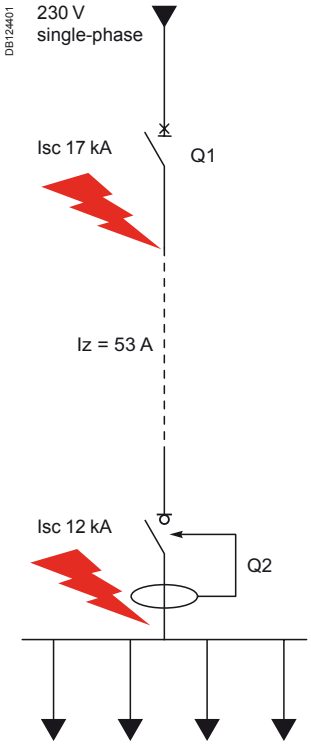
Overload protection

- The current rating of the switches is the maximum current that it can withstand without being damaged.
- It is protected against overloads by the circuit breaker located upstream on its power supply line (1).

As a consequence:
The rating of the switches must be equal to or greater than the rating of the circuit breaker located upstream.
Be careful: only the circuit breaker ensure the protection against overloads.

For example: on a circuit protected by an 32 A iC60 circuit breaker, an iSW-NA switches of rating 40 A or 63 A must be installed.

(1) In some countries, the installation standards consider that overload protection can be provided by all the downstream circuit breakers, if the sum of their ratings is less than or equal to the rating of the residual current circuit breaker.



Short-circuit protection

- The switches is protected against short circuits by the circuit breaker (or fuse) located upstream on its power supply line (2).
- To prevent any damage, the circuit breaker must sufficiently limit any short-circuit current that could pass through the switches (up to the max. short-circuit current Isc at its installation point).

The short-circuit withstand of the switches and residual current circuit breaker is given in the following tables, as a function of the upstream circuit breaker. It must be greater than or equal to the prospective short-circuit current Isc at its installation point.

(2) Exeption in case of special installation described at the end of this document, page 812.

Example
Choice of protection devices Q1 and Q2 in the diagram opposite:

Circuit breaker Q1		
Rated current	Less than or equal to the cable withstand Iz	50 A
Breaking capacity	Greater than or equal to the short-circuit current Isc (17 kA)	iC60N 2P or C120N 2P (20 kA under 230 V)
Residual current circuit breaker Q2		
Rated current	Greater than or equal to that of circuit breaker Q1	63 A
Short-circuit withstand (Inc)	Greater than or equal to the short-circuit current Isc (12 kA)	Based on the tables opposite: ■ with iC60N: 20 kA: is suitable ■ with C120N: 20 kA: is suitable

Coordination
Residual current circuit breakers protection

Protection against earth fault currents

In the event of an insulation fault in a TN system, the phase-to-earth fault current is equal to the phase-to-neutral fault current.

■ The residual current circuit breaker interrupts this current, if it does not exceed its specific breaking capacity I∆m.

■ If the fault current exceeds this value, it must be interrupted by the circuit breaker located upstream.

Therefore, the magnetic threshold (instantaneous tripping threshold) of the circuit breaker must always be less than or equal to the breaking capacity of the residual current circuit breaker (I∆m).

Breaking and making capacity (I∆m) of iID residual current circuit breakers

Rating (A)	iID type AC, A, SI	RCCB-ID type B
16	1500	-
25	1500	500
40	1500	500
63	1500	630
80	1500	800
100	1500	-
125	1250	1250

The combination of an iID residual current circuit breaker and an iC60 circuit breaker of appropriate rating naturally satisfies this condition.

Example:

■ iID RCCB, rating 63 A: I∆m = 1500 A;

■ iC60N circuit breakers of rating 63 A:

□ B curve: magnetic threshold 189 to 315 A;

□ C curve: magnetic threshold 315 to 630 A;

□ D curve: magnetic threshold 630 to 882 A.

The condition is satisfied whatever the iC60 circuit breaker (of rating at most equal to 63 A).

For protection by fuse, the user should check that the fuse blowing time is less than the residual current circuit breaker's response time for a fault current of amperage superieur than I∆m, i.e.: type Ⓢ: 40 ms.

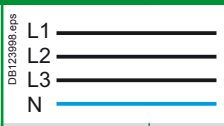
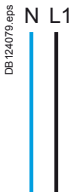
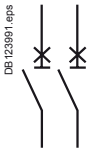
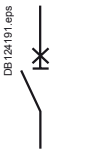
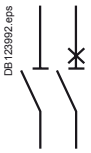
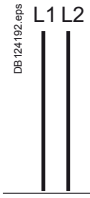
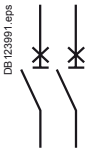
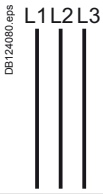
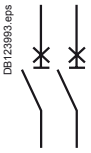
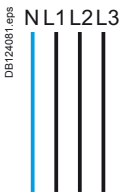
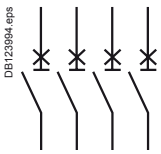
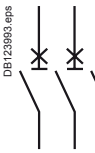
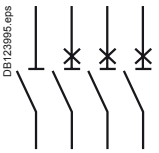
Coordination
Switches and residual current circuit breakers protection

Using the coodination tables

This table takes in account:
- all types of faults: between phases, phase and neutral and between phase and earth.
- all earthing systems except IT.

See comment here below.
Depending on the network and the type of protection, the selection table below indicates which table should be consulted to find out the coordination value.

Selection table

		Upstream network					
							
Type of Downstream network	**Type of protection device**	**Ph/N 110-130 V**	**Ph/N 220-240 V**	**Ph/N 110-130 V** **Ph/Ph 220-240 V**	**Ph/N 220-240 V** **Ph/Ph 380-415 V**	**Ph/Ph 220-240 V**	**Ph/Ph 380-415 V**
	 2P		(1) See table Ue: 220-240 V		(1) See table Ue: 220-240 V		
	 1P  1P + N		(2) See table Ue: 380-415 V		(2) See table Ue: 380-415 V		
	 2P			See table Ue: 220-240 V	See table Ue: 380-415 V	See table Ue: 220-240 V	See table Ue: 380-415 V
	 3P			See table Ue: 220-240 V	See table Ue: 380-415 V	See table Ue: 220-240 V	See table Ue: 380-415 V
	 4P			See table Ue: 220-240 V	See table Ue: 380-415 V		
	 3P  3P+N			See table Ue: 220-240 V	See table Ue: 380-415 V		

(1) For fault phase-earth please consult the table Ue: 380-415 V.
(2) For iC60 1P+N circuit breaker connected between phase and neutral under 220-240 V, consult the table Ue: 220-240 V (only for faults between phase and neutral).

Coordination
Upstream: iDPN, iC60
Downstream: switch-disconnectors, residual current circuit breakers

Ue: 380-415 V and Ue: 220-240 V

Protection by circuit breaker

Downstream		Upstream Circuit breaker		Ue: 380-415 V			Ue: 220-240 V		
Product	**Ratings (A)**	**Product**	**Ratings (A)**	**0.5 to 25**	**32-40**	**50-63**	**0.5 to 25**	**32-40**	**50-63**
iID NG125NA iSW-NA INS	**All**	iDPN	iDPN	**6**	**6**		**6**	**6**	
			iDPN N	**10**	**10**		**10**	**10**	
		iC60	iC60a	**6**	**6**	**6**	**10**	**10**	**10**
			iC60N	**10**	**10**	**10**	**20**	**20**	**20**
			iC60H	**15**	**15**	**15**	**30**	**30**	**30**
			iC60L	**25**	**20**	**15**	**50**	**36**	**30**
iSW	**20 to 32**	iDPN	iDPN	4.5	4.5		4.5	4.5	
			iDPN N	4.5	4.5		4.5	4.5	
		iC60	iC60a/N/H/L	4.5	4.5	3	5.5	5.5	4
	40 to 125	iDPN	iDPN	**6**	**6**		**6**	**6**	
			iDPN N	**10**	**10**		**10**	**10**	
		iC60	iC60a	**6**	**6**	**6**	**10**	**10**	**10**
			iC60N	**10**	**10**	**10**	**20**	**20**	**20**
			iC60H	**15**	**15**	**15**	**30**	**30**	**30**
			iC60L	**25**	**20**	**15**	**50**	**36**	**30**
RCCB-ID type B	**All**	iDPN	iDPN	**6**	**6**				
			iDPN N	**10**	**10**				
		iC60	iC60a	**6**	**6**	**6**			
RCCB-ID	**125**		iC60N	**10**	**10**	**10**			
			iC60H	**15**	**15**	**15**			
			iC60L	**25**	**20**	**15**			

10 Total coordination up to the MCB breaking capacity: Value of Short circuit withstand of the circuit breaker - Switch-disconnector or residual current circuit breaker combination (kA rms)

4.5 Coordination limit: Value of Short circuit withstand of the circuit breaker - Switch-disconnector or residual current circuit breaker combination combination (kA rms)

No coordination

Coordination
Upstream: C120, NG125, NG160, NSX100, NSX160
Downstream: switch-disconnectors, residual current circuit breakers

Ue: 380-415 V and Ue: 220-240 V

Protection by circuit breaker

Downstream		Upstream Circuit breaker		Ue: 380-415 V							Ue: 220-240 V						
Product	**Ratings (A)**	**Product**	**Ratings (A)**	**0.5 to 25**	**32-40**	**50-63**	**80**	**100**	**125**	**160**	**0.5 to 25**	**32-40**	**50-63**	**80**	**100**	**125**	**160**
iID iSW-NA	**≤ 63**	C120	C120N	**10**	**10**	**10**	6	6	6		**20**	**20**	**20**	12	12	12	
			C120H	**15**	**15**	**15**	6	6	6		**30**	**30**	**30**	12	12	12	
		NG125	NG125a				4	4	4					8	8	8	
			NG125N	16	16	16	6	6	6		30	30	30	12	12	12	
			NG125H	20	16	16	6				40	30	30	12			
			NG125L	25	20	16	6				50	36	30	12			
		NG160	NG160	7	7	7	4	4	4	4	8	8	8	5	5	5	5
		NSX	NSX100/160	5	5	5	4	4	4	4	6	6	6	5	5	5	5
iID iSW-NA	**80 to 100**	C120	C120N	**10**	**10**	**10**	**10**	**10**	**10**		**20**	**20**	**20**	**20**	**20**	**20**	
			C120H	**15**	**15**	**15**	10	10	10		**30**	**30**	**30**	20	20	20	
		NG125	NG125a				6	6	6					12	12	12	
			NG125N	16	16	16	10	10	10		30	30	30	20	20	20	
iSW	**40 to 125*** ***for iSW**		NG125H	20	16	16	10				36	30	30	20			
			NG125L	25	20	16	10				50	36	30	20			
		NG160	NG160	7	7	7	7	7	7	7	8	8	8	8	8	8	8
		NSX	NSX100/160	5	5	5	5	5	5	5	6	6	6	6	6	6	6
iSW	**20 to 32**	C120	C120N/H	3	3						4.5	4.5					
		NG125	NG125N/H/L	3	3						4.5	4.5					
NG125NA INS	**All**	C120	C120N	**10**	**10**	**10**	**10**	**10**	**10**		**20**	**20**	**20**	**20**	**20**	**20**	
			C120H	**15**	**15**	**15**	**15**	**15**	**15**		**30**	**30**	**30**	**30**	**30**	**30**	
		NG125	NG125a				**16**	**16**	**16**					**16**	**16**	**16**	
			NG125N	**25**	**25**	**25**	**25**	**25**	**25**		**50**	**50**	**50**	**50**	**50**	**50**	
			NG125H	**36**	**36**	**36**	**36**				**70**	**70**	**70**	**70**			
			NG125L	**50**	**50**	**50**	**50**				**100**	**100**	**100**	**100**			
NG125NA	**All**	NG160	NG160E	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**25**	**25**	**25**	**25**	**25**	**25**	**25**
			NG160N	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**40**	**40**	**40**	**40**	**40**	**40**	**40**
			NG160H	**36**	**36**	**36**	**36**	**36**	**36**	**36**	**50**	**50**	**50**	**50**	**50**	**50**	**50**
		NSX	NSX100B/160B	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**40**	**40**	**40**	**40**	**40**	**40**	**40**
			NSX100F/160F	**36**	**36**	**36**	**36**	**36**	**36**	**36**	50	50	50	50	50	50	50
			NSX100N/H/S/L NSX160N/H/S/L	36	36	36	36	36	36	36	50	50	50	50	50	50	50
RCCB-ID type B	**All**	C120	C120N/H	7	7	7	7	5	5								
		NG125	NG125a				8	8	8								
RCCB-ID	**125**		NG125N	15	15	15	15	10	10								
			NG125H/L	15	15	15	15										
		NG160	NG160	7	7	7	5	5	5	4							
		NSX	NSX100/160	4	4	4	4	4	4	4							

10 Total coordination up to the MCB breaking capacity: Value of Short circuit withstand of the circuit breaker - Switch-disconnector or residual current circuit breaker combination (kA rms)

4.5 Coordination limit: Value of Short circuit withstand of the circuit breaker - Switch-disconnector or residual current circuit breaker combination combination (kA rms)

No coordination

Coordination
Upstream: fuses gG
Downstream: switch-disconnectors, residual current circuit breakers

Ue: 380-415 V and Ue: 220-240 V

Protection by fuse

Downstream		Upstream		Ue: 380-415 V / Ue: 220-240 V								
		Fuse										
Product	**Ratings (A)**	**Product**	**Ratings (A)**	**16**	**20**	**25**	**32**	**40**	**63**	**80**	**100**	**125**
iID	**16 to 40**	Fuse gG		**100**	**100**	**100**	80	80	30	10		
	63 to 100			**100**	**100**	**100**	80	80	30	15	10	5
iSW	**20 to 32**			60	40	25	15	8				
	40 to 63			60	40	25	20	10	10			
	100 to 125			60	40	25	20	10	10	10	10	10
iSW-NA	**40**			**100**	**100**	**100**	80	80	30	15		
	63 to 100			**100**	**100**	**100**	80	80	30	15	10	5
NG125NA	**63 to 125**			**100**	**100**	**100**	80	80	50	50	50	50
RCCB-ID type B	**25**			**100**	**100**	**100**	80					
	40 à 80			**100**	**100**	**100**	**100**	80	30	20		
	125			**100**	**100**	**100**	**100**	80	30	20	10	10
RCCB-ID	**125**			**100**	**100**	**100**	**100**	80	30	20	10	10

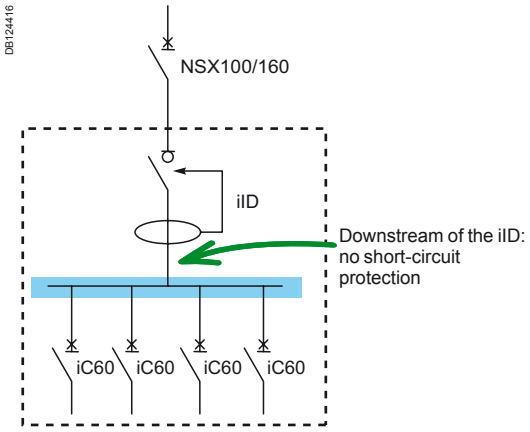
100 Total coordination up to the fuse breaking capacity: Value of Short circuit withstand of the fuse - Switch-disconnector or residual current circuit breaker combination (kA rms)

30 Coordination limit: Value of Short circuit withstand of the fuse - Switch-disconnector or residual current circuit breaker combination (kA rms)

No coordination

Coordination

Upstream: NSX100/160
Downstream: modular residual current circuit breakers and modular circuit breakers



Installation required on the same DIN rail and under the same comb busbar to avoid any risk of short-circuits.

2P residual current circuit breakers installed between a NSX100/160 and a circuit breaker (220 V to 240 V single-phase circuit)

Protection by circuit breaker

Upstream	Residual current circuit breakers 2P ratings (A)		
	25	40	63
Downstream Circuit breakers			
iDPN	6	6	-
iDPN N	7.5	7.5	-
iC60N	20	20	20
iC60H	30	30	30
iC60L	50	36	30

Short-circuit current withstand of the circuit breakers-residual current circuit breakers combination (kA r.m.s.)

4P residual current circuit breakers installed between a NSX100/160 and a circuit breaker (380 V to 415 V three-phase circuit)

Protection by circuit breaker

Upstream	Residual current circuit breakers 4P ratings (A)		
	25	40	63
Downstream Circuit breakers			
iDPN	2	2	-
iDPN N	3	3	-
iC60N	10	10	10
iC60H	15	15	15
iC60L	20	20	15

Short-circuit current withstand of the circuit breakers-residual current circuit breakers combination (kA r.m.s.)

