Low voltage

Acti 9

Advanced Communication

Technology that Inspires.....

Catalogue Jasmine

07/2012

Schneider Electric

Summary

Summary (cont.)

Choice of circuit protective devices

■ Circuit breakers can:
□ guard against fires that might be caused by a faulty electric circuit (short-circuit, overload, insulation fault),
□ protect people against electric shock in the event of indirect contact.
■ 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 magnetic short circuits and thermal 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:
■ breaking capacity
■ max. voltage rating
■ planned amperage for the circuit to be protected
■ nature and cross section of cables
■ ambient temperature (possible derating)
■ the loads, which determine the number of poles of the protective circuit breaker installed on their power supply circuit and the tripping curve.

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 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** and short-circuit current limiting, see module **CA908025**).

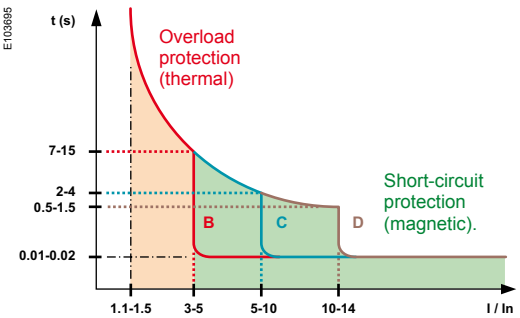
Choice of rating

■ The rating (In) is chosen above all to protect the electrical connections:
□ for cables: it is chosen according to the cross section,
□ for Canalis prefabricated busbar trunking: it must be simply less than or equal to the rating of the busbar trunking.
■ Generally, the rating should be greater than the nominal current of the circuits.
■ The rating of the upstream circuit breaker must always be less than or equal to the sum of the ratings of the downstream circuit breakers.

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	**EN 60898**	**IEC 60947-2**
B	Between 3 In and 5 In	Between 3.2 In and 4.8 In
C	Between 5 In and 10 In	Between 7 In and 10 In
D or K	-	Between 10 In and 14 In
MA	-	12 In
Z	-	Between 2.4 In and 3.6 In

■ 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.)

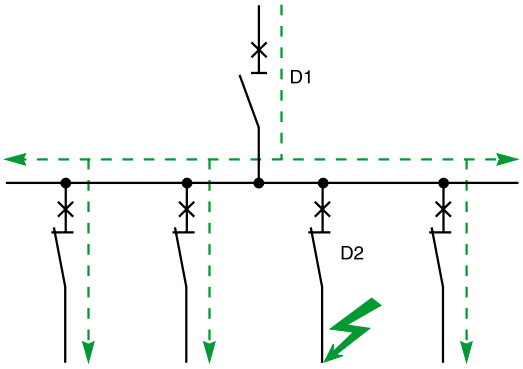
Continuity of service

■ 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).

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, as the electrical connections would then no longer be protected.**
■ **Ensure discrimination of the protective devices**
(see modules **557E4300/4305/4310/4320/4330**).
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.

DB120589



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 specific case of three-phase circuits supplying discharge lamps with electronic ballasts, harmonic currents of the third order and multiples of three are generated. The neutral cable must be sized to prevent it from overheating. However, 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

DB123787

Circuit isolation

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 (1), must be cut off.
■ 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.

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

Motor protection

DB123791

Motor protection

Protection of motors against risks of overheating due, for example, to an extended overload, rotor blocking or single-phase operation. Given the specific characteristics of motors:
■ overload detection is entrusted to a thermal relay specially designed for their protection. This relay may possibly provide overload protection for busbar trunking
■ in this case short-circuit protection is provided by a circuit breaker without a thermal release (MA type).

Circuit breaker panorama

Selection guide

Circuit breakers

Type			iDPN	iDPN N	
					
Standard			IEC/EN 60898-1	IEC/EN 60898-1	
Quality label			Country approval pictogram	Country approval pictogram	
Number of poles			1P+N	1P+N, 3P, 3P+N	
Add-on residual current devices (Vigi)			■	■	
Auxiliaries for remote tripping and indication			■	■	
Electrical characteristics					
Curves			B, C	C, D	
Ratings (A)	In		1 to 40	1 to 40	
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)	230	230/400	
		DC	–	–	
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)	–	–	
		DC	–	–	
Insulation voltage (V AC)	Ui		440	440	
Rated impulse withstand voltage (kV)	Uimp		4	4	
Limitation class up to 40 A (EN 60898)			3	3	
Breaking capacity					
AC-Breaking capacity		**Ue (50/60 Hz)**	**Ph / N**	**Ph / N**	**Ph / Ph**
IEC 60947-2 (kA)	Icu	12...60 V	–	–	–
		12...133 V	–	–	–
		100...133 V	–	–	–
		220...240 V	**6**	**10**	**15**
		380...415 V	–	–	**10**
		440 V	–	–	–
	Ics		–	–	–
IEC/EN 60898 (A)	Icn	240/415 V - 230/400 V	4500	6000	
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			–	–	
Fault tripping indication			–	–	
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			**CA901012**	**CA901012**	
Accessories			**CA907010**	**CA907010**	
Auxiliaries			**CA907008 and CA907010**	**CA907008 and CA907010**	
Add-on residual current devices (Vigi)			**CA902013**	**CA902013**	

Circuit breaker panorama (cont.)

	iK60N		iC60N		iC60H		iC60L	
								
	IEC/EN 60898-1		IEC/EN 60947-2, 60898-1		IEC/EN 60947-2, 60898-1		IEC/EN 60947-2, 60898-1	
	Country approval pictogram		Country approval pictogram		Country approval pictogram		Country approval pictogram	
	1P, 1P+N	2, 3, 4P	1P, 1P+N	2, 3, 4P	1P, 1P+N	2, 3, 4P	1P	2, 3, 4P
	–		■		■		■	
	–		■		■		■	
	B, C		B, C, D		B, C, D		B, C, K, Z	
	1 to 63		0.5 to 63 (1 to 63 in DC)		0.5 to 63 (1 to 63 in DC)		0.5 to 63 (1 to 63 in DC)	
	230/400		240/415, 440		240/415, 440		240/415, 440	
	–		250		250		250	
	–		12		12		12	
	–		12		12		12	
	400		500		500		500	
	4		6		6		6	
	3		–		–		–	
	Ph / N	**Ph / Ph**	**Ph / N**	**Ph / Ph**	**Ph / N**	**Ph / Ph**	**Ph / N**	**Ph / Ph**
	–	–	**50** (0.5 to 4 A) **36** (6 to 63 A)	–	**70** (0.5 to 4 A) **42** (6 to 63 A)	–	**100** (0.5 to 4 A) **70** (6 to 63 A)	**100** (0.5 to 4 A) **80** (6 to 63 A)
	–	–	–	**50** (0.5 to 4 A) **36** (6 to 63 A)	–	**70** (0.5 to 4 A) **42** (6 to 63 A)	–	–
	–	–	**50** (0.5 to 4 A) **20** (6 to 63 A)	–	**70** (0.5 to 4 A) **30** (6 to 63 A)	–	**100** (0.5 to 4 A) **50** (6 to 25 A) **36** (32/40 A) **30** (50/63 A)	**100** (0.5 to 4 A) **70** (6 to 63 A)
	–	–	**50** (0.5 to 4 A) **10** (6 to 63 A)	**50** (0.5 to 4 A) **20** (6 to 63 A)	**70** (0.5 to 4 A) **15** (6 to 63 A)	**70** (0.5 to 4 A) **30** (6 to 63 A)	**100** (0.5 to 4 A) **25** (6 to 25 A) **20** (32/40 A) **15** (50/63 A)	**100** (0.5 to 4 A) **50** (6 to 25 A) **36** (32/40 A) **30** (50/63 A)
	–	–	–	**50** (0.5 to 4 A) **10** (6 to 63 A)	–	**70** (0.5 to 4 A) **15** (6 to 63 A)	–	**100** (0.5 to 4 A) **25** (6 to 25 A) **20** (32/40 A) **15** (50/63 A)
	–	–	–	**25** (0.5 to 4 A) **6** (6 to 63 A)	–	**50** (0.5 to 4 A) **10** (6 to 63 A)	–	**70** (0.5 to 4 A) **20** (6 to 25 A) **15** (32/40 A) **10** (50/63 A)
	–		100 % of Icu (0.5 to 4 A) 75 % of Icu (6 to 63 A)		100 % of Icu (0.5 to 4 A) 50 % of Icu (6 to 63 A)		100 % of Icu (0.5 to 4 A) 50 % of Icu (6 to 63 A) (1)	
	6000	6000	6000	6000	10000	10000	15000	15000
	–		**15**		**20**		**25**	
	–		**10**		**15**		**20**	
	–		**10**		**15**		**20**	
	–		**10**		**15**		**20**	
	–		**10**		**15**		**20**	
	–		100 % of Icu		100 % of Icu		100 % of Icu	
	–		■		■		■	
	–		50°C		50°C		50°C	
	–		Visi-trip window		Visi-trip window		Visi-trip window	
	–		■		■		■	
	–		■		■		■	
	IP20		IP20		IP20		IP20	
	IP40 Insulation class II		IP40 Insulation class II		IP40 Insulation class II		IP40 Insulation class II	
	CA901006 and CA901007		**CA901002**		**CA901003**		**CA901004**	
	–		**CA907000 and CA907001**		**CA907000 and CA907001**		**CA907000 and CA907001**	
	–		**CA907000 and CA907002**		**CA907000 and CA907002**		**CA907000 and CA907002**	
	–		**CA902005**		**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		B, C	
Ratings (A)	In		63, 80, 100, 125		10 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						
AC-Breaking capacity		**Ue (50/60 Hz)**	**Ph / N**	**Ph / Ph**	**Ph / N**	**Ph / Ph**
IEC 60947-2 (kA)	Icu	110...130 V	–	–	–	–
		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	
IEC/EN 60898 (A)	Icn	230/400 V	10000	10000	15000	15000
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			■		■	
Dismounting with comb busbar in place			Special comb busbar		Special comb busbar	
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, 3, 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	
	240/415, 500	240/415, 500		240/415, 500		240/415, 500	
	–	125 per pole		125 per pole		125 per pole	
	12	12		12		12	
	–	12		12		12	
	690	690		690		690	
	8	8		8		8	
	Ph / Ph	**Ph / N**	**Ph / Ph**	**Ph / N**	**Ph / Ph**	**Ph / N**	**Ph / Ph**
	–	**50**	–	**70**	–	**100**	–
	–	–	–	–	–	–	–
	–	**25**	**50**	**36**	**70**	**50**	**100**
	16	**6**	**25**	**9** (1)	**36**	**12.5** (1)	**50**
	–	–	**20**	–	**30**	–	**40**
	6	–	**10**	–	**12**	–	**15**
	75 % of Icu	75 % of Icu		75 % of Icu		75 % of Icu	
	–	–	–	–	–	–	–
	–	**25**		**36**		**50**	
	–	**20**		**25**		**36**	
	–	**20**		**25**		**36**	
	20	**20**		**25**		**36**	
	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 up to 40 A (EN 60898)			–	
Breaking capacity				
AC-Breaking capacity		**Ue (50/60 Hz)**	**Ph / N**	**Ph / Ph**
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	
IEC/EN 60898 (A)	Icn	240/415 V - 230/400 V	4500	
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)	MA (Ii = 12 In)
Ratings (A)	In		1.6 to 40	4 to 80
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)	440	500
		DC	250	–
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)	12	12
		DC	12	–
Insulation voltage (V AC)	Ui		500	690
Rated impulse withstand voltage (kV)	Uimp		6	8
Breaking capacity				
AC-Breaking capacity		**Ue (50/60 Hz)**		
IEC 60947-2 (kA)	Icu	12...60 V	–	–
		12...133 V	–	–
		100...133 V	–	–
		110...130 V	–	–
		130 V	–	–
		220...240 V	**40** (1.6 to 16 A) **30** (25 to 40 A)	**100**
		230/400 V	–	–
		380...415 V	**20** (1.6 to 16 A) **15** (25 to 40 A)	**50**
		400/415 V	–	–
		440 V	**15** (1.6 to 16 A) **10** (25 to 40 A)	**40**
		500 V	–	**15**
	Ics		50 % of Icu (1.6 to 40 A)	75 % of Icu
IEC/EN 60898 (A)	Icn	230/400 V	–	–
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			■	■
Dismounting with comb busbar in place			Upstream connection	–
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)**	**Ratings (A)**	**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**	**8**	**8**
	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			–									
Dismounting with comb busbar in place			–									
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)**			**Ph / N**	**Ph / Ph**
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**	

xC60 biconnect circuit breakers

DB404807

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

■ xC60 biconnect circuit breakers are multistandard circuit breakers that combine the following functions:
□ circuit protection against short-circuit currents,
□ circuit protection against overload currents,
□ protection of people against indirect contact in IT and TN earthing systems,
□ suitability for isolation in the industrial sector to IEC/EN 60947-2.
■ Fault tripping and indication by adding auxiliaries.

PB110811-40

PB110813-40

PB110812-40

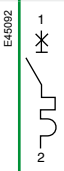
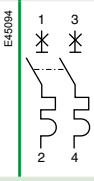
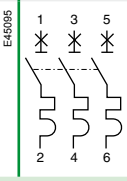
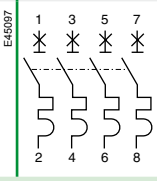
PB110814-40

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)			**380 to 415 V**	
Ph/N (1P)			**220 to 240 V**	
Rating (In)	≤ 40A	B, C, D curves	15 kA	50 % of Icu
	50-63A	B, C curves	10 kA	75 % of Icu
	50-63A	D curve	6 kA	100 % of Icu
Breaking capacity (Icn) according to IEC/EN 60898-1				
			Voltage (Ue)	
Ph/Ph			**415 V**	
Ph/N			**240 V**	
Rating (In)	0.5 to 63 A		10,000 A	

Direct current (DC)						
Breaking capacity (Icu) according to IEC/EN 60947-2						**Service breaking capacity (Ics)**
	Voltage (Ue)					
Between +/-	**12 to 48 V**	**60 V**	**100 to 125 V**		**220 to 250 V**	
Number of poles	**1P**		**2P (in series)**	**3P (in series)**	**4P (in series)**	
Rating (In) 1 to 63 A	15 kA	6 kA	6 kA	15 kA	6 kA	100 % of Icu

Catalogue numbers

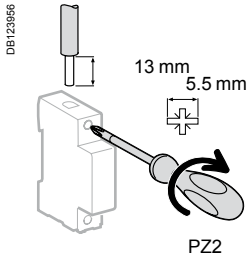
xC60

Type	1P	2P	3P	4P
				
Auxiliaries	**Module CA907008**			
Vigi xC60	**Vigi xC60 add-on residual current device, module CA902029**			

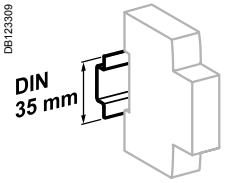
Rating (In)	Curve									Curve		
	B	C	D	B	C	D	B	C	D	B	C	D
0.5 A	-	A9N1PD5C	-	-	A9N2PD5C	-	-	A9N3PD5C	-	-	A9N4PD5C	-
1 A	-	A9N1P01C	A9N1P01D	-	A9N2P01C	A9N2P01D	-	A9N3P01C	A9N3P01D	-	A9N4P01C	-
2 A	-	A9N1P02C	A9N1P02D	-	A9N2P02C	A9N2P02D	-	A9N3P02C	A9N3P02D	-	A9N4P02C	A9N4P02D
3 A	-	A9N1P03C	A9N1P03D	-	A9N2P03C	A9N2P03D	-	A9N3P03C	A9N3P03D	-	A9N4P03C	A9N4P03D
4 A	-	A9N1P04C	A9N1P04D	-	A9N2P04C	A9N2P04D	-	A9N3P04C	A9N3P04D	-	A9N4P04C	A9N4P04D
6 A	A9N1P06B	A9N1P06C	A9N1P06D	A9N2P06B	A9N2P06C	A9N2P06D	A9N3P06B	A9N3P06C	A9N3P06D	A9N4P06B	A9N4P06C	A9N4P06D
10 A	A9N1P10B	A9N1P10C	A9N1P10D	A9N2P10B	A9N2P10C	A9N2P10D	A9N3P10B	A9N3P10C	A9N3P10D	A9N4P10B	A9N4P10C	A9N4P10D
16 A	A9N1P16B	A9N1P16C	A9N1P16D	A9N2P16B	A9N2P16C	A9N2P16D	A9N3P16B	A9N3P16C	A9N3P16D	A9N4P16B	A9N4P16C	A9N4P16D
20 A	A9N1P20B	A9N1P20C	A9N1P20D	A9N2P20B	A9N2P20C	A9N2P20D	A9N3P20B	A9N3P20C	A9N3P20D	A9N4P20B	A9N4P20C	A9N4P20D
25 A	A9N1P25B	A9N1P25C	A9N1P25D	A9N2P25B	A9N2P25C	A9N2P25D	A9N3P25B	A9N3P25C	A9N3P25D	A9N4P25B	A9N4P25C	A9N4P25D
32 A	A9N1P32B	A9N1P32C	A9N1P32D	A9N2P32B	A9N2P32C	A9N2P32D	A9N3P32B	A9N3P32C	A9N3P32D	A9N4P32B	A9N4P32C	A9N4P32D
40 A	A9N1P40B	A9N1P40C	A9N1P40D	A9N2P40B	A9N2P40C	A9N2P40D	A9N3P40B	A9N3P40C	A9N3P40D	A9N4P40B	A9N4P40C	A9N4P40D
50 A	A9N1P50B	A9N1P50C	A9N1P50D	A9N2P50B	A9N2P50C	A9N2P50D	A9N3P50B	A9N3P50C	A9N3P50D	A9N4P50B	A9N4P50C	A9N4P50D
63 A	A9N1P63B	A9N1P63C	A9N1P63D	A9N2P63B	A9N2P63C	A9N2P63D	A9N3P63B	A9N3P63C	A9N3P63D	A9N4P63B	A9N4P63C	A9N4P63D
Width in 9-mm modules	2			4			6			8		
Accessories	**Module CA907020 and CA907012**											

xC60 biconnect circuit breakers (cont.)

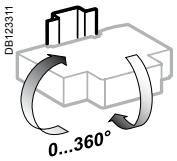
Connection



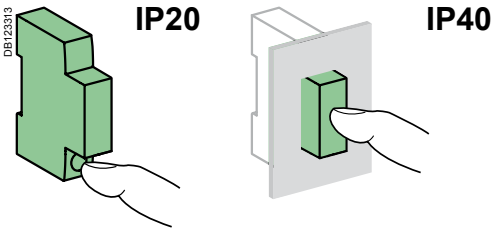
Rating	Tightening torque	Without accessory: Copper cables – Rigid	Without accessory: Copper cables – Flexible or ferrule	With accessories: 50 mm² Al terminal	With accessories: Screw-on connection for ring terminal	With accessories: Multi-cables terminal – Rigid cables	With accessories: Multi-cables terminal – Flexible cables
		DB122945	DB122946	DB122935 / Al / DB118789	DB118787		
0.5 to 25 A	2 N.m	0.75 to 16 mm²	0.33 to 10 mm²	-	Ø 5 mm	-	-
32 to 63 A	3.5 N.m	0.5 to 35 mm²	0.5 to 25 mm²	50 mm²		3 x 16 mm²	3 x 10 mm²



Clip on DIN rail 35 mm.



Indifferent position of installation.



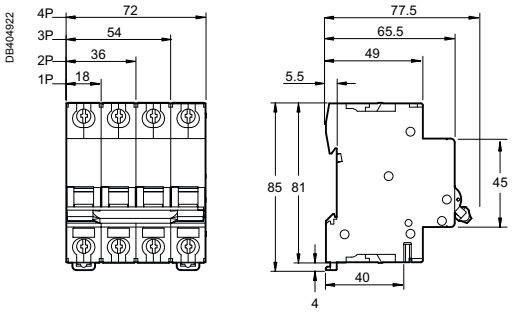
Technical data

Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		500 V AC
Rated voltage (Ue)		415 V AC
Operating frequency		50/60 Hz
Thermal tripping	Reference temperature	50°C
Magnetic tripping	Curve B	4 In ± 20 %
	Curve C	8 In ± 20 %
	Curve D	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
According to IEC/EN 60947-2		
Rated impulse withstand voltage (Uimp)		6 kV
Breaking capacity (Icu)	≤ 40 A	15 kA
	50-63 A curves B, C	10 kA
Pollution degree		3
Additional characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation classe 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		-30°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	**xC60**
1P	115
2P	215
3P	310
4P	415

Dimensions (mm)



xC60 biconnect circuit breakers (cont.)

■ Enhanced cable tear-off strength: serrated terminals

■ Cable automatically guided to the correct position: terminals with guard
■ Insulated terminals IP20

■ Fast closure

Identification
■ Location for 4 clip-on terminal markers near upstream terminals

Connection
■ Downstream by biconnect comb busbar
■ Downstream / upstream by tunnel terminals

Positive contact indication
■ 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

C120N circuit breakers (curves B, C, D)

DB123430 DB123525

Country approval pictograms

PB107904-30

PB107907-40

PB107910-30

PB107913-30

IEC/EN 60898-1, IEC 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		**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 % Icu
2P/3P/4P		**130 V**	**220 to 240 V**	**380 to 415 V**	**440 V**	
	63 to 125 A	-	20 kA	10 kA	6 kA	75 % 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 % 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

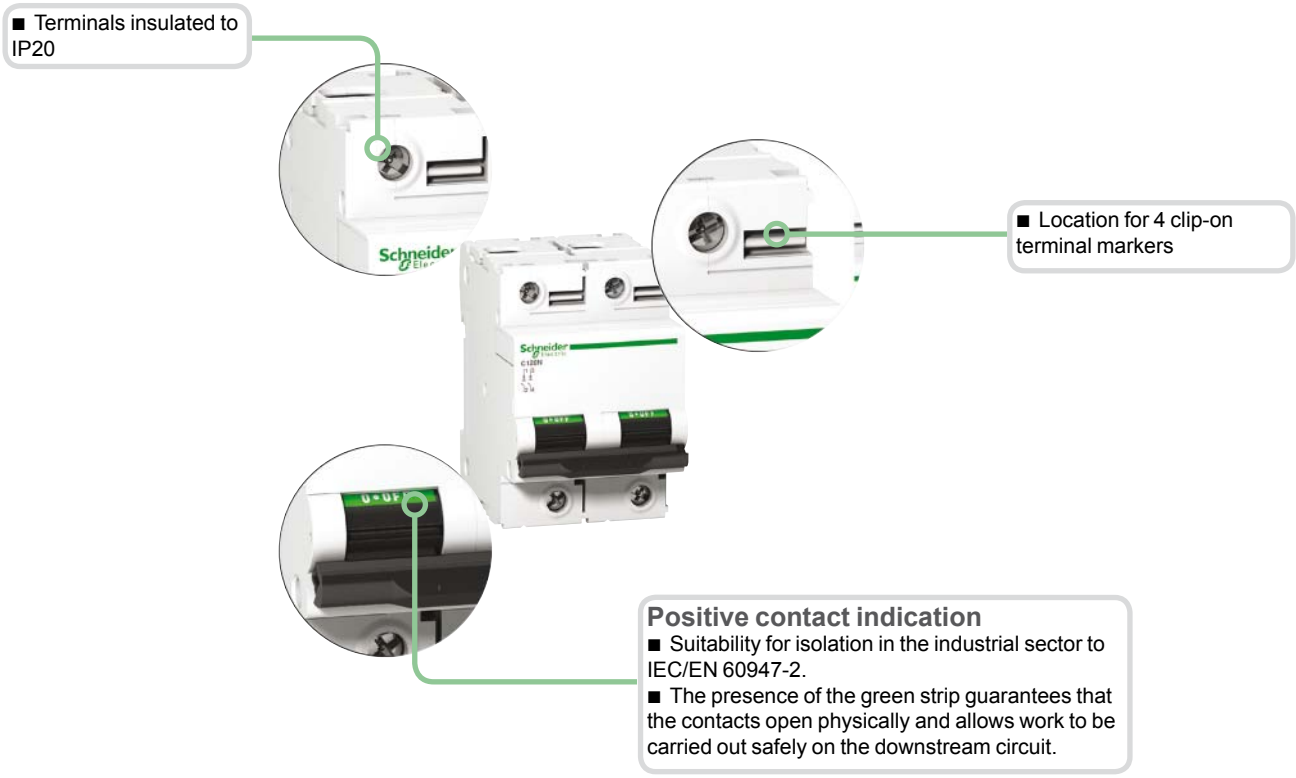
C120N circuit breaker

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**		

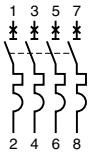
(1) Country France only

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

PB107907-40

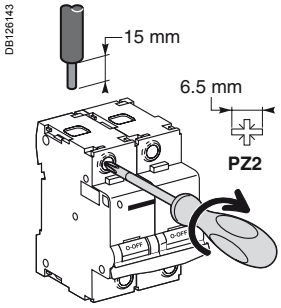


■ Longer product service life thanks to:
□ good overvoltage withstand capacity: products designed to offer a high industrial performance level (degree of pollution, rated impulse withstand voltage and insulation voltage).
□ high limitation performances (see limitation curves).
□ fast closure independent 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**		

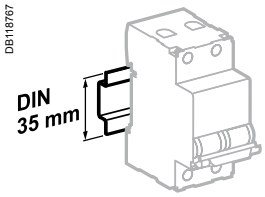
C120N circuit breakers (curves B, C, D) (cont.)

Connection

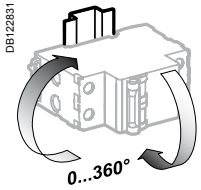


Rating	Tightening torque	Without access. Copper cables: Rigid/ semi-rigid	Without access. Copper cables: Flexible or with ferrule	With accessories: 50 mm² Al Terminal	With accessories: Screw-on connection for ring terminal(1)	With accessories: Multi-cable terminal: Rigid cables	With accessories: Multi-cable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

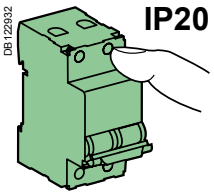
(1) For lugs up to 63 A, front or rear access.

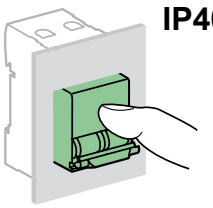


Clips onto 35 mm DIN rail.



Any installation position.





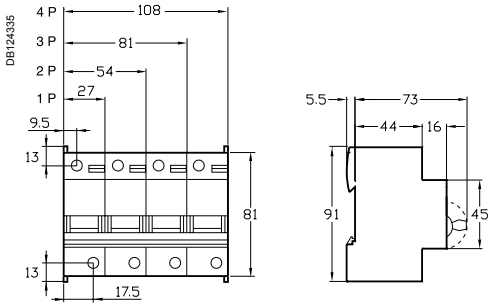
Technical data

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)



C120H circuit breakers (curves B, C, D)

DB123430 DB123525

Country approval pictograms

PB107903-30

PB107906-30

PB107909-30

PB107912-30

IEC/EN 60898-1, IEC 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		**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 % Icu
2P, 3P, 4P		**130 V**	**220 to 240 V**	**380 to 415 V**	**440 V**	
	63 to 125 A	-	30 kA	15 kA	10 kA	50 % 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 % 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

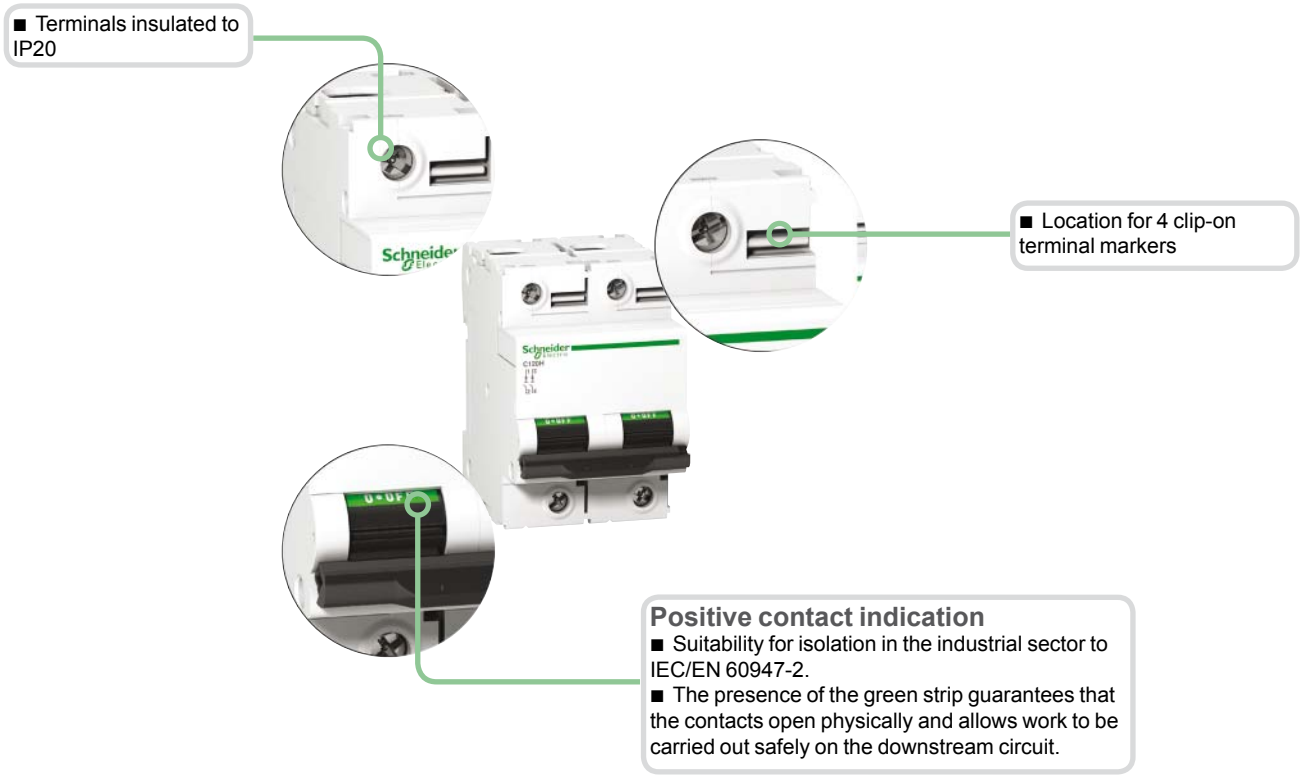
Catalogue numbers

C120H circuit breaker

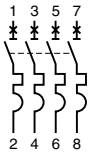
Type	**1P**			**2P**		
						
Auxiliaries	**Remote indication and tripping, module CA907008 and CA907013**			**Remote indication and tripping, module CA907008 and CA907013**		
Vigi C120	**Vigi C120 add-on residual current device, module CA902016**			**Vigi C120 add-on residual current device, module 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.)