Protection discrimination

Upstream: NSXm, NSX100, NSX160, NSX250 TM-D
Downstream: iSPN Vigi, iC60 RCBO

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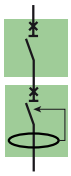


Upstream	NSXm E/B/F/N/H									
Rating (A)	16	25	32	40	50	63	80	100	125	160
Downstream										
	In (A)	Discrimination limit (kA)								
iSPN Vigi	≤ 10	0.5	0.5	0.5	0.5	0.6	0.8	T	T	T	T
C curve	16			0.5	0.5	0.6	0.8	T	T	T	T
	20				0.5	0.6	0.8	T	T	T	T
	25					0.6	0.8	T	T	T	T
	32						0.8	2	T	T	T
iC60 RCBO	≤ 10	0.5	0.5	0.5	0.5	0.6	0.8	T	T	T	T
B-C curves	13			0.5	0.5	0.6	0.8	T	T	T	T
	16			0.5	0.5	0.6	0.8	T	T	T	T
	20				0.5	0.6	0.8	T	T	T	T
	25					0.6	0.8	3	T	T	T
	32						0.8	2	T	T	T
iC60N RCBO	≤ 10	0.5	0.5	0.5	0.5	0.6	0.8	T	T	T	T
B-C curves	16			0.5	0.5	0.6	0.8	T	T	T	T
	20				0.5	0.6	0.8	T	T	T	T
	25					0.6	0.8	T	T	T	T
	32						0.8	3	T	T	T
	40							2	T	T	T
	45								T	T	T
iC60H/H2 RCBO	≤ 10	0.5	0.5	0.5	0.5	0.6	0.8	T	T	T	T
B-C curves	16			0.5	0.5	0.6	0.8	T	T	T	T
	20				0.5	0.6	0.8	T	T	T	T
	25					0.6	0.8	8	T	T	T
	32						0.8	3	T	T	T
	40							2	T	T	T
	45								6	8	8

Upstream	NSX100 B/F/N/H/S/L								NSX160 B/F/N/H/S/L				NSX250 B/F/N/H/S/L		
Trip unit	TMD								TMD				TMD		
Rating (A)	16	25	32	40	50	63	80	100	80	100	125	160	160	200	250
Downstream															
	In (A)	Discrimination limit (kA)													
iSPN Vigi	≤ 10	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
C curve	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	32						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
iC60 RCBO	≤ 10	0.19	0.3	0.4	0.9	0.9	0.9	1.3	3	1.3	3	T	T	T	T	T
B-C curves	13		0.3	0.4	0.5	0.5	0.5	1	2	1	2	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	1	2	1	2	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	1.5	0.63	1.5	T	T	T	T	T
	25				0.5	0.5	0.5	0.63	1.5	0.63	1.5	T	T	T	T	T
	32						0.5	0.63	1	0.63	1	T	T	T	T	T
iC60N/H/H2 RCBO	≤ 10	0.19	0.3	0.4	0.9	0.9	0.9	1.3	3	1.3	3	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	1	2	1	2	T	T	T	T	T
B-C curves	20			0.4	0.5	0.5	0.5	0.63	1.5	0.63	1.5	T	T	T	T	T
	25				0.5	0.5	0.5	0.63	1.5	0.63	1.5	T	T	T	T	T
	32						0.5	0.63	1	0.63	1	T	T	T	T	T
	40-45						0.5	0.63	1	0.63	1	T	T	T	T	T

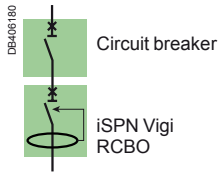
2 Discrimination limit = 2 kA.

T Total discrimination.

No discrimination.

Protection discrimination (cont.)

Upstream: NSX100, NSX160, NSX250 Micrologic
Downstream: iSPN Vigi, iC60 RCBO



Upstream	NSX100 B/F/N/H/S/L								NSX160 B/F/N/H/S/L					NSX250 B/F/N/H/S/L		
Trip unit	Micrologic								Micrologic					Micrologic		
Setting	40			100					160					250		
Rating (A)	16	25	32	40	50	63	80	100	63	80	100	125	160	160	200	250
Downstream																
	In (A)															
iSPN Vigi	≤ 10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C curve	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T	T
iC60 RCBO	≤ 10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
B-C curves	13		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T	T
	32								T	T	T	T	T	T	T	T	T
iC60N RCBO	≤ 10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
B-C curves	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T	T
	40						T	T	T	T	T	T	T	T	T	T	T
	45							T	T		T	T	T	T	T	T	T
iC60H RCBO	≤ 10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
B-C curves	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T	T
	40						T	T	T	T	T	T	T	T	T	T	T
	45							6	6		T	T	T	T	T	T	T
iC60H2 RCBO	≤ 10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
B-C curves	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T	T

6 Discrimination limit = 6 kA.

T Total discrimination.

No discrimination.

Cascading MCB-MCCB/RCBO

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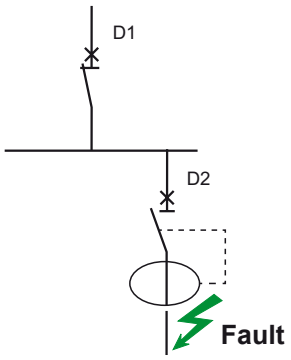
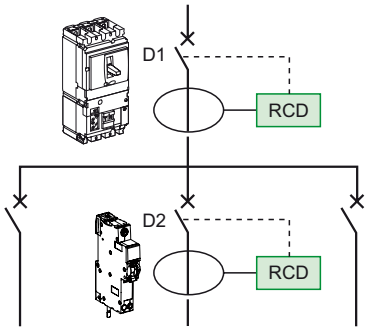
DB409693.eps



D1 and D2 in series.

DB409694.eps



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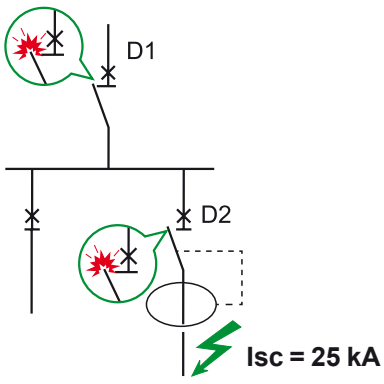


IEC 60947-2, Annex A
IEC 60364-4-43 § 434.5.1

What is cascading?

Cascading is the use of the current limiting capacity of circuit breakers at a given point to permit installation of lower-rated and therefore lower-cost circuit breakers downstream.
The upstream Compact circuit breakers acts as a barrier against short-circuit currents. In this way, downstream circuit breakers with lower breaking capacities than the prospective short-circuit (at their point of installation) operate under their normal breaking conditions.
Since the current is limited throughout the circuit controlled by the limiting circuit breaker, cascading applies to all switchgear downstream. It is not restricted to two consecutive devices.

General use of cascading

With cascading, the devices can be installed in different switchboards. Thus, in general, cascading refers to any combination of circuit breakers where a circuit breaker with a breaking capacity less than the prospective Isc at its point of installation can be used. Of course, the breaking capacity of the upstream circuit breaker must be greater than or equal to the prospective short-circuit current at its point of installation.
The combination of two circuit breakers and RCBO in cascading configuration is covered by the following standards of:
- design and manufacture of circuit breakers (IEC 60947-2, Annex A),
- electrical distribution networks (IEC 60364-4-43 § 434.5.1).

Coordination between circuit breakers

The use of a protective device possessing a breaking capacity less than the prospective short-circuit current at its installation point is permitted as long as another device is installed upstream with at least the necessary breaking capacity. In this case, the characteristics of the two devices must be coordinated in such a way that the energy let through by the upstream device is not more than that which can be withstood by the downstream device and the cables protected by these devices without damage.
Cascading can only be checked by laboratory tests and the possible combinations can be specified only by the circuit breaker manufacturer.

Cascading tables

Schneider Electric cascading tables are:
- drawn up on the basis of calculations (comparison between the energy limited by the upstream device and the maximum permissible thermal stress for the downstream device)
- verified experimentally in accordance with IEC standard 60947-2.

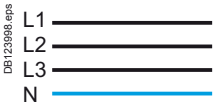
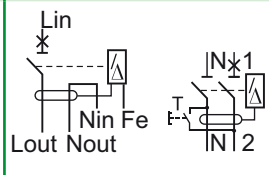
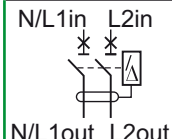
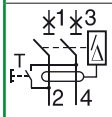
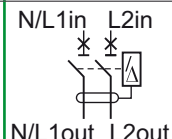
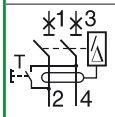
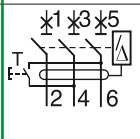
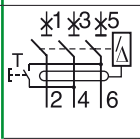
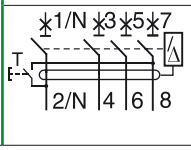
For 50/60 Hz distribution systems with 220-240 V, 380-415 V and 440 V between upstream Compact and downstream Acti 9 RCBO.

Cascading MCB-MCCB/RCBO

Using the cascading tables

This table takes in account all types of faults: between phases, phase and neutral, phase and earth in all earthing systems.
In IT the following cascading tables can not be used to improve performances in case of "double fault" between two different phases and earth in two different locations of the installation. Each breaker shall comply to IEC60947-2 Annex H to be used in such a system.
Depending on the network and the type of downstream circuit breaker, the selection table below indicates which table should be consulted to find out the cascading value.

Selection table

			Upstream network					
								
Type of Downstream network	**Type of Downstream protection device**	**Product form factor**	**Ph/N 220-240 V**	**Ph/N 110-130 V**	**Ph/N 220-240 V Ph/Ph 380-415 V**	**Ph/N 110-130 V Ph/Ph 220-240 V**	**Ph/Ph 380-415 V**	**Ph/Ph 220-240 V**
N L1			iC60N RCBO IC60H RCBO iSPN+Vigi **(Table 1)**	iC60H RCBO **(Table 2)**	iC60N RCBO IC60H RCBO iSPN+Vigi **(Table 1)**	iC60H RCBO **(Table 2)**		
			iC60H2 RCBO **(Table 1)**	iC60H2 RCBO **(Table 2)**	iC60H2 RCBO **(Table 1)**	iC60H2 RCBO **(Table 2)**		
			iC60 RCBO **(Table 1)**		iC60 RCBO **(Table 1)**			
L1 L2						iC60H2 RCBO **(Table 2)**		iC60H2 RCBO **(Table 2)**
						iC60 RCBO **(Table 2)**		iC60 RCBO **(Table 2)**
L1 L2 L3					iC60 RCBO **(Table 1)**	iC60 RCBO **(Table 2)**	iC60 RCBO **(Table 1)**	iC60 RCBO **(Table 2)**
N L1 L2 L3					iC60 RCBO **(Table 1)**	iC60 RCBO **(Table 2)**	iC60 RCBO **(Table 1)**	iC60 RCBO **(Table 2)**
					iC60 RCBO **(Table 1)**			

Cascading MCB-MCCB/RCBO (cont.)

Table 1

Upstream	iC60					C120		NG125		
	N	H	L			N	H	N	H	L
Breaking capacity (kA)	10	15	15	20	25	10	15	25	36	50
Downstream										
	In Max (A)	Icn (A)	Reinforced breaking capacity (kA)									
iSPN Vigi	16	6000	10	10	10	15	20	10	10	10	16	20
	32	6000	10	10	10	10	10					
iC60 RCBO	32	6000	10	15	15	20	25	10	15	25	25	25
iC60N RCBO	45	6000	10	15	15	20	25	10	15	25	25	25
iC60H RCBO	45	10000		15	15	20	25		15	25	36	36
iC60H2 RCBO	32	10000		15	15	20	25		15	25	36	36

Upstream	NSXm					NSX100					
	E	B	F	N	H	B	F	N	H	S	L
Breaking capacity (kA)	10	25	36	50	70	25	36	50	70	100	150
Downstream												
	In Max (A)	Icn (A)	Reinforced breaking capacity (kA)										
iSPN Vigi	16	6000	10	10	10	10	10	10	10	10	10	10	10
iC60 RCBO	32	6000	16	20	20	20	20	20	20	20	20	20	20
iC60N RCBO	20	6000	16	20	25	30	30	20	25	30	30	30	30
	45	6000	16	20	25	25	25	20	25	25	25	25	25
iC60H RCBO	20	10000	16	25	36	36	36	25	36	40	40	40	40
	45	10000	16	25	25	25	25	25	25	25	25	25	25
iC60H2 RCBO	20	10000	16	25	36	36	36	25	36	40	40	40	40
	32	10000	16	25	25	25	25	25	25	25	25	25	25

Upstream	NSX160					
	B	F	N	H	S	L
Breaking capacity (kA)	25	36	50	70	100	150
Downstream						
	In Max (A)	Icn (A)	Reinforced breaking capacity (kA)					
iSPN Vigi	16	6000	10	10	10	10	10	10
iC60 RCBO	32	6000	20	20	20	20	20	20
iC60N RCBO	20	6000	20	25	30	30	30	30
	45	6000	20	25	25	25	25	25
iC60H RCBO	20	10000	25	36	40	40	40	40
	45	10000	25	25	25	25	25	25
iC60H2 RCBO	20	10000	25	36	40	40	40	40
	32	10000	25	25	25	25	25	25

Upstream	NSX250					
	B	F	N	H	S	L
Breaking capacity (kA)	25	36	50	70	100	150
Downstream						
	In Max (A)	Icn (A)	Reinforced breaking capacity (kA)					
iSPN Vigi	16	6000	10	10	10	10	10	10
iC60 RCBO	20	6000	20	20	20	20	20	20
	32	6000	16	16	16	16	16	16
iC60N RCBO	20	6000	20	25	30	30	30	30
	45	6000	20	25	25	25	25	25
iC60H RCBO	20	10000	25	30	30	30	30	30
	45	10000	25	25	25	25	25	25
iC60H2 RCBO	20	10000	25	30	30	30	30	30
	32	10000	25	25	25	25	25	25

Cascading MCB-MCCB/RCBO (cont.)

Table 2

Upstream	iC60					C120		NG125		
	N	H	L			N	H	N	H	L
Breaking capacity (kA)	20	30	30	36	50	20	30	50	70	100
Downstream										
	In Max (A)	Icn (A)	Reinforced breaking capacity (kA)									
iC60 RCBO	32	10000	10	15	15	20	25	10	15	25	36	36
iC60H RCBO	45	10000		15	15	20	25		15	25	36	36
iC60H2 RCBO	32	10000		15	15	20	25		15	25	36	36

Upstream	NSXm					NSX100					
	E	B	F	N	H	B	F	N	H	S	L
Breaking capacity (kA)	25	50	85	90	100	40	85	90	100	120	150
Downstream												
	In Max (A)	Icn (A)	Reinforced breaking capacity (kA)										
iC60 RCBO	32	10000	16	25	25	25	25	25	25	25	25	25	25
iC60H RCBO	20	10000	16	25	36	36	36	25	36	40	40	40	40
	45	10000	16	25	25	30	30	25	25	30	30	30	30
iC60H2 RCBO	20	10000	16	25	36	36	36	25	36	40	40	40	40
	32	10000	16	25	25	30	30	25	25	30	30	30	30

Upstream	NSX160					
	B	F	N	H	S	L
Breaking capacity (kA)	40	85	90	100	120	150
Downstream						
	In Max (A)	Icn (A)	Reinforced breaking capacity (kA)					
iC60 RCBO	32	10000	25	25	25	25	25	25
iC60H RCBO	20	10000	25	36	40	40	40	40
	45	10000	25	25	30	30	30	30
iC60H2 RCBO	20	10000	25	36	40	40	40	40
	32	10000	25	25	30	30	30	30

Upstream	NSX250					
	B	F	N	H	S	L
Breaking capacity (kA)	40	85	90	100	120	150
Downstream						
	In Max (A)	Icn (A)	Reinforced breaking capacity (kA)					
iC60 RCBO	32	10000	25	25	25	25	25	25
iC60H RCBO	20	10000	25	30	30	30	30	30
	45	10000	25	25	25	25	25	25
iC60H2 RCBO	20	10000	25	30	30	30	30	30
	32	10000	25	25	25	25	25	25

Discrimination enhanced by cascading

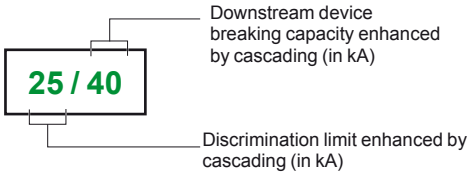
With traditional circuit breakers, cascading between two devices generally results in the look of discrimination.
With Compact circuit breakers, the discrimination characteristics in the tables remain applicable and are in some cases even enhanced. Protection discrimination is ensured for short-circuit currents greater than the rated breaking capacity of the circuit breaker and even, in some cases, for its enhanced breaking capacity. In the later case, **protection discrimination is total**, i.e. only the downstream device trips for any and all possible faults at its point in the installation.

Example
Consider a combination between:
- a Compact NSX160F with trip unit TM125D
- a iC60N RCBO 32 A.

The discrimination tables indicate total discrimination. Protection discrimination is therefore ensured up to the breaking capacity of the iC60N RCBO, i.e. **6000 A**.
The cascading tables indicate an enhanced breaking capacity of **20 kA**.
The enhanced discrimination tables indicate that in a cascading configuration, discrimination is ensured up to **20 kA**, i.e. for any and all possible faults at that point in the installation.

Enhanced discrimination tables - 380-415 V

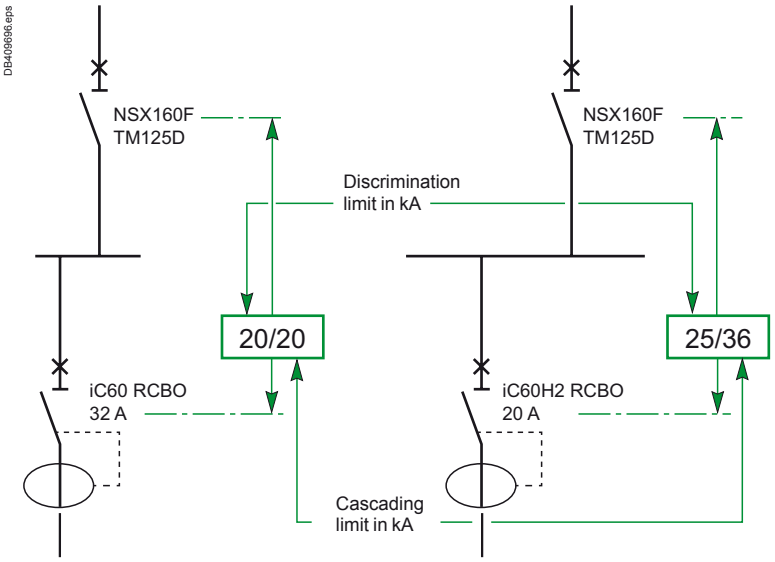
For each combination of two circuit breakers, the tables indicate the:



In a table, a box containing two equal values indicates that discrimination is provided up to the reinforced breaking capacity of the downstream device.
These tables apply only to cases with combined discrimination and cascading between two devices. For all other cases, refer to the normal cascading and discrimination tables.

Technical principle

Enhanced discrimination is the result of the exclusive Compact NSX Roto-active breaking technique which operates as follows:
- due to the short-circuit current (electrodynamic forces), the contacts in both devices simultaneously separate. The result is major limitation of the short-circuit current
- the dissipated energy provokes the reflex tripping of the downstream device, but is insufficient to trip the upstream device.



Discrimination enhanced by cascading (cont.)

Upstream: NSX100 Micrologic
Downstream: iC60 RCBO

Upstream	NSX100											
	B		F		N		H		S		L	
Icu (kA)	25		36		50		70		100		150	
Trip unit	Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Rating (A)	40	100	40	100	40	100	40	100	40	100	40	100

Downstream													
	Icn (A)	In (A)	Discrimination/Breaking capacity enhanced limits (kA)											
iC60 RCBO	6000	≤ 20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20
		25	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20
		32		20/20		20/20		20/20		20/20		20/20		20/20
iC60N RCBO	6000	≤ 20	20/20	20/20	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30
		25	20/20	20/20	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		32		20/20		25/25		25/25		25/25		25/25		25/25
		40		20/20		25/25		25/25		25/25		25/25		25/25
		45		6/20		6/25		6/25		6/25		6/25		6/25
iC60H RCBO	10000	≤ 20	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
		25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		32		25/25		25/25		25/25		25/25		25/25		25/25
		40		25/25		25/25		25/25		25/25		25/25		25/25
		45		6/25		6/25		6/25		6/25		6/25		6/25
iC60H2 RCBO	10000	≤ 20	25/25	25/25	36/36	25/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
		25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		32		25/25		25/25		25/25		25/25		25/25		25/25

Discrimination enhanced by cascading (cont.)

Upstream: NSX160, NSX250 Micrologic
Downstream: iC60 RCBO

Upstream	NSX160											
	B		F		N		H		S		L	
Icu (kA)	25		36		50		70		100		150	
Trip unit	Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Rating (A)	100	160	100	160	100	160	100	160	100	160	100	160
Downstream												
	Icn (A)	In (A)	Discrimination/Breaking capacity enhanced limits (kA)									
iC60 RCBO	6000	≤ 20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20
		25-32	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20
iC60N RCBO	6000	≤ 20	20/20	20/20	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30
		25	20/20	20/20	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		32	20/20	20/20	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		40	20/20	20/20	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		45	6/20	20/20	6/25	25/25	6/25	25/25	6/25	25/25	6/25	25/25	6/25	25/25
iC60H RCBO	10000	≤ 20	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
		25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		32	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		40	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		45	6/25	25/25	6/25	25/25	6/25	25/25	6/25	25/25	6/25	25/25	6/25	25/25
iC60H2 RCBO	10000	≤ 20	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
		25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		32	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25

Upstream	NSX250						
	B	F	N	H	S	L	
Icu (kA)	25	36	50	70	100	150	
Trip unit	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	
Rating (A)	250	250	250	250	250	250	
Downstream							
	Icn (A)	In (A)	Discrimination/Breaking capacity enhanced limits (kA)				
iC60 RCBO	6000	≤ 20	20/20	20/20	20/20	20/20	20/20	20/20
		25-32	16/16	16/16	16/16	16/16	16/16	16/16
iC60N RCBO	6000	≤ 20	20/20	25/25	30/30	30/30	30/30	30/30
		25-45	20/20	25/25	25/25	25/25	25/25	25/25
iC60H RCBO	10000	≤ 20	25/25	30/30	30/30	30/30	30/30	30/30
		25-45	25/25	25/25	25/25	25/25	25/25	25/25
iC60H2 RCBO	10000	≤ 20	25/25	30/30	30/30	30/30	30/30	30/30
		25-32	25/25	25/25	25/25	25/25	25/25	25/25

Discrimination enhanced by cascading (cont.)

Upstream: NSXm, NSX160, NSX250 TM-D
Downstream: iC60 RCBO

Upstream	NSXm B					NSXm F					NSXm N/H				
Icu (kA)	25					36					50/70				
Rating (A)	⩽ 63	80	100	125	160	⩽ 63	80	100	125	160	⩽ 63	80	100	125	160
Downstream															
	Icn (A)	In (A)	Discrimination/Breaking capacity enhanced limits (kA)												
iC60 RCBO	6000	⩽ 20	-/20	20/20	20/20	20/20	20/20	-/20	20/20	20/20	20/20	20/20	-/20	20/20	20/20	20/20	20/20
		25		3/20	20/20	20/20	20/20		3/20	20/20	20/20	20/20		3/20	20/20	20/20	20/20
		32		2/20	20/20	20/20	20/20		2/20	20/20	20/20	20/20		2/20	20/20	20/20	20/20
iC60N RCBO	6000	⩽ 20	-/20	20/20	20/20	20/20	20/20	-/25	25/25	25/25	25/25	25/25	-/30	25/30	25/30	25/30	25/30
		25		8/20	20/20	20/20	20/20		8/25	25/25	25/25	25/25		8/25	25/25	25/25	25/25
		32		3/20	20/20	20/20	20/20		3/25	25/25	25/25	25/25		3/25	25/25	25/25	25/25
		40		2/20	16/20	16/20	16/20		2/25	16/25	16/25	16/25		2/25	16/25	16/25	16/25
		45			6/20	8/20	8/20			6/25	8/25	8/25			6/25	8/25	8/25
iC60H RCBO	10000	⩽ 20	-/25	25/25	25/25	25/25	25/25	-/36	25/36	25/36	25/36	25/36	-/36	25/36	25/36	25/36	25/36
		25		8/25	25/25	25/25	25/25		8/25	25/25	25/25	25/25		8/25	25/25	25/25	25/25
		32		3/25	25/25	25/25	25/25		3/25	25/25	25/25	25/25		3/25	25/25	25/25	25/25
		40		2/25	16/25	16/25	16/25		2/25	16/25	16/25	16/25		2/25	16/25	16/25	16/25
		45			6/25	8/25	8/25			6/25	8/25	8/25			6/25	8/25	8/25
iC60H2 RCBO	10000	⩽ 20	-/25	25/25	25/25	25/25	25/25	-/36	25/36	25/36	25/36	25/36	-/36	25/36	25/36	25/36	25/36
		25		8/25	25/25	25/25	25/25		8/25	25/25	25/25	25/25		8/25	25/25	25/25	25/25
		32		3/25	25/25	25/25	25/25		3/25	25/25	25/25	25/25		3/25	25/25	25/25	25/25

Upstream	NSX160											
	B		F		N		H		S		L	
Icu (kA)	25		36		50		70		100		150	
Trip unit	TM-D		TM-D		TM-D		TM-D		TM-D		TM-D	
Rating (A)	⩽ 100	125-160	⩽ 100	125-160	⩽ 100	125-160	⩽ 100	125-160	⩽ 100	125-160	⩽ 100	125-160
Downstream												
	Icn (A)	In (A)	Discrimination/Breaking capacity enhanced limits (kA)									
iC60 RCBO	6000	⩽ 20	-/20	20/20	-/20	20/20	-/20	20/20	-/20	20/20	-/20	20/20	-/20	20/20
		25-32	-/20	20/20	-/20	20/20	-/20	20/20	-/20	20/20	-/20	20/20	-/20	20/20
iC60N RCBO	6000	⩽ 20	-/20	20/20	-/25	25/25	-/30	30/30	-/30	30/30	-/30	30/30	-/30	30/30
		25	-/20	20/20	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25
		32	-/20	20/20	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25
		40	-/20	20/20	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25
		45	-/20	20/20	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25
iC60H RCBO	10000	⩽ 20	-/25	25/25	-/36	36/36	-/40	40/40	-/40	40/40	-/40	40/40	-/40	40/40
		25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25
		32	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25
		40	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25
		45	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25
iC60H2 RCBO	10000	⩽ 20	-/25	25/25	-/36	36/36	-/40	40/40	-/40	40/40	-/40	40/40	-/40	40/40
		25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25
		32	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25	-/25	25/25

Upstream	NSX250					
	B	F	N	H	S	L
Icu (kA)	25	36	50	70	100	150
Trip unit	TM-D	TM-D	TM-D	TM-D	TM-D	TM-D
Rating (A)	200-250	200-250	200-250	200-250	200-250	200-250
Downstream						
	Icn (A)	In (A)	Discrimination/Breaking capacity enhanced limits (kA)			
iC60 RCBO	6000	⩽ 20	20/20	20/20	20/20	20/20	20/20	20/20
		25-32	16/16	16/16	16/16	16/16	16/16	16/16
iC60N RCBO	6000	⩽ 20	20/20	25/25	30/30	30/30	30/30	30/30
		25-45	20/20	25/25	25/25	25/25	25/25	25/25
iC60H RCBO	10000	⩽ 20	25/25	30/30	30/30	30/30	30/30	30/30
		45	25/25	25/25	25/25	25/25	25/25	25/25
iC60H2 RCBO	10000	⩽ 20	25/25	30/30	30/30	30/30	30/30	30/30
		25-32	25/25	25/25	25/25	25/25	25/25	25/25

Coordination of Surge protection devices

> Design guide

Surge arresters for commercial and industrial buildings

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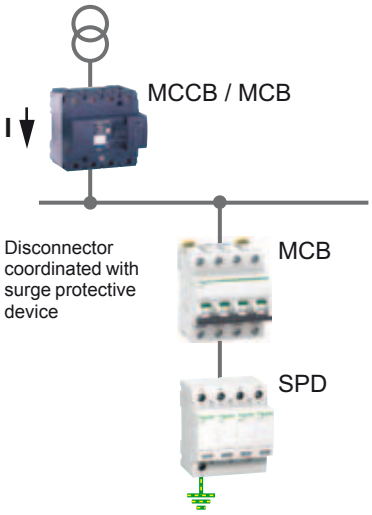
Life Is On Schneider Electric

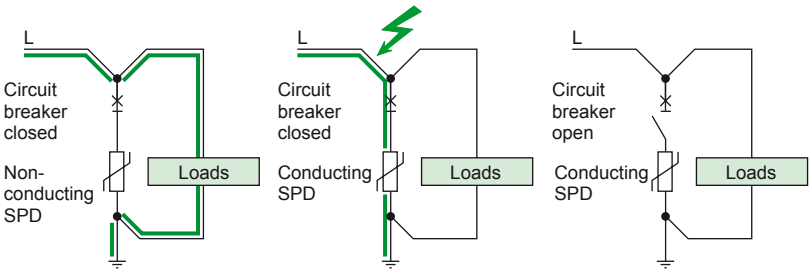
Surge protective device coordination

Coordination between the surge protective device and its disconnect circuit breaker



MCCB = Molded-case circuit breaker.
MCB = Modular circuit breaker.
SPD = Surge protective device.

An external disconnecting device must be coordinated with a surge protective device in order to achieve:
- ■ continuity of service:
  - □ do not trip due to surge current,
  - □ do not increase (Up) voltage protection level.
- ■ effective protection against all types of overcurrents:
  - □ overload due to SPD aging,
  - □ short circuit of low intensity (impedant) due to temporary overvoltages,
  - □ short circuit of high intensity due to SPD degradation.



Surge protective device in normal operation

Surge protective device in operation during the lightning stroke

Surge protective device at end of life on short circuit

The disconnecting device must be coordinated with the surge protective device. It is designed to meet the following two constraints:

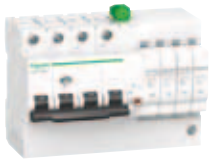
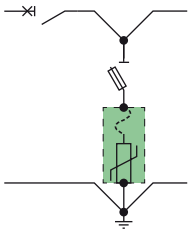
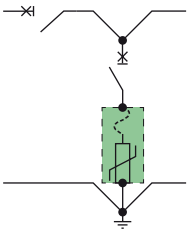
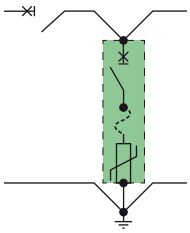
Resistance to lightning current

The resistance to lightning current is an essential characteristic of the surge protective device's external disconnecting device.
The device must be capable of passing the following standardized tests: not trip upon 15 successive impulse currents at In.

Resistance to short-circuit current

The breaking capacity is determined by the installation rules (IEC 60364 standard):
- ■ the external disconnecting device must have a breaking capacity equal to or greater than the presumed short-circuit current Isc at the point of installation.
- ■ when this device is integrated into the surge protective device, conformity with product standard IEC 61643-11 naturally ensures protection.

Surge protective device coordination (cont.)