PB107906-40



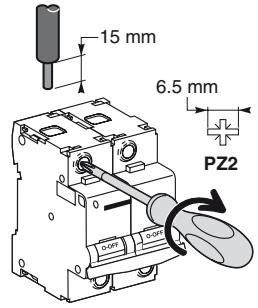
■ Longer product service life thanks to:
□ good overvoltage withstand capacity: products designed to provide a high industrial performance level (degree of pollution, rated impulse withstand voltage and insulation voltage).
□ high limitation performances (see limitation curves).
□ fast closure independent 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

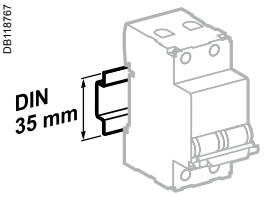
DB126143



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

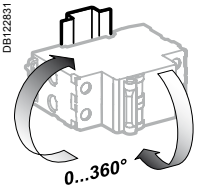
(1) For lugs up to 63 A, front or rear accessories.

DB118767



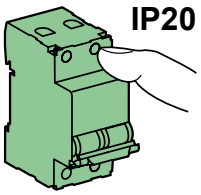
Clips onto 35 mm DIN rail.

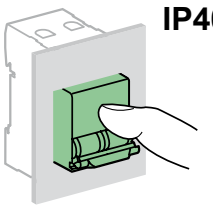
DB122831



Any installation position.

DB122932





Technical data

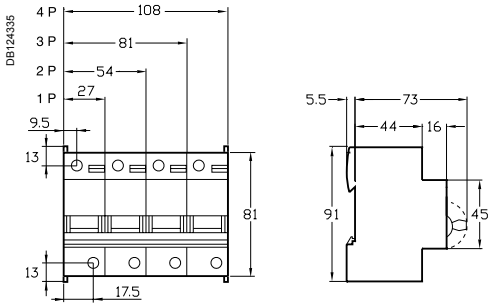
Main characteristics			
To IEC/EN 60947-2			
Insulation voltage (Ui)			500 V AC
Degree of pollution			3
Rated impulse withstand voltage (Uimp)			6 kV
Thermal tripping	Reference temperature		50°C
To IEC/EN 60898-1			
Magnetic tripping	Curve B		3 and 5 In
	Curve C		5 and 10 In
	Curve D		10 and 14 In
Limitation 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)

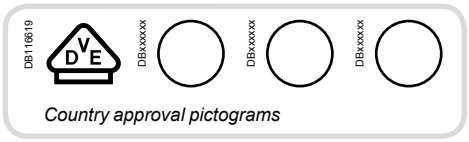
Circuit breaker	
Type	**C120H**
1P	205
2P	410
3P	615
4P	820

Dimensions (mm)

DB124335



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.

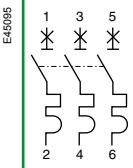
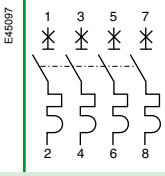
NG125a 3P

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

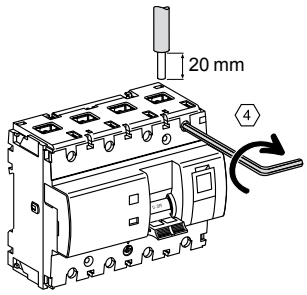
NG125a circuit breaker			
Type		**3P**	**4P**
			
Auxiliaries		**Remote indication and tripping, module CM907005 – Vigi NG125 add-on residual current device, module CM902008**	
Rating (In)	**Quality label** (1)	**Curve C**	**Curve C**
80 A		**18603**	**18607**
100 A		**18604**	**18608**
125 A		**18605**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

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

NG125a circuit breakers (curve C) (cont.)

Connection

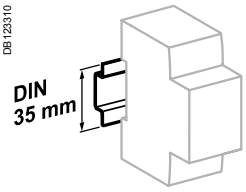
DB122589



Rating	Tightening torque	Without accessories: Copper cables: 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		
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

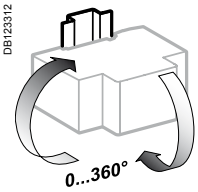
■ Upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.

DB123310



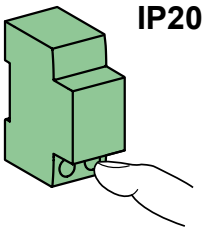
Clips on to 35 mm DIN rail.

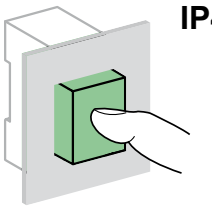
DB123312



Any installation position.

DB123314





Technical data

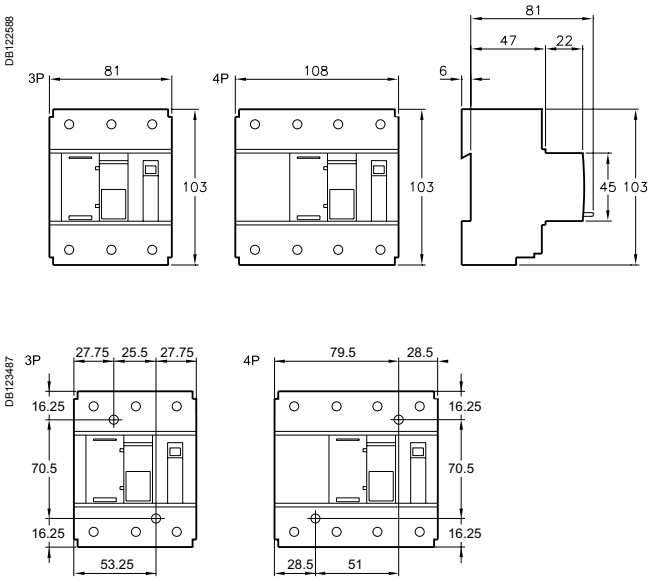
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		690 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		8 kV
Thermal tripping	Reference temperature	40°C
Magnetic tripping (Ii)	Curve C	8 In ± 20 %
Utilization category		A
Additional characteristics		
Degree 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

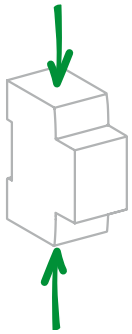
■ Central manual control, 3 positions:
□ ON
□ tripped on fault
□ open

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

■ Circuit breaker tripped indicator

DB123493

■ 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.

NG125N
Table of contents

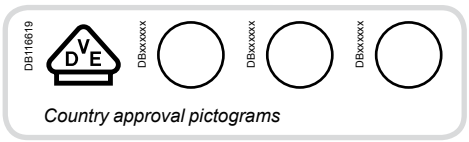
Offers
this page should be removed before publication

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.

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

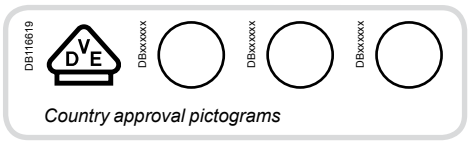
Catalogue numbers

NG125N circuit breaker

Type		1P	2P	3P			3P+N	4P		
		E45092	E45094	E45095			DB122592	E45097		
Auxiliaries		Remote indication and tripping, module CM907005 – 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 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.


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

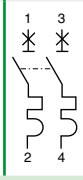
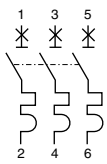
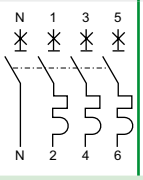
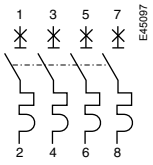
Breaking capacity (Icu) to IEC/EN 60947-2	Voltage (Ue)							Service breaking capacity (Ics)
Ph/Ph (2P, 3P, 3P+N, 4P)		-	220 to 240 V	-	380 to 415 V	440 V	500 V	
Ph/N (1P)	110 to 130 V	220 to 240 V	-	380 to 415 V	-	-	-	
Rating (In) 10 to 125 A	50 kA	25 kA	50 kA	6 kA(2)	25 kA	20 kA	10 kA	75 % of Icu

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

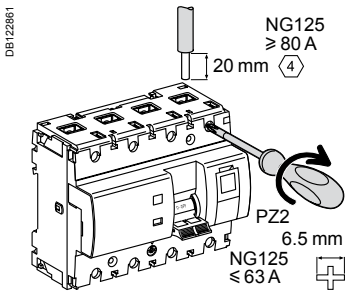
NG125N circuit breaker

Type		1P	2P	3P			3P+N	4P		
		 E45092	 E45094	 E45095			 DB122592	 E45097		
Auxiliaries		Remote indication and tripping, module CM907005 – 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 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).

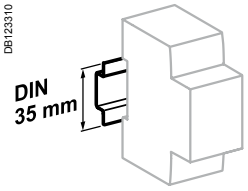
NG125N circuit breakers (curves B, C, D) (cont.)

Connection

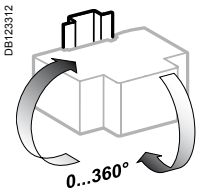


Rating	Tightening torque	Without accessories: Copper cables		With accessories: 70 mm² Al terminal	Screw-on connection for ring terminal	Small ring terminal	Multi-cable terminal	
		Rigid	Flexible or with ferrule				Rigid cables	Flexible cables
	DB122945	DB122946	DB123410	DB123488	DB118789	DB118787		
						Ø 6 mm		
10 to 63 A	3.5 N.m	1.5 to 50 mm²	1 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		

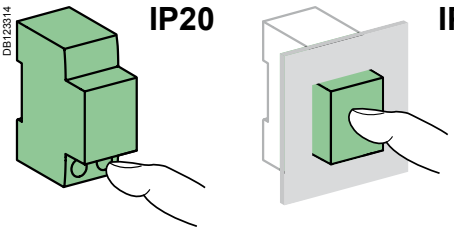
■ On 3P, 3P+N and 4P ≥ 80 A: upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.



Clips on to 35 mm DIN rail.



Any installation position.



Technical data

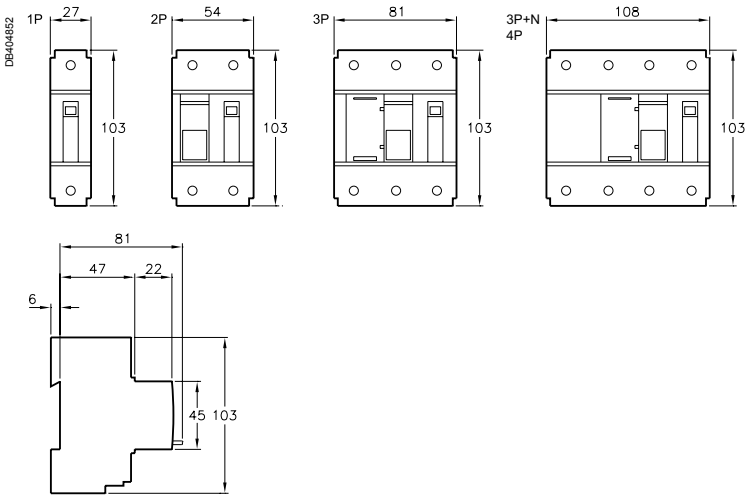
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		690 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		8 kV
Thermal tripping	Reference temperature	40°C
Magnetic tripping (Ii)	Curve B	4 In ± 20 %
	Curve C	8 In ± 20 %
	Curve D	12 In ± 20 %
Utilization category		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)

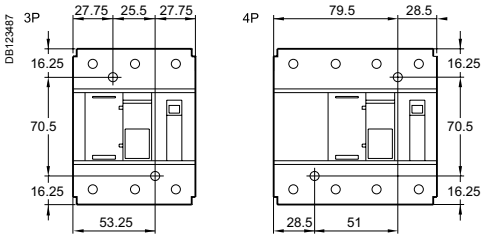
NG125N circuit breakers (curves B, C, D) (cont.)

Weight (g)

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

Dimensions (mm)





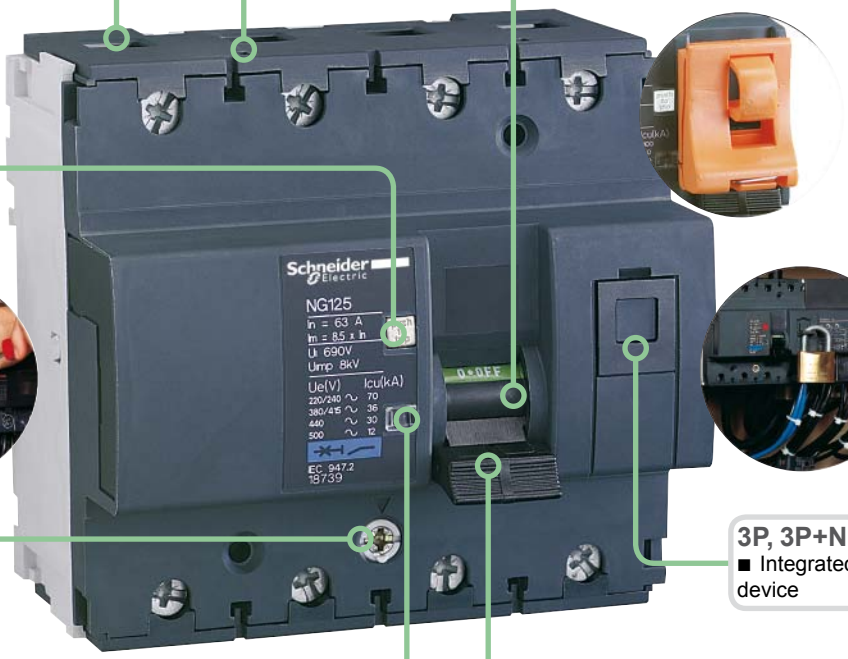
Spacing for mounting on panel

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

3P, 3P+N, 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 strength
□ metallic lock

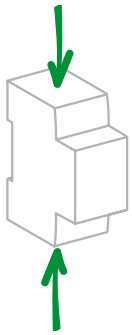
3P, 3P+N, 4P
■ Integrated padlocking device

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

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

■ Circuit breaker tripped indicator

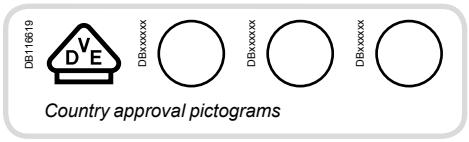
■ Electric power supply through the top or bottom



■ Positive contact indication:
□ suitability for isolation in the industrial sector to IEC/EN 60947-2
□ 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

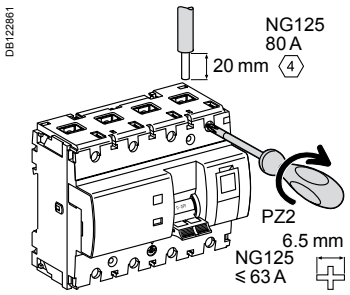
Catalogue numbers

NG125H circuit breaker					
Type		**1P**	**2P**	**3P**	**4P**
		E45092 E45094	E45095	E45097	
Auxiliaries		**Remote indication and tripping, module CM907005 – 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 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).

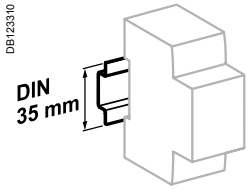
NG125H circuit breakers (curve C) (cont.)

Connection

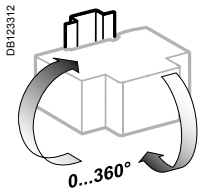


Rating	Tightening torque	Without accessories: Copper cables – Rigid	Without accessories: Copper cables – Flexible or with ferrule	With accessories: 70 mm² Al terminal	With accessories: Screw-on connection for ring terminal	With accessories: Small ring terminal	With accessories: Multi-cable terminal –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

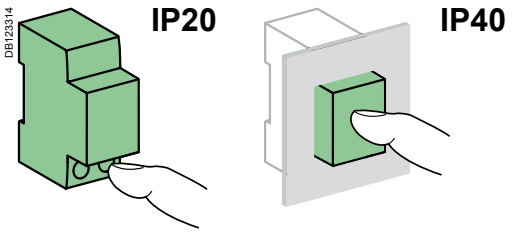
■ On 3P and 4P 80 A: upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.



Clips on to 35 mm DIN rail.



Any installation position.



Technical data

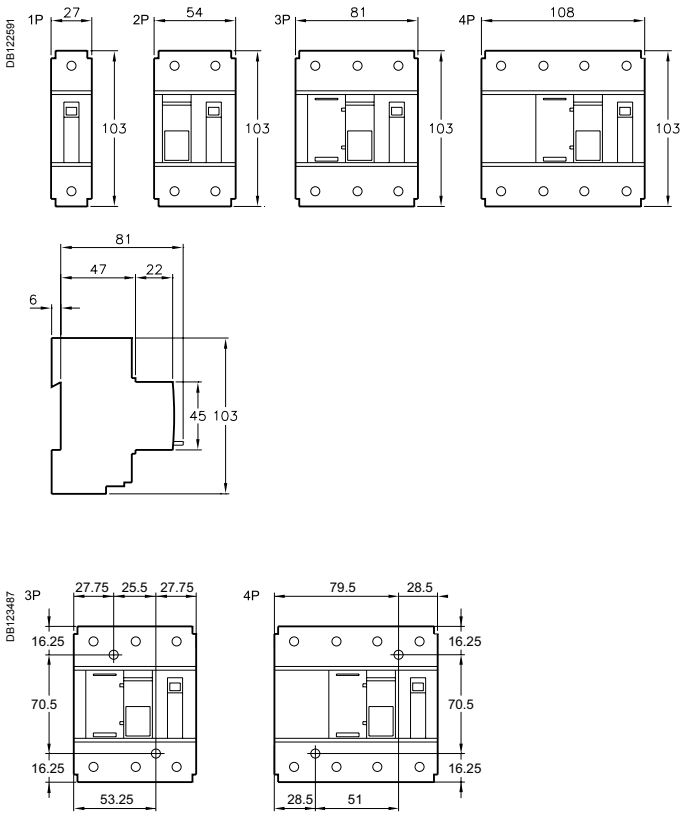
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		690 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		8 kV
Thermal tripping	Reference temperature	40°C
Magnetic tripping (Ii)	Curve C	8 In ± 20 %
Utilization category		A
Additional characteristics		
Degree 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

05691BN_SE-90

■ Test button to check satisfactory operation of the tripping mechanism

■ Pull-out strenght:
□ metallic lock

3P, 4P
■ Integrated padlocking device

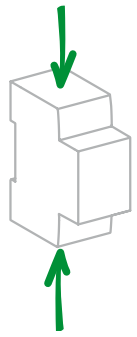
■ Central manual control, 3 positions:
□ ON
□ tripped on fault
□ open

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

■ Circuit breaker tripped indicator

DB123493

■ 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.

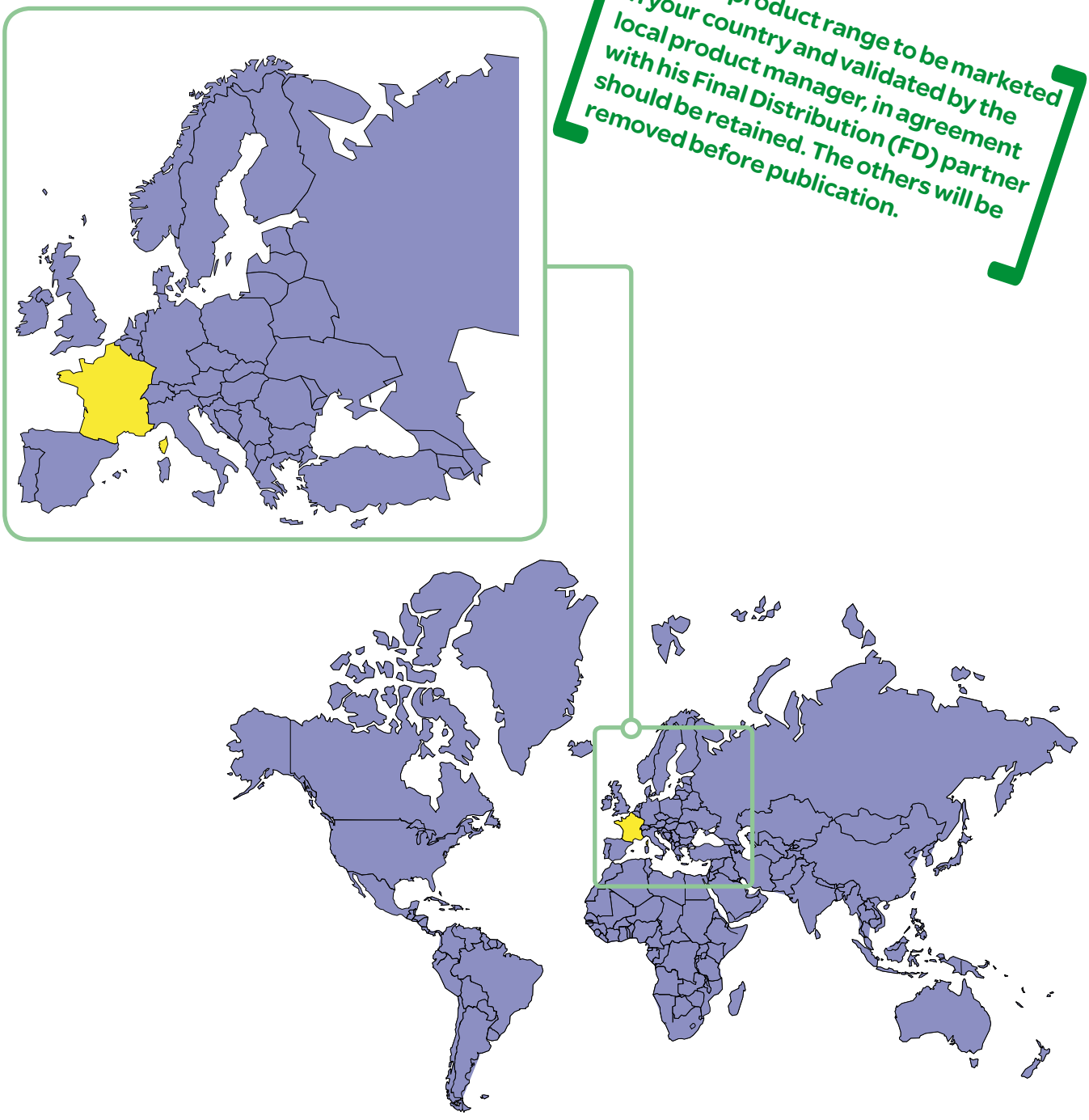
NG125L
Table of contents

Offers
this page should be removed before publication

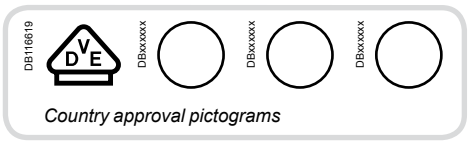
The Schneider Electric circuit breaker range comprises various offers (A, B) so as to be as competitive as possible in each country, taking into account the specific features of each market:
- Installation customs
- Price
- Approval by local organizations.

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.



NG125L circuit breakers (curves B, C, D)



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.

Offer selection see page 37

56337_SE-30


NG125L 1P

56338_SE-30


NG125L 2P

56339_SE-30


NG125L 3P

56340_SE-30


NG125L 4P

Alternating current (AC) 50/60 Hz

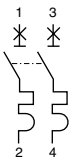
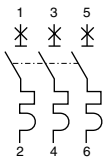
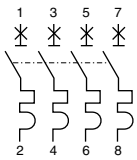
Breaking capacity (Icu) to IEC/EN 60947-2	Voltage (Ue)							Service breaking capacity (Ics)
Ph/Ph (2P, 3P, 4P)	-	-	220 to 240 V	-	380 to 415 V	440 V	500 V	
Ph/N (1P)	110 to 130 V	220 to 240 V	-	380 to 415 V	-	-	-	
Rating (In) 10 to 80 A	100 kA	50 kA	100 kA	12.5 kA(2)	50 kA	40 kA	15 kA	75 % of Icu

Direct current (DC)

Breaking capacity (Icu) according to IEC/EN 60947-2	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 80 A	50 kA	36 kA	36 kA	36 kA	36 kA	100 % of Icu

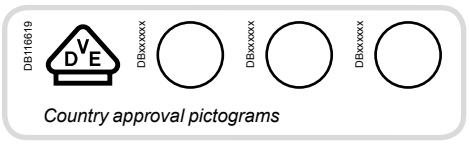
Catalogue numbers

NG125L circuit breaker

Type		1P			2P			3P			4P		
		E45092 			E45094 			E45095 			E45097 		
Auxiliaries		Remote indication and tripping, module CM907005 – 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 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.)



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.

56337_SE-30


NG125L 1P

56336_SE-30


NG125L 2P

56339_SE-30


NG125L 3P

56340_SE-30


NG125L 4P

Alternating current (AC) 50/60 Hz

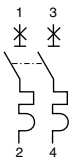
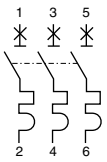
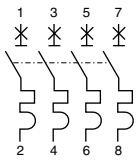
Breaking capacity (Icu) to IEC/EN 60947-2								Service breaking capacity (Ics)
	Voltage (Ue)							
Ph/Ph (2P, 3P, 4P)		-	220 to 240 V	-	380 to 415 V	440 V	500 V	
Ph/N (1P)	110 to 130 V	220 to 240 V	-	380 to 415 V	-	-	-	
Rating (In) 10 to 80 A	100 kA	50 kA	100 kA	12.5 kA(2)	50 kA	40 kA	15 kA	75 % of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

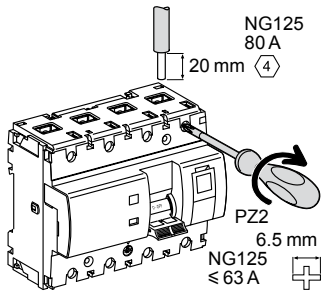
Type		1P			2P			3P			4P		
		E45092 			E45094 			E45095 			E45097 		
Auxiliaries		Remote indication and tripping, module CM907005 – Vigi NG125 add-on residual current device, module CM902008											
Rating (In)	Quality label (1)	Curve			Curve			Curve			Curve		
		B	C	D	B	C	D	B	C	D	B	C	D
10 A		18741	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 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

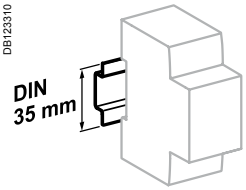
DB122861



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 cables	Flexible cables
	DB122945	DB122946	DB123410	DB123488	DB118789	DB118787		
						Ø 6 mm		
10 to 63 A	3.5 N.m	1.5 to 50 mm²	1 to 35 mm²	-	-	-	3 x 16 mm²	3 x 10 mm²
80 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		

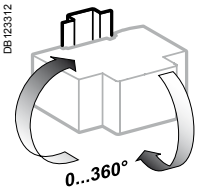
■ On 3P and 4P 80 A: upstream voltage taps for each pole, by 6.35 mm Fast-on terminal.

DB123310



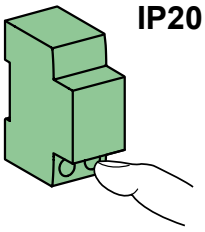
Clips on to 35 mm DIN rail.

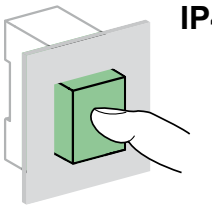
DB123312



Any installation position.

DB123314





Technical data

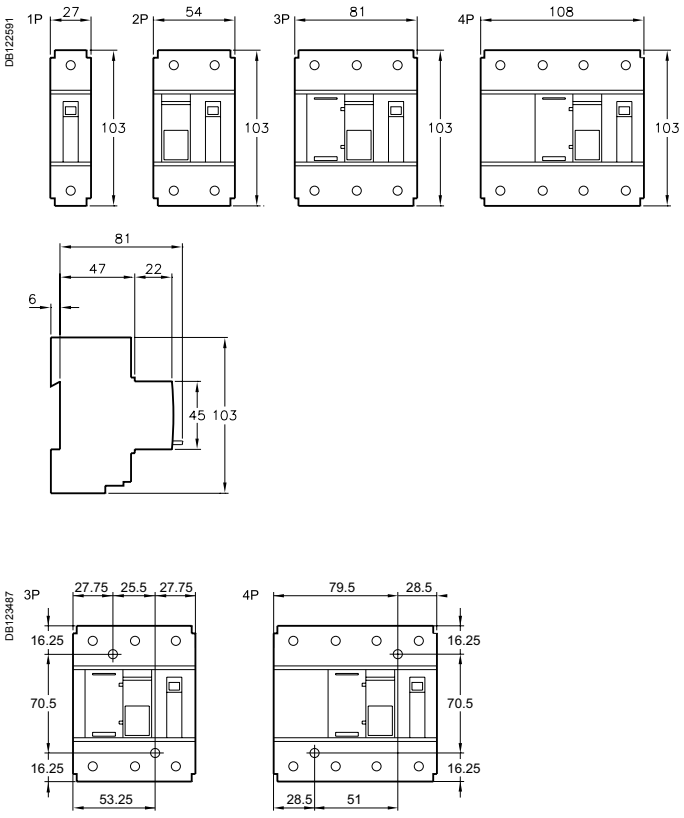
Main characteristics		
According to IEC/EN 60947-2		
Insulation voltage (Ui)		690 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		8 kV
Thermal tripping	Reference temperature	40°C
Magnetic tripping (Ii)	Curve B	4 In ± 20 %
	Curve C	8 In ± 20 %
	Curve D	12 In ± 20 %
Utilization category		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

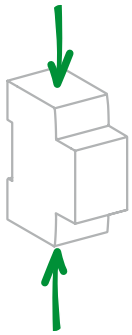
3P, 4P
■ Integrated padlocking device

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

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

■ Circuit breaker tripped indicator

■ 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.

C60H-DC
C curve

DB123430 DB123525

Pictogrammes agréments pays


PB107193-34.eps


PB107194-34.eps

IEC/EN 60947-2

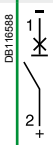
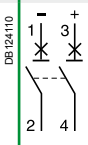
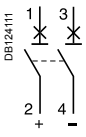
The C60H-DC supplementary protectors are used in direct current circuits (Industrial control and automations, transport, renewable energy...).
They combine the following functions of circuit protection against short-circuit and overload currents, control and isolation.