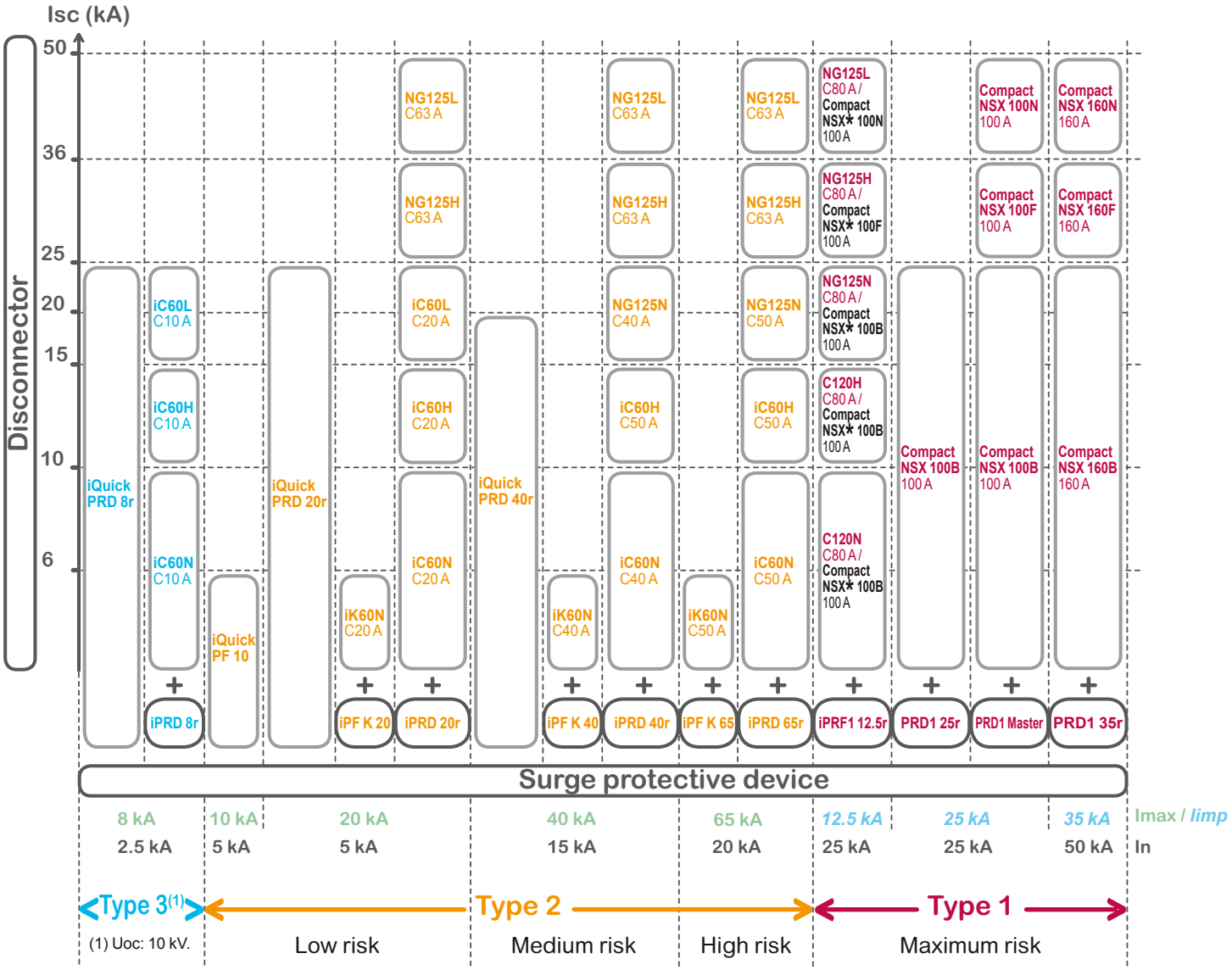
External disconnecting device	Fuse protection combined with the SPD	Circuit breaker protection combined with the SPD	Circuit breaker protection integrated into the SPD
			
			
Lightning protection of equipment	=	=	=
	All types of disconnecting devices protect the equipment satisfactorily		
Protection of installation (at end of the surge protective device's life)	=	+	++
	Achieved if compliance with the MCB/SPD coordination table		Achieved during product design
	Protection from (impedant) short circuits of low intensity not well ensured	Protection against (impedant) short circuits of low intensity	
Continuity of service (at end of the surge protective device's life)	+	+	+
	Only the surge protective device circuit is shut down		
Maintenance (at end of the surge protective device's life)	=	+	+
	Change of fuses	Immediate resetting	

Main reasons why the disconnecting device recommended by the manufacturer should be used:
- if the disconnecting device's rating is lower than the recommended rating: risk of the disconnecting device opening in normal operation.
- if the disconnecting device's rating is higher than the recommended rating: risk of non-disconnection during a temporary voltage surge.

Surge protective device coordination (cont.)

Coordination between the **surge protective device** and its disconnect **circuit breaker** in the event of a short circuit

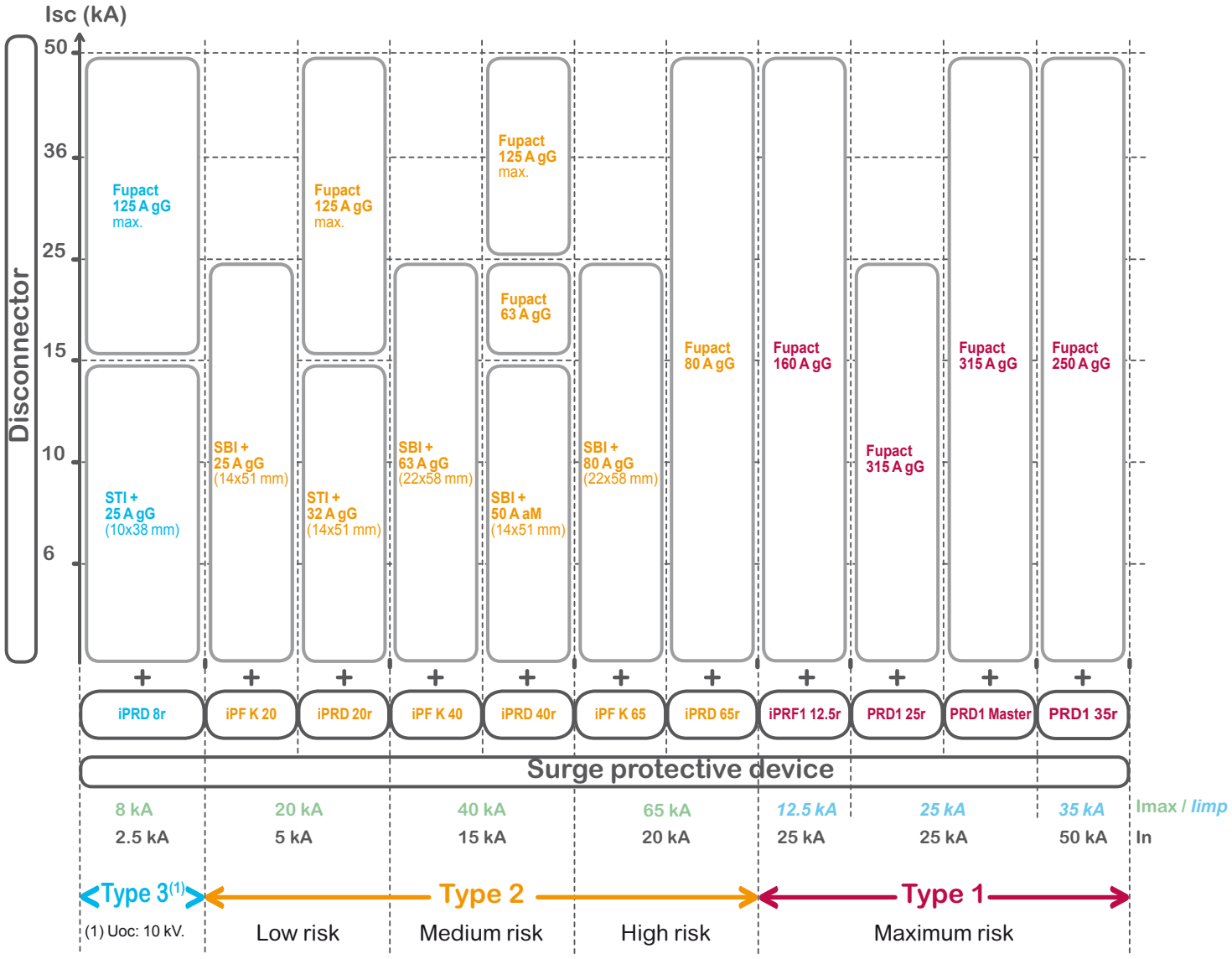
This table shows: the rating, curve and short circuit current level of the disconnector coordinated with the surge protective device.



(*) ***For lightning impulse current withstand***

Surge protective device coordination (cont.)

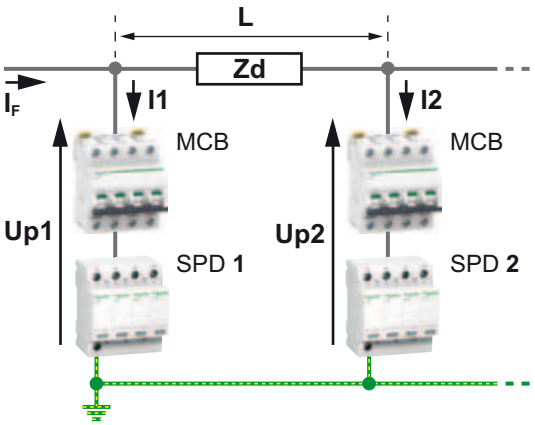
Coordination between the **surge protective device** and its disconnect **fuse** in the event of a short circuit



Surge protective device coordination (cont.)

Coordination between two surge protective devices, upstream/downstream

When two surge protective devices are installed in an electrical installation, coordination is needed according to IEC 61643-12 to obtain an acceptable stress distribution between the two surge protective devices according to their permissible energy "E".



L and Zd	represent the cable length and impedance respectively between the 2 surge protective devices.
Up2:	level of protection of surge protective device SPD2.
Uw:	impulse withstand voltage of the equipment to be protected.
Imax:	maximum discharge current.
I_F:	lightning current: ≤ Imax of SPD1 = I1 + I2
E:	permissible energy.
MCB:	modular circuit breaker.
SPD:	surge protective device.

For coordination between two surge protective devices, a minimum cable length between these 2 surge protective devices is needed to ensure that:

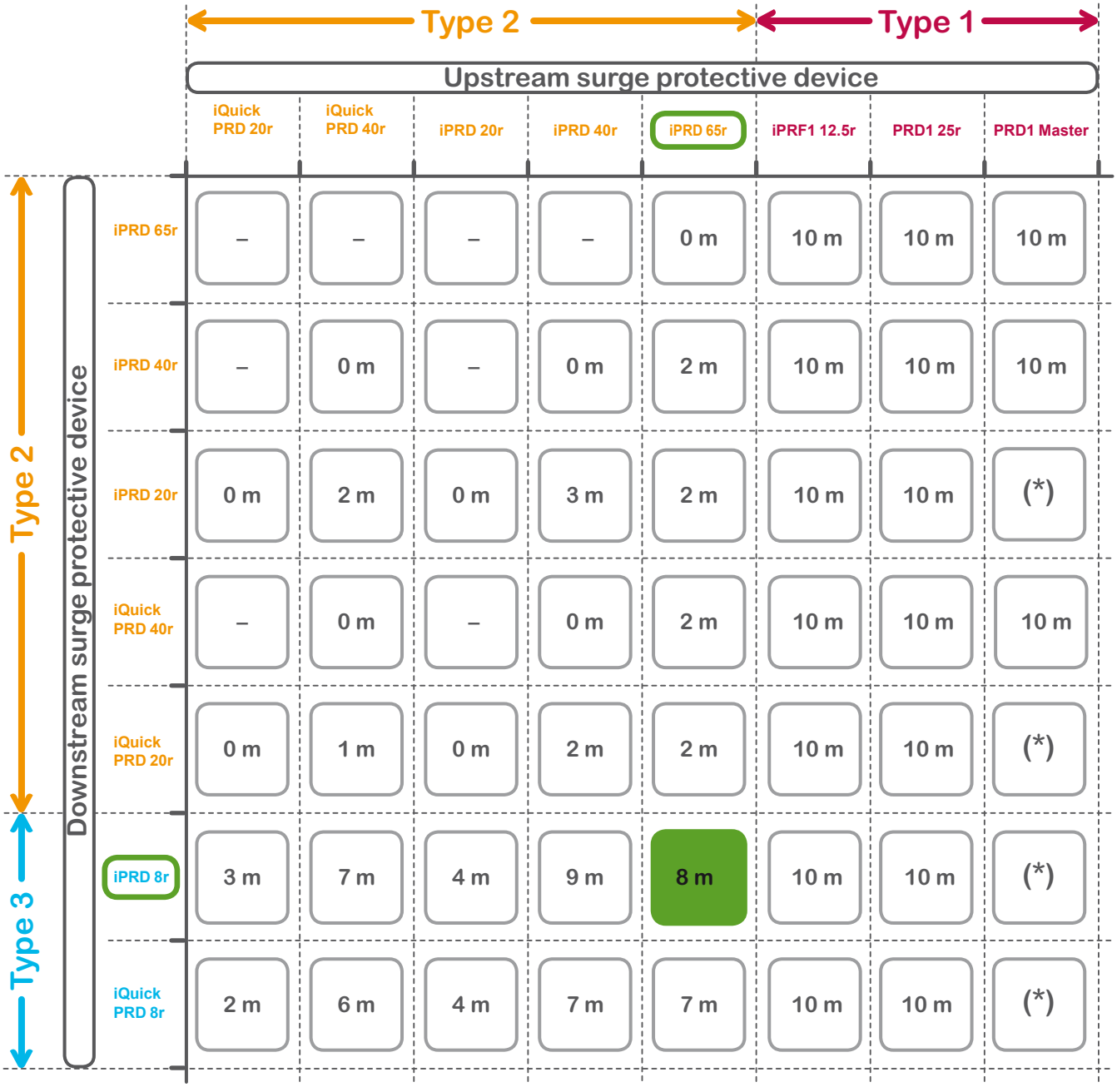
- **I2** < Imax SPD2.
- **Up2** < Uw.
- **E2** < E max SPD2.

Surge protective device coordination (cont.)

Minimum distance between two surge protective devices, upstream/downstream

For a cable section of 16 mm² and an impulse current equal to the maximum discharge current (Imax) of the upstream surge protective device.

Example
If iPRD65r is installed in the incoming panelboard, the second SPD iPRD8r must be installed at a cable length of 8 meters from the first one.



(*) Forbidden configuration

Surge protective device coordination (cont.)

Cascading in the event of a short circuit between the surge protective device disconnector and the upstream circuit breaker

What is cascading?

Cascading means using the circuit breakers' limiting power, which allows circuit breakers of lower performance to be installed downstream.

The upstream circuit breakers then act as a barrier for major short-circuit currents. They thus enable circuit breakers of breaking capacity lower than the presumed short-circuit current (at their point of installation) to be loaded in their normal breaking conditions.

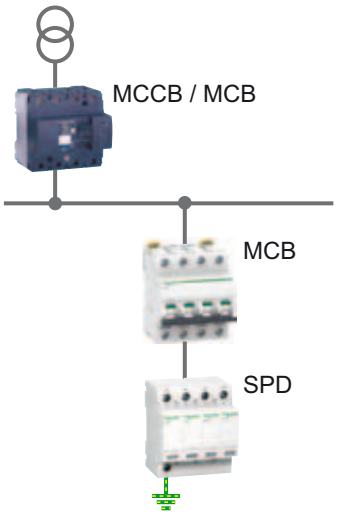
Since current limiting takes place all along the circuit controlled by the upstream current-limiting circuit breaker, cascading concerns all the devices located downstream of that circuit breaker.

It is not restricted to two consecutive devices.

Case 1

Disconnect circuit breaker not integrated into the surge protective device.

For this type of study, refer to the existing coordination tables.
> see 557F4200 catalogue module.

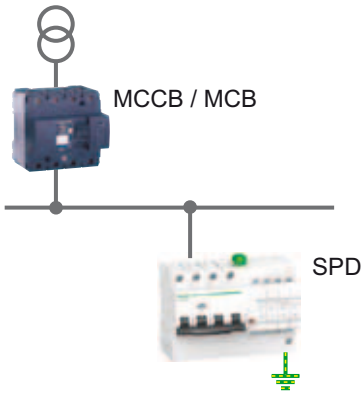


MCCB = Molded-case circuit breaker.
MCB = Modular circuit breaker.
SPD = Surge protective device.

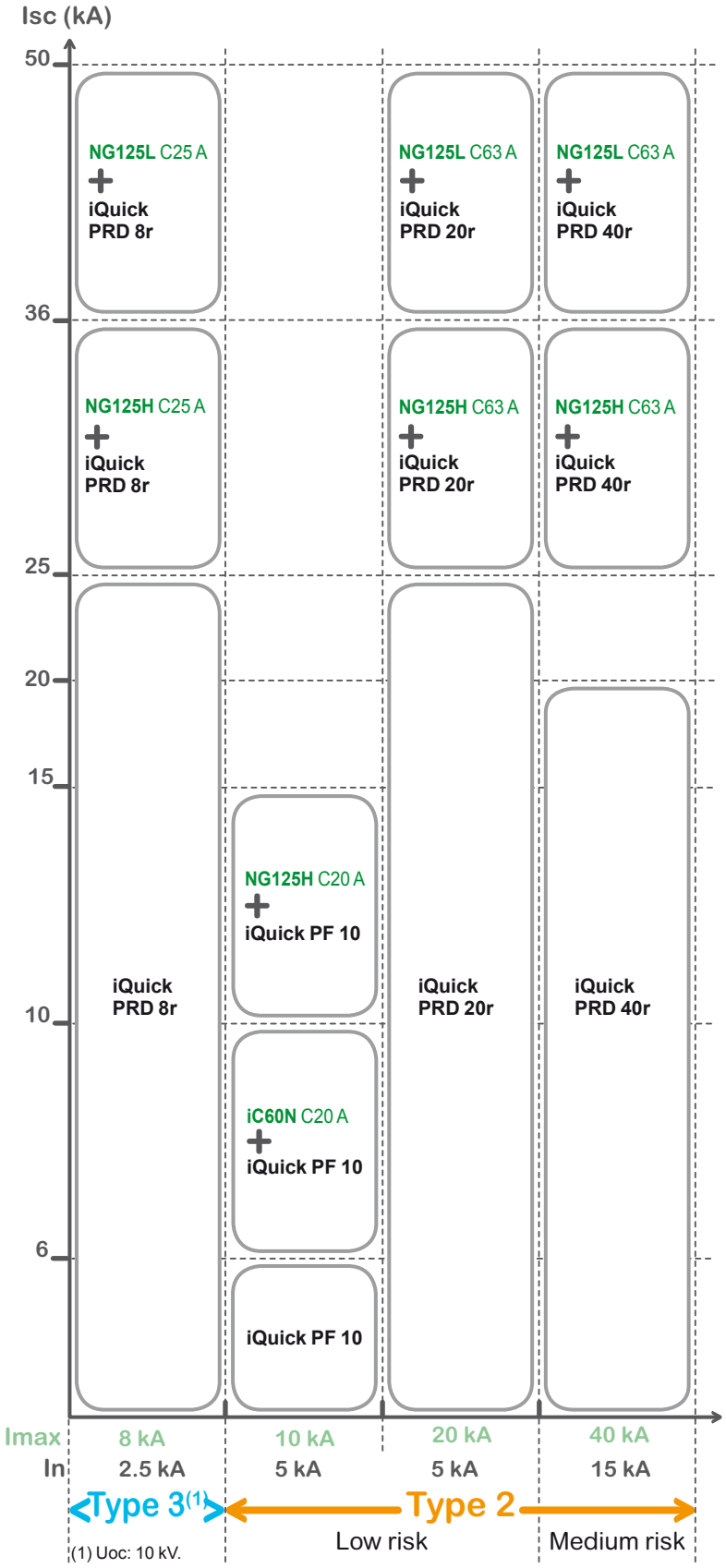
Surge protective device coordination (cont.)

Case 2

Disconnect circuit breaker integrated into the surge protective device.



MCCB = Molded-case circuit breaker.
MCB = Modular circuit breaker.
SPD = Surge protective device.



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Document Number CA903014E

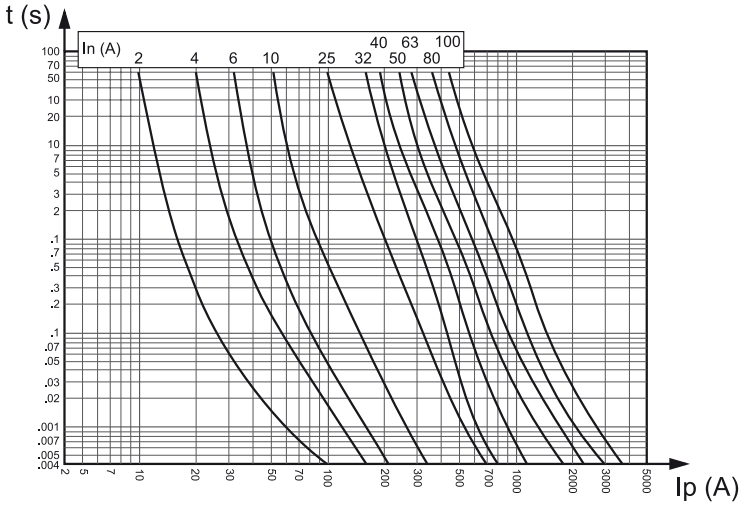
SBI / STI Fuse cartridges

aM fuses curves

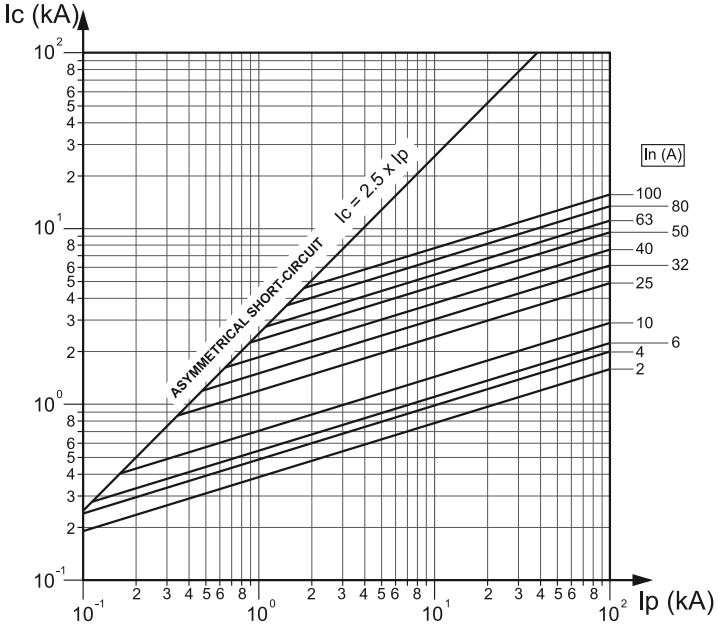
8.5 x 31.5 - 10.3 x 38 - 14 x 51 - 22 x 58

aM fuses curves

Time/Current operating curves



Current limitation curves



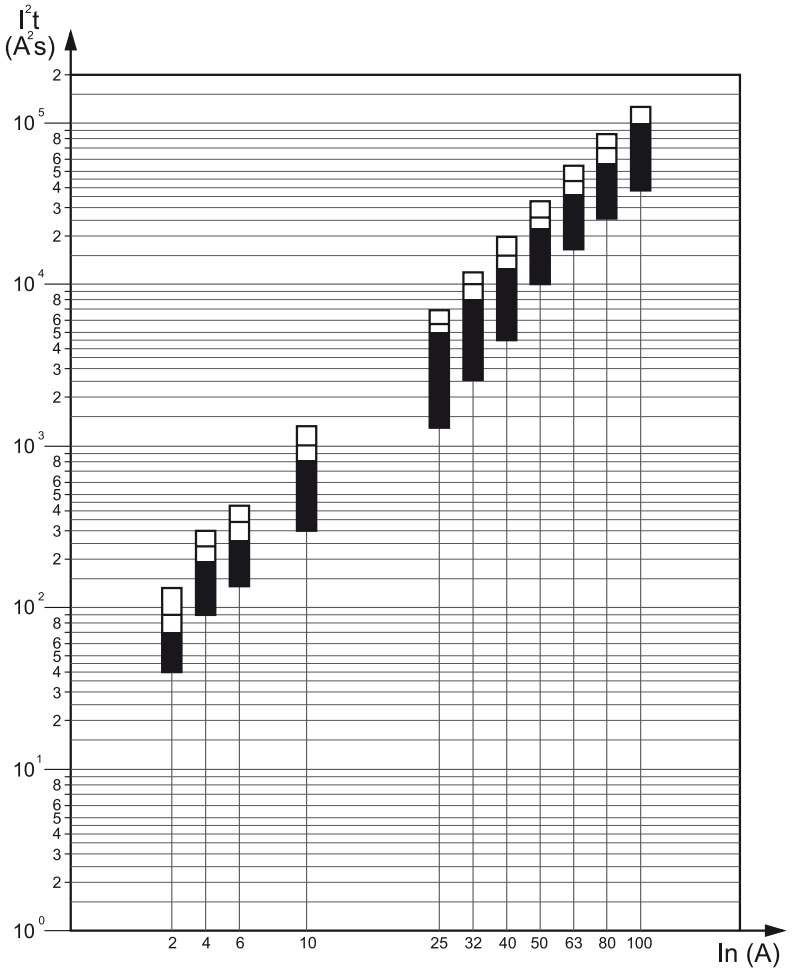
SBI / STI Fuse cartridges

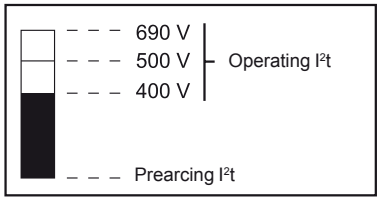
aM fuses curves

8.5 x 31.5 - 10.3 x 38 - 14 x 51 - 22 x 58 (cont.)

aM fuses curves

Thermal stress limitation curves





Dissipated power (in Watts)

In	Dimensions (mm)	
	14 x 51	22 x 58
10 A	-	-
16 A	-	-
25 A	1.80 W	-
32 A	2.10 W	-
40 A	2.60 W	3.20 W
50 A	2.90 W	3.90 W
63 A	-	4.60 W
80 A	-	5.60 W
100 A	-	6.50 W

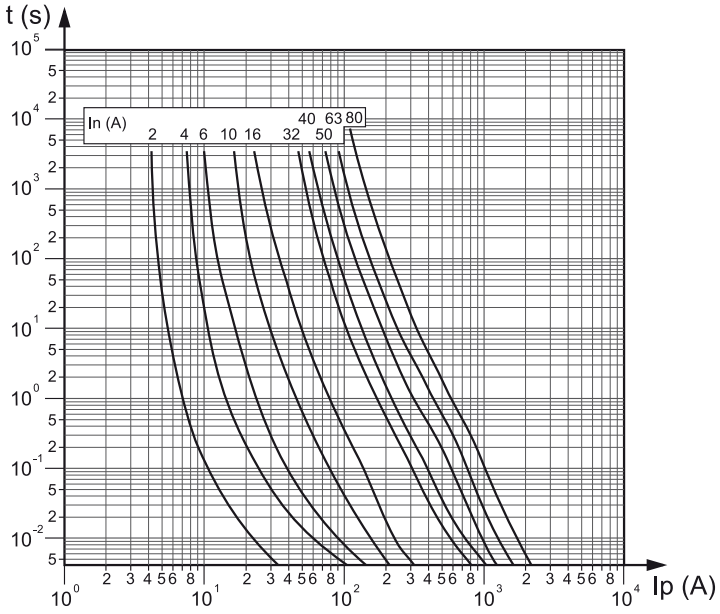
SBI / STI Fuse cartridges

gG fuses curves

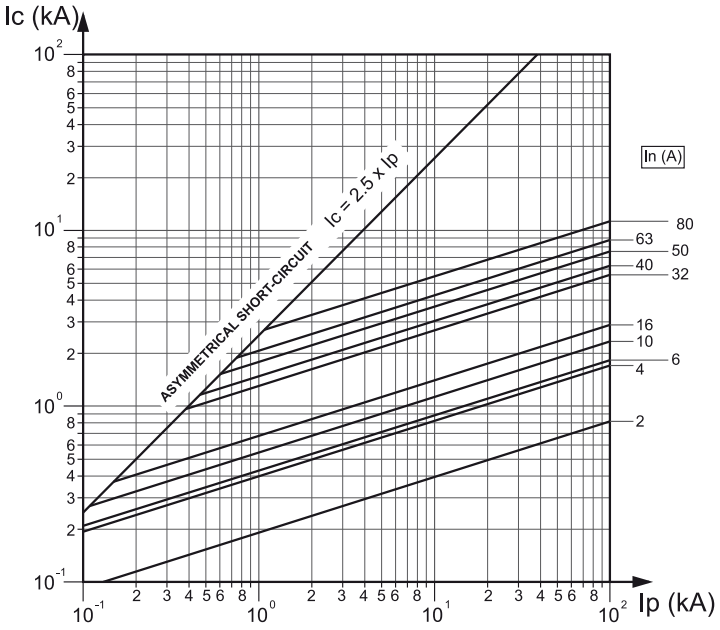
8.5 x 31.5 - 10.3 x 38 - 14 x 51 - 22 x 58

gG fuses curves

Time/Current operating curves



Current limitation curves



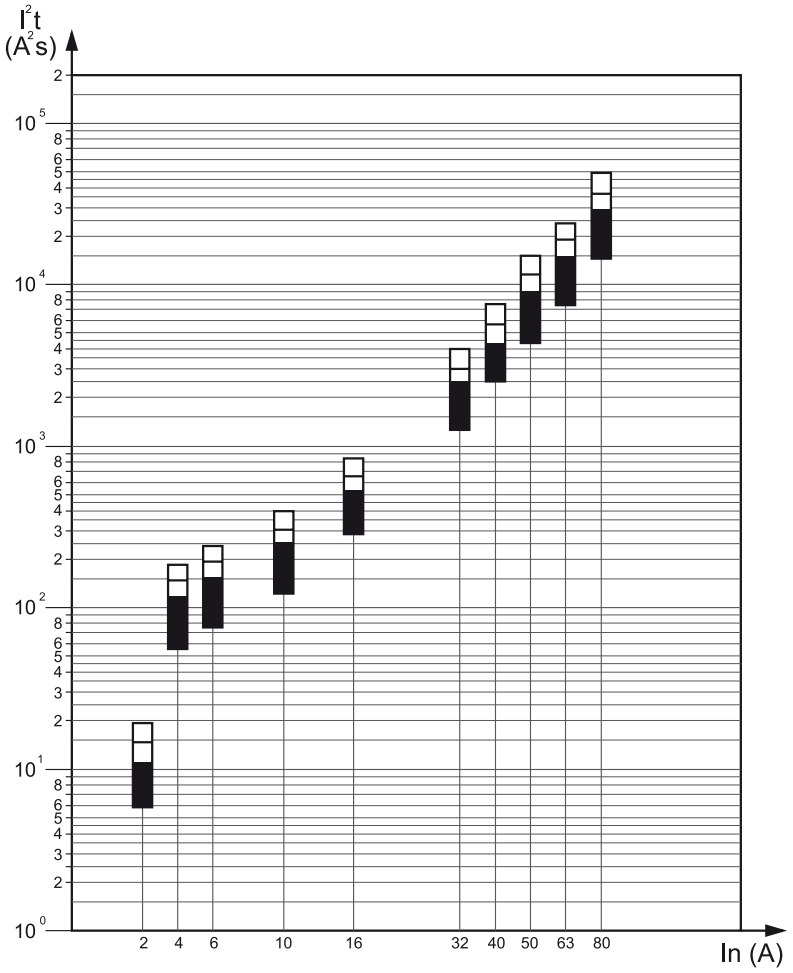
SBI / STI Fuse cartridges

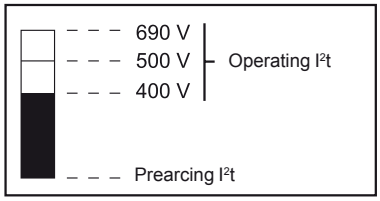
gG fuses curves

8.5 x 31.5 - 10.3 x 38 - 14 x 51 - 22 x 58 (cont.)

gG fuses curves

Thermal stress limitation curves





Dissipated power (in Watts)

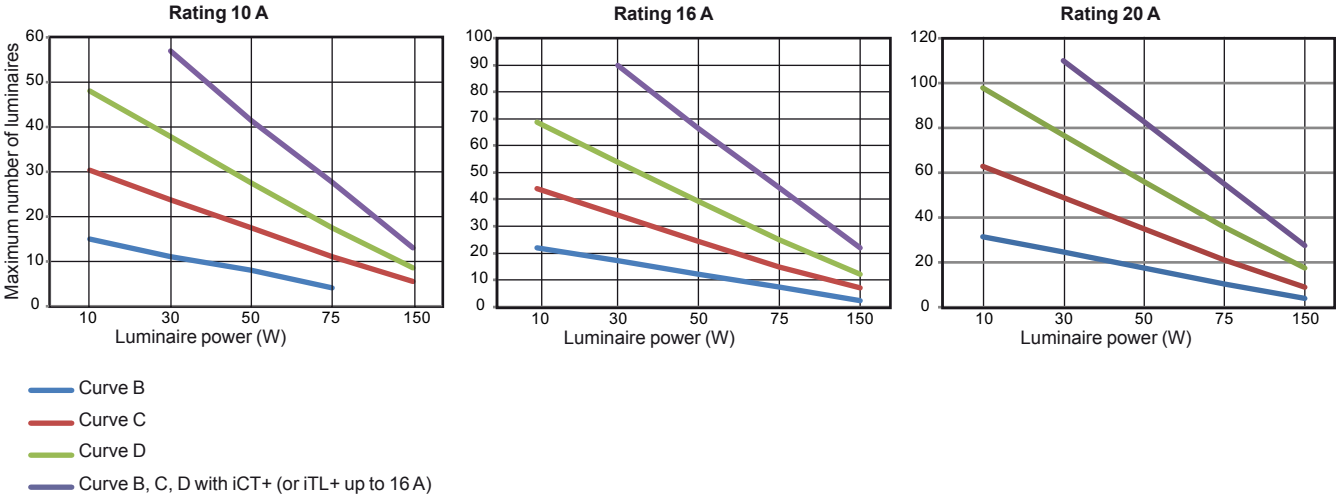
In	Dimensions (mm)	
	14 x 51	22 x 58
10 A	1.80 W	-
16 A	2.55 W	-
25 A	3.80 W	4.30 W
32 A	4.40 W	5.10 W
40 A	-	5.50 W
50 A	-	6.70 W
63 A	-	8 W
80 A	-	5.60 W
100 A	-	6.50 W

Coordination of switchgear with loads
Circuit breakers

Use of circuit breakers

The new lighting technologies with electronic interfaces (ballasts, drivers) cause a high transient inrush current at power up that can trip the circuit breaker. These phenomena are particularly increased with LED lighting.