CE

Direct current (DC)						
Breaking capacity (Icu) according to IEC/EN 60947-2						Rated service breaking capacity (Ics)
Type						
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

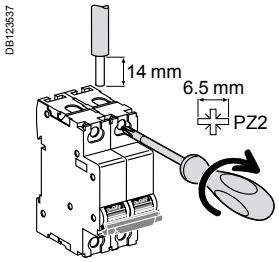
Catalogue numbers

C60H-DC

Type	1P	2P	
	 DB116588	 DB124110	 DB124111
	Supply from above or below, observing the polarity	Supply from above	Supply from below
Auxiliaries	Remote signalisation and tripping, module CA907008		
Rating (In)	Courbe C	Courbe 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 CM907007 and CA907012		

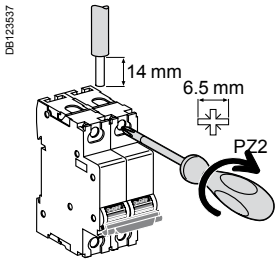
C60H-DC (cont.)
C curve

Connection

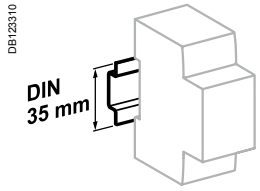


Rating	Tightening torque	Without accessory: Copper cables – Rigid / Stranded	Without accessory: Copper cables – Flexible or ferrule	With accessories: 50 mm² Al terminal	With accessories: Screw-on connection for ring terminal	With accessories: Multi-cables terminal – Rigid cables	With accessories: Multi-cables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

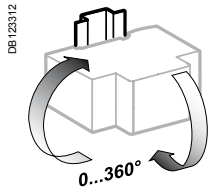
Multi-cables connection



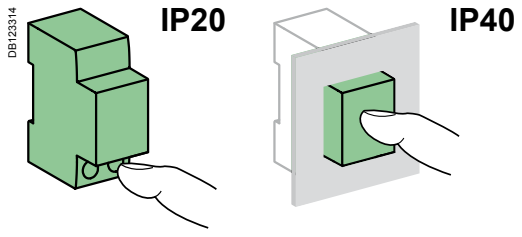
Rating	Tightening torque	Without accessory: 2 Copper cables – Rigid / Stranded	Without accessory: 2 Copper cables – Flexible or ferrule	3 Multi-cables / Different wires: Flexible / Stranded	3 Multi-cables / Different wires: Flexible / Stranded / Rigid
		DB122945	DB122946 DB118787		
≤ 25 A	2.5 N.m	2 x 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 / EN 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/EN 60947-2		
Insulation voltage (Ui)		500 V DC
Rated voltage (Un)	1P	250 V DC
	2P	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 only	IP20
	Device in modular enclosure	IP40
Utilization category		A (no delay in accordance with IEC/EN 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

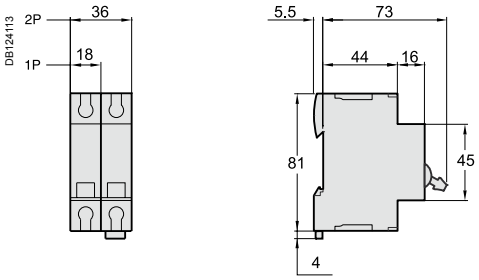
Failure to match polarity during connection may lead to a fire hazard and/or serious injury.
- The connection polarity must be observed (marked on the front panel).
- Use only with direct current.

C60H-DC (cont.)
C curve

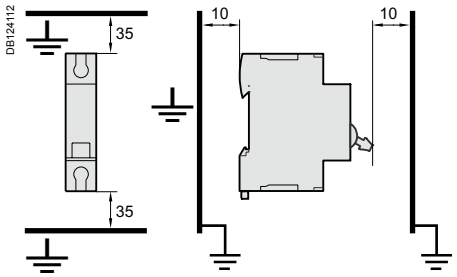
Weight (g)

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.

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.

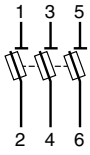
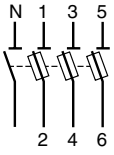
Busbar connectors
- Used to supply the busbar.
- For 25 mm² cable.

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.

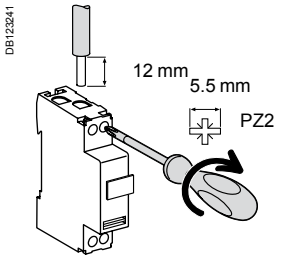
Catalogue numbers

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 	DB112798 	DB112799 	DB112800 	DB110801 
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					
	32 A	400 V AC	120 kA	120 kA	DF2CA32	DF2CN32					
							Operating frequency : 50/60 Hz				

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

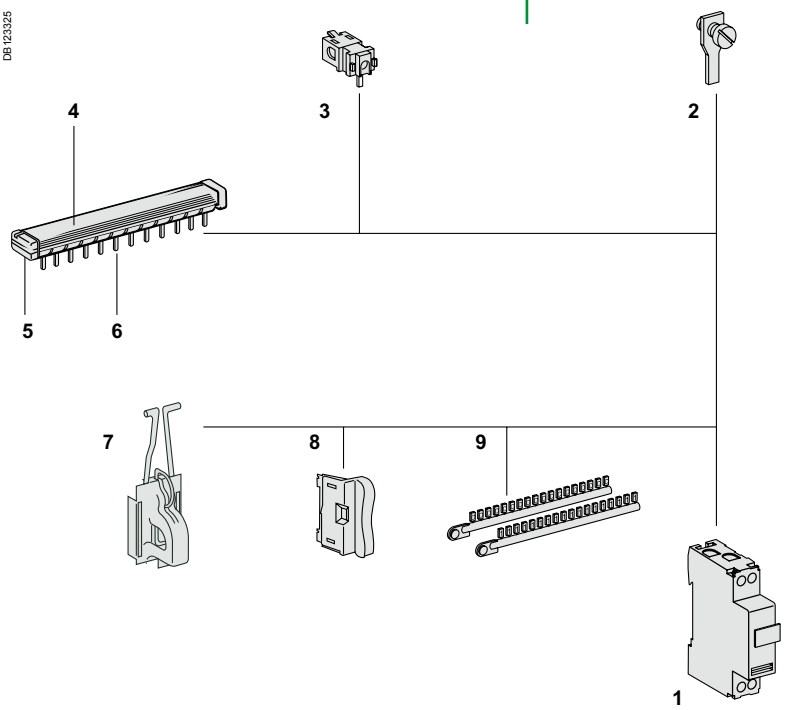
STI isolatable fuse-carriers (cont.)

Connection



Type	Rating	Tightening torque	Without accessory: Copper cables – Rigid	Without accessory: Copper cables – Flexible or ferrule	Without accessory: Multi-cables terminal – Rigid cables	Without accessory: Multi-cables terminal – Flexible cables	With accessories: Screw-on connection for ring terminal
			DB122945	DB122946	DB118787	DB118789	
STI	All	2 N.m	0.75 to 10 mm²	0.33 to 6 mm²	0.75 to 10 mm²	0.33 to 6 mm²	Ø 5 mm

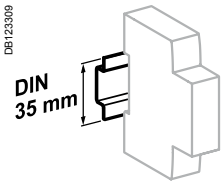
2	Screw-on connection for ring terminal			**27053**
3	Insulated connectors		(set of 4)	**14885**
4	Comb busbar	24 pas	1P	**14881**
		26 pas	1P+N	**14880**
		24 pas	2P	**14882**
		24 pas	3P	**14883**
		24 pas	4P	**14884**
5	Flange for comb busbars (set of 40)		For 1P, 2P	**14886**
			For 3P, 4P	**14887**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



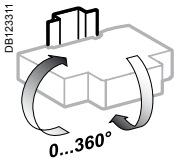
Mounting accessories

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

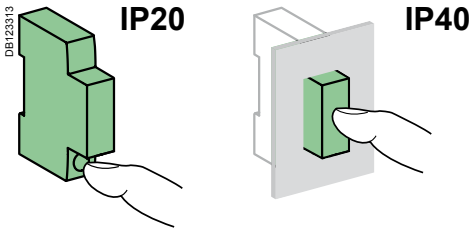
STI isolatable fuse-carriers (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



Technical data

Main characteristics		
Insulation voltage (Ui)		690 V
Pollution degree		3
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40 Insulation classe 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

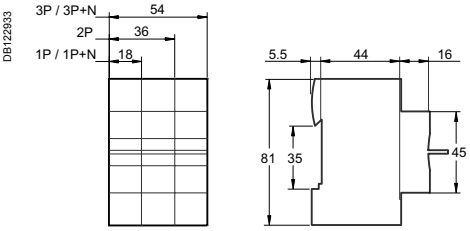
To be equiped with aM or gG (gL - gl) type fuse cartridge without striker, with or without fuse blowing indicator:

Fuse cartridge type		Ith	Pmax*
8.5 x 31 mm	aM	10 A	3 W
	gG	20 A	3 W
10.3 x 38 mm	aM	25 A	3.5 W
	gG	32 A	3.5 W

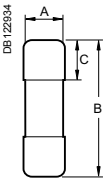
**Pmax: maximum dissipated power per fuse cartridge.*

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

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

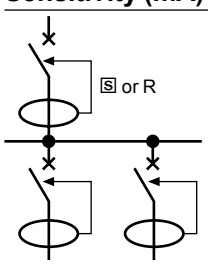
Schneider Electric provides various equipment technologies capable of overcoming the consequences of interference of all kinds.

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 (Ⓢ) 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						Selective Ⓢ					Delayed R	
		30	100	300	500	1000	3000	100	300	500	1000	3000	1000	3000
Instantaneous	30	-	-	-	-	-	-							
	100	-	-	-	-	-	-	-						
	300	-	-	-	-	-	-	-	-	-				
	500	-	-	-	-	-	-	-	-	-	-		-	
	1000	-	-	-	-	-	-	-	-	-	-		-	
	3000	-	-	-	-	-	-	-	-	-	-	-	-	-
Selective Ⓢ	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
Number of poles		1P+N	–	–	–	–
		2P	■	■	■	–
		3P	–	–	–	–
		4P	■	■	■	■
Type		AC	■	■	■	–
		A	–	■	■	–
		SI	–	■	■	–
		B	–	–	–	■
Voltage (V)	Ue		230/400	230/400	230/400	230/400
Impulse voltage (kV)	Uimp		4	6	4	4
Insulation voltage (V)	Ui		440	500	400	400
Current rating (A)	In		25 - 40 - 63	16 to 100	125	25 to 125
Frequency (Hz)			50/60	50	50	50
Rated breaking capacity (A)	Icn		–	–	10000	–
Rated conditional short-circuit current	Inc		4500	10000	10000	10000
Rated residual breaking and making capacity (A)	(IΔm)		10 In (500 A min.)	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
	–	–	–	■	■
	■	■	■	–	–
	■	■	■	–	–
	■	■	■	–	–
	■	■	■	■	■
	■	■	■	■	–
	■	■	■	–	■
	–	–	–	–	–
	230/400	230/400	230/400	230	230
	6	6	8	4	4
	500	500	690	400	400
	25 - 40 - 63	10 - 125	63 - 125	10 -16	4 to 40
	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
Number of poles		1P+N	–	–
		2P	■	■
		3P	–	–
		4P	■	■
Type		AC	■	■
		A	–	–
		SI	■	–
		B	–	–
Voltage (V)	Ue		230/400	230/400
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 Ⓢ	■	–
		500 Ⓢ	–	–
		1000 Ⓢ	–	–
		3000 Ⓢ	–	–
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**

xID biconnect residual current circuit breakers (AC, *SI* types)

DB404807

Country approval pictograms

IEC/EN 61008-1

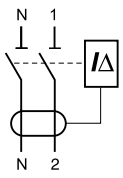
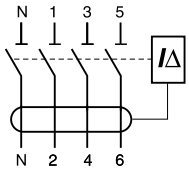
■ xID biconnect residual current circuit breakers offer the following functions:
□ protection of persons against electric shocks by direct contact (30 mA),
□ protection of persons against electric shock by indirect contact (≥ 100 mA),
□ protection of installations against fire risks (300 mA).

PB110816-40

PB110817-40

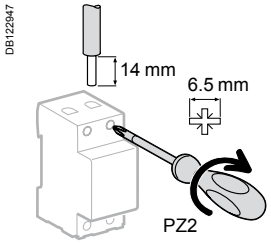
Catalogue numbers

xID biconnect residual current circuit breakers

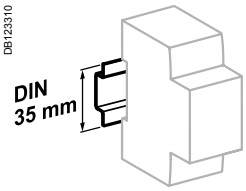
Type			AC			*SI*		Width in 9-mm modules
Auxiliaries			**Module CA907008**					
2P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	**30 mA**	**300 mA** S	
DB122476 	Rating	25 A	**A9N16201**	**-**	**A9N16202**	**A9N16234**	**-**	4
		40 A	**A9N16204**	**A9N16205**	**A9N16206**	**A9N16237**	**-**	
		63 A	**A9N16208**	**A9N16209**	**A9N16210**	**A9N16240**	**A9N16246**	
		80 A	**A9N16212**	**A9N16213**	**A9N16214**	**-**	**-**	
4P		**Sensitivity**						
DB122477 	Rating	25 A	**A9N16251**	**-**	**A9N16252**	**A9N16321**	**-**	8
		40 A	**A9N16254**	**A9N16255**	**A9N16256**	**A9N16324**	**-**	
		63 A	**A9N16258**	**A9N16259**	**A9N16260**	**A9N16327**	**A9N16334**	
		80 A	**A9N16261**	**A9N16262**	**A9N16263**	**-**	**-**	
Voltage rating (Ue)		2P	230 - 240 V					
		4P	400 - 415 V					
Operating frequency			50/60 Hz					
Accessories			**Module CA907020 and CA907012**					

xID biconnect residual current circuit breakers (AC, *SI* types) (cont.)

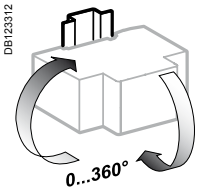
Connection



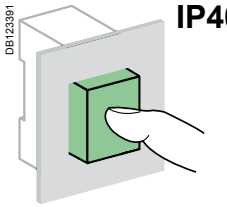
	Without accessory			With accessories			
Type	Tightening torque	Copper cables		50 mm² Al terminal	Screw-on connection for ring terminal	Multi-cable terminal	
		Rigid	Flexible or with ferrule			Rigid cables	Flexible cables
	DB122945	DB122946	DB122935	Al DB118789	Ø DB118787		
xID	3.5 N.m	1 to 35 mm²	1 to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



Clips on to 35 mm DIN rail.



Any installation position.



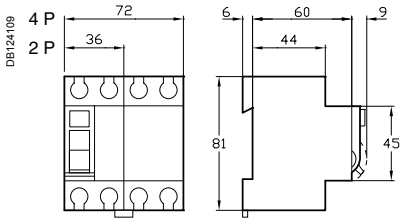
Technical data

Main characteristics		
Insulation voltage (Ui)		500 V
Degree of pollution		2
Rated impulse withstand voltage (Uimp)		6 kV
According to IEC/EN 61008-1		
Making and breaking capacity (Im/IΔm)		10 In
Impulse current withstand (8/20 µs) without tripping)	AC type	250 Â
	SI type	3 kÂ
Rated conditional short-circuit current (Inc/IΔc)	With xC60	Equal to the breaking capacity of the xC60 circuit breaker
	With fuse	10,000 A
Additional characteristics		
Degree of protection	Device in modular enclosure	IP40
Endurance (O-C)	Electrical	4000 cycles
	Mechanical	4000 cycles
Operating temperature	AC type	-5°C to +40°C
	SI type	-25°C to +40°C
Storage temperature		-40°C to +85°C

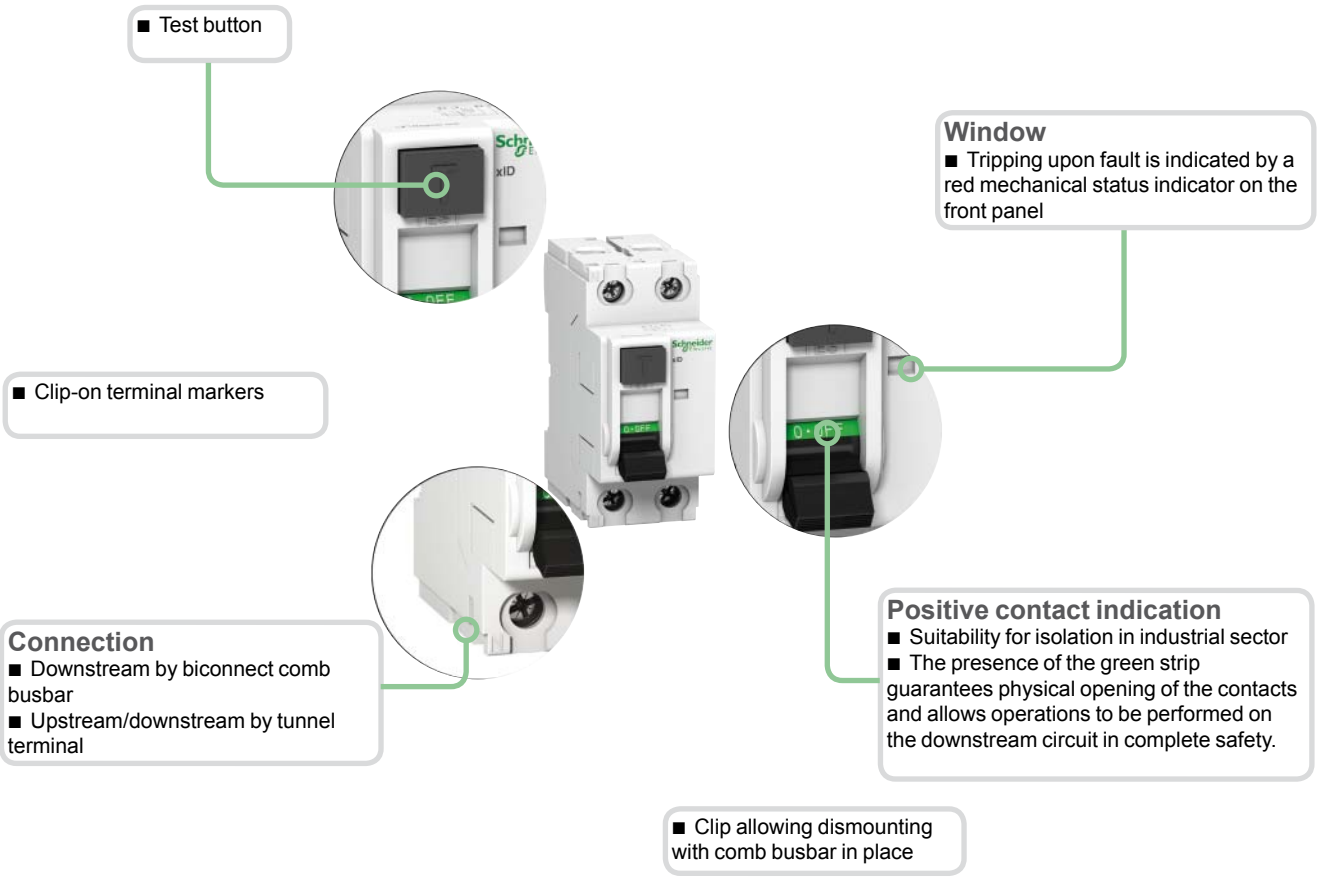
Weight (g)

Biconnect residual current circuit breakers	
Type	**xID**
2P	210
4P	370

Dimensions (mm)



xID biconnect residual current circuit breakers (AC, *SI* types) (cont.)



SI type

The *SI* type offers enhanced immunity to electrical disturbances and polluted or corrosive environments.

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

IEC/EN 61008-1, VDE 0664

PB111262-33

16973

PB111263-33

16921

PB107510-33

16940

PB100573-18

16938

PB100572-18

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

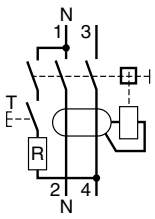
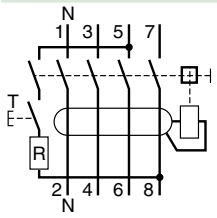
- Electrical indication: by OFsp auxiliary mounted to the left, it has a double changeover switch indicating the "open" or "closed" position of the RCCB-ID 125 A.

Accessories

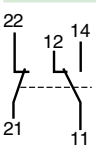
- 2P and 4P sealable screw shield.

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**	
E91413 	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**	
E91414 	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**		
E91415 	1 A	110 V DC	**16940**	1
	6 A	230 V AC (AC15)		

Accessory

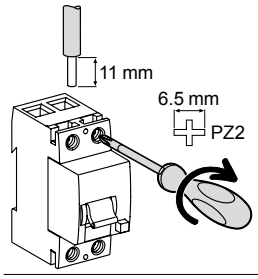
Type	Number of pole	
Screw shield (set of 10) for upstream or downstream	2P	**16938**
	4P	**16939**

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 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

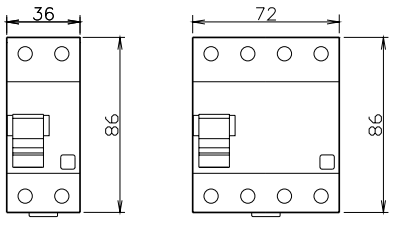
Electrical characteristics		
Insulation voltage (Ui)		400 V
Pollution degree		3
Rated impulse withstand voltage (Uimp)		4 kV
According to IEC/EN 61008-1		
Making and breaking capacity (Im/IΔm)		1250 A
Surge current withstand (8/20 µs) without tripping	AC and A types (no selective Ⓢ)	250 Â
	SI type (no 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
Additional characteristics		
Degree of protection	Device only	IP20 IP40 with screw shield
	Device in modular enclosure	IP40 Insulation classe II
Endurance (O-C)	Electrical	> 2 000 cycles
	Mechanical	> 5 000 cycles
Operating temperature		-25°C to +40°C
Storage temperature		-40°C to +85°C

Weight (g)

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

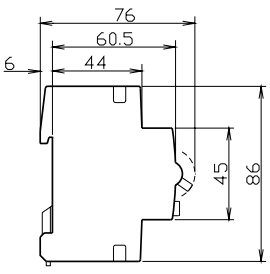
Dimensions (mm)

0140302_1

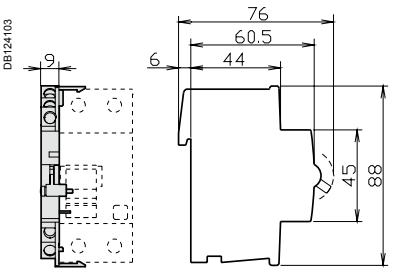


2P
RCCB-ID 125 A

4P



DB124103



Contact OFsp

Vigi xC60 add-on residual current devices (AC type)

Country approval pictograms

IEC/EN 61009-1

- Combined with xC60 circuit breaker, the Vigi xC60 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).

PB110819-40

Vigi xC60 2P 25 A

PB110820-40

Vigi xC60 2P 63 A

PB110821-40

Vigi xC60 4P 25 A

PB110822-40

Vigi xC60 4P 63 A

Catalogue numbers

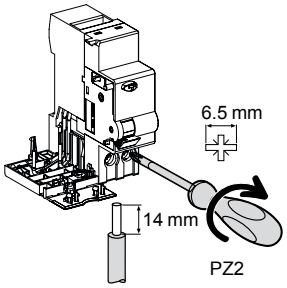
Vigi xC60 biconnect residual current circuit breakers

Type			AC ~			Width in 9-mm modules
Auxiliaries			**Without auxiliaries**			
2P		**Sensitivity**	**30 mA**	**100 mA**	**300 mA**	
DB122462	Rating	25 A	**A9N26581**	**A9N26582**	**A9N26583**	3
		63 A	**A9N26611**	**A9N26612**	**A9N26613**	4
4P		**Sensitivity**				
DB122464	Rating	25 A	**A9N26595**	**A9N26596**	**A9N26597**	6
		63 A	**A9N26643**	**A9N26644**	**A9N26645**	7
Voltage rating (Ue)		2P	230 - 240 V			
		4P	400 - 415 V			
Operating frequency			50/60 Hz			
Accessoires			**Module CA907020 and CA907012**			

Vigi xC60 add-on residual current devices (AC type) (cont.)

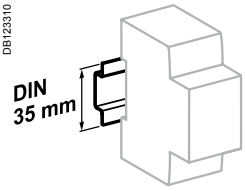
Connection

DB404925



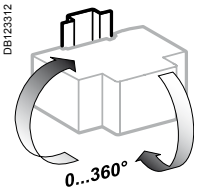
Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or ferrule
			DB122945	DB122946
Vigi xC60	25 A	2 N.m	1 to 25 mm²	1 to 16 mm²
	63 A	3.5 N.m	1 to 35 mm²	1 to 25 mm²

DB123310



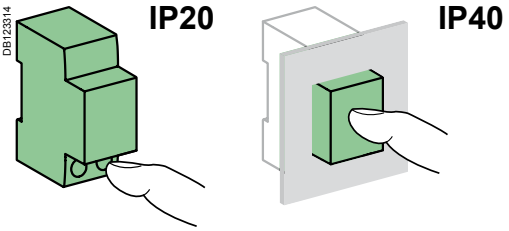
Clip on DIN rail 35 mm.

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
Surge current withstand (8/20 µs) without tripping		250 Â
Additional characteristics		
Degree of protection	Device only	IP20
	Device in modular enclosure	IP40 Insulation classe II
Operating temperature		-5°C to +60°C
Storage temperature		-40°C to +85°C

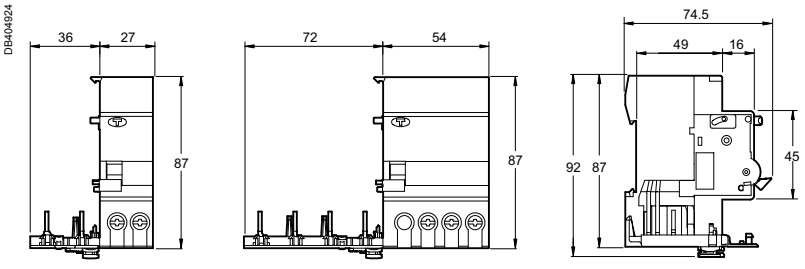
Weight (g)

Add-on residual current devices		
Vigi xC60	**25 A**	**63 A**
2P	120	150
4P	215	285

Dimensions (mm)

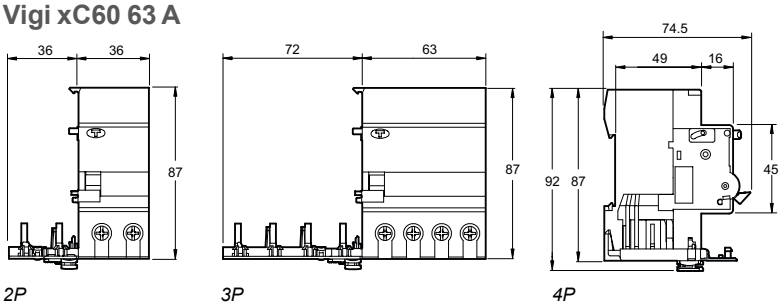
Vigi xC60 25 A

DB404924



2P *3P* *4P*

Vigi xC60 63 A



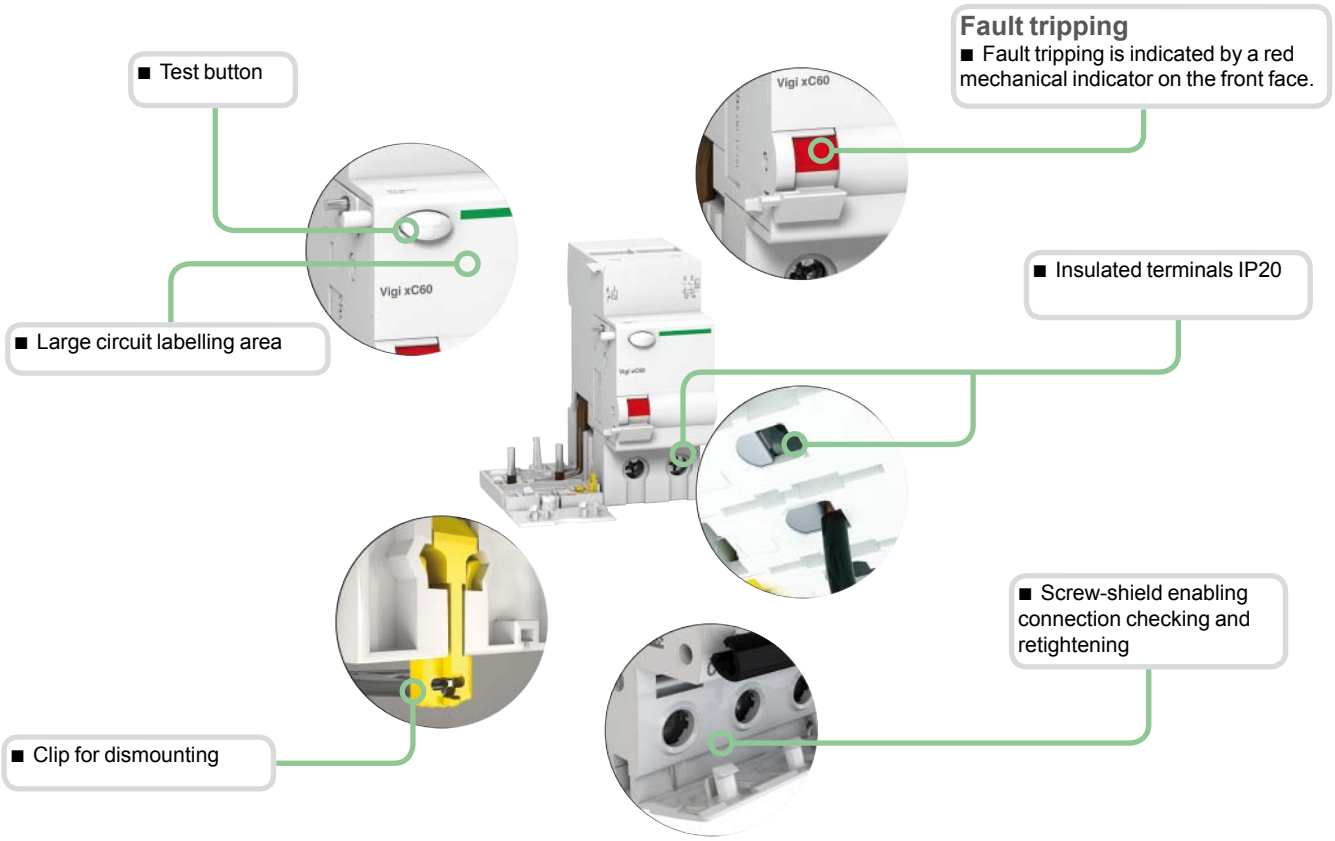
2P *3P* *4P*

Vigi xC60 add-on residual current devices (AC type) (cont.)

Association xC60 + Vigi xC60

xC60	Vigi xC60 25 A	Vigi xC60 63 A
0.5 A to 25 A	■	■
32 A - 63 A	NO	■

PB104466-40



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)		230...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 Ⓢ	500 mA Ⓢ	1000 mA Ⓢ	
dess. 077		A9N18572	A9N18573	A9N18574	-	-	-	7
3P	Sensitivity	30 mA	300 mA	500 mA	300 mA Ⓢ	500 mA Ⓢ	1000 mA Ⓢ	
dess. 079		A9N18575	A9N18576	A9N18577	-	-	-	10
4P	Sensitivity	30 mA	300 mA	500 mA	300 mA Ⓢ	500 mA Ⓢ	1000 mA Ⓢ	
dess. 079B		A9N18578	A9N18579	A9N18580	A9N18587	A9N18588	A9N18589	10
Operating voltage (Ue)		230...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

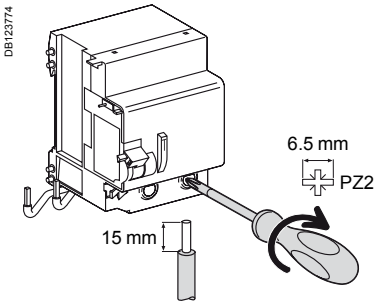
Vigi C120 add-on residual current devices

Type		*SI*					Width in 9 mm modules
Product		**Vigi C120**					
Auxiliaries		**Without auxiliary**					
2P	**Sensitivity**	**30 mA**	**300 mA**	**500 mA**	**300 mA Ⓢ**	**1000 mA Ⓢ**	
dess. 077		**A9N18591**	**A9N18592**	**-**	**A9N18556**	**A9N18557**	7
3P	**Sensitivity**	**30 mA**	**300 mA**	**500 mA**	**300 mA Ⓢ**	**1000 mA Ⓢ**	
dess. 079		**A9N18594**	**A9N18595**	**-**	**A9N18558**	**A9N18559**	10
4P	**Sensitivity**	**30 mA**	**300 mA**	**500 mA**	**300 mA Ⓢ**	**1000 mA Ⓢ**	
dess. 078B		**A9N18597** **A9N18554**(1)	**A9N18598** **A9N18555**(1)	**A9N18599**	**A9N18560**	**A9N18561**	10
Operating voltage (Ue)		230...415 V					
Operating frequency		50 Hz					
Accessories		**Module CA907012 and CA907013**					

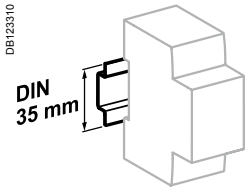
(1) specific offer for France

Vigi C120 add-on residual current devices (types AC, A and *SI*)

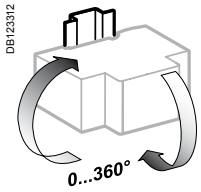
Connection



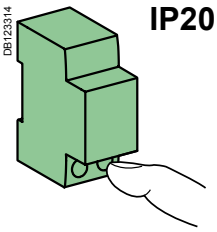
Type	Sensitivity	Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
		DB122945	DB122946	
Vigi C120	30...1000 mA	3.5 N.m	1 to 50 mm²	1 to 35 mm²

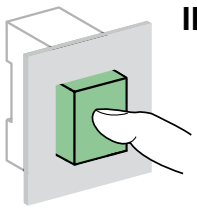


Clips onto 35 mm DIN rail.



Any installation position.





Technical data

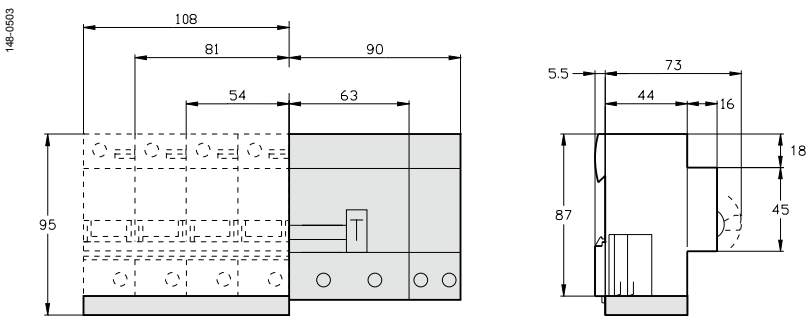
Main characteristics		
To IEC 60947-2		
Insulation voltage (Ui)		500 V AC
Degree of pollution		3
Rated impulse withstand voltage (Uimp)		6 kV
To EN 61009		
Impulse current withstand (8/20 µs) without tripping	Types AC and A (non-selective Ⓢ)	250 Â
	Types AC and A (selective Ⓢ)	3 kÂ
	Types *SI* (non-selective Ⓢ)	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)

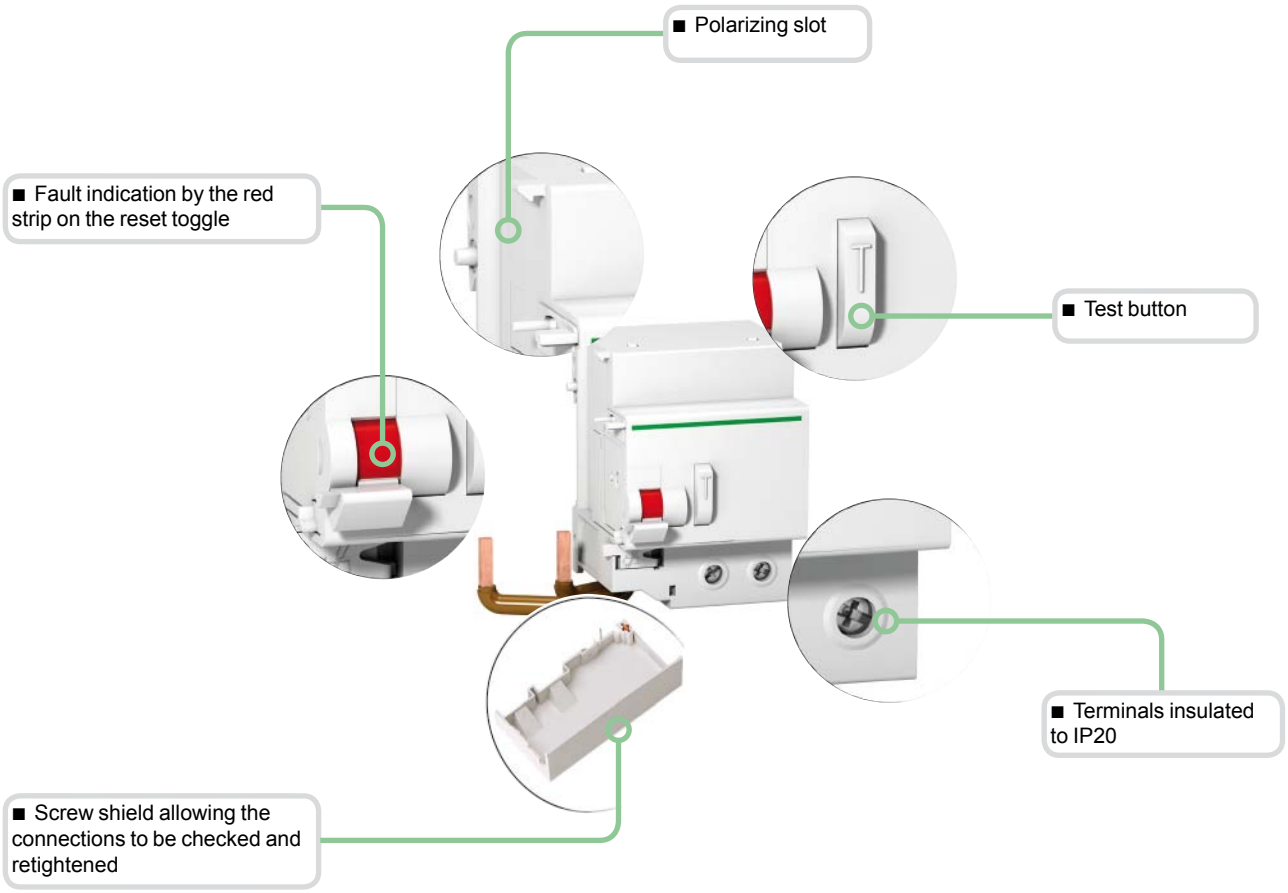
Add-on residual current devices	
Type	**Vigi C120**
2P	325
3P	500
4P	580

Dimensions (mm)

C120 + Vigi C120



Vigi C120 add-on residual current devices (types AC, A and *SI*) (cont.)



Type *SI*

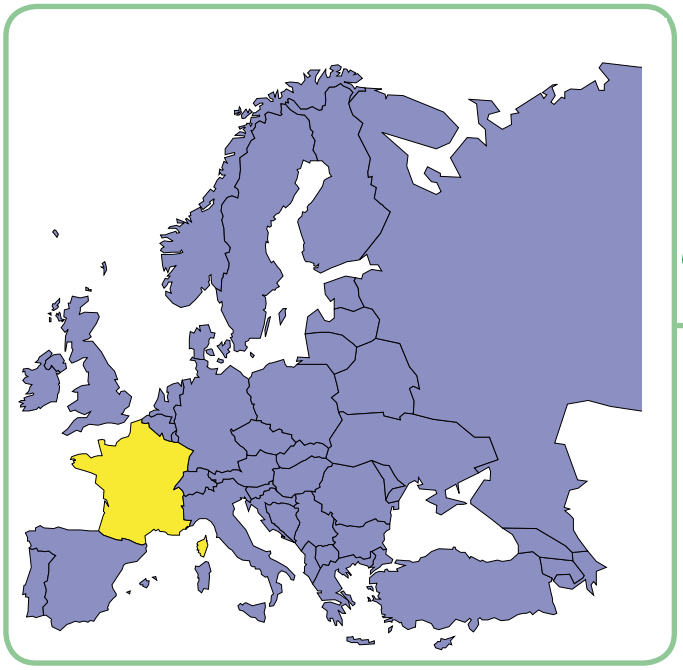
The ***SI*** type provides increased immunity from electrical interference and polluted or corrosive environments.

Vigi NG125
Contents

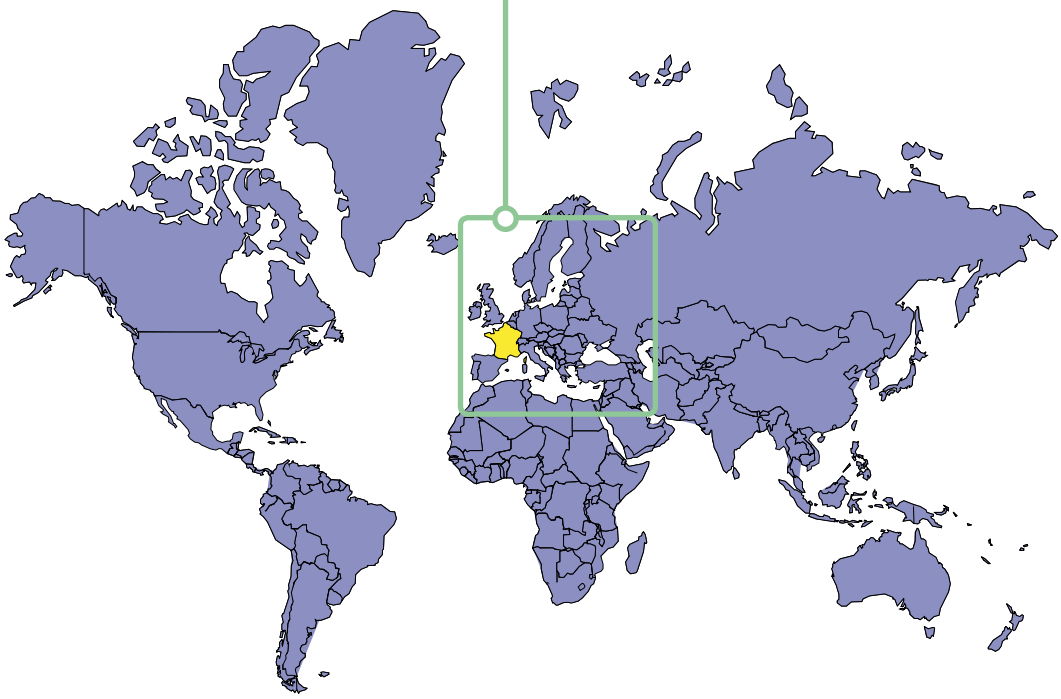
Offers
This page must be removed before publishing

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.

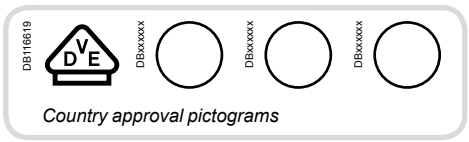
Variants



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.

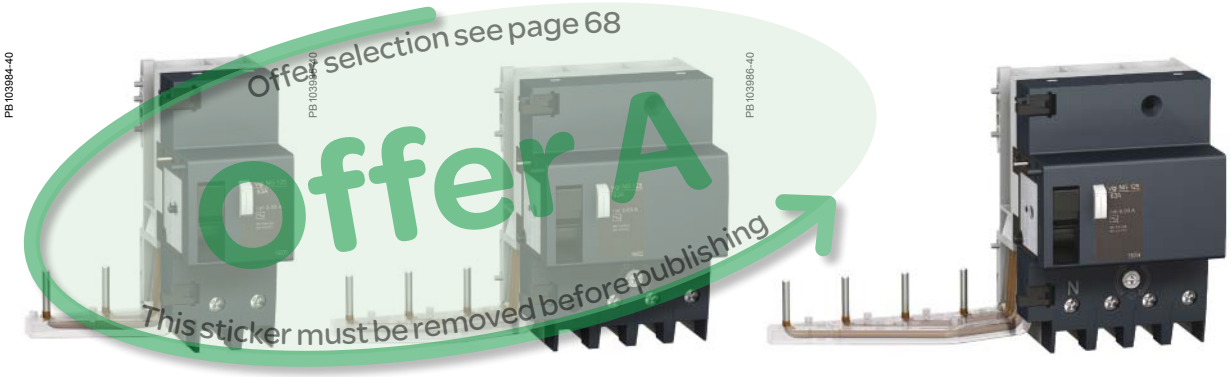


Vigi NG125 add-on residual current devices (AC type)



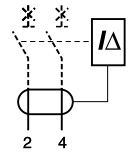
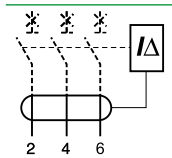
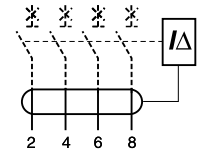
Country approval pictograms

IEC/EN 60947-2

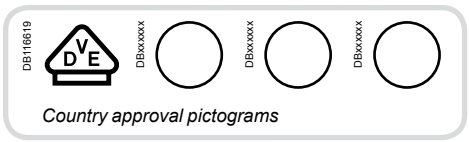


■ When it is combined with an NG125 circuit breaker, the Vigi NG125 add-on residual current device offers the following functions:
□ protection of persons against electric shocks by direct contact (30 mA),
□ protection of persons against electric shocks by indirect contact (300 mA),
□ protection of installations 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)



Country approval pictograms

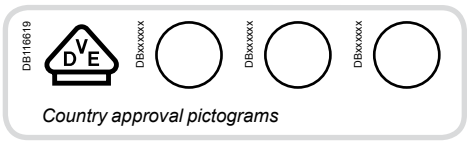
IEC/EN 60947-2

■ 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)



Country approval pictograms

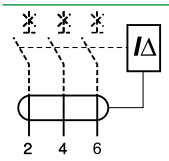
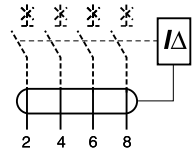
IEC/EN 60947-2

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.).

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**		

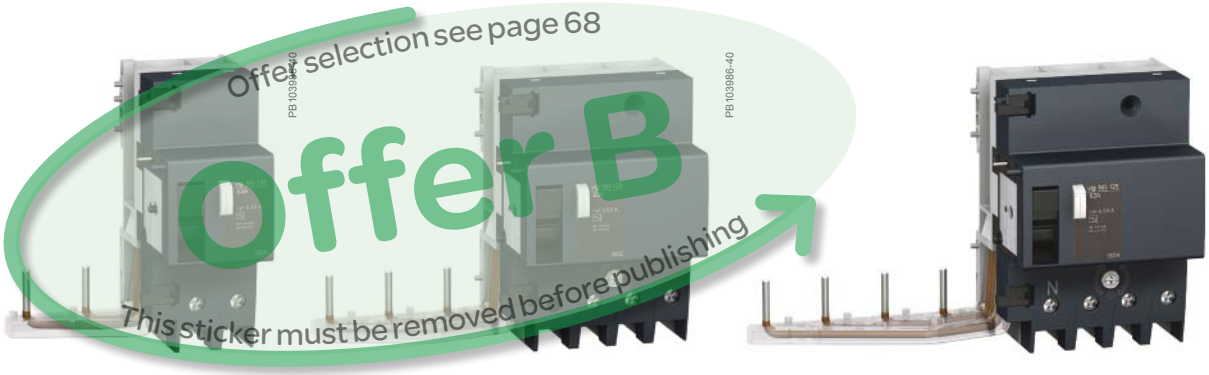
Vigi NG125 add-on residual current devices (AC type)

DB116619 DBxxxxxx DBxxxxxx DBxxxxxx

Country approval pictograms

IEC/EN 60947-2

PB103984-40



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 DBxxxxxx DBxxxxxx DBxxxxxx

Country approval pictograms

IEC/EN 60947-2

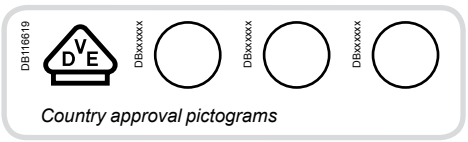
054383M-40

■ 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

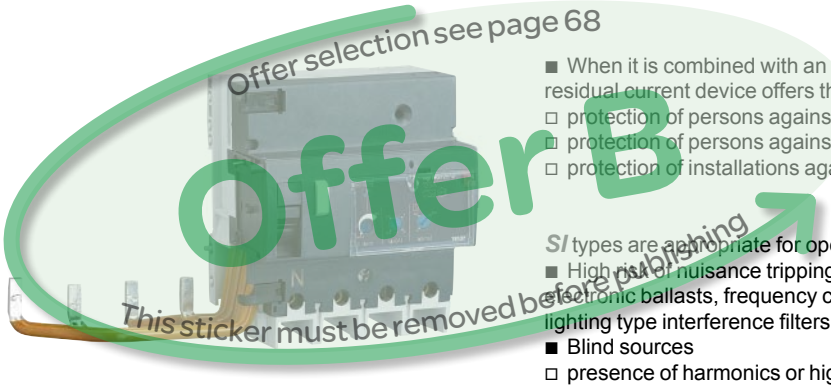
Vigi NG125 add-on residual current devices									
Type			**A**						**Width in 9 mm modules**
Product			**Vigi NG125**						
Auxiliaries			**Module CM907005**						
2P		**Sensitivity**	**30 mA**	**300 mA**	**300 mA S**	**1000 mA S**	**300…1000 I/S**	**300…3000 I/S/R**	
DB122462	Rating	63 A	**19010** *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)



Country approval pictograms

IEC/EN 60947-2



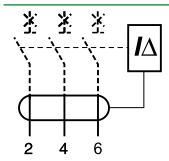
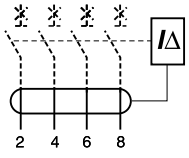
057484-40

■ 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.).

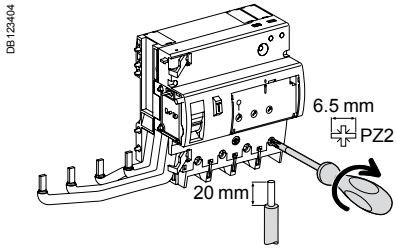
Catalogue numbers

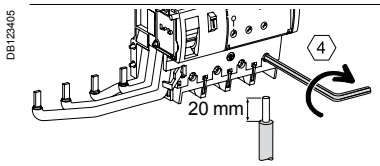
Vigi NG125 add-on residual current devices

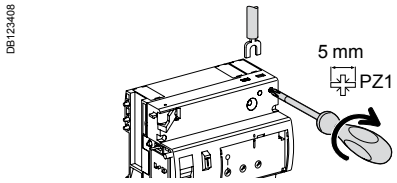
Type			*SI*		Width in 9 mm modules
Product			**Vigi NG125**		
Auxiliaries			**Module CM907005**		
3P	**Sensitivity**		**30 mA**	**300…3000 I/S/R**	
DB122463 	Rating	125 A	**19100**	**19106**	11
4P	**Sensitivity**		**30 mA**	**300…3000 I/S/R**	
DB122464 	Rating	125 A	**19101**	**19107**	11
Voltage rating (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)

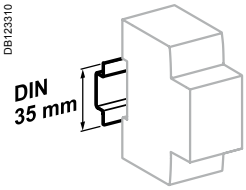
Connection



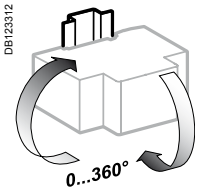




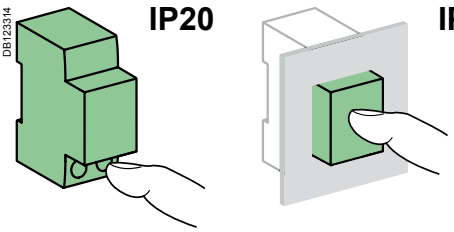
Rating	Tightening torque	Without accessories: Copper cables – Rigid	Without accessories: Copper cables – Flexible or ferrule	Without accessories: Copper cables – Screw clamp terminal	With accessories: 70 mm² Al terminal	With accessories: Screw-on connection for ring terminal
	DB122945	DB122946	DB123409	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

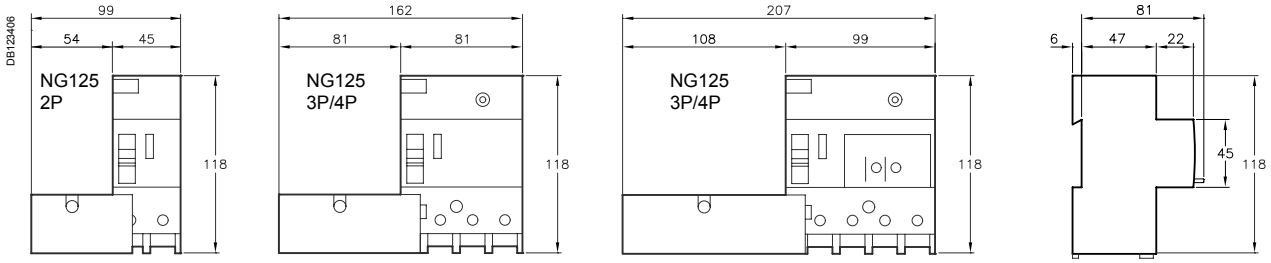
Main characteristics		
Insulation voltage (Ui)		690 V
Pollution degree		3
Rated impulse withstand voltage (Uimp)		8 kV
According to IEC/EN 61009-1		
Surge current withstand (8/20 µs) without tripping	Selective Ⓢ or R	5 kÂ
	Instantaneous	3 kÂ
Additional characteristics		
Degree of protection	Device only	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.)

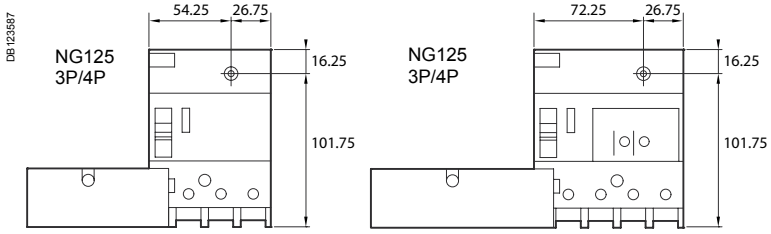
Weight (g)

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.)

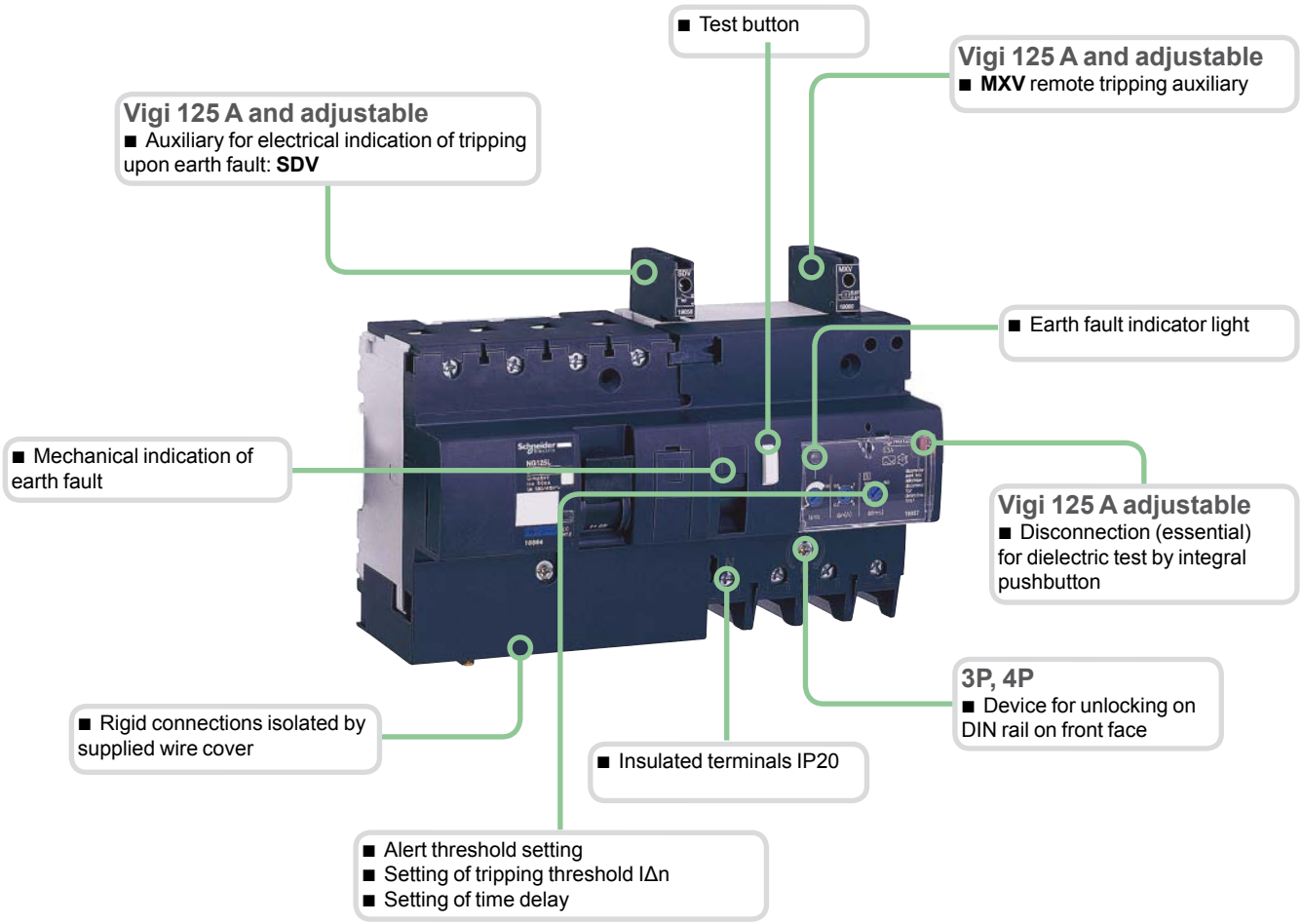
056341_SE-50

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.).

Residual current devices
DPNa Vigi and DPN N Vigi

DB106604

Country approval pictograms

PB107168-35

PB107110-35

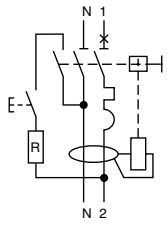
National standard*.
European standard EN 61009.
International standard IEC 61009.

■ The DPN N 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).

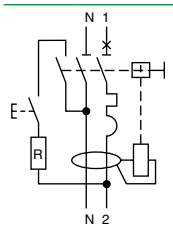
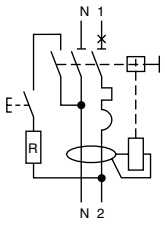
■ The *SI* range has been designed to maintain a network with optimum safety and continuity of service in installations disturbed by:
□ extreme atmospheric conditions,
□ harmonic generating loads,
□ transient switching currents.

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 CA907013 and CA907012**	

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**				

** Information to be provided by the country.*

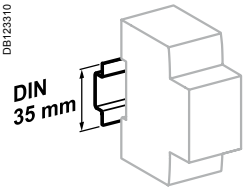
Residual current devices
DPNa Vigi and DPN N Vigi (cont.)

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

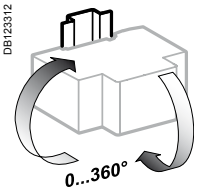
■ Display of earth fault on the front panel by position of toggle

DB123310



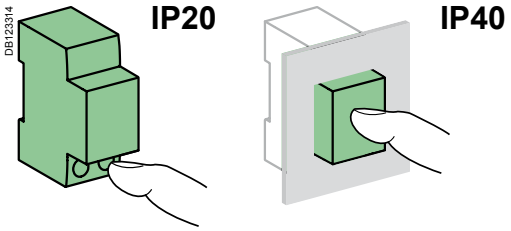
Clip on DIN rail 35 mm.

DB123312



Indifferent position of installation.

DB123314

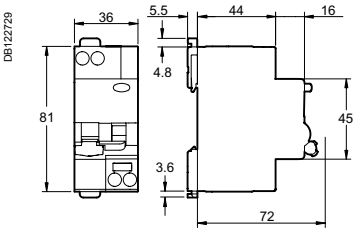


Weight (g)

Residual current device		
Type	**DPNa Vigi**	**DPN N Vigi**
1P+N	125	125

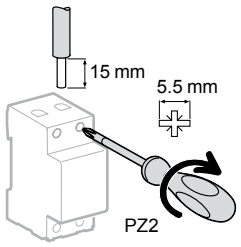
Dimensions (mm)

DB122729



Connection

DB123947



	With accessories		
Rating	**Tightening torque**	**Copper cables**	
		Rigid	**Flexible or with ferrule**
	DB122945	DB122946	
4 to 40 A	3.5 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 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	-
		SI type	-	3 kÂ
According to EN 61009				
Limitation class			3	
Rated breaking capacity (Icn)			4500 A	6000 A
Rated residual breaking and making capacity (IΔm)			4500 A	6000 A
Additional characteristics				
Degree of protection (IEC 60529)	Device only		IP20	
	Device in modular enclosure		IP40 Classe d'isolement 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)	

iPRF1 12.5r/PRF1 Master/ 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 230 V IT earthing connection systems (neutral point connection).
In addition, the PRF1 Master 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.

PB104275-35

iPRF1 12.5r

PB104260-35

PRD1 25r

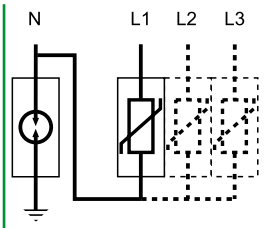
PB104264-35

PRD1 Master

iPRF1 12.5r/PRF1 Master/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.

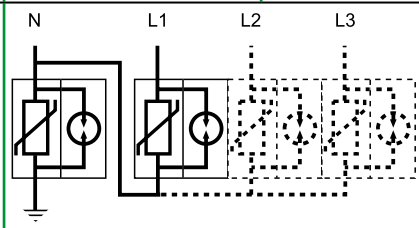
DB119038



iPRF1 12.5r (1P+N, 3P+N)

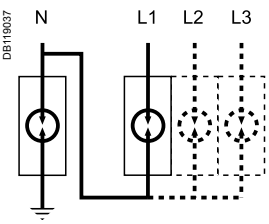
Type	Product solution	
Fixed surge arrester	**1P+N**	**3P+N**
iPRF1 12.5r T1, T2	**A9L16632**	**A9L16634**
PRF1 Master T1		

DB119036



PRD1 25r (1P+N, 3P+N)

DB119037

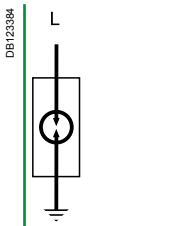


PRD1 Master (1P+N, 3P+N)

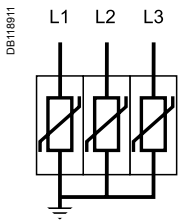
Cartridge surge arrester	1P+N	3P+N
PRD1 25r T1 + T2	**16330**	**16332**
PRD1 Master T1	**16361**	**16363**

iPRF1 12.5r/PRF1 Master/ PRD1 25r/PRD1 Master

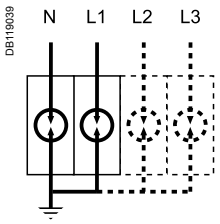
Type 1 and 2 LV surge arresters (cont.)