Coordination curves between the number of LED luminaires and the circuit breaker rating:



Maximum number of luminaires depending on the circuit breaker rating and curve

	Circuit breaker rating	10 A				16 A				20 A			
Unit power of the luminaire (W)	Curve	B	C	D	B, C, D with iCT+ or iTL+	B	C	D	B, C, D with iCT+ or iTL+	B	C	D	B, C, D with iCT+
10		15	30	48	-	22	44	69	-	32	63	98	-
30		11	24	38	57	17	34	54	90	25	49	77	110
50		8	17	27	41	12	25	39	66	18	35	56	83
75		4	11	17	28	7	15	25	44	11	21	36	55
150		-	5	9	13	2	7	12	22	4	9	18	28

According to the control device used, the transient current surge may:
■ require the circuit breaker to be derated according to the number of luminaires / circuit breaker rating coordination curves, when using standard control devices: CT, TL (electromechanical control device),
■ be reduced by the use of the following technologies:
□ softStart: using a command integrated in the driver or a dimmer switch,
□ controlled contactor (iTL+, iCT+) (closes when the voltage passes through "0", derating is related to the Cos phi of the lighting circuit).

These technologies allow circuit breakers without derating related to the technology of the lamps to be used.
Example:
Circuit rated power = 230 V AC x Circuit breaker rating x Cos phi.

Coordination of switchgear with loads

iCT ,iCT+, iTL, iTL+, Reflex iC60

General comment

Modular contactors and impulse relays do not use the same technologies. Their rating is determined according to different standards and does not correspond to the rated current of the circuit. For example, for a given rating, an impulse relay is more efficient than a modular contactor for the control of light fittings with a strong inrush current, or with a low power factor (non-compensated inductive circuit).

Relay rating

■ The table below shows the maximum number of light fittings for each relay, according to the type, power and configuration of a given lamp. As an indication, the total acceptable power is also mentioned.
■ These values are given for a 230 V circuit with 2 active conductors (single-phase phase/neutral or two-phase phase/phase). For 110 V circuits, divide the values in the table by 2.
■ To obtain the equivalent values for the entire 230 V three-phase circuit, multiply the number of lamps and the maximum power output:
□ by $\sqrt{3}$ (1.73) for circuits with 230 V between phases without neutral;
□ by $\sqrt{3}$ for circuits with 230 V between phase and neutral or 400 V between phases.

Note: The power ratings of the lamps most commonly used are shown in bold.
For powers not mentioned, use a proportional rule with the nearest values.

Choice table

Products			iCT contactors								iCT+ contactors
Type of lamp			Maximum number of light fittings for a single-phase circuit and maximum power output per circuit								
			16 A		25 A		40 A		63 A		20 A
Basic incandescent lamps, LV halogen lamps, replacement mercury vapour lamps (without ballast)											
	40 W		38	1550 W to 2000 W	57	2300 W to 2850 W	115	4600 W to 5250 W	172	6900 W to 7500 W	4660 W x Cos phi
	60 W		30		45		85		125		
	75 W		25		38		70		100		
	100 W		19		28		50		73		
ELV 12 or 24 V halogen lamps											
With ferromagnetic transformer	**20 W**		15	300 W to 600 W	23	450 W to 900 W	42	850 W to 1950 W	63	1250 W to 2850 W	
	50 W		10		15		27		42		
	75 W		8		12		23		35		
	100 W		6		8		18		27		
With electronic transformer	**20 W**		62	1250 W to 1600 W	90	1850 W to 2250 W	182	3650 W to 4200 W	275	5500 W to 6000 W	
	50 W		25		39		76		114		
	75 W		20		28		53		78		
	100 W		16		22		42		60		
Fluorescent tubes with starter and ferromagnetic ballast											
1 tube without compensation (1)	15 W		22	330 W to 850 W	30	450 W to 1200 W	70	1050 W to 2400 W	100	1500 W to 3850 W	
	18 W		22		30		70		100		
	20 W		22		30		70		100		
	36 W		20		28		60		90		
	40 W		20		28		60		90		
	58 W		13		17		35		56		
	65 W		13		17		35		56		
	80 W		10		15		30		48		
	115 W		7		10		20		32		
1 tube with parallel compensation (2)	15 W	5 µF	15	200 W to 800 W	20	300 W to 1200 W	40	600 W to 2400 W	60	900 W to 3500 W	
	18 W	5 µF	15		20		40		60		
	20 W	5 µF	15		20		40		60		
	36 W	5 µF	15		20		40		60		
	40 W	5 µF	15		20		40		60		
	58 W	7 µF	10		15		30		43		
	65 W	7 µF	10		15		30		43		
	80 W	7 µF	10		15		30		43		
	115 W	16 µF	5		7		14		20		
2 or 4 tubes with series compensation	2 x **18 W**		30	1100 W to 1500 W	46	1650 W to 2400 W	80	2900 W to 3800 W	123	4450 W to 5900 W	
	4 x **18 W**		16		24		44		68		
	2 x **36 W**		16		24		44		68		
	2 x **58 W**		10		16		27		42		
	2 x 65 W		10		16		27		42		
	2 x 80 W		9		13		22		34		
	2 x 115 W		6		10		16		25		
Fluorescent tubes with electronic ballast											
1 or 2 tubes	**18 W**		74	1300 W to 1400 W	111	2000 W to 2200 W	222	4000 W to 4400 W	333	6000 W to 6600 W	
	36 W		38		58		117		176		
	58 W		25		37		74		111		
	2 x **18 W**		36		55		111		166		
	2 x **36 W**		20		30		60		90		
	2 x **58 W**		12		19		38		57		

	iTL impulse relays				iTL+ impulse relays	Reflex iC60 (C curve)								
	Maximum number of light fittings for a single-phase circuit and maximum power output per circuit													
	16 A		32 A		16 A	10 A		16 A		25 A		40 A		63 A	
	40 25 20 16	1500 W to 1600 W	106 66 53 42	4000 W to 4200 W	3680 W x Cos phi	28 23 29 15	1120 W to 2175 W	46 36 31 23	1840 W to 2600 W	70 55 46 33	2800 W to 3600 W	140 103 80 60	5600 W to 6800 W	207 152 121 88	8280 W to 9800 W
	70 28 19 14	1350 W to 1450 W	180 74 50 37	3600 W to 3750 W		11 8 7 5	220 W to 500 W	19 12 10 8	380 W to 800 W	27 19 14 10	540 W to 1050 W	50 33 27 22	1000 W to 2200 W	75 51 43 33	1500 W to 3300 W
	60 25 18 14	1200 W to 1400 W	160 65 44 33	3200 W to 3350 W		47 19 15 12	940 W to 1200 W	74 31 24 20	1480 W to 2000 W	108 47 34 26	2160 W to 2600 W	220 92 64 51	4400 W to 5100 W	333 137 94 73	6660 W to 7300 W
	83 70 62 35 31 21 20 16 11	1250 W to 1300 W	213 186 160 93 81 55 50 41 29	3200 W to 3350 W		16 16 16 15 15 9 9 8 6	244 W to 647 W	26 26 26 24 24 15 15 12 9	390 W to 1035 W	37 37 37 34 34 21 21 19 12	555 W to 1520 W	85 85 85 72 72 43 43 36 24	1275 W to 2880 W	121 121 121 108 108 68 68 58 38	1815 W to 4640 W
	60 50 45 25 22 16 13 11 7	900 W	160 133 120 66 60 42 37 30 20	2400 W		11 11 11 11 11 8 8 8 4	165 W to 640 W	19 19 19 19 19 12 12 12 7	285 W to 960 W	24 24 24 24 24 19 19 19 9	360 W to 1520 W	48 48 48 48 48 36 36 36 17	720 W to 2880 W	72 72 72 72 72 51 51 51 24	1080 W to 4080 W
	56 28 28 17 15 12 8	2000 W	148 74 74 45 40 33 23	5300 W		23 12 12 8 8 7 5	828 W to 1150 W	36 20 20 12 12 11 8	1296 W to 1840 W	56 29 29 20 20 15 12	2016 W to 2760 W	96 52 52 33 33 26 20	3456 W to 4600 W	148 82 82 51 51 41 31	5328 W to 7130 W
	80 40 26 40 20 13	1450 W to 1550 W	212 106 69 106 53 34	3800 W to 4000 W		56 28 19 27 16 9	1008 W to 1152 W	90 46 31 44 24 15	1620 W to 1798 W	134 70 45 67 37 23	2412 W to 2668 W	268 142 90 134 72 46	4824 W to 5336 W	402 213 134 201 108 70	7236 W to 8120 W

Coordination of switchgear with loads

iCT ,iCT+, iTL, iTL+, Reflex iC60

Choice table (cont.)

Products			iCT contactors								iCT+ contactors
Type of lamp			Maximum number of light fittings for a single-phase circuit and maximum power output per circuit								
			16 A		25 A		40 A		63 A		20 A
Compact fluorescent lamps											
With external electronic ballast	**5 W**		210	1050 W to 1300 W	330	1650 W to 2000 W	670	3350 W to 4000 W		Non testé	4660 W x Cos phi
	7 W		150		222		478				
	9 W		122		194		383				
	11 W		104		163		327				
	18 W		66		105		216				
	26 W		50		76		153				
With integral electronic ballast (replacement for incandescent lamps)	**5 W**		160	800 W to 900 W	230	1150 W to 1300 W	470	2350 W to 2600 W	710	3550 W to 3950 W	
	7 W		114		164		335		514		
	9 W		94		133		266		411		
	11 W		78		109		222		340		
	18 W		48		69		138		213		
	26 W		34		50		100		151		
LED lamps											
With driver	**10 W**		48	500 W to 1400 W	69	700 W to 1950 W	98	1000 W to 3000 W	200	2000 W to 6200 W	
	30 W		38		54		77		157		
	50 W		27		39		56		114		
	75 W		17		25		36		73		
	150 W		9		12		18		37		
	200 W		7		9		15		31		
Low-pressure sodium vapour lamps with ferromagnetic ballast with external ignitor											
Without compensation (1)	**35 W**		5	270 W to 360 W	9	320 W to 720 W	14	500 W to 1100 W	24	850 W to 1800 W	
	55 W		5		9		14		24		
	90 W		3		6		9		19		
	135 W		2		4		6		10		
	180 W		2		4		6		10		
With parallel compensation (2)	**35 W**	20 µF	3	100 W to 180 W	5	175 W to 360 W	10	350 W to 720 W	15	550 W to 1100 W	
	55 W	20 µF	3		5		10		15		
	90 W	26 µF	2		4		8		11		
	135 W	40 µF	1		2		5		7		
	180 W	45 µF	1		2		4		6		
High-pressure sodium vapour lamps Metal-iodide lamps											
With ferromagnetic ballast with external ignitor, without compensation (1)	35 W		16	600 W	24	850 W to 1200 W	42	1450 W to 2000 W	64	2250 W to 3200 W	
	70 W		8		12		20		32		
	150 W		4		7		13		18		
	250 W		2		4		8		11		
	400 W		1		3		5		8		
	1000 W		0		1		2		3		
With ferromagnetic ballast with external ignitor and parallel compensation (2)	35 W	6 µF	12	450 W to 1000 W	18	650 W to 2000 W	31	1100 W to 4000 W	50	1750 W to 6000 W	
	70 W	12 µF	6		9		16		25		
	150 W	20 µF	4		6		10		15		
	250 W	32 µF	3		4		7		10		
	400 W	45 µF	2		3		5		7		
	1000 W	60 µF	1		2		3		5		
	2000 W	85 µF	0		1		2		3		
With electronic ballast	35 W		24	850 W to 1350 W	38	1350 W to 2200 W	68	2400 W to 4000 W	102	3600 W to 600 W	
	70 W		18		29		51		76		
	150 W		9		14		26		40		

(1) Circuits with non-compensated ferromagnetic ballasts consume twice as much current for a given lamp power output. This explains the small number of lamps in this configuration.
(2) The total capacitance of the power factor correction capacitors in parallel in a circuit limits the number of lamps that can be controlled by a contactor. The total downstream capacitance of a modular contactor of rating 16, 25, 40 or 63 A should not exceed 75, 100, 200 or 300 µF respectively. Allow for these limits to calculate the maximum acceptable number of lamps if the capacitance values are different from those in the table.

	iTL impulse relays				iTL+ impulse relays	Reflex iC60 (C curve)								
	Maximum number of light fittings for a single-phase circuit and maximum power output per circuit													
	16 A		32 A		16 A	10 A		16 A		25 A		40 A		63 A	
	240	1200 W to 1450 W	630	3150 W to 3800 W	3680 W x Cos phi	158	790 W to 962 W	251	1255 W to 1560 W	399	1995 W to 2392 W	810	4050 W to 4706 W	Usage peu fréquent	
	171		457			113		181		268		578			
	138		366			92		147		234		463			
	118		318			79		125		196		396			
	77		202			49		80		127		261			
	55		146			37		60		92		181			
	170	850 W to 1050 W	390	1950 W to 2400 W		121	605 W to 650 W	193	959 W to 1044 W	278	1390 W to 1560 W	568	2840 W to 3146 W	859	4295 W to 4732 W
	121		285			85		137		198		405		621	
	100		233			71		113		160		322		497	
	86		200			59		94		132		268		411	
	55		127			36		58		83		167		257	
	40		92			25		40		60		121		182	
	69	700 W to 1950 W	98	1000 W to 3000 W		30	300 W to 850 W	44	450 W to 1250 W	71	700 W to 2000 W	108	1050 W to 3050 W	146	1450 W to 4150 W
	54		77			24		34		55		83		113	
	39		56			17		25		40		61		83	
	25		36			11		15		24		37		50	
	12		18			5		7		11		17		23	
	9		15			-		6		10		15		20	
	Non testé, utilisation peu fréquente					4	153 W to 253 W	7	245 W to 405 W	11	385 W to 792 W	17	595 W to 1198 W	29	1015 W to 2070 W
						4		7		11		17		29	
						3		4		8		11		23	
						2		3		5		8		12	
						1		2		4		7		10	
	38	1350 W	102	3600 W		3	88 W to 169 W	4	140 W to 270 W	7	245 W to 450 W	12	420 W to 720 W	19	665 W to 1440 W
	24		63			3		4		7		12		19	
	15		40			2		3		5		8		13	
	10		26			1		2		3		5		9	
	7		18			0		1		2		4		8	
	Non testé, utilisation peu fréquente					12	416 W to 481 W	19	400 W to 750 W	28	980 W to 1350 W	50	1750 W to 2500 W	77	2695 W to 4000 W
						7		11		15		24		38	
						3		5		9		15		22	
						2		3		5		10		13	
						0		1		3		6		10	
						0		0		1		2		3	
	34	1200 W to 1350 W	88	3100 W to 3400 W		14	490 W to 800 W	17	595 W to 1200 W	26	910 W to 2200 W	43	1505 W to 4400 W	70	2450 W to 7000 W
	17		45			8		9		13		23		35	
	8		22			5		6		9		14		21	
	5		13			3		4		5		10		14	
	3		8			2		3		4		7		9	
	1		3			0		1		2		4		7	
	0		1			0		0		1		2		3	
	38	1350 W to 2200 W	87	3100 W to 5000 W		15	525 W to 844 W	24	840 W to 1350 W	38	1330 W to 2100 W	82	2870 W to 4650 W	123	4305 W to 7200 W
	29		77			11		18		29		61		92	
	14		33			6		9		14		31		48	

Note: **Reflex iC60**
High-pressure sodium vapour lamp with electronic ballast
For the 10 A and 16 A B-curve ratings, the number of lamps should be reduced by 10 % to limit unwanted magnetic tripping.
LED lamp
B-curve ratings, the number of lamps should be reduced by 50 %.
D-curve ratings, the number of lamps should be increased by 50 %.

Coordination of switchgear with loads
iTL, iCT

Heating application

■ Impulse relay rating to be chosen according to the power to be controlled.

230 V heating		
Type	**Maximum power for a given rating iTL impulse relays**	
Single-phase circuit	**16 A**	**32 A**
Heating (AC1)	3.6 kW	7.2 kW

■ Contactor rating to be chosen according to the power to be controlled and the number of operations a day.

230 V heating				
Type of heating application	**Maximum power for a given rating iCT contactors**			
Number of operations / day	**25 A**	**40 A**	**63 A**	**100 A**
25	5.4 kW	8.6 kW	14 kW	21.6 kW
50	5.4 kW	8.6 kW	14 kW	21.6 kW
75	4.6 kW	7.4 kW	12 kW	18 kW
100	4 kW	6 kW	9.5 kW	14 kW
250	2.5 kW	3.8 kW	6 kW	9 kW
500	1.7 kW	2.7 kW	4.5 kW	6.8 kW
400 V heating				
25	16 kW	26 kW	41 kW	63 kW
50	16 kW	26 kW	41 kW	63 kW
75	14 kW	22 kW	35 kW	52 kW
100	11 kW	17 kW	26 kW	40 kW
250	5 kW	8 kW	13 kW	19 kW
500	3.5 kW	6 kW	9 kW	14 kW

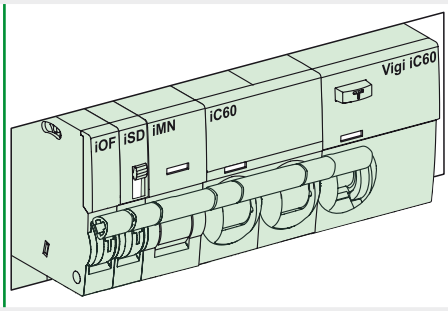
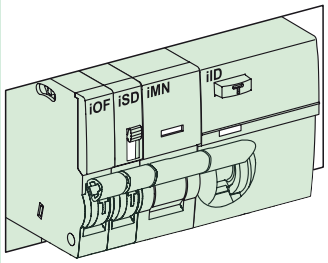
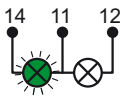
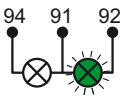
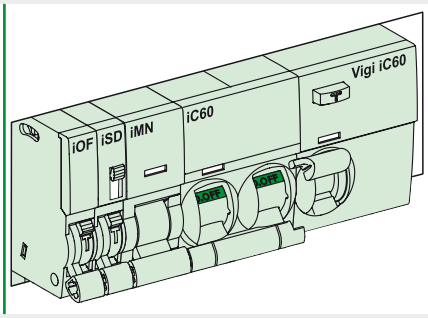
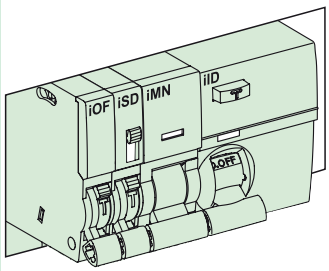
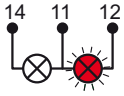
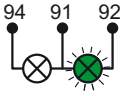
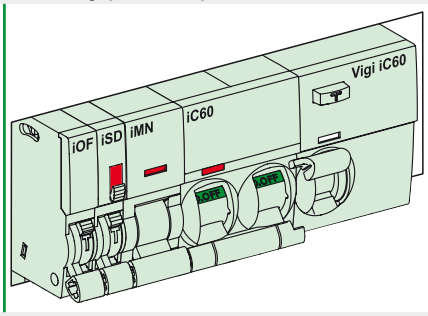
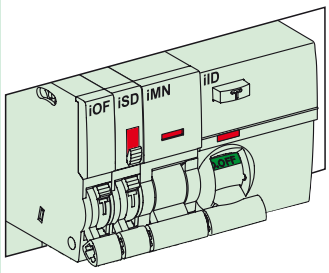
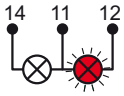
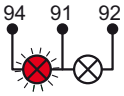
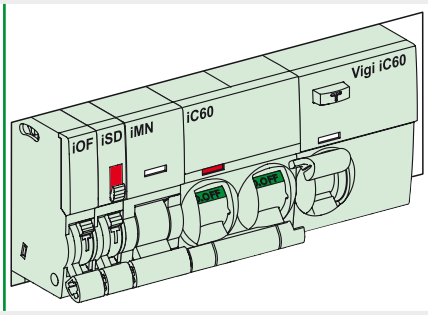
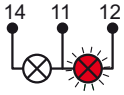
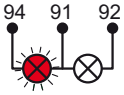
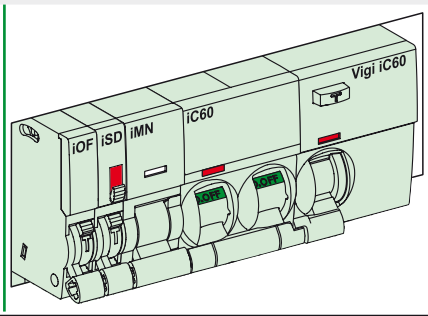
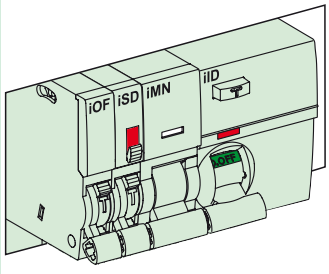
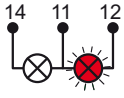
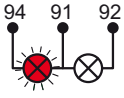
Small motor application

Contactor rating to be chosen according to the power to be controlled.

Asynchronous single-phase motor with capacitor			
Small motor application type	**Maximum power for a given rating iCT contactors**		
Voltage	**25 A**	**40 A**	**63 A**
230 V	1.4	2.5	4
Asynchronous three-phase motor			
400 V	4	7.5	15
Universal motor			
230 V	0.9	1.4	2.2

Auxiliary indicating contacts for Acti 9 protective devices

Table showing state of auxiliary contacts according to the main device and the type of fault.

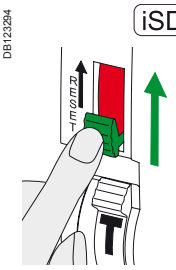
	Main device		Auxiliary contacts	
Functions and use	**Circuit breaker**	**Residual current circuit breaker**	**OF**	**SD**
Closed	DB123288 	DB123289 	DB123292 	
Manually opened	DB123277 	DB123278 	DB123290 	
Tripped by release auxiliary (iMN, iMX)	DB404827 	DB404829 	DB123291 	
Tripped upon overload or short circuit	DB122285 	–	DB123291 	
Tripped upon earth fault	DB404828 	DB122287 	DB123291 	

Auxiliary indicating contacts for Acti 9 protective devices (cont.)

Function

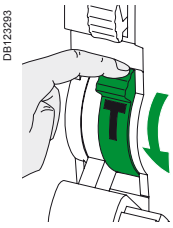
RESET (SD contact)

When the main device is tripped and the fault has been eliminated, it is possible to switch the SD contact manually, via the "RESET" button on the front panel.
The unit is then in "device opened manually" configuration.

	iOF	iSD	iOF/SD+OF iOF+SD24
	-	■	■ iSD only

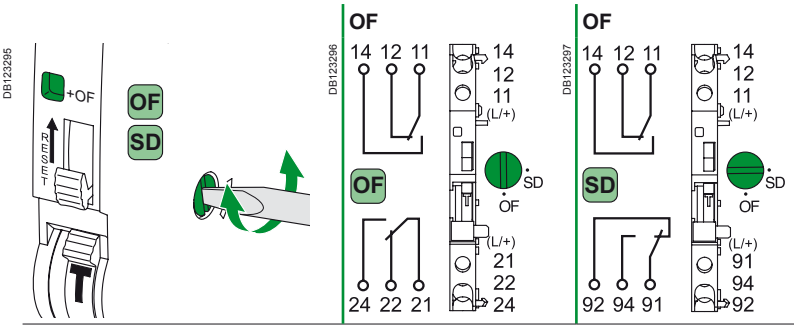
TEST (SD or OF contact)

When the main device is opened or tripped, the TEST button can be used to check the satisfactory operation of the indicating circuit by simulating operation of the main device. This operation also modifies the position of the indicator on the front panel of the iSD auxiliary.
On the double contact (iOF/SD+OF or iOF+SD24), this function can be implemented only for the SD indicating circuit.

	iOF	iSD	iOF/SD+OF iOF+SD24
	■	■	■

iOF/SD+OF double contact

Change of function of the second contact from OF to SD.

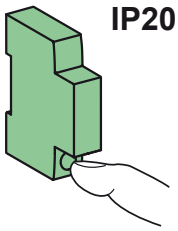


Auxiliary indicating contacts for Acti 9 protective devices (cont.)

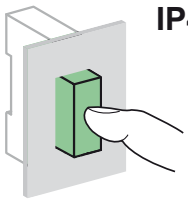
Technical data

Main characteristics		iOF, iSD, iOF/SD+OF		iOF+SD24
		IEC/EN 60947-5-1		IEC/EN 60947-5-1, IEC/EN 60947-5-4
Insulation voltage (Ui)		400 V AC		500 V AC
Degree of pollution		3		3
Rated impulse withstand voltage (Uimp)		4 kV (6 kV relative to the associated protective device)		4 kV (6 kV relative to the associated protective device)
Current rating (A)	Min.	24 V, 10 mA		24 V ± 20 %, 2 mA mini, 100 mA maxi Low level contact: compatible with IEC/EN 61131-2 Programmable Controllers, suitable for any connection to 24 V DC PLCs
	Maxi	AC12 415 V AC	3 A	
		AC12 ⩽ 240 V AC	6 A	
		DC12 130 V DC	1 A	
		DC12 60 V DC	1.5 A	
		DC12 48 V DC	2 A	
		DC12 24 V DC	6 A	
Additional characteristics				
Degree of protection (IEC 60529)	Device only	IP20		IP20
	Device in a modular enclosure	IP40 Insulation class II		IP40 Insulation class II
Endurance (O-C)	Electrical	10,000 cycles		10,000 cycles
Overvoltage category (IEC 60364)		III		III
Short-circuit resistance		1 kA		1 kA
Rating of device for auxiliary contact protection against short circuits	Circuit breaker	iC60 - C curve - 6 A		iC60 - C curve - 6 A
	Fuse	6 A, 500 V type Gg 10.3 x 38 mm		6 A, 500 V type Gg 10.3 x 38 mm
Operating temperature		-35°C to +70°C		-20°C to +60°C
Storage temperature		-40°C to +85°C		-40°C to +85°C

DB123313



IP20

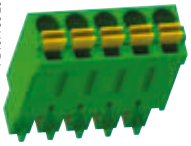


IP40

PB107755-14

A9XCAU06

PB107756-20

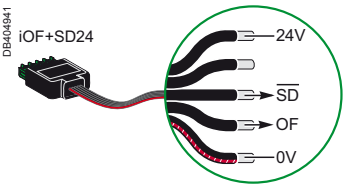


A9XC2412

iOF+SD24 connection

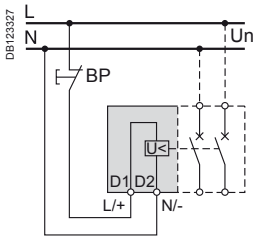
The indicating auxiliary iOF+SD24 can be connected with a factory-built link, **A9XCAU06**: moulded connector (iOF+SD24 side) and with the 5 wires (PLC side).

DB404941

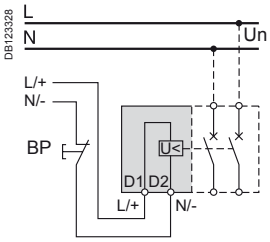


Or using a Ti24 5-point connector, **A9XC2412**

Auxiliary trip units for Acti 9 protective devices



iMN/iMNs powered by main network

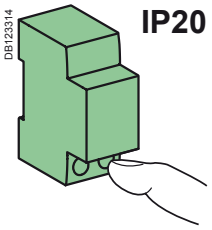


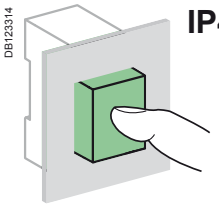
iMN/iMNs with separate power supply

iMN, iMNs: undervoltage release units

Function

■ Tripping of the associated protective device, when the voltage across its terminals falls:
□ either by opening the control circuit (e.g. push-button),
□ or by lowering the supply voltage.
■ Resetting of the protective device is possible only after the voltage across the terminals of the auxiliary has returned to its nominal value.
■ The iMNs undervoltage release does not perform tripping in the event of a voltage drop lasting less than 200 ms.
■ A locking push-button control allows the circuit protected by the circuit breaker (e.g. machine control) to be placed in safety configuration.



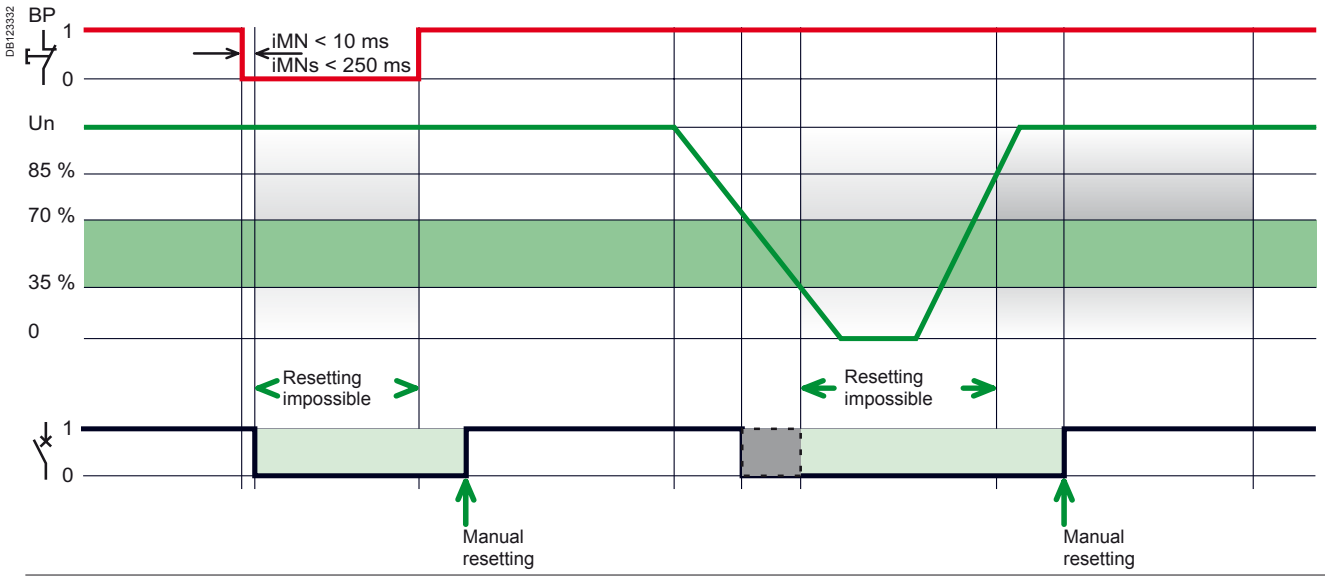


Technical data

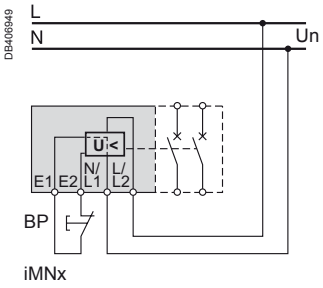
Auxiliary trip units		iMN						iMNs
Catalogue numbers		**A9A26960**	**A9A26961**		**A9A27108**		**A9A26959**	**A9A26963**
Main characteristics								
Rated voltage (1) (Un)		220…240 V, 50/60 Hz	48 V, 50/60 Hz	48 V DC	24 V, 50/60 Hz	24 V DC	115 V, 400 Hz	220…240 V, 50/60 Hz
Holding current (2)	A	0.014	0.022	0.034	0.04	0.021	0.017	0.014
Power consumption	VA	3.3	1.6	1.1	1	0.5	2	3.4
Tripping								
Threshold (V)		Between 0.35 and 0.75 of Un						
Duration of voltage dip (ms)	Min.	30	8	8	8	8	30	200
Restoration								
Threshold (V)	Min.	187	40.8	40.8	20.4	20.4	98	187
Additional characteristics								
Endurance		20,000 operations						
Insulation voltage (Ui)		400 V						
Degree of pollution		3						
Rated impulse withstand voltage (Uimp)		4 kV (6 kV relative to the associated protective device)						

(1) For a lower power supply (e.g., control by a PLC output), an iRTBT interface must be implemented (see page 851).
(2) This characteristic must be taken into account to define the number of multiple controls by switches provided with an indicator lamp.