PRF1 Master (1P)

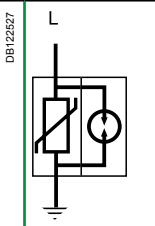


iPRF1 12.5r (3P)

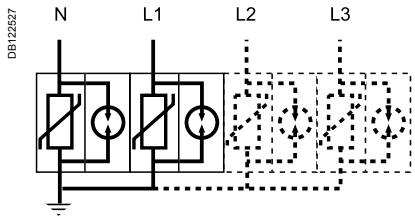


PRF1 Master (2P, 3P, 4P)

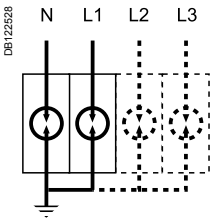
					Neutral point connection	Recommended accessory
	1P	**2P**	**3P**	**4P**		
					TT, TN-S	
			A9L16633		TN-C, IT 230 V	
		2 x **16630**			IT (1) distributed neutral	**16643**
	16630		3 x **16630**		IT (1) non-distributed neutral	**16644**
				4 x **16630**	IT (1) distributed neutral	**16645**



PRD1 25r (1P)



PRD1 25r (2P, 3P, 4P)



PRD1 Master (2P, 3P, 4P)

	1P	**2P**	**3P**	**4P**		
					TT, TN-S	
		2 x **16329**		4 x **16329**	IT 230 V	
	16329		**16331**		TN-C, IT 230 V	
					TT, TN-S	
	16360	2 x **16360**	**16362**	4 x **16360**	TN-C, IT 230 V	

(1) Version without indicator light.

iPRF1 12.5r/PRF1 Master/ 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) Maximal discharge current	In - kA Rated discharge current	Up - kV Degree of protection	Un - V Nominal line voltage	Uc - V Maximum steady state voltage	
Fixed surge arrester		**9 mm modules**	**Surge arrester**	**Surge arrester + disconnector**						
iPRF1 12.5r	**Type** 1 + 2									
	1P+N	4	12.5/50 N/PE		50	25	1.5	230	350	**A9L16632**
	3P	8	12.5		50	25	1.5	230 / 400	350	**A9L16633**
	3P+N	8	12.5/50 N/PE		50	25	1.5	230 / 400	350	**A9L16634**
PRF1 Master	**Type** 1									
	1P	4	50	35	-	50	1.5	230	440	**16630**
Withdrawable surge arrester										
PRD1 25r	**Type** 1 + 2									
	1P	4	25		40	25	1.5	230	350	**16329**
	1P+N	8	25/100 N/PE		40	25	1.5	230/400	350	**16330**
	3P	12	25		40	25	1.5	230	350	**16331**
	3P+N	16	25/100 N/PE		40	25	1.5	230/400	350	**16332**
PRD1 Master	**Type** 1									
	1P	4	25		-	25	1.5	230	350	**16360**
	1P+N	8	25/100 N/PE		-	25	1.5	230/400	350	**16361**
	3P	12	25		-	25	1.5	230	350	**16362**
	3P+N	16	25/100 N/PE		-	25	1.5	230/400	350	**16363**
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	1.4	-	350	**16316**
C1 Neutral-350	-	4	-	-	-	-	-	-	350	**16317**

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**

DB123370

Accessories		
Type	**Number of poles**	
4P Wiring comb busbars	4	**16643**
6P Wiring comb busbars	6	**16644**
Peignes de câblage 8P	8	**16645**
200 mm flexible cable (PRF1 Master)		**16646**

iPRF1 12.5r/PRF1 Master/ PRD1 25r/PRD1 Master

Type 1 and 2 LV surge arresters (cont.)

Technical data

		iPRF1 12.5r	PRF1 Master	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	≤ 1 µs	≤ 25 ns	≤ 100 ns
End-of-life indication		Green: correct operation	-	White: correct operation	White: correct operation
		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. 0.2 A/125 V DC	1 A/250 V AC. 0.2 A/125 V DC
By tunnel terminal	Rigid cable	10...35 mm²	10...50 mm²	2.5...35 mm²	10...35 mm²
	Flexible cable	10...25 mm²	10...35 mm²	2.5...25 mm²	10...25 mm²
Operating temperature		-25°C to +60°C	-40°C to +85°C	-25°C to +60°C	-25°C to +60°C
Standards	Type 1	IEC 61643-1 T1. EN 61643-11 Type 1	IEC 61643-1 T1. EN 61643-11 Type 1	IEC 61643-1 T1. EN 61643-11 Type 1	IEC 61643-1 T1. EN 61643-11 Type 1
	Type 2	IEC 61643-1 T2. EN 61643-11 Type 2	-	IEC 61643-1 T2. EN 61643-11 Type 2	-
Certification		CE	KEMAKEUR, CE	KEMAKEUR, CE	CE

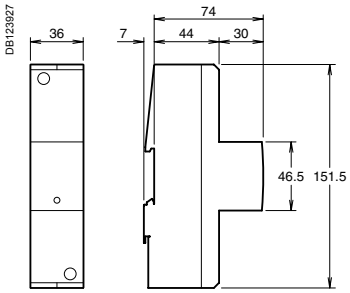
Choice of disconnector / surge arrester

Type	Iimp : 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	C120H 80 A curve C or NG125N 80 A curve C	NG125N 80 A curve C	NG125H 80 A curve C	NG125L 80 A curve C
PRF1 Master	35 kA	Compact NSX160B 160 A TM			Compact NSX160F 160 A	Compact NSX160N 160 A
PRD1 25r	25 kA	NG125N 80 A curve C			-	
PRD1 Master	25 kA	NG125N 80 A curve C			NG125H 80 A curve C	NG125L 80 A curve C

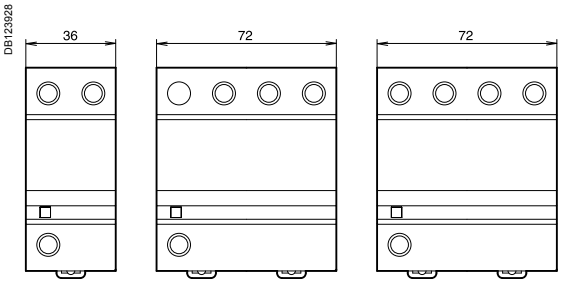
iPRF1 12.5r/PRF1 Master/ PRD1 25r/PRD1 Master

Type 1 and 2 LV surge arresters (cont.)

Dimensions (mm)

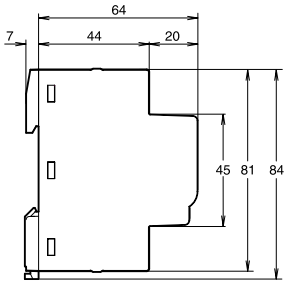


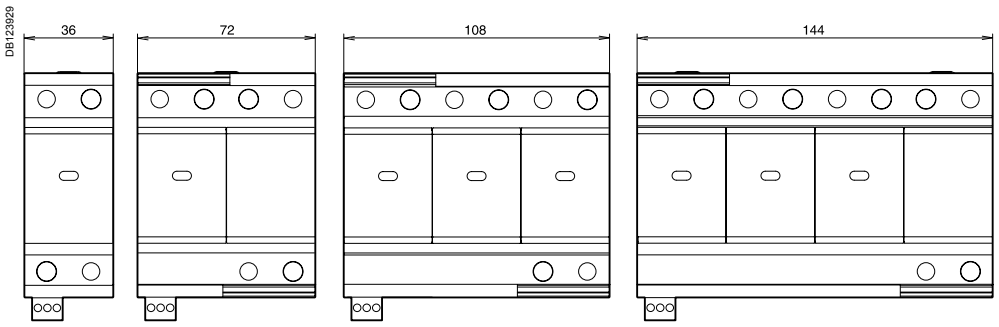
PRF1 Master



1P + N 3P 3P + N

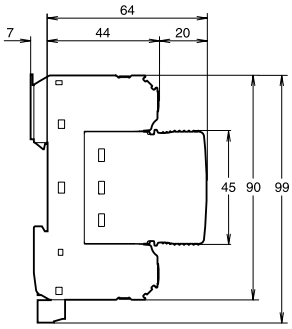
iPRF1 12.5r

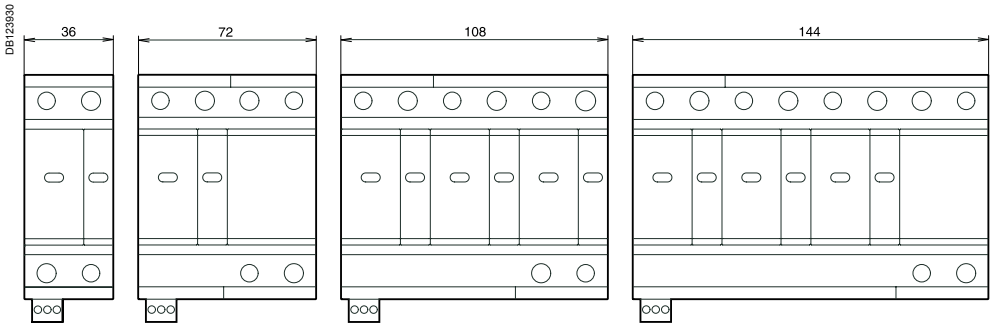




1P 1P + N 3P 3P + N

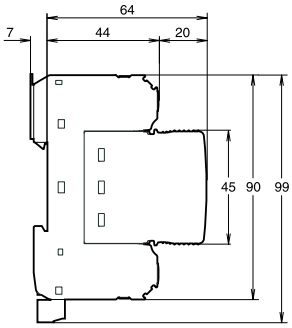
PRD1 Master





1P 1P + N 3P 3P + N

PRD1 25r



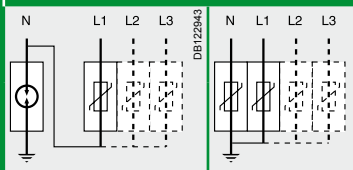
iPRD surge arresters
Type 2 or 3 LV withdrawable surge arresters

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 30 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

Type of surge arrester	Associated circuit breaker
iPRD65	Curve C 50 A
iPRD40	Curve C 40 A
iPRD20	Curve C 25 A
iPRD8	Curve C 20 A

iPRD surge arresters

Type 2 or 3 LV withdrawable surge arresters (cont.)

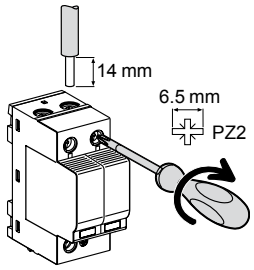
	Earthing system	Transfer	Surge arrester name	Width in mod. of 9 mm	Up - (kV) Voltage protection level			Un - (V) Rated voltage network	Uc - (V) Maximum continuous operating voltage		
					CM*		DM*		CM*		DM*
					L/⏚	N/⏚	L/N		L/⏚	N/⏚	L/N
			iPRD65								
	IT	■	iPRD65r 1P IT	2	≤ 2	-	-	230	460	-	-
	TT & 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 ferrule
	DB122945	DB122946	
iPRD	2 N.m	2.5 to 25 mm²	2.5 to 16 mm²

Technical data

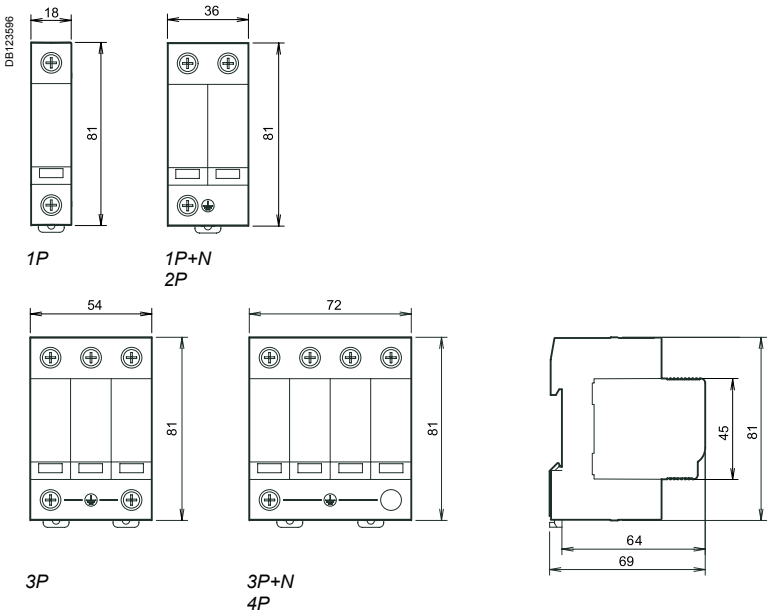
Main characteristics		
Operating frequency		50/60 Hz
Operating voltage (Ue)		230/400 V AC
Permanent operating current (Ic)		< 1 mA
Response time		< 25 ns
End of life indication: by mechanical indicator	White	In operation
	Red	At end of life
End of life remote indication		By contact NO, NC 250 V / 0.25 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

iPRD surge arresters
Type 2 or 3 LV withdrawable surge arresters (cont.)

Weight (g)

Surge arrester	
Type	**iPRD**
1P	115
2P	220
3P	340
4P	450

Dimensions (mm)



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

IEC 61643- 1 T2, EN 61643-11 Type 2

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

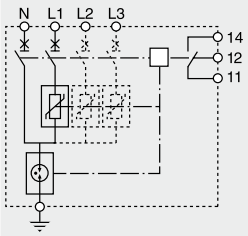
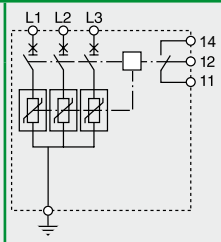
□ iQuick PRD20r is recommended for a moderate risk level

■ **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 30 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 30 m from the incoming surge arrester		iQuick PRD8r	**A9L16298**		
					A9L16299
				A9L16300	

DB123837

Replacement cartridges.

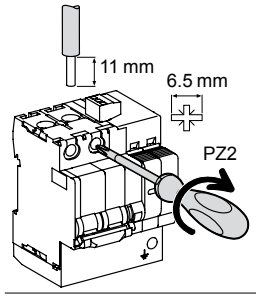
Replacement cartridges

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 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.

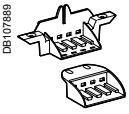
	Earthing system	Transfert	Name of surge arrester	Width in 9 mm modules	Up – (kV) Voltage protection level			Un – (V) Nominal mains voltage	Uc – (V) Maximum continious operating voltage		
					CM*		DM*		CM*		DM*
					L/⏚	N/⏚	L/N		L/⏚	N/⏚	L/N
			iQuick PRD40r								
	TT & TN-S	■	1P+N	8	1.5	1.5	2.5	230	-	264	350
	TN-C & IT 230 V	■	3P	13	2	-	-	230/400	350	-	-
	TT & TN-S	■	3P+N	15	1.5	1.5	2.5		-	264	350
			iQuick PRD20r								
	TT & TN-S	■	1P+N	8	1.5	1.5	1.5	230	-	264	350
	TN-C & IT 230 V	■	3P	13	1.5	-	-	230/400	350	-	-
	TT & TN-S	■	3P+N	15	1.5	1.5	1.5		-	264	350
			iQuick PRD8r (2)		Type 2 / Type 3						
	TT & TN-S	■	1P+N	8	1.5/1.4	1.5/1.5	1.2/1.4	230	-	264	350
	TN-C & IT 230 V	■	3P	13	1.2/1.4	-	-	230/400	350	-	-
	TT & TN-S	■	3P+N	15	1.5/1.4	1.5/1.5	1.2/1.4		-	264	350

** **CM** common mode (between phase/earth and neutral/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.

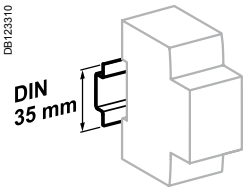
DB123842

Pragma: the earth terminal block needs 1 support kit and 1 terminal block kit.

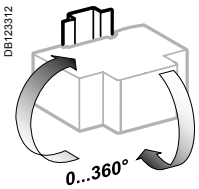
Accessories

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.)



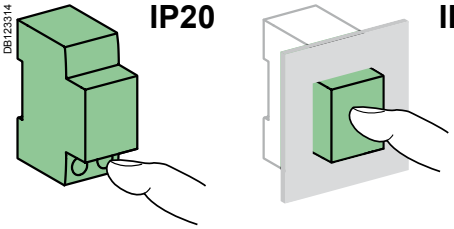
Clip on DIN rail 35 mm.



Indifferent position of installation.

Technical data

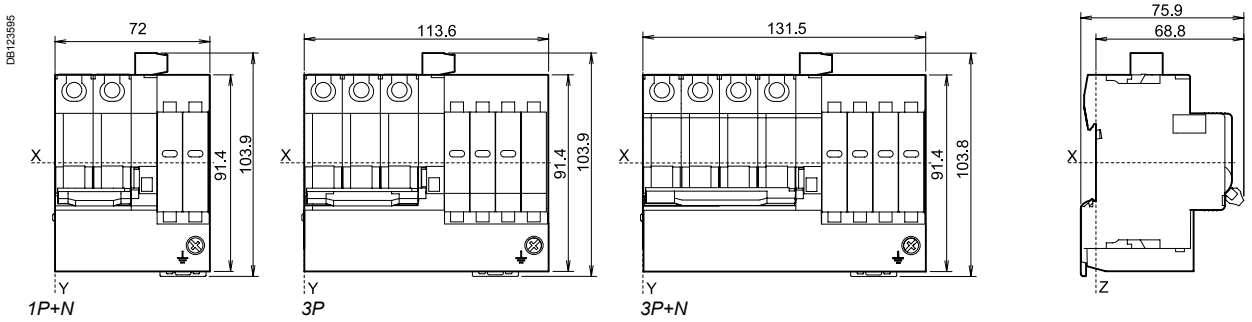
Main characteristics			
Operating frequency	50/60 Hz		
Operating voltage (Ue)	230/400 V AC		
Disconnector short-circuit withstand (Isc)	25 kA (50 Hz)		
Permanent operating current (Ic)	<1 mA		
Response time	<25 ns		
Status indication	By the cartridges	White	Operational
		Red	At end of life
	By white 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 +70°C		
Storage temperature	-40°C to +80°C		
Certifications	NF, KEMA KEUR (iQuick PRD 8r, 20r)		



Weight (g)

Surge arresters		
Type	**iQuick PRD8r/20r**	**iQuick PRD40r**
1P+N	435	445
3P	665	700
3P+N	810	850

Dimensions (mm)



iPRC, iPRI surge arresters

DB116619

Country approval pictograms

Protection against overvoltages related to lightning strikes.

PB104269-35

A9L16337

PB104270-35

A9L16339

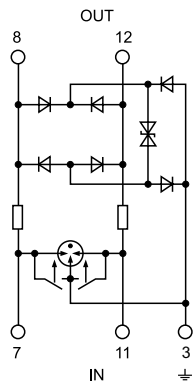
Db122624

DSL

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.

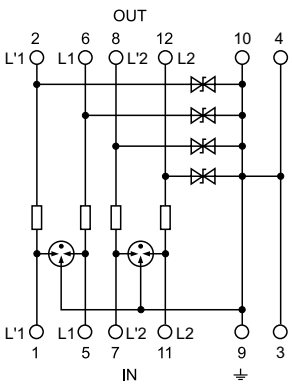
Protection for 2 low-current lines without common potential or 4 lines with common reference potential: the iPRI protects the measuring instrument and PLC "sensor" inputs and the DC power supply inputs up to 53 V and AC power supply inputs up to 37 V.
The input current must not exceed 300 mA.

DB122585



Line L1	Cables 7-8
Line L2	Cables 11-12
–	–
–	–
⏚	Cable 3
IN	Ligne side
OUT	Protected side

DB126523



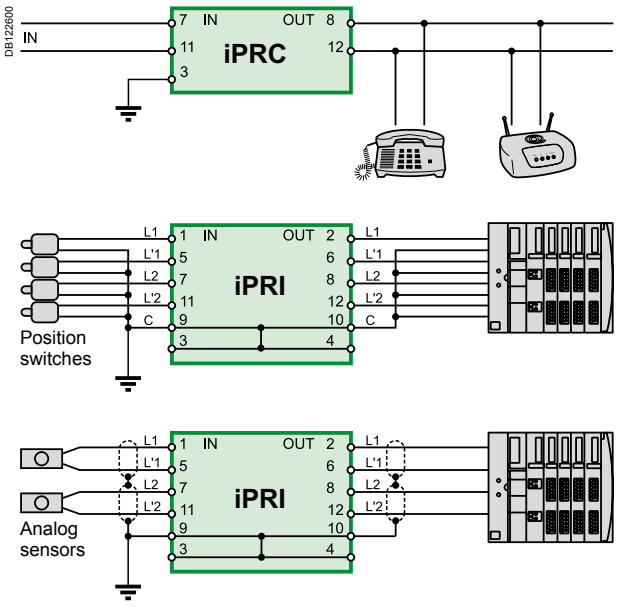
Line L1	Cables 5-6
Line L2	Cables 11-12
Line L'1	Cables 1-2
Line L'2	Cables 7-8
⏚	Cables 3-4-9-10
IN	Ligne side
OUT	Protected side

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

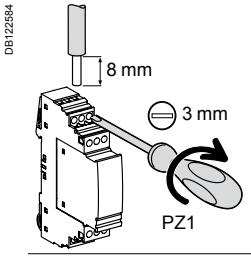
Diagrams

DB122600

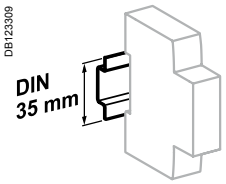


iPRC, iPRI surge arresters (cont.)

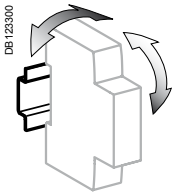
Connection



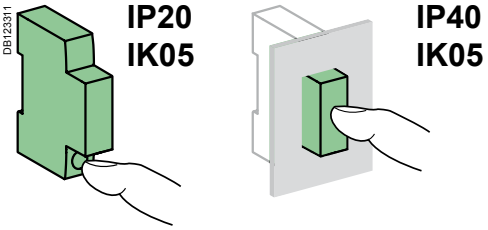
Tightening torque	Copper cables	
	Rigid	Flexible or ferrule
		
0.8 N.m	0.2 to 4 mm²	0.2 to 2,5 mm²



Clip on DIN rail 35 mm.



± 30° vertical.



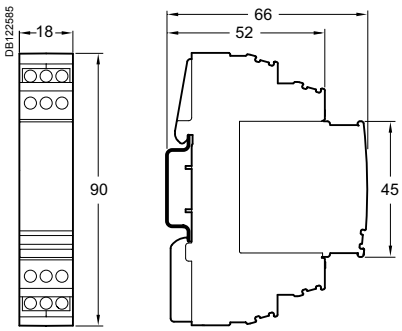
Technical data

Main characteristics			
		iPRC	iPRI
Number of protected lines		2	2
Test category	IEC/VDE	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 PV-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

PB112283-40

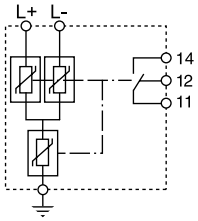
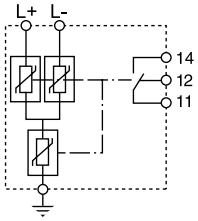
iPRD 40r 600PV

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	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 40r 600PV										
DB124052 	40	15	2,8	2,8	2,8	840	840	840	6	**A9L40271**
iPRD 40r 1000PV										
DB124052 	40	15	3.9	3.9	3.9	1000	1000	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

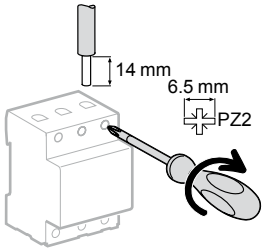
Replacement cartridges

Replacement cartridges		
Type	**Replacement cartridges for**	**Cat. no.**
C 40-600PV	iPRD 40r 600PV	**A9L40172**
C 40-1000PV	iPRD 40r 1000PV	**A9L40182**

iPRD PV-DC surge arresters
Withdrawable surge arresters type 2 for photovoltaic applications (cont.)

Connection

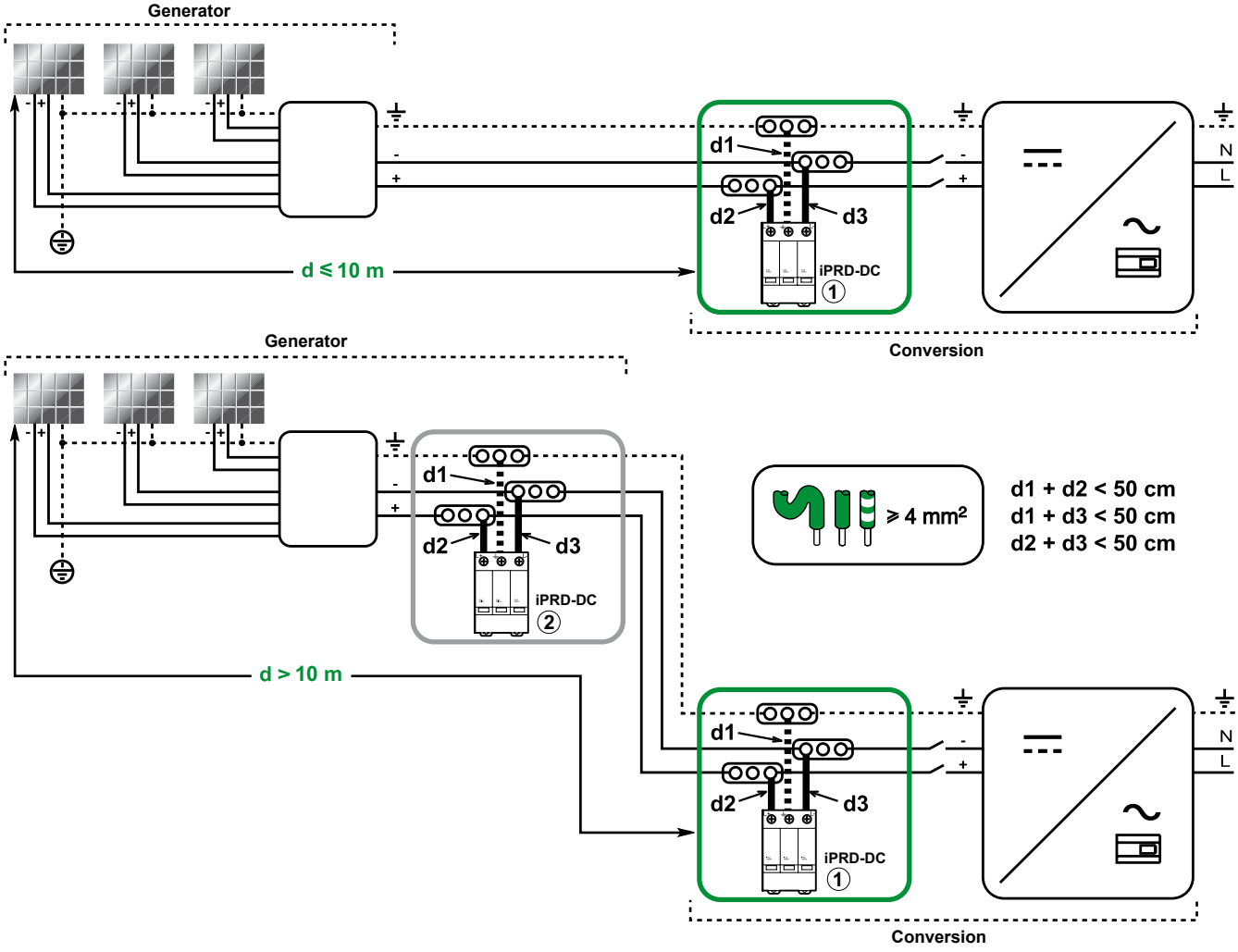
DB124057



Type	Tightening torque	Copper cables	
		Rigid	Flexible or ferrule
	DB122945		DB122946 
iPRD PV-DC	2 N.m	2,5 à 25 mm²	2,5 à 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.

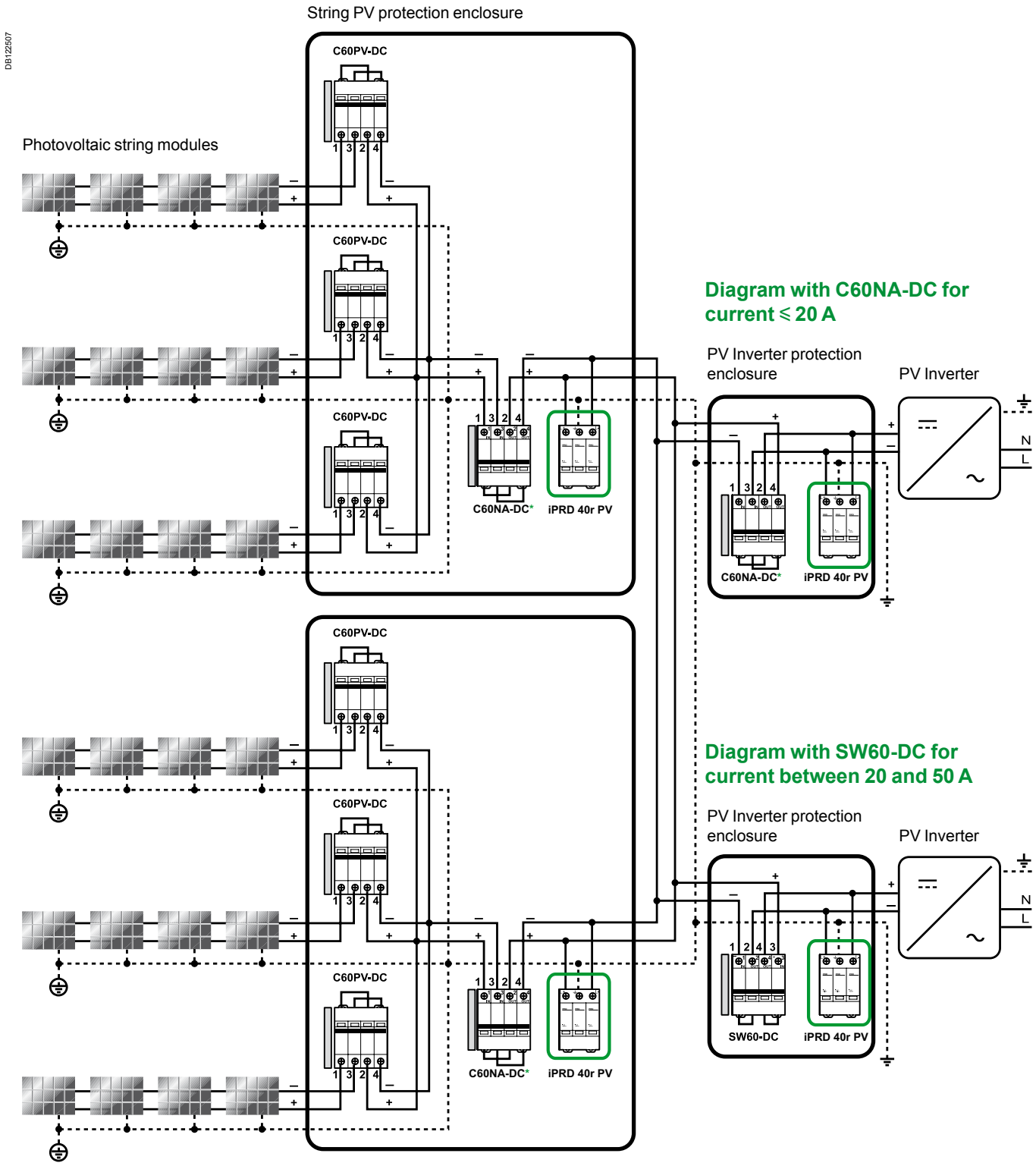
DB124049



iPRD PV-DC surge arresters

Withdrawable surge arresters type 2 for photovoltaic applications

Application diagram

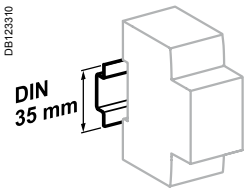


MN, MX, MNx, MN[S], MX+OF, OF, SD, OF+SD/OF, OF+SD24

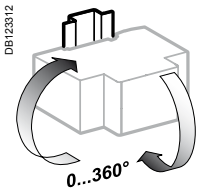
***C60NA-DC :**
20 A/1000 V DC or
32 A/800 V DC or
50 A/700 V DC

iPRD PV-DC surge arresters

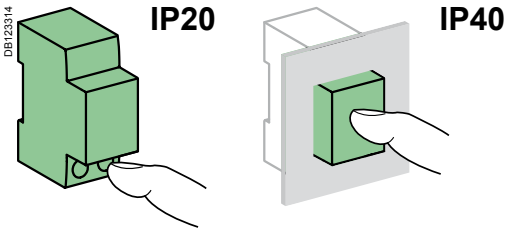
Withdrawable surge arresters type 2 for photovoltaic applications (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



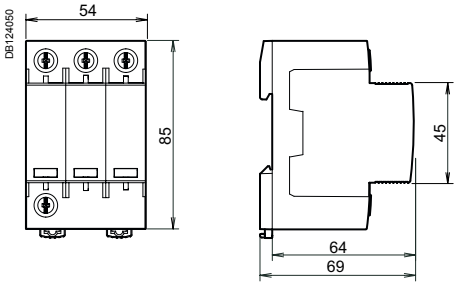
Technical data

Main characteristics			
Type of network		Isolated direct current	
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	
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	
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)	

Weight (g)

Surge arresters	
Type	
iPRD 40r 600PV	400
iPRD 40r 1000PV	400

Dimensions (mm)



xSW switches

Country approval pictograms

PB110824-40

2P Biconnect

PB110825-40

2P Monoconnect

PB110827-40

4P Biconnect

PB110828-40

4P Monoconnect

IEC/EN 60947-3

Control and disconnection of on-load electrical circuits already protected against overloads and short-circuits.

Catalogue numbers

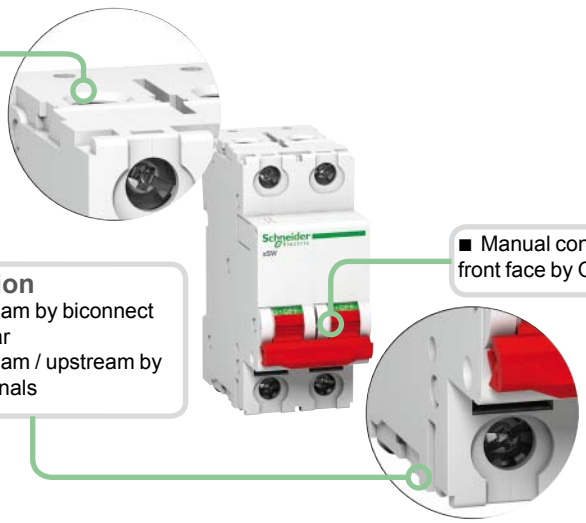
xSW Biconnect

Type				Width in 9 mm modules
2P	**Rating**	**Voltage (Ue)**		
DB118999 1 3 2 4	40 A	240/415 V AC	**A9S2P040**	4
	63 A	240/415 V AC	**A9S2P063**	
	80 A	240/415 V AC	**A9S2P080**	
3P				
DB119000 1 3 5 2 4 6	40 A	415 V AC	**A9S3P040**	6
	63 A	415 V AC	**A9S3P063**	
4P				
DB119000 1 3 5 7 2 4 6 8	40 A	415 V AC	**A9S4P040**	8
	63 A	415 V AC	**A9S4P063**	
	80 A	415 V AC	**A9S4P080**	

xSW Monoconnect

2P	**Rating**	**Voltage (Ue)**		
DB118999 1 3 2 4	100 A	240/415 V AC	**A9S2P100**	4
	125 A	240/415 V AC	**A9S2P125**	
4P				
DB119000 1 3 5 7 2 4 6 8	100 A	415 V AC	**A9S4P100**	8
	125 A	415 V AC	**A9S4P125**	
Operating frequency		50 Hz		
Auxiliaries		**Module CA907008**		
Accessories		**Module CA907020 and CA907012**		

■ Cable automatically guided to the correct position: terminals with guard
■ Insulated terminals IP20

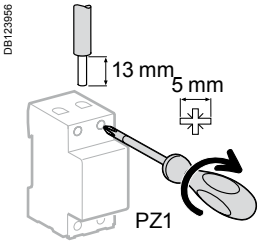


■ Manual control on front face by O-I lever

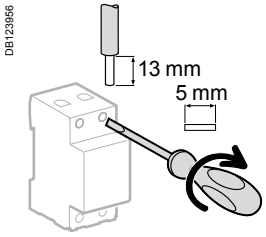
Connection
■ Downstream by biconnect comb busbar
■ Downstream / upstream by tunnel terminals

xSW switches (cont.)

Connection

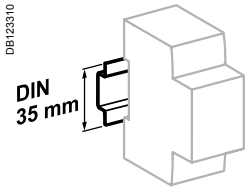


Biconnect

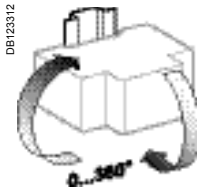


Monoconnect

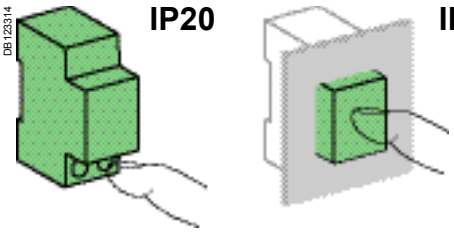
Type	Rating	Tightening torque	Copper cables	
			Rigid	Flexible or ferrule
		DB122945	DB122946	
xSW	40 to 80 A	3.5 N.m	0.5 to 35 mm²	0.5 to 25 mm²
	100-125 A	4.5 N.m	1 to 50 mm²	1 to 30 mm²



Clip on DIN rail 35 mm.



Indifferent position of installation.

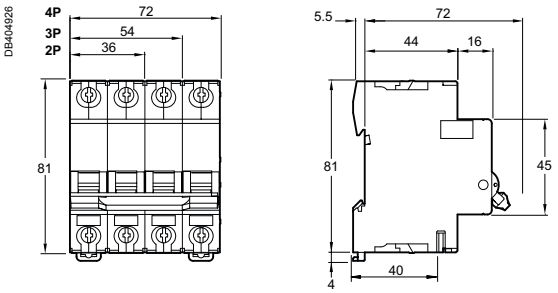


Technical data

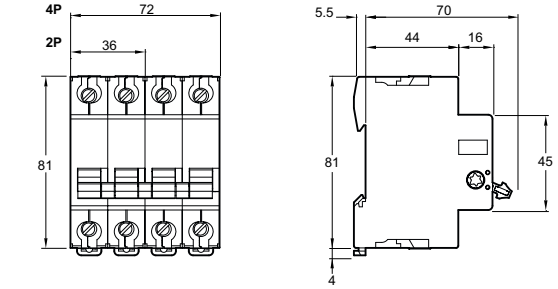
Main characteristics		40 A	63 A	80 A	100 A	125 A
Insulation voltage (Ui)		500 V AC				
Pollution degree		3				
Power circuit						
Rated impulse withstand voltage (Uimp)		4 kV			6 kV	
Operating category		AC - 22 A				
Permissible rated short-time withstand current (Icw)		12.5 In/300 ms			20 In/1 s	
Conditional rated short-circuit current (Inc)		-			6 kA with fuse gG	
Rated short-circuit closing current (Icm)		1 kA			5 kA	
Using direct current		48 V (110 V with 2 poles in series)				
Additional characteristics						
Degree of protection	Device only	IP20				
	Device in modular enclosure	IP40				
Endurance (O-C)	Mechanical	20,000 cycles			50,000 cycles	
	Electrical	10,000 cycles			2,500 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)

Biconnect



Monoconnect



Weight (g)

xSW switches		
Type	**40 to 80 A**	**100-125 A**
2P	202	151
3P	303	-
4P	425	302

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	**CM907007**

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

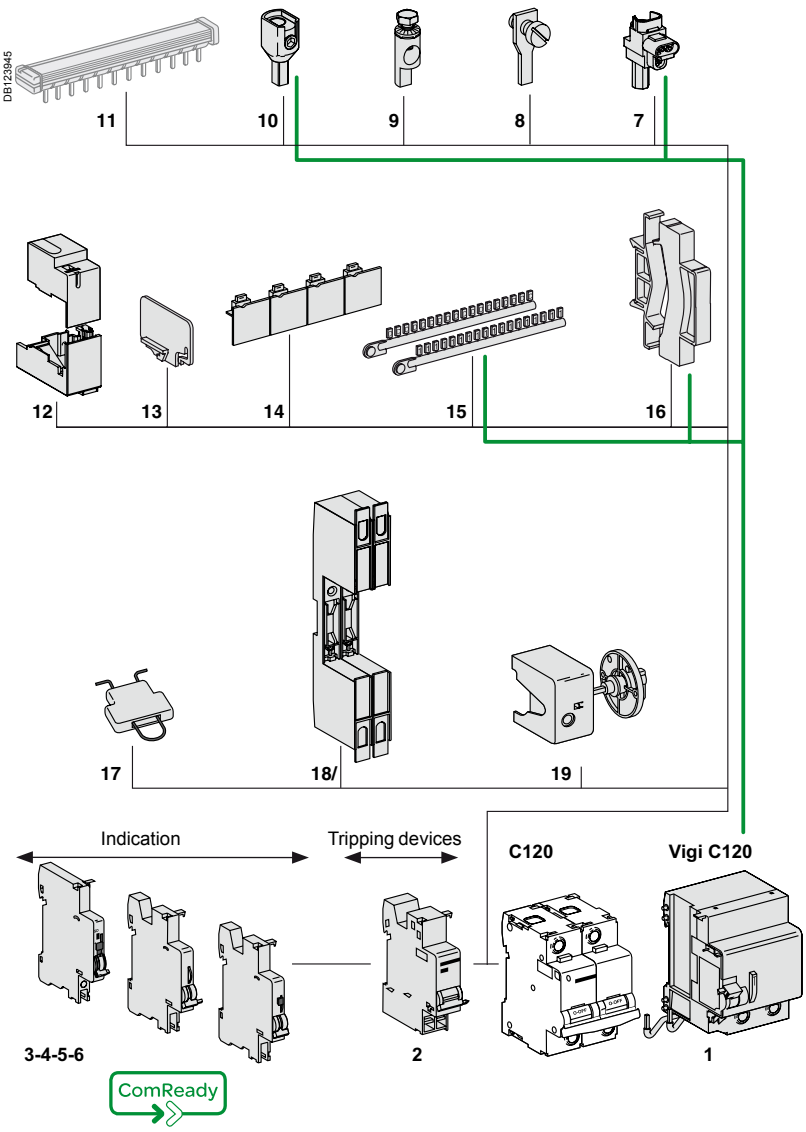
Indication		
3	SD fault indicating contact	**A9N26927**
4	OF+SD24 auxiliary contact	**A9N26899**
5	OF open/close auxiliary contact	**A9N26924**
6	OF/SD+OF auxiliary contact (OF+SD or OF+OF combination switch)	**A9N26929**

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 mounted first.

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	**CM907007**

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**

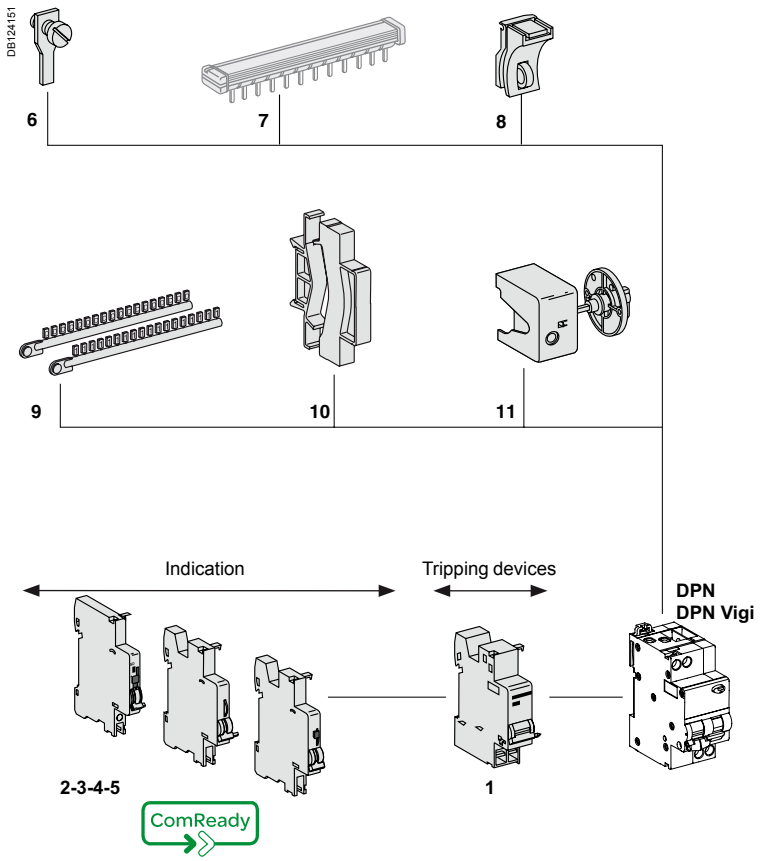
(1) A complete rotary handle consists of a circuit-breaker operating sub-assembly, cat. no. **27046**, *a handle cat. no.* **27047** *or a handle cat. no.* **27048**.

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 mounted first.

Accessories and Auxiliaries for C60H-DC devices

Connection accessories

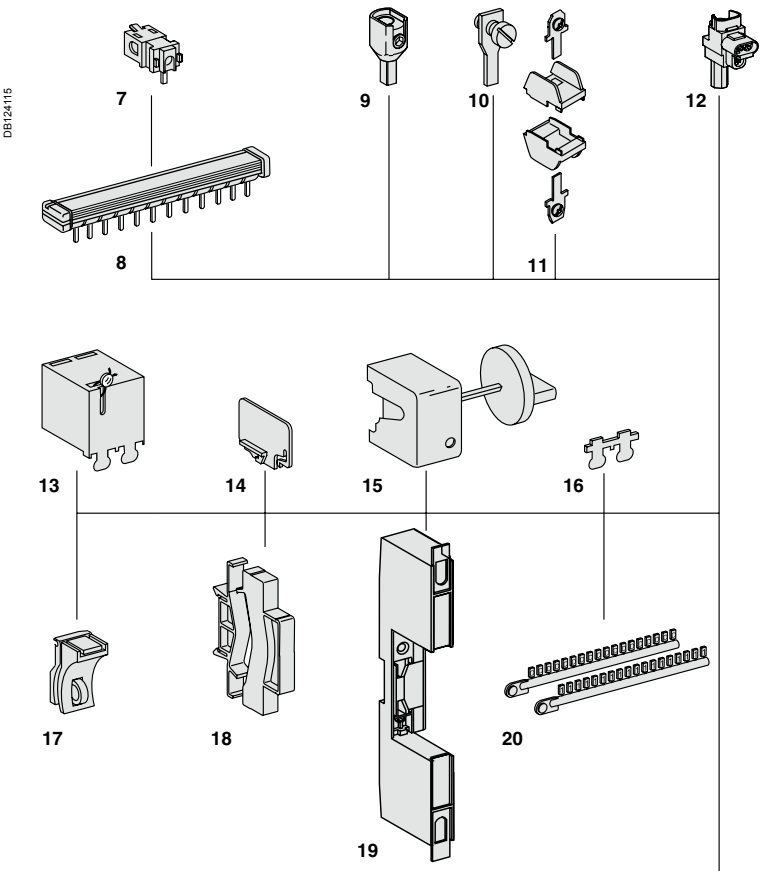
See module CA907012

7	Insulated connector	See module	**CM907007**
8	Comb busbar	See module	**CM907007**
9	Terminal 50 mm² Al / Cu		**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 pieces	**19091**
		3 pieces	**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	Dividable mounting plate		**26996**
20	Marker strip	See module	**CA907012**

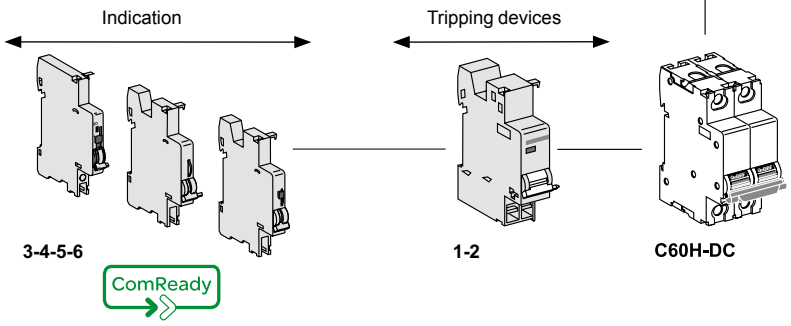


Electrical auxiliaries

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**



■ **The electrical auxiliaries must be installed to the left of the circuit breaker.**
■ **If the auxiliary SD contacts are associated with the tripping auxiliaries (MN, MX, etc.), they must be installed to the left of these auxiliaries.**

Accessories and Auxiliaries for iSW 40 to 125 A devices

Connection accessories

See module CA907012

1	Insulated connector	See module	**CM907007**
2	Comb busbar	See module	**CM907007**
3	Terminal 50 mm² Al / Cu		**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 pieces	**19091**
		3 pieces	**19096**

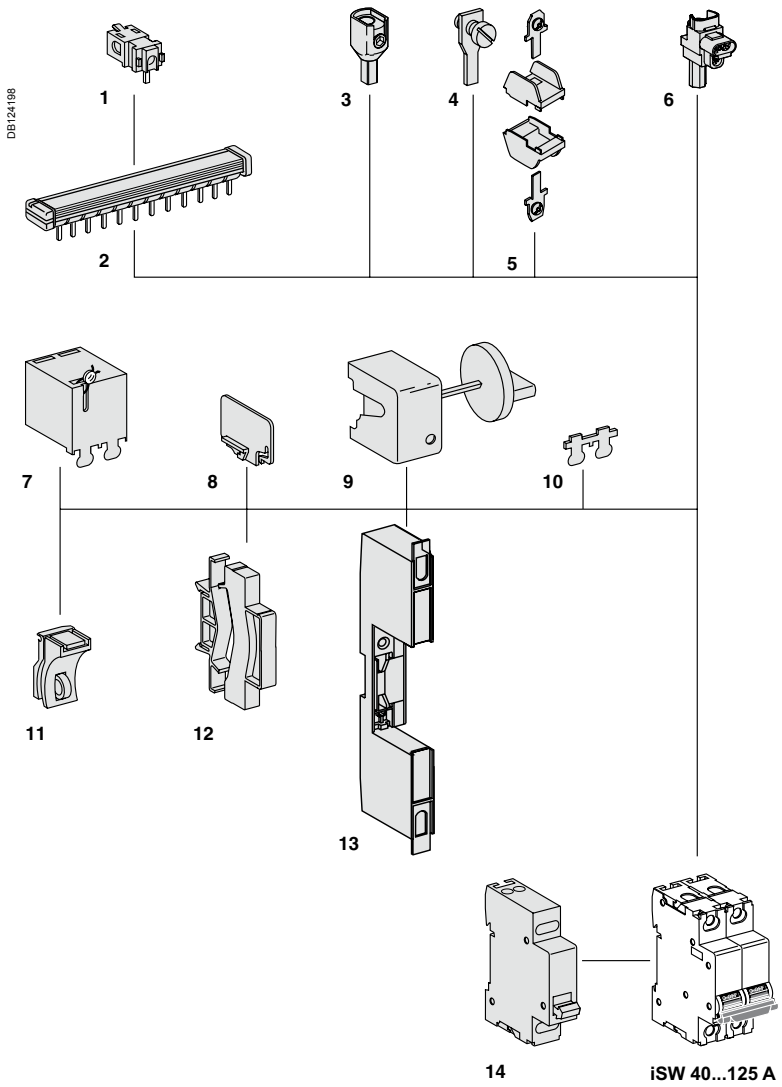
Mounting accessories

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	Dividable mounting plate		**26996**

Electrical auxiliaries

Indication		
14	OF iSW open/closed contact	**A9A15096**

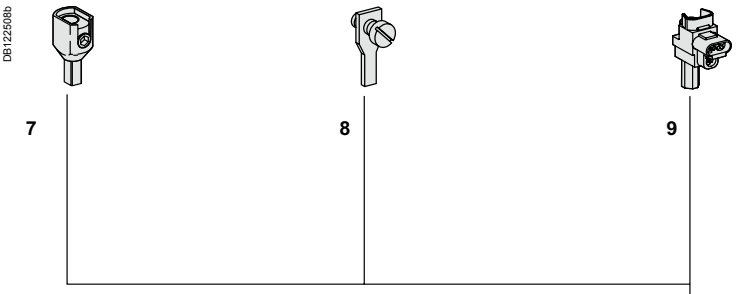


Accessories and Auxiliaries for SW60-DC, C60NA-DC devices

Connection accessories

See module CA907012

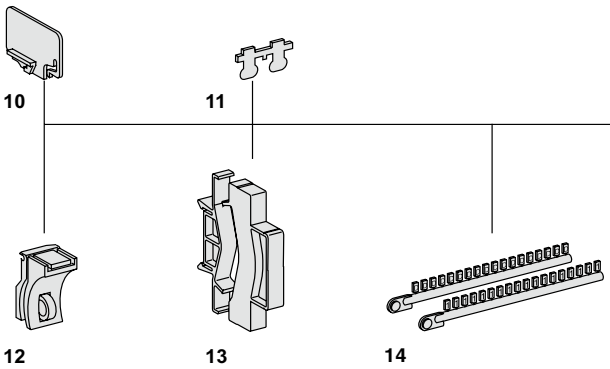
7	Terminal 50 mm² Al / Cu		**27060**
8	Ring tongue terminal screw connection		**27053**
9	Insulated distribution terminal	4 pieces	**19091**
		3 pieces	**19096**



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**

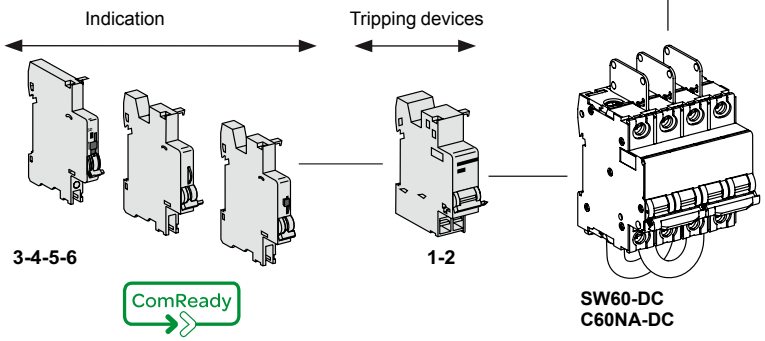


Electrical auxiliaries

See module CA907008

Indication		
3	SD fault indicating switch	**A9N26927**
4	OF+SD24 auxiliary contact	**A9N26999**
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**



■ **The electrical auxiliaries must be installed to the left of the circuit breaker.**
■ **If the auxiliary SD contacts are associated with the tripping auxiliaries (MN, MX, etc.), they must be installed to the left of these auxiliaries.**

Accessories and Auxiliaries for C60PV-DC devices

Connection accessories

See module CA907012

7	Terminal 50 mm² Al / Cu		**27060**
8	Ring tongue terminal screw connection		**27053**
		3 pièces	**19096**

Mounting accessories

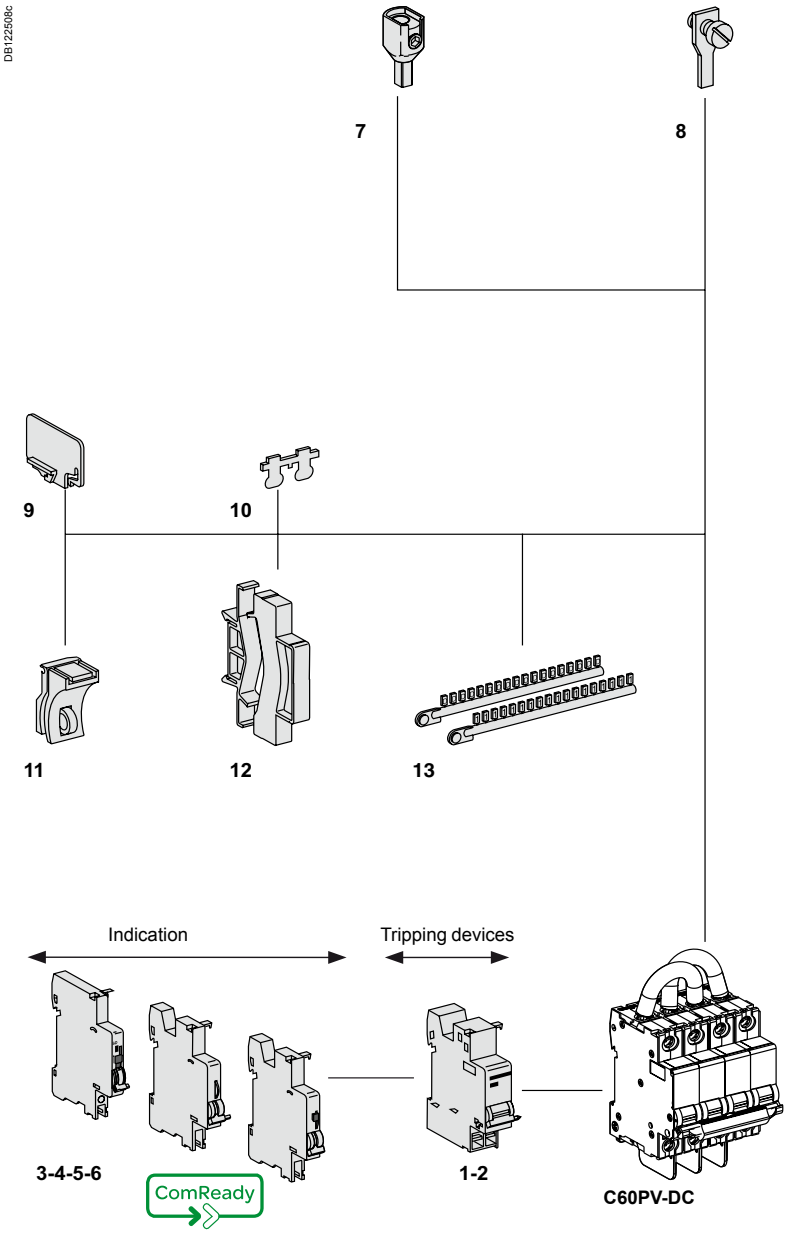
See module CA907012

9	Inter-pole barrier		**27001**
10	Screw shield		**26981**
11	Padlocking accessory (to be locked in the "open" position)		**26970**
12	Spacer		**A9N27062**
13	Marker strip	See module	**CA907012**

Electrical auxiliaries

See module CA907008

Indication			
3	SD fault indicating switch		**A9N26927**
4	OF+SD24 auxiliary contact		**A9N26999**
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**



■ **The electrical auxiliaries must be installed to the left of the circuit breaker.**
■ **If the auxiliary SD contacts are associated with the tripping auxiliaries (MN, MX, etc.), they must be installed to the left of these auxiliaries.**

Accessories and auxiliaries for NG125 devices

Connection

6	Comb busbar		see module	**CM907007**
7	Splitter blocks	Distribloc 125 A	see module	**CM907008**
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**

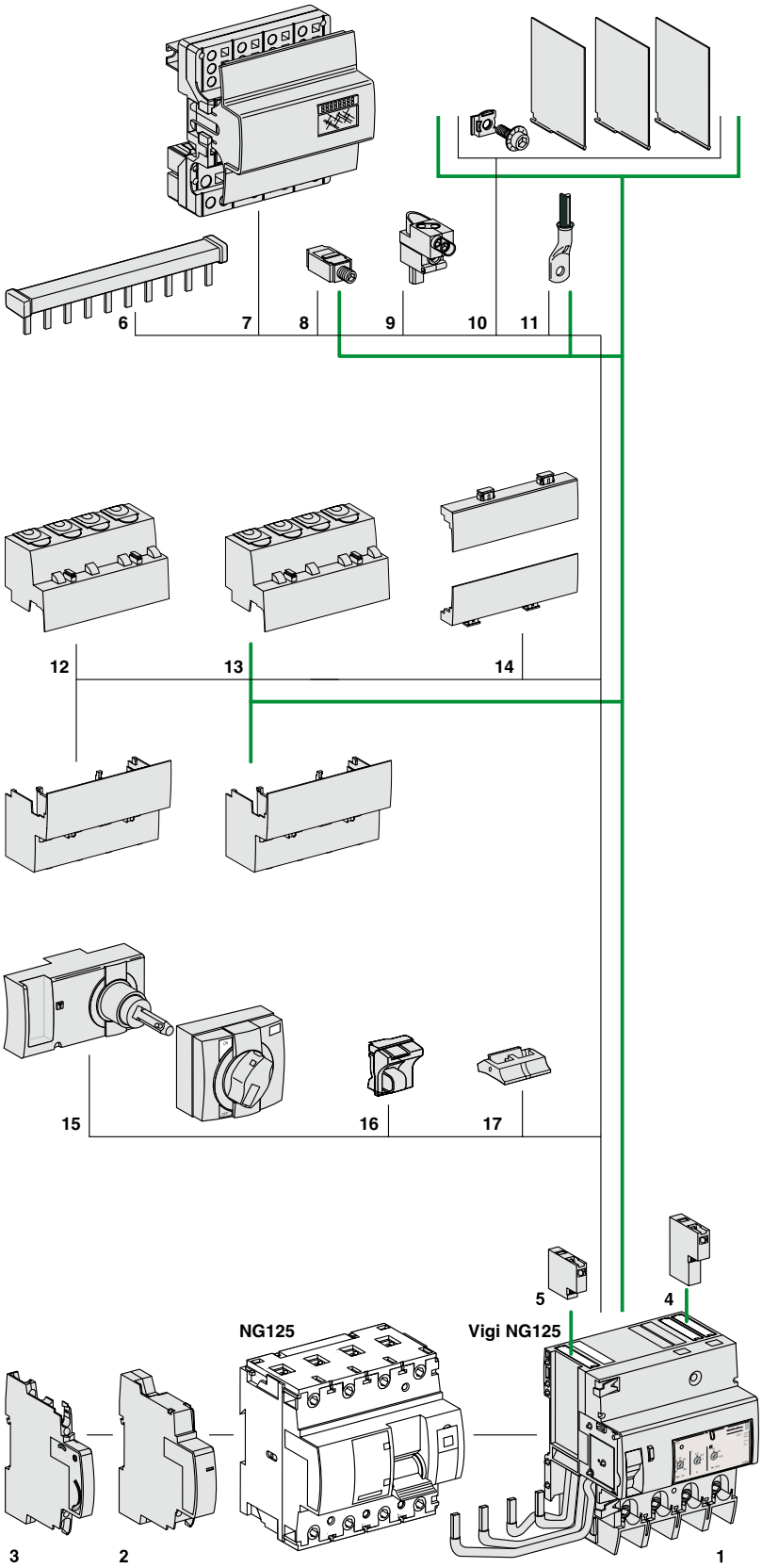
Electrical auxiliaries

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 C120, DPN, DPN Vigi, C60H-DC, iSW, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC devices

Installation

Accessories	Rotary handle			Plug-in base		Padlocking device	
	PB100137_SE-24 PB100138_SE-24 			056856_SE 		056886_SE 	057209J_SE-33 
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:							
C120	■ 2P, 3P, 4P			–	■	■	–
C120 + Vigi C120	■ 2P, 3P, 4P			–	–	■	–
DPN, DPN Vigi	■ 3P, 4P			–	–	–	■
C60H-DC	■ 2P			■	–	–	■
SW60-DC, C60NA-DC, C60PV-DC	–			–	–	–	■
iSW	■ iSW ≥ at 4 modules of 9 mm			■ iSW 40 to 63 A	–	–	■

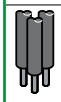
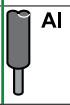
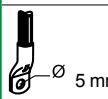
Accessories for C120, DPN, DPN Vigi, C60H-DC, iSW, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC devices (cont.)