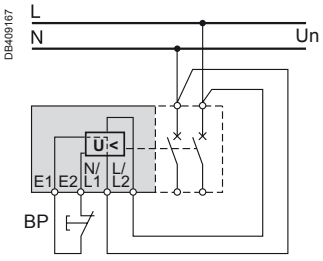
Operation timing chart



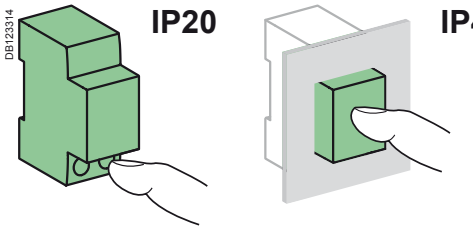
Auxiliary trip units for Acti 9 protective devices (cont.)



iMNx



iMNx with safety configuration



iMNx: trip units with push-button control

Function

- Tripping of the associated protective device by opening of the control circuit (e.g. push-button, dry contact).
- A drop in the supply voltage does not trip the associated protective device.
- A locking push-button control allows the circuit protected by the circuit breaker (e.g. machine control) to be placed in safety configuration.

Important: this function is insured only when the product is under voltage.

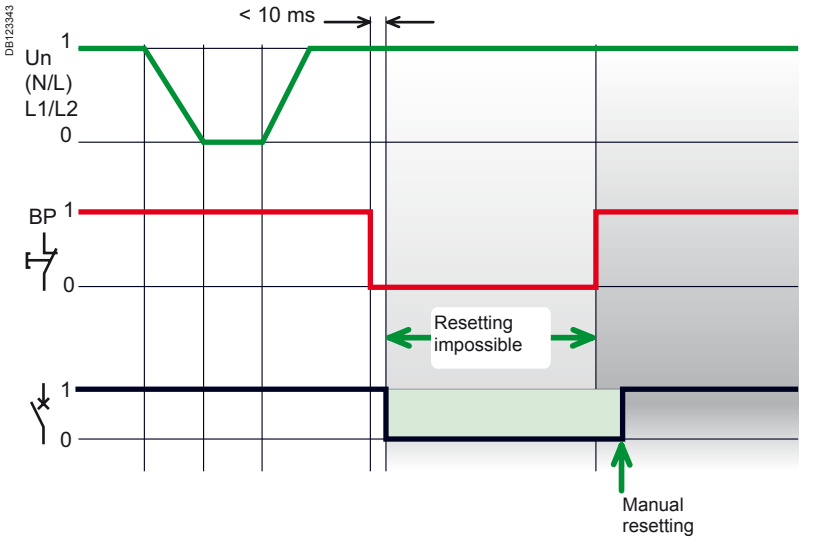
Important: before any servicing operation switch off the mains power supply (voltage presence at terminals E1/E2).

Technical data

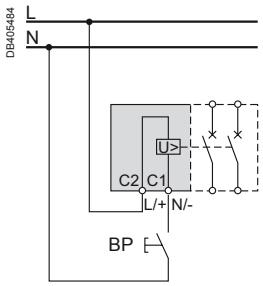
Auxiliary trip units		iMNx	
Catalogue numbers		**A9A26969**	**A9A26971**
Main characteristics			
Rated voltage (1) (Un)		220…240 V, 50/60 Hz	380...415 V, 50/60 Hz
Operation voltage		Un -30 % to Un +10 %	
Consumption current (at Un)	A	0.014	
Power consumption (at Un)	VA	3.3	
Tripping			
Control-circuit opening duration (ms)	Min.	30	
Additional characteristics			
Endurance		20,000 operations	
Insulation voltage (Ui)		400 V	
Degree of pollution		3	
Rated impulse withstand voltage (Uimp)		4 kV (6 kV relative to the associated protective device)	

(1) For a lower supply voltage (e.g., control by a PLC output), an iRTBT interface must be implemented (see page 851).

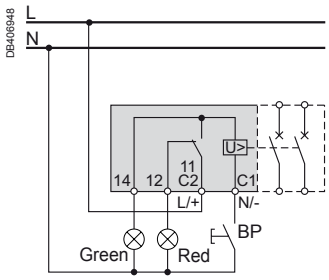
Operation timing chart



Auxiliary trip units for Acti 9 protective devices (cont.)



iMX powered by main network



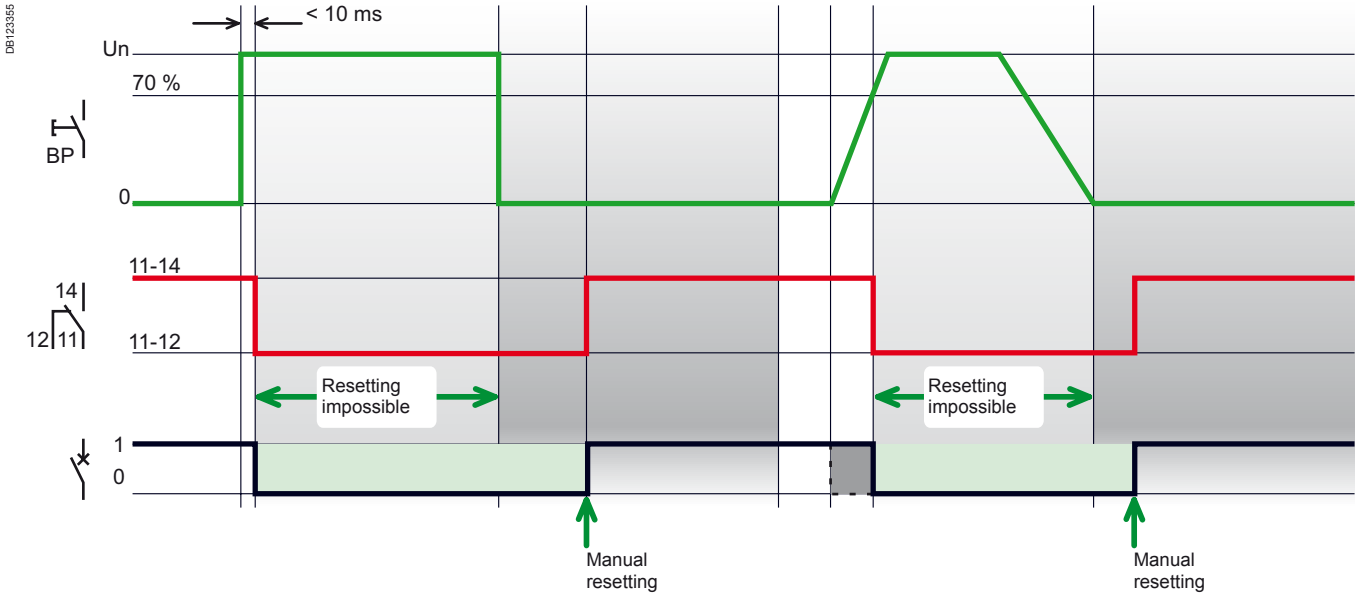
Control by N/O push-button with verification of voltage presence (iMX+OF)

iMX, iMX+OF: shunt release units

Function

■ Tripping of the associated protective device when a voltage appears across the terminals of the auxiliary (control by: N/O push-button, dry contact, etc.).
■ Resetting of the protective device is possible only when the voltage across the terminals of the auxiliary has disappeared.
■ A locking push-button control allows the circuit protected by the circuit breaker (e.g. machine control) to be placed in safety configuration.

Operation timing chart



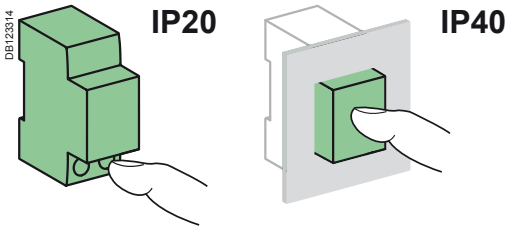
Auxiliary trip units for Acti 9 protective devices (cont.)

Auxiliary trip units			iMX + OF										
Catalogue numbers			**A9A26946**					**A9A26947**		**A9A26948**			
Rated voltage network (V) (+10, -20 %)			100	230 (1)	415	110	130	48	48	12	12	24	24
	Alternating current (AC)		■	■	■	-	-	■	-	■	-	■	-
	Direct current (DC)		-	-	-	■	■	-	■	-	■	-	■
Operating frequency 50/60 Hz			■	■	■	-	-	■	-	■	-	■	-
Min. cut-out voltage (V)			77	77	77	77	77	33.6	33.6	8.4	8.4	8.4	8.4
Inrush current (A)			0.4	0.8	1.5	0.3	0.3	1	0.7	4	2.5	7.7	5.6
Inrush power (VA)			44	184	625	38	45	48	33.6	48	30	185	135
Min. control impulse duration (ms)			8					8		8			
Power circuit breaking time (ms)			18					18		18			
Auxiliary contacts	Current rating (A) 10 mA mini	Maxi under											
		12...24 V DC									6 A		6 A
		12...24 V AC								6 A		6 A	
		48 V DC							2 A				
		48 V AC						6 A					
		110...130 V DC				1 A	1 A						
		100...230 V AC	6 A	6 A									
		415 V AC			3 A								

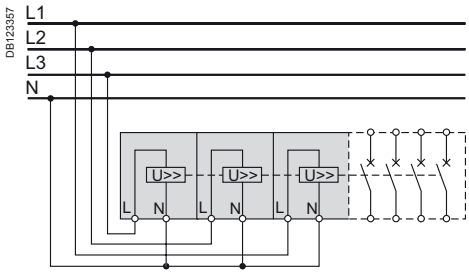
Auxiliary trip units			iMX										
Catalogue numbers			**A9A26476**					**A9A26477**		**A9A26478**			
Rated voltage network (V) (+10, -20 %)			100	230 (1)	415	110	130	48	48	12	12	24	24
	Alternating current (AC)		■	■	■	-	-	■	-	■	-	■	-
	Direct current (DC)		-	-	-	■	■	-	■	-	■	-	■
Operating frequency 50/60 Hz			■	■	■	-	-	■	-	■	-	■	-
Min. cut-out voltage (V)			77	77	77	77	77	33.6	33.6	8.4	8.4	8.4	8.4
Inrush current (A)			0.4	0.8	1.5	0.3	0.3	1	0.7	4	2.5	7.7	5.6
Inrush power (VA)			44	184	625	38	45	48	33.6	48	30	185	135
Min. control impulse duration (ms)			8					8		8			
Power circuit breaking time (ms)			18					18		18			

(1) 230 V applies to 220 240 V

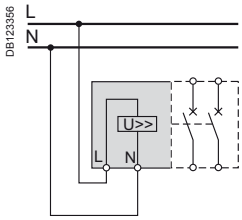
Common technical data	
Endurance	20,000 operations
Insulation voltage (Ui) (V)	400
Degree of pollution	3
Rated impulse withstand voltage (Uimp)	4 kV (6 kV relative to the associated protective device)



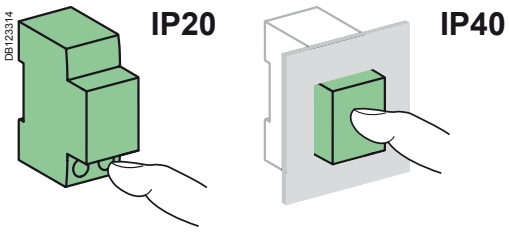
Auxiliary trip units for Acti 9 protective devices (cont.)



Three-phase power supply monitoring



Single-phase power supply monitoring



iMSU: overvoltage release units

Function

■ Tripping of the associated protective device when the voltage across its terminals exceeds its nominal value.
■ This auxiliary can protect sensitive loads from mains voltage fluctuations, in particular those due to breakage of the neutral conductor.
■ Resetting of the protective device is possible only when the voltage across the terminals of the auxiliary has returned to its nominal value.
■ When assembling with the associated device:
□ take the operating temperature range of the associated protective device into account,
□ when the assembly is complete, test the handle of the associated protective device.

Technical data

Auxiliary trip units			iMSU
Catalogue numbers			**A9A26500**
Main characteristics			
Rated voltage (Un)			230 V, 50/60 Hz
Power consumption (at Un)		A	0.002
Power consumption	Holding	VA	0.046
	Inrush	VÂ	128
Insulation voltage (Ui)			400 V
Degree of pollution			3
Rated impulse withstand voltage (Uimp)			4 kV (6 kV relative to the associated protective device)
Additional characteristics			
Endurance			20,000 operations

Standardised operating and non-response to voltage (Ua) times					
	255 V AC	275 V AC	300 V AC	350 V AC	400 V AC
Maximum operating time	Pas de déclenchement	15 s	5 s	0.75 s	0.20 s
Minimum non-response time		3 s	1 s	0.25 s	0.07 s

(Ua)
Voltages measured between the phase and the neutral conductor, at which the iMSU device must control the associated protective device.

Low-level control

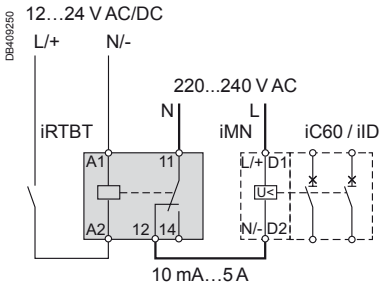
PB107164-35

"Low-level" control

The iRTBT relay cat. no. A9A15416 allows the auxiliary trip units to be controlled by a low-level signal.

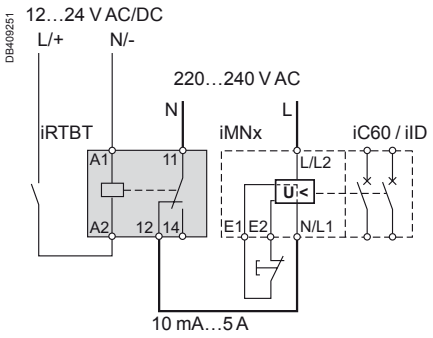
Example iMN

DB409250



Example iMNx

DB409251



iRTBT relay

Inputs (A1, A2)		12…24 V AC/DC, 0…60 Hz
Outputs (11 and 12, 11 and 14)	Mini	10 mA/10 V DC (DC12) 10 mA/10 V AC
	Maxi	1 A/24 V DC (DC12) 5 A/250 V AC

Electrical auxiliaries for iC60, iID, iSW-NA, ARA and RCA

DB123593

The mounting order for the various auxiliaries must be complied with.
The tripping auxiliaries (iMN, iMX) should be mounted first, as close as possible to the circuit breaker or the residual current circuit breaker. Then, the indicating auxiliaries (iOF, iSD) should be mounted, complying with their position shown in the following table.

Indicating auxiliaries

PB104474-25

PB104475-25

1 (iOF/SD+OF or iOF+SD24 or iSD)	1 iOF/SD+OF
1 iOF	1 (iSD or iOF or iOF/SD+OF)
None	1 iOF+SD24
None	None
1 iSD	1 iSD
None	1 (iSD or iOF or iOF/SD+OF or iOF+SD24)
1 iOF	1 (iSD or iOF or iOF/SD+OF)
None	1 (iSD or iOF or iOF/SD+OF or iOF+SD24)
1 iOF	1 (iSD or iOF or iOF/SD+OF)

The tripping auxiliaries should be installed first.
Comply with the position of the SD function.

Electrical auxiliaries for iC60, iID, iSW-NA, ARA and RCA (cont.)

	Tripping auxiliaries	Remote control	Device	Vigi iC60
		**ARA automatic recloser or RCA remote control**	**iC60 circuit breaker or iID residual current circuit breaker or iSW-NA switch-disconnector**	**Vigi iC60 add-on residual current device**
	1 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU) max.	–	 *iC60*	 *Vigi iC60*
	2 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU) max.			
	2 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU) max.			
	3 iMSU max.			
	1 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU) max.			
		–	 *iID/iSW-NA*	–
	1 (iMN, iMNs, iMNx or iMX, iMX+OF or iMSU) max.	 *ARA*	 *iC60*	 *Vigi iC60*
	None		 *iID*	–
	1 (iMX or iMN or iMSU) max.	 *RCA*	 *iC60*	 *Vigi iC60*
	None			

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