Safety

Accessories	Screw shield		Terminal shield			Interpole barrier	Spacer
	056870_SE-33 / PB124114		058869_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:							
C120	■	–	■	–	–	■	■
Vigi C120	–	–	–	–	–	–	■
DPN, DPN Vigi	–	–	–	–	–	–	■
C60H-DC	–	■	–	■	■	■	■
SW60-DC, C60NA-DC, C60PV-DC	–	■	–	–	–	■	■
iSW	–	■ iSW 40 to 125 A	–	■ iSW 40 to 125 A		■ iSW 40 to 125 A	■

Accessories for C120, DPN, DPN Vigi, C60H-DC, iSW, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC devices (cont.)

Connection

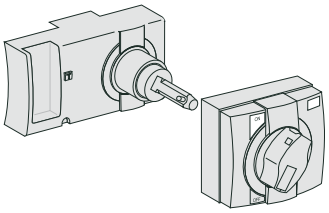
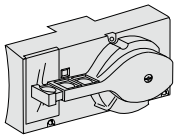
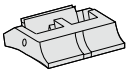
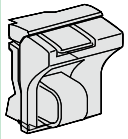
Accessories	Multi-cable terminal		50 mm² Al terminal	Screw-on connection for ring terminal	Connection kit for ring terminals	Terminal for rear connector
	DB118780 		DB118782 	DB123897 	058967N-23 	DB118784 
Function						
	For 3 copper cables: ■ Rigid up to 16 mm² ■ Flexible up to 10 mm² DB118787 		**For 16 to 50 mm² aluminium cables** DB122935 	**For lug tipped cables, front or rear mounting** DB118789 	**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
Cat. numbers	**19091**	**19096**	**27060**	**27053**	**17400**	**18528**
Set of	**4**	**3**	**1**	**8**	**2**	**2**
C120	■	■	■	■	–	■
Vigi C120	■	■	■	–	–	–
DPN, DPN Vigi	–	–	–	■	–	–
C60H-DC, 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	–

Identification

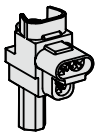
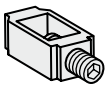
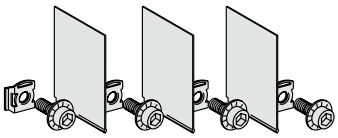
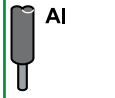
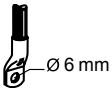
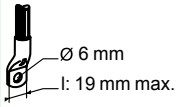
Accessories	Clip-on terminal marker strip			
	03120HD_SE-23 			
Function	**For connection identification**			
Cat. numbers	0: **AB1-R0**	A: **AB1-GA**	K: **AB1-GK**	U: **AB1-GU**
	1: **AB1-R1**	B: **AB1-GB**	L: **AB1-GL**	V: **AB1-GV**
	2: **AB1-R2**	C: **AB1-GC**	M: **AB1-GM**	W: **AB1-GW**
	3: **AB1-R3**	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**			
C120	■ 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

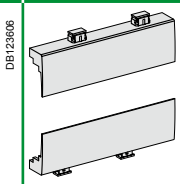
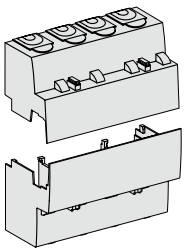
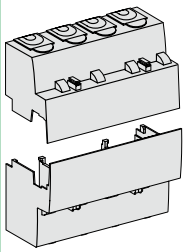
Accessories	Rotary handle				Toggle	Padlocking device
	DB123603 		DB123604 		DB123498 	DB123605 
Function						
	Extended rotary handle ■ Degree of protection: rotary button IP55 ■ Front installation: ■ Prevents door opening when the circuit breaker is in position O ■ Keeps disconnection ■ Padlocking 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

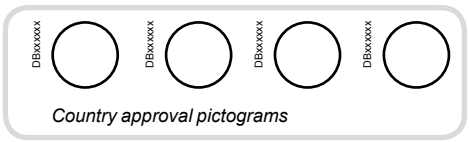
Accessories	Multi-cable terminal		70 mm² Al terminal	Screw-on connection for ring terminal	Small ring terminal
	DB118780 		DB123426 	DB123427 	DB123428 
Function					
	For 3 copper cables: ■ Rigid up to 16 mm² ■ Flexible up to 10 mm²		**For aluminium cables from** 25 to 70 mm²	**Installation:** ■ Upstream 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	■	■	■ 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	–				–				■					■	

Distribloc 63 A splitter block



Country approval pictograms

IEC/EN 60947-7-1.
IEC/EN 61439-2.

Description

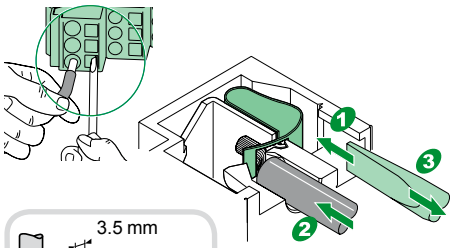
■ Distribloc 63 A is a four pole splitter block installable on a standard DIN rail.
■ Outgoing feeders are connected at the front, without screws, in spring terminals. The contact pressure of the cable is independent of the operator.
■ The spring contact pressure adapts automatically to the cross section of the conductor. It is independent of the operator.

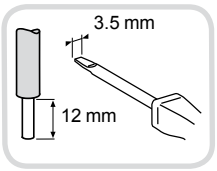
PB104409-40

Advantages

■ Very fast connection.
■ Very simple phase rebalancing.
■ In the event of an extension to or modification of the switchboard, connection is very easy.
■ The appearance of its front panel (45 mm front tip) enables it to fit in on a row perfectly, alongside modular devices.

DB122626





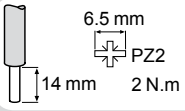
Technical data

Main characteristics		
Cat. no	**Distribution through the top**	**04040**
	Distribution through the bottom	**04041**
According to IEC/EN 60947-7-1		
Degree of protection		IP20
Rated insulation voltage (Ui)		500 V AC
Voltage rating (Ue)		440 V AC
Rated impulse withstand voltage (Uimp)		6 kV
Short-circuit current withstand		Up to breaking capacity of Schneider Electric outgoing circuit breakers, even when reinforced by cascading implementation
Reference temperature		40°C
Rated current at 40°C (In)		63 A
Operating frequency		50/60 Hz
Width in 9-mm modules		8

PB104500-60

Power supply

■ Four-pole tunnel terminals with screw clamping.
■ The tunnel terminals are located to facilitate the insertion of cables and clamping by screws.
■ A single cable per connection point:
□ flexible from 4 to 16 mm²
□ rigid from 6 to 25 mm².



Installation

■ Clip-on mounting on modular rail.
■ Width occupied: 8x9-mm modules.

Distribution

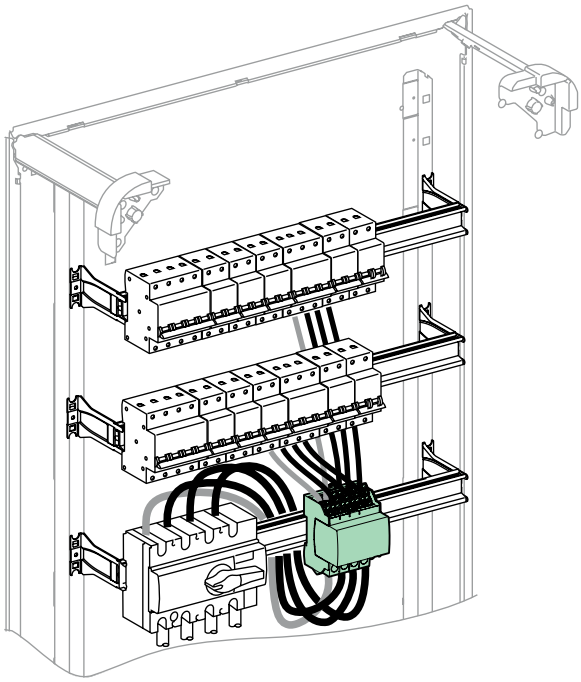
■ 3 outgoing feeders connected by flexible or rigid cables of cross section 1 to 6 mm².
■ 2 rows of terminals:
□ 12 connection points for phases (L1, L2, L3)
□ 12 connection points for neutral.
■ A single cable per connection point: flexible (without ferrule) or rigid from 1 to 6 mm².
■ Reliable, maintenance-free (tightness guaranteed over time).
■ Insensitive to vibrations and thermal variations.

Distribloc 63 A splitter block (cont.)

Additional characteristics	
According to IEC/EN 60947-7-1	
Rated cross section	16 mm²
Rated connecting capacity	10-16-25 mm²
Pollution degree	3
Storage temperature	-40°C to +85°C
According to IEC/EN 61439-2	
Operating temperature	-25°C to +60°C
Colour	RAL 7016, RAL 9003

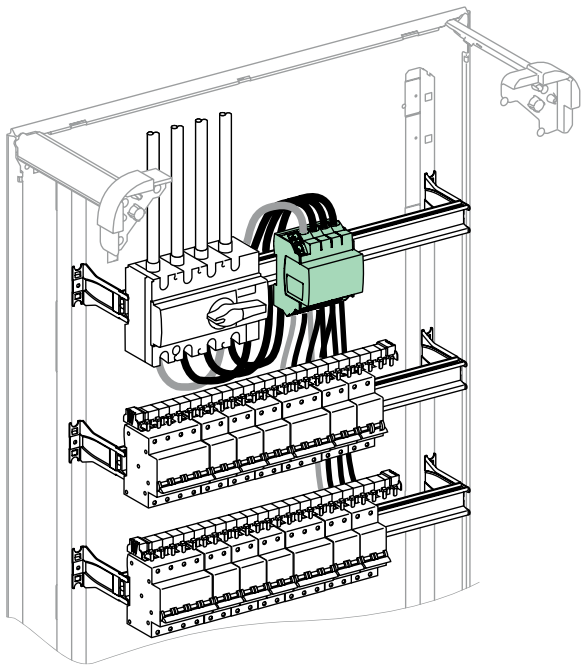
Installation

DB122671



Distribution through the bottom.

DB122625



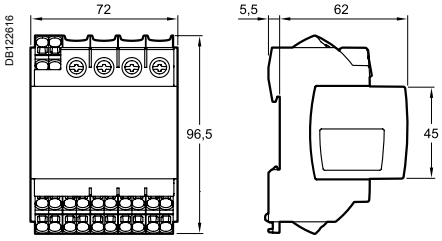
Distribution through the top.

Weight (g)

Splitter block	
Type	
Distribloc	290

Dimensions (mm)

DB122616



Distribloc 125 A splitter block

IEC/EN 60947-7-1, IEC/EN 60439-1

PG132021_SE-15

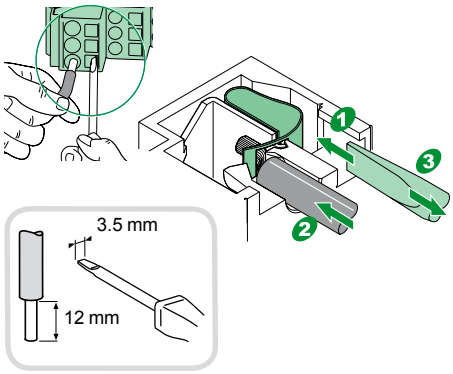
Description

- Distribloc 125 A is a completely insulated four-pole modular splitter block.
- Connection is performed to a screw terminal or screwless spring-loaded terminal.
- Reversible cover for power supply through the top or bottom.

Advantages

- Connection is very fast.
- Phase rebalancing is very simple.
- For an extension to or modification of the switchboard, connection is very easy.
- It fits perfectly in a row alongside modular switchgear, thanks to the appearance of its front panel (45 mm front tip).

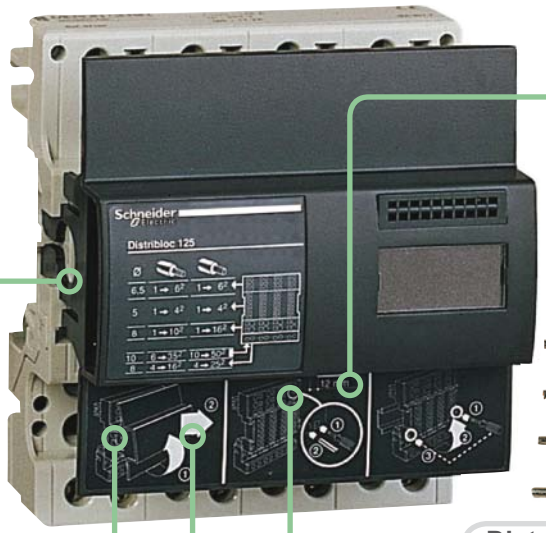
DB122626



Technical data

Main characteristics		
Cat. no.	**Distribloc 125 A**	**04045**
Option	**Set of 4 flexible links, 125 A**	**04047**
According to IEC/EN 60947-7-1		
Degree of protection		IPxxB
Rated insulation voltage (Ui)		750 V
Voltage rating (Ue)		440 V AC
Rated impulse withstand voltage (Uimp)		8 kV
Short-circuit current withstand capacity		Up to the breaking capacity of Schneider Electric feeder circuit breakers, even in case of cascade configuration
Reference temperature		40°C
Rated current at 40°C (In)		125 A
Acceptable peak current (Ipk)		20 kA
Width in 9 mm modules		12

PG132021_SE-71



Installation

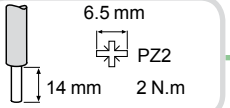
- Clips onto modular rail
- Screwing possible on solid or perforated plate
- Width occupied in 9 mm modules: 12

Power supply

- In a tunnel terminal for cable:
  - flexible: 6 to 35 mm²
  - rigid: 10 to 35 mm²

Prefabricated flexible link (option)

- Cross section: 35 mm² L=210 mm (cat. no. 04047)



Distribution in spring-loaded terminals

- Minimum cross section: 1 mm²
- Facilitates phase rebalancing and extensions
- Insensitive to thermal variations
- Spring contact pressure automatically adapted to the cross section of the conductor
- A single cable without metal end-piece per spring
- Per phase or neutral, flexible or rigid cables:
  - 2 feeders per cable, 4 to 10 mm²
  - 3 feeders per cable, 2.5 to 6 mm²
  - 7 feeders per cable, 2.5 to 4 mm²

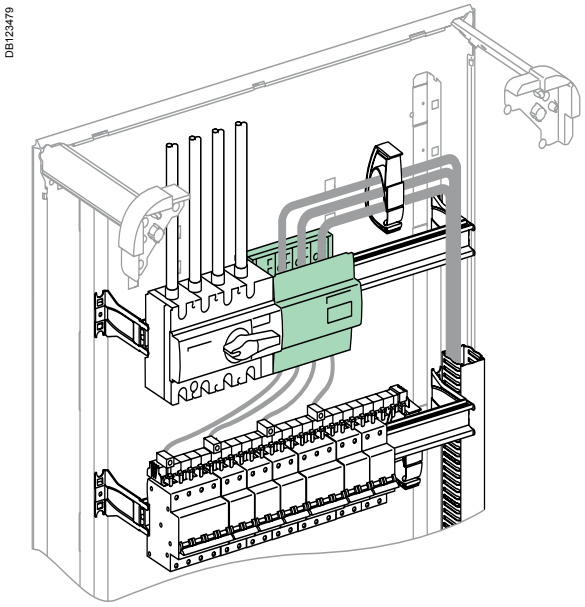
Distribution in screw terminals

- Cable: flexible 4 to 16 mm²
- Cable: rigid 4 to 25 mm²

Distribloc 125 A splitter block (cont.)

Additional characteristics	
Storage temperature	-40°C to +85°C
Operating temperature	-25°C to +60°C
Supplied with	An identification label Self-adhesive labels to identify phases
Is not installed in built-in enclosures	Pragma C12 and Pragma D18
Mounting spacing for solid or perforated plate	100 x 75 mm

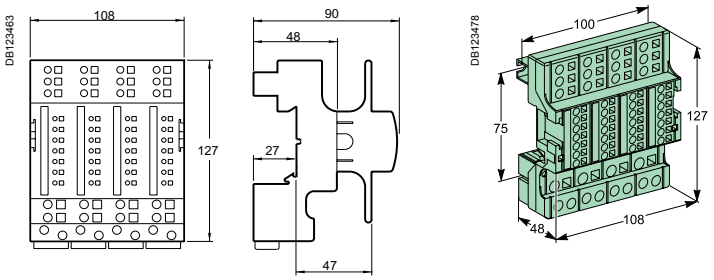
Installation



Weight (g)

Distribloc	
Type	
125 A	425

Dimensions (mm)



Multiclip 80 A splitter block

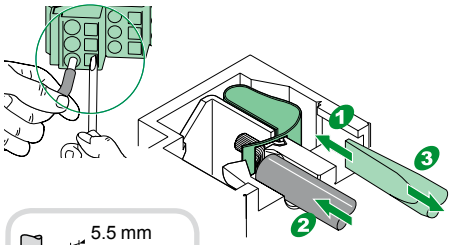
PB104507-35

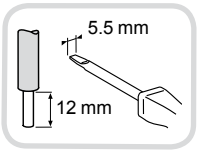
IEC/EN 60947-7-1.
IEC/EN 61439-2.

Description

■ Multiclip 80 A is a four-pole splitter block 24 modules wide installable on a standard DIN rail.
■ Outgoing feeders are connected at the front, without screws, in spring terminals.
■ The spring contact pressure adapts automatically to the cross section of the conductor. It is independent of the operator.
■ Supplied with 12 black and 12 blue pre-stripped 6 mm² cables.

DB122626





Advantages

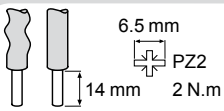
■ Very fast connection.
■ Very simple phase rebalancing.
■ In the event of an extension to or modification of the switchboard, connection is very easy.
■ Compatible with inter-rows of 150 mm.

Technical data

Main characteristics	
Cat. no	**04000**
According to IEC/EN 60947-7-1	
Rated current at 40°C (In)	80 A
Maximum operated voltage (Ue)	440 V AC
Operating frequency	50/60 Hz
Rated insulation voltage (Ui)	500 V AC
Pollution degree	3
Rated impulse withstand voltage (Uimp)	6 kV
Degree of protection	IP20
Short-circuit current withstand	Up to breaking capacity of Schneider Electric outgoing circuit breakers, even when reinforced by cascading implementation
Width in 9-mm modules	48

Power supply

■ Four-pole tunnel terminals with screw clamping.
■ The tunnel terminals are located to facilitate the insertion of cables and clamping by screws.
■ One cable per connection point:
□ flexible from 6 to 25 mm²
□ rigid from 10 to 35 mm².



PB104501-45

Installation

■ Clip-on mounted Pragma and Prisma DIN rails.
■ Screwed on all other symetric rail.

Distribution

■ Connection to spring terminals through the front.
■ 2 rows of terminals:
□ 18 connection points for phases (L1, L2, L3)
□ 18 connection points for neutral.
■ A single cable per connection point: flexible (without ferrule) or rigid from 1 to 6 mm².
■ Maintenance-free (tightness guaranteed over time). Insensitive to vibrations and thermal variations.

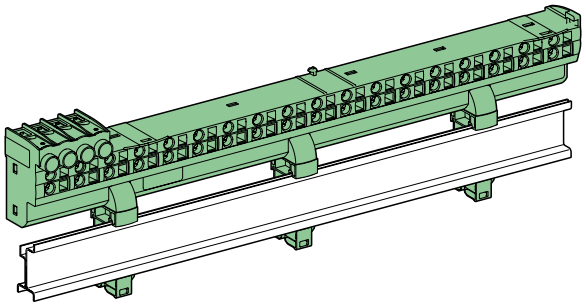
Multiclip 80 A splitter block (cont.)

PB104505-50

Additional characteristics	
According to IEC/EN 61439-2	
Operating temperature	-25°C to +60°C
Storage temperature	-40°C to +85°C
Colour	RAL 7016

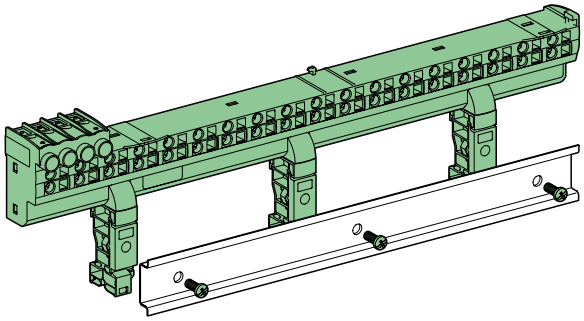
Installation

DB123198



On Pragma and Prisma rails

DB123199



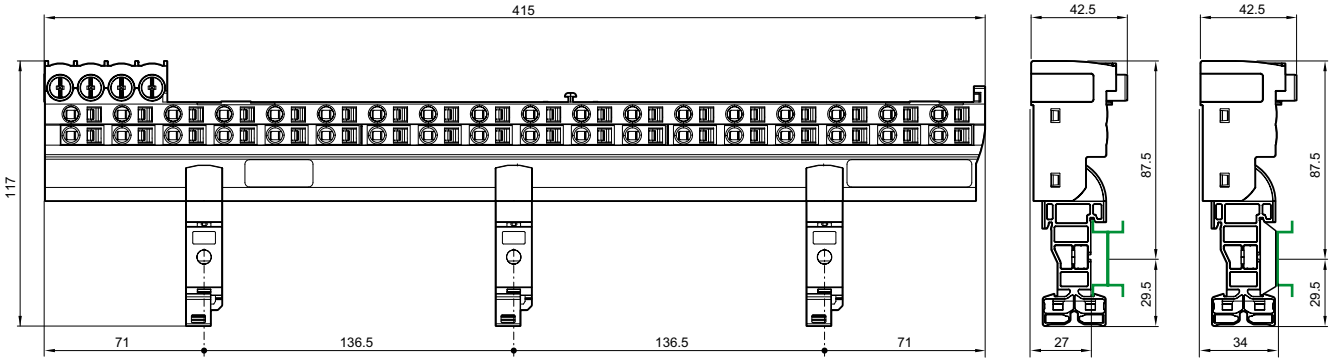
On other symetric rails

Weight (g)

Splitter block	
Type	
Multiclip	640

Dimensions (mm)

DB123200

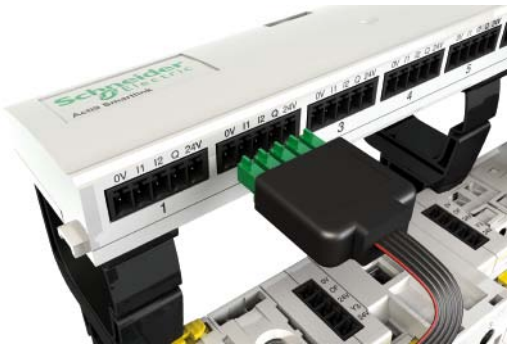


Acti 9 Smartlink

DB123430

Country approval pictograms

PB107797-47



ComReady

IEC/EN 61131-2

The Acti 9 Smartlink transmits data from Acti 9 devices to a PLC or a supervision system via the Modbus serial line communication network.

Functions

Data transmission between the Modbus 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 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 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.

All the data are stored in memory: number of cycles, consumption, period of operation, even in the event of a power failure.

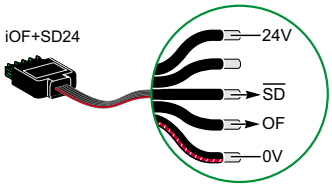
The Acti 9 Smartlink can also exchange data with any device having 24 V DC digital inputs/outputs.
No configuration of the connected products is required.

When the Acti 9 Smartlink is switched on, communication automatically adjusts to the Modbus Master (PLC, control station) communication parameters.

PB107753-68

A9XMSB11

DB404941



Catalogue numbers

Acti 9 Smartlink			
Type		**Set of**	
Acti 9 Smartlink		1	**A9XMSB11**
Supplied with	Modbus connector	1	
	24 V DC power supply connector	1	
	Locking clips for mounting on Multiclip 80	2	
Accessories			
Link USB / Modbus for Acti 9 Smartlink test		1	**A9XCATM1**
Prefabricated cables			
With 2 connectors	Short: 100 mm	6	**A9XCAS06**
PB107754-12	Medium-sized: 160 mm	6	**A9XCAM06**
	Long: 870 mm	6	**A9XCAL06**
With 1 connector	Long: 870 mm	6	**A9XCAU06**
PB107755-5			
Connectors	5-pin connectors (Ti24)	12	**A9XC2412**
PB107756-7			
Mounting kit	DIN rail (4 feet, 4 straps, 4 adapters)	1	**A9XMFA04**
	Multiclip 200 A (4 adapters)	1	**A9XM2B04**
Spare parts	Lock for Multiclip 80 A (2 clips)	1	**A9XMLA02**

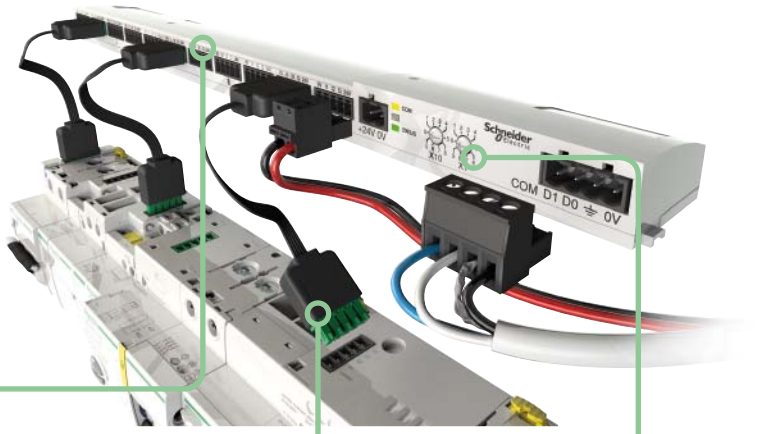
Acti 9 Smartlink (cont.)

The Acti 9 communication system

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, Seven
- To be download on: Schneider Electric web sites:
  - schneider-electric.com or
  - schneider-electric country web site)

PB107805-80



11 input/output channels
- Standard connectors
- In accordance with the IEC 61131-2 standard

Prefabricated cables
- Simplified cabling
- Fast and safe

Modbus Communication

- Communication adapts automatically to the communication parameters of the Modbus master (PLC, supervisor).
- Up to 32 slaves connected

PB107804-43

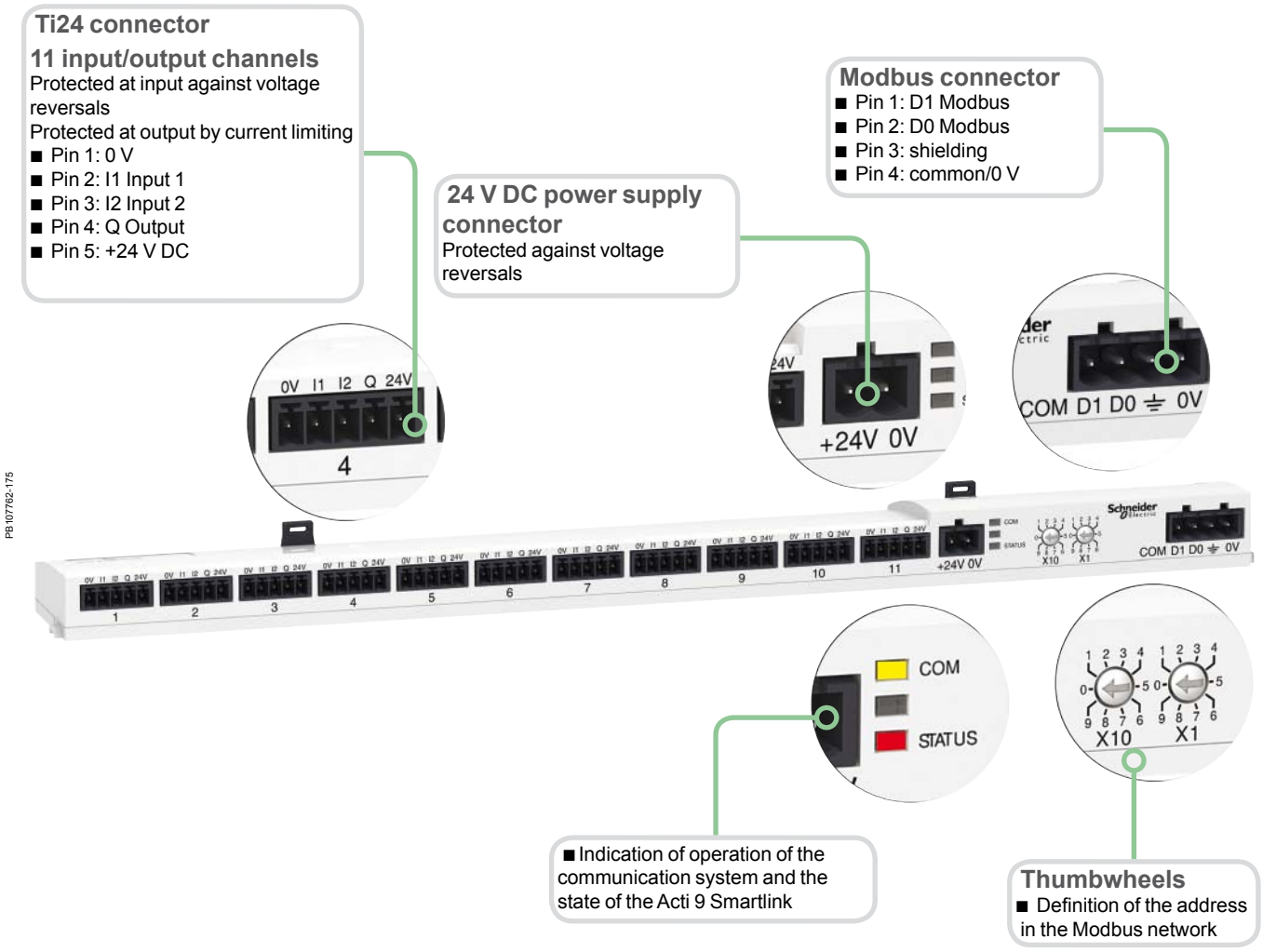
Connectable devices

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
Meters complying with the IEC 62053-21 standard
24 V DC indicator lamp, Harmony XVL range
All loads not exceeding 100 mA, 24 V DC
IC2000 light sensitive switches
Timers, thermostats, time switches, load shedding devices
All 24 V DC auxiliary contacts, IEC 61131-2 type 1

Installation

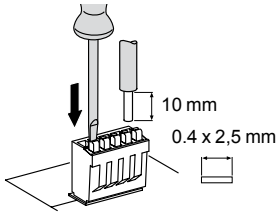
- Mounting in switchboards:
  - width 24 modules per row;
  - minimum spacing between rails 150 mm.



Acti 9 Smartlink (cont.)

Connection

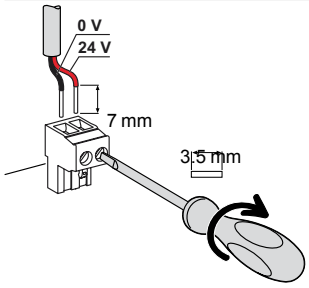
DB123580



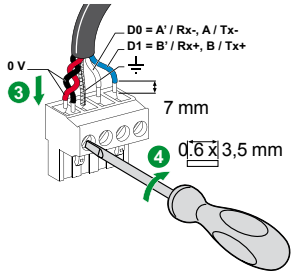
Connector cat. no: A9XC2412

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	-
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

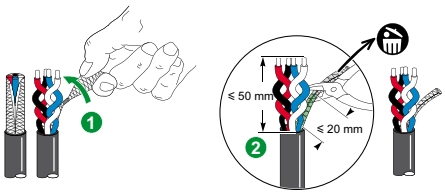
DB124331



DB405141



DB405142

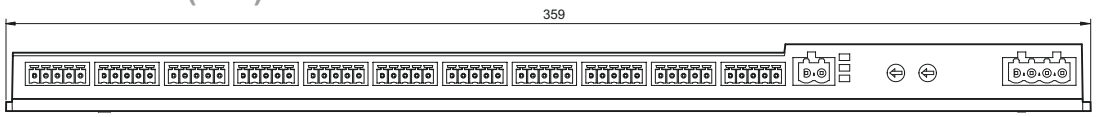


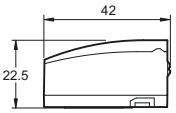
Weight (g)

Acti 9 Smartlink	
Type	
Acti 9 Smartlink	195

Dimensions (mm)

DB124330





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
Structure		Type	Modbus.org
		Method	Master/Slave
Type of device			Slave
Configuration	Modbus addressing range of the Acti 9 Smartlink	Maximum number of slaves for a Modbus master	99
		Maximum length of the bus	1000 m
Type of bus connector			4-pin connector
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			
Type of input			Current collector **Type 1 IEC 61131-2**
Number of channels			11 2-input channels
Maximum cable lengh			20 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	1 ms
		In state 0	1 ms
Isolation			No isolation between ports
Negative sequence voltage protection			Yes
Output characteristics			
Number of output channels			11
Type of output			24 V DC 0.1 A current source
Rated voltage		Voltage	24 V DC
		Maximum current	100 mA
Filtering time		In state 1	1 ms
		In state 0	1 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			
Mean time between failure (MTBF) = MTTF at 70°C			1,851,818 h
Duration of saving memory			10 years
Prefabricated cables characteristics			
Dielectric resistance			1 kV / 5 min
Minimum draw-out resistance			20 N

Electrical auxiliaries for C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC devices

■ 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
■ MNs: 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 60947-5-4

■ 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/SD+OF: open/close contact and switchable OF or SD contact.
■ OF+SD24: pen/close contact OF and cfault indicating contact SD with Ti24 interface.

DB124453

Combination table

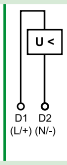
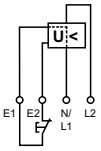
Electrical auxiliaries						Devices
Indication auxiliaries				Tripping auxiliaries		
Left		Right				
1 max.	OF/SD+OF, OF+SD24 +	1 max.	OF/SD+OF +	1 max.	MN, MNx, MNs, MX, MX+OF, MSU(1)	 C60H-DC, SW60-DC, C60PV-DC, C60NA-DC DPN, DPN Vigi, C120
			Or			
1 max.	OF +	1 max.	OF/SD+OF, SD, iOF +	2 max.	MN, MNx, MNs, MX, MX+OF, MSU(1)	
			Or			
–	None	1 max.	OF+SD24	2 max.	MN, MNx, MNs, MX, MX+OF, MSU(1)	
			Or			
–	None	–	None	3 max.	MSU	DPN, DPN Vigi,C120
–	None	1 max.	OF/SD+OF, OF, OF+SD24 +	2 max.	MN, MNx, MNs, MX, MX+OF, MSU	 OF.S +  ID
			Or			
1 max.	OF +	1 max.	OF +	1 max.	MN, MNx, MNs, MX, MX+OF, MSU	

Tripping devices must be installed first.
If two tripping devices are used: the MN undervoltage release must be installed first
Indication auxiliaries: install the SD auxiliary first

(1) MSU is not used in direct current

Electrical auxiliaries for C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC devices (cont.)

Tripping

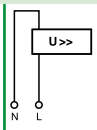
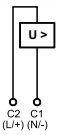
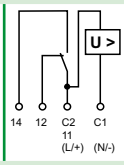
Auxiliaries	MN	MNs	MNx
Type	**Undervoltage release**		
	Instantaneous	Delayed	Independent of the supply voltage
	PB107151-30 	PB107152-30 	PB107149-30 
Function			
	■ Causes the device with which it is associated to trip when its input voltage decreases (between 70 % and 35 % of Un). Prevents the device 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 		DB118805 
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
C120, DPN, DPN Vigi, ID	■	■	■	■	■	■
C60H-DC, SW60-DC, C60PV-DC, C60NA-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)		–			–	–	

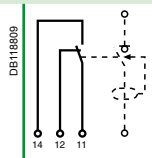
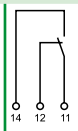
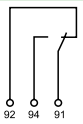
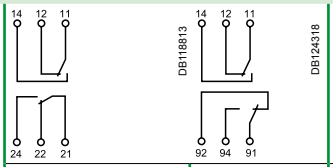
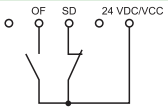
(1) For C120, DPN.
**(Ua)*
Voltages measured between the phase and the neutral conductor, at which the MSU device must control the associated protective device.

Electrical auxiliaries for C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC devices (cont.)

	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 			DB118808 		
	■ 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	–	–	–	–	–	–
	No tripping / 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		
	–	–			3 A / 415 V AC 6 A / ≤ 240 V AC		
	–	–			1 NO/NC		
	-25…+50	-25…+50			-25…+50		
	-40…+85	-40…+85			-40…+85		
	■	■			■		
	–	–			–		
	–	–			–		
	–	–			–		

Electrical auxiliaries for C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC devices (cont.)

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**
					
Function					
	■ Changeover contact indicating the "open" or "closed" position of the associated device	■ 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	■ The OF+SD/OF auxiliary is a two-in-one product: choice of OF + SD or OF + OF contact via the selector switch	■ Double changeover contact which 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
	⚠ **Compulsory for the addition of tripping or indication auxiliaries on a residual current circuit breaker ID**		⚠ **Not compatible with a ID residual current circuit breaker, use an OF+SD/OF in the SD position**		
Wiring diagrams					
				 OF position SD position	
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	■	■	■	■	■
C120, DPN, DPN Vigi, C60H-DC, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC	–	■	■	■	■

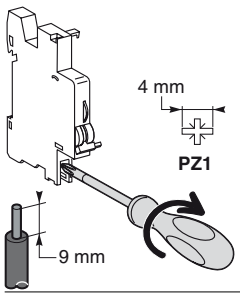
Technical specifications						
Rated voltage (Ue)	V AC	24…415	24…415	24…415	24…415	–
	V DC	24…130	24…130	24…130	24…130	24
Operating frequency	Hz	50/60	50/60	50/60	50/60	–
Mechanical state indicator		–	–	On front face	On front face	On front face
Test function		–	On front face	On front face	On front face	On toggle
Width in 9 mm modules		1	1	1	1	1
Operating current		3 A /415 V AC 6 A / ⩽ 240 V AC				2 mA mini, 50 mA maxi
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 C120, DPN, DPN Vigi, ID, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC devices (cont.)

Connection

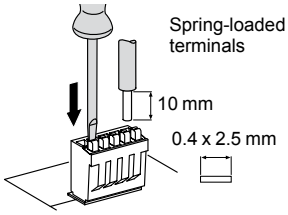
DB1261475



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



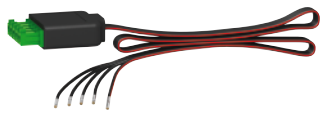
Type	Catalogue numbers	Copper cables	
		Rigid	Flexible
	DB122945	DB123553	
Ti24 interface	**A9XC2412**	1 x 0.5 to 1.5 mm²	1 x 0.5 to 1.5 mm²

Ti24 prefabricated cables connection

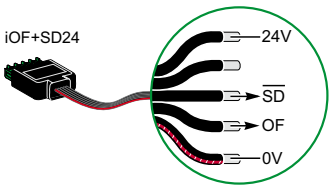
Type	Catalogue numbers	Length
Connection for Acti 9 Smartlink		
6 short prefabricated	**A9XCAS06**	100 mm
6 medium-sized prefabricated	**A9XCAM06**	160 mm
6 long prefabricated	**A9XCAL06**	870 mm
Connection for PLC type terminals		
6 long prefabricated on a single side	**A9XCAU06**	870 mm

PB107754-10

PB107755-14



DB404941



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
□ SDV: fault indicating contact for Vigi add-on residual current device.

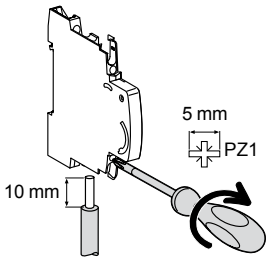
DB123424

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

Connection

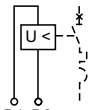
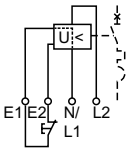
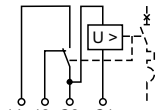
DB123413



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

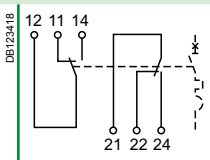
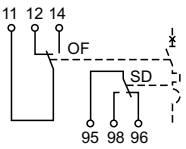
Electrical auxiliaries for NG125 devices and for Vigi NG125 add-on residual current devices (cont.)

Tripping

Auxiliaries	MN			MNx	MX+OF			
Type	**Undervoltage release**				**Shunt release**			
	Instantaneous			Independent of the supply voltage	With open/closed auxiliary contact			
	056367_SE-30 			057084N_SE-30 	056368_SE-35 			
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								
	DB123415 			DB123416 	DB123417 			
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	–			–	≥ 240 V AC	3 A		
					< 240 V AC	6 A		
					130 V CC	1 A		
					≤ 48 V CC	2 A		
					≤ 24 V CC	6 A		
Number of contacts	–			–	–			
Operating temperature °C	-25…+60			-25…+60	-25…+60			
Storage temperature °C	-40…+85			-40…+85	-40…+85			

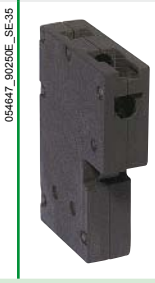
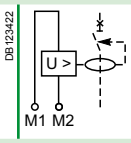
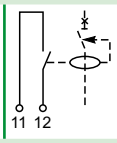
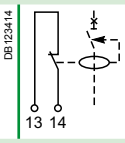
Electrical auxiliaries for NG125 devices and for Vigi NG125 add-on residual current devices (cont.)

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**
	220…240	220…240
	–	–
	50/60	50/60
	–	–
	1	1
	240 V AC 6 A 415 V AC 3 A	240 V AC 6 A 415 V AC 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	

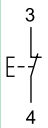
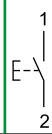
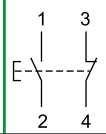
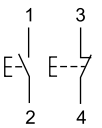
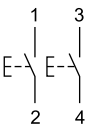
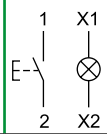
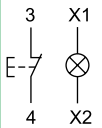
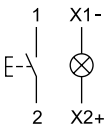
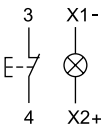
iPB pushbuttons

IEC 60669-1 and IEC 60947-5-1

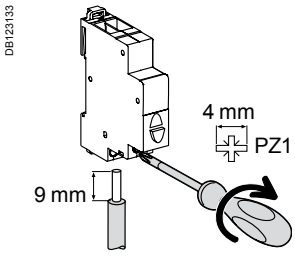
■ iPB pushbuttons are used to control electric circuits by means of pulses.

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			

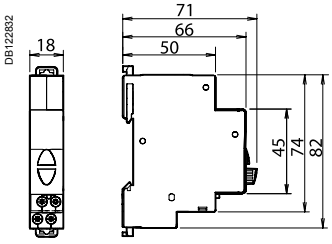
Connection



Tightening torque	Copper cables	
	Rigid	Flexible or 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	
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)

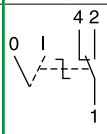
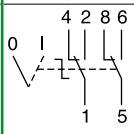
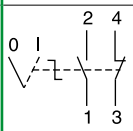
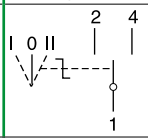
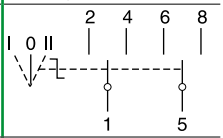
iSSW linear switches

IEC 60669-1 and IEC 60947-5-1

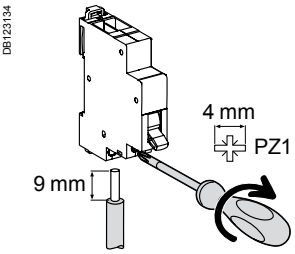
■ iSSW linear switches are used for the manual control of electric circuits.

Catalogue numbers

iSSW linear switches

Type	2 positions			3 positions	
					
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

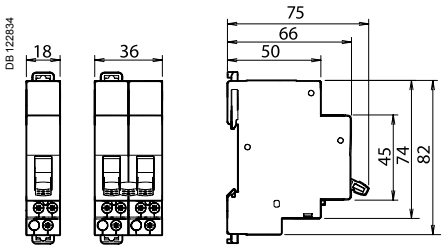
Connection



Tightening torque	Copper cables	
	Rigid	Flexible or ferrule
		
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)

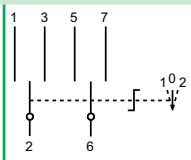
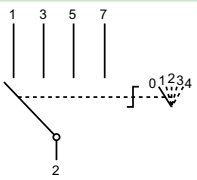
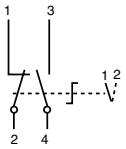


Technical data

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 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	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**

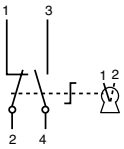
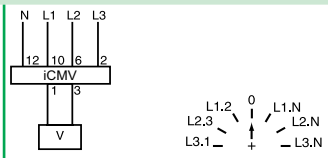
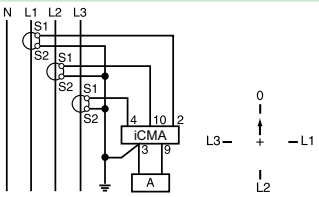
Technical specifications

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)		–	–	

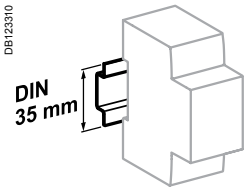
	V AC	V DC
1 V	5 A	3 A
12 V	1.2 A	0.7 A
24 V	0.7 A	0.4 A
48 V	0.45 A	0.25 A
110 V	0.25 A	0.13 A
240 V	0.15 A	0.08 A
300 V	0.13 A	0.07 A
440 V	0.1 A	0.05 A

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.)

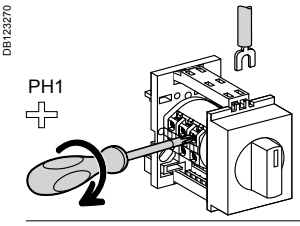
	iCMC	iCMV	iCMA
	2-way key-actuated	**7-position voltmeter**	**4-position ammeter**
	IEC 60947-3 (EN 60947-3) VDE 0660 part. 107 UL	IEC 60947-3 (EN 60947-3) VDE 0660 part. 107 UL	IEC 60947-3 (EN 60947-3) VDE 0660 part. 107 UL
	PB107123-38 	PB107118-38 	PB107119-38 
	■ 2-way key-actuated selector switch 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.)



Clip on DIN rail 35 mm.

Connection



Tightening torque	Copper cables
	Flexible or rigid with ferrule
	DB122945
0.35 N.m	< 1.5 mm²

■ Connection by jumper terminals with captive screws.

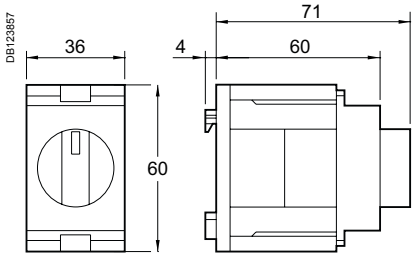
Technical data

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)



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

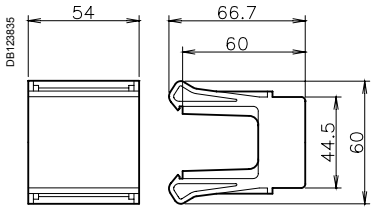
Button holders		
Type		**Width in 9 mm modules**
Ø 22 mm button holder		
	A9A15151	6
Universal support		
	A9A15152	6

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)		

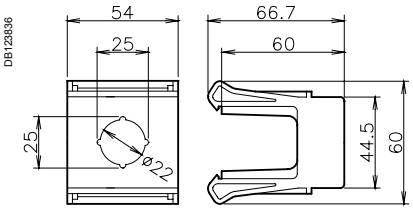
Dimensions (mm)

DB123835



Universal support

DB123836



Ø 22 mm button holder

Reflex iC60N, iC60H (curves B, C, D)

Country approval pictograms

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 version with Ti24 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).

The Ti24 interface also allows fast, reliable connection of 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.

PB106239-40

PB106238-40

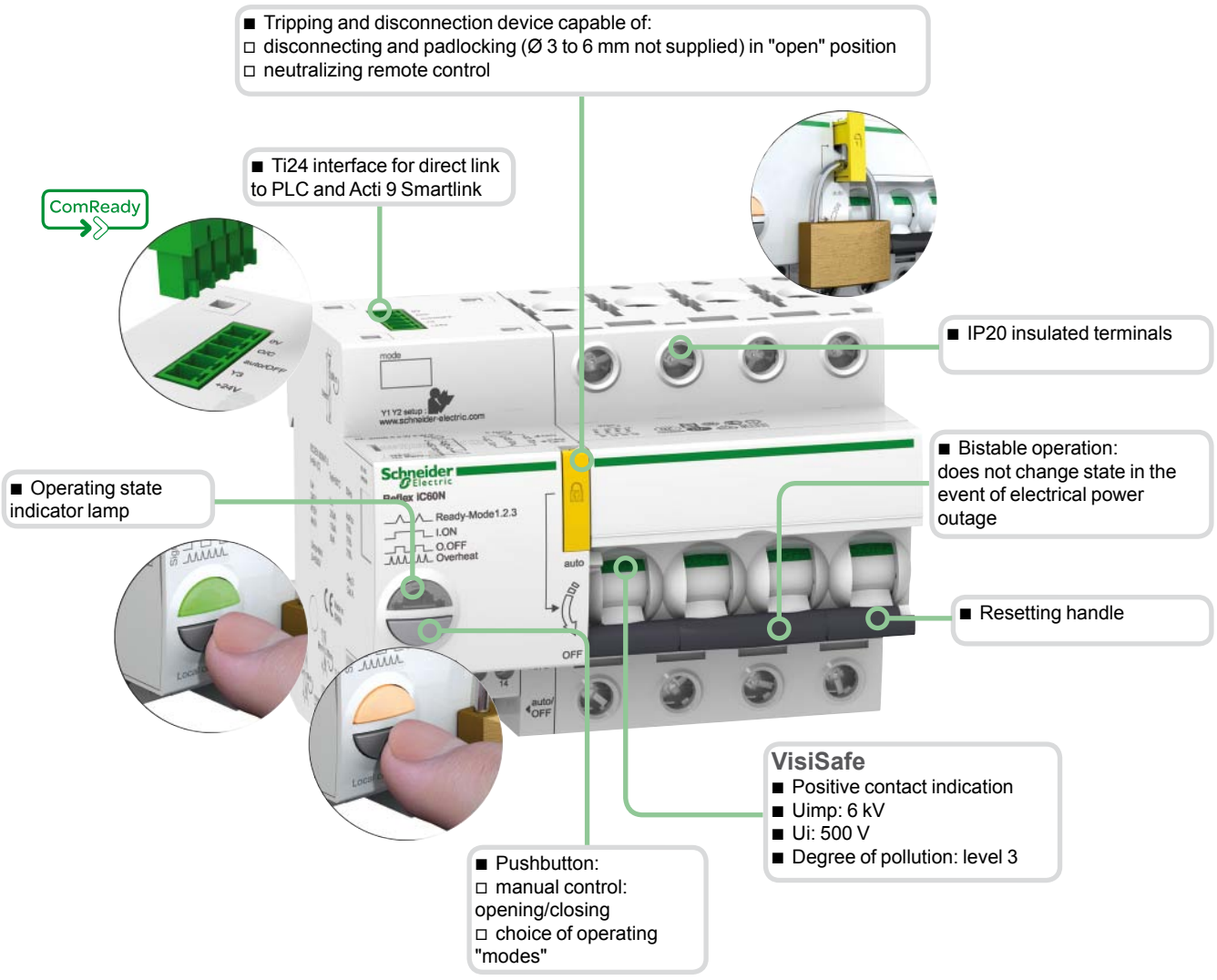
Alternating current (AC) 50 Hz				
Ultimate breaking capacity (Icu) as per IEC/EN 60947-2				Service breaking capacity (Ics)
		Voltage (Ue)		
Ph/Ph (2P, 3P, 4P)		220 to 240 V	380 to 415 V	
Reflex iC60N				
Rating (In)	10 to 40 A	20 kA	10 kA	75 % of Icu
	63 A	20 kA	10 kA	50 % of Icu
Reflex iC60H				
Rating (In)	10 to 40 A	30 kA	15 kA	50 % of Icu

Catalogue numbers

Reflex iC60 circuit breaker									
Type	2P			3P			4P		
Rating (In)	Curve			Curve			Curve		
	B	C	D	B	C	D	B	C	D
Reflex iC60N									
With Ti24 interface									
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	-
Without Ti24 interface									
10 A	-	A9C52210	-	-	A9C52310	-	-	A9C52410	-
16 A	-	A9C52216	-	-	A9C52316	-	-	A9C52416	-
25 A	-	A9C52225	-	-	A9C52325	-	-	A9C52425	-
40 A	-	A9C52240	-	-	A9C52340	-	-	A9C52440	-
63 A	-	A9C52263	-	-	A9C52363	-	-	A9C52463	-
Reflex iC60H									
With Ti24 interface									
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**		

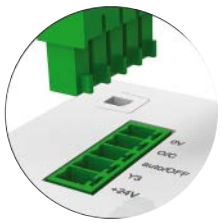
Reflex iC60N, iC60H (curves B, C, D) (cont.)

PB105980-70



■ 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.

DB123765



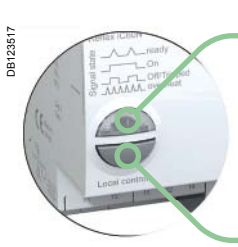
DB123516

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

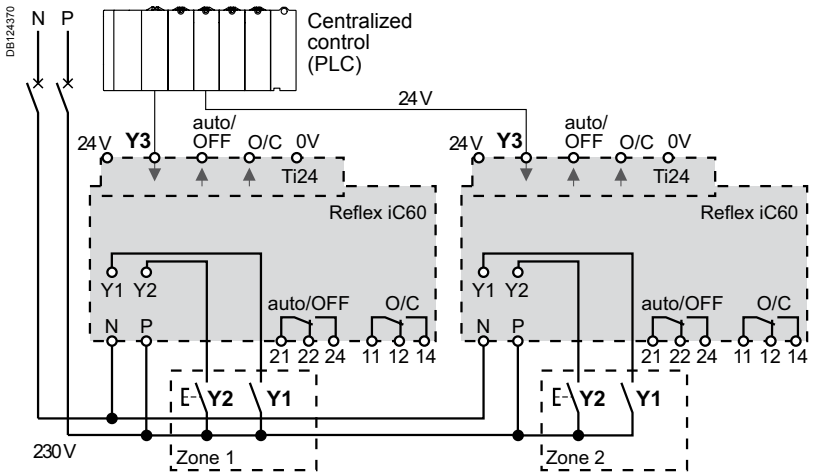
Y1	Latched order control
Y2	Control by impulse-type
N	230 V AC power supply
P	
O/C 11 12 14	Control circuit state indication contact
auto/OFF 21 22 24	Circuit-breaker tripping indication contact

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

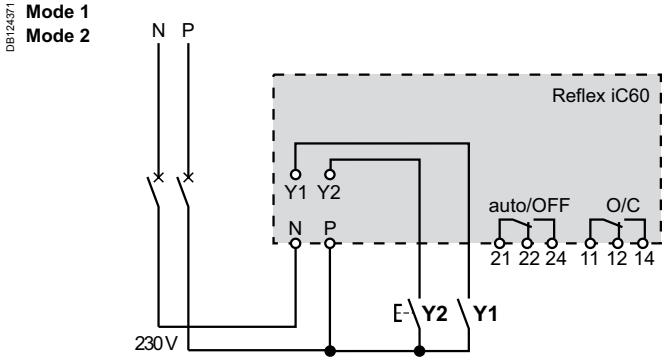
■ Y1 is used to inhibit Y2
□ Y1: local opening/Y2 inhibition latched order control
□ Y2: impulse-type local opening/closing control
□ Y3: latched order centralized opening/closing control

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 without Ti24 interface

Mode 1
Mode 2



Reflex iC60 with Ti24 interface

Mode 1
Mode 2
Mode 3

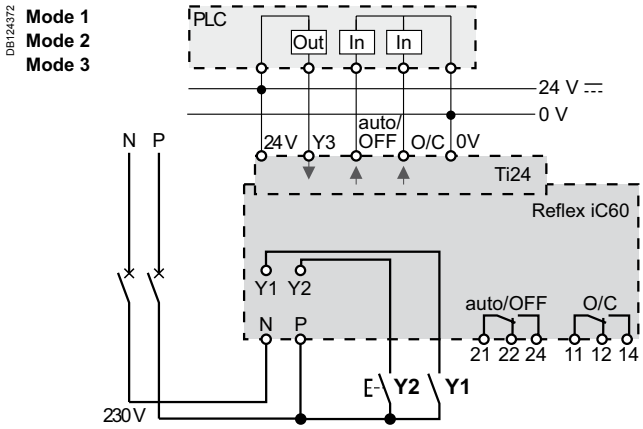


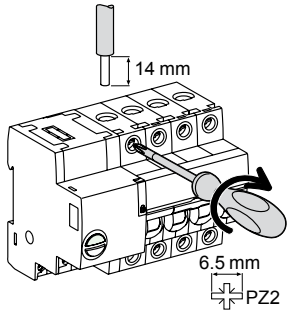
Table of modes

	Mode 1	Mode 2	Mode 3
Reflex iC60 without interface Ti24	■ Default mode	■ Possible mode	–
Reflex iC60 with interface Ti24	■ Possible mode	■ Possible mode	■ Default mode

Reflex iC60N, iC60H (curves B, C, D) (cont.)

Power connection

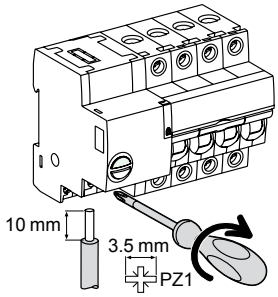
DB123561



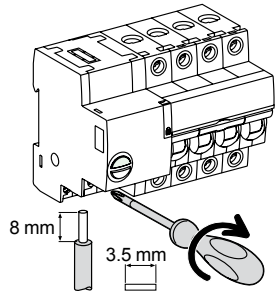
Terminal	Rating	Tightening torque	Without accessories: Copper cables — Rigid	Without accessories: Copper cables — Flexible or with ferrule	With accessories: Al terminal 50 mm²	With accessories: Screw-on connection for ring terminal	With accessories: Multi-cable terminal — Rigid cables	With accessories: Multi-cable terminal — Flexible cables
		DB122945	DB122946	DB122935	Al DB118789	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

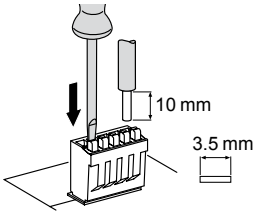
DB123562



DB123563

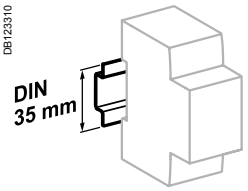


DB123580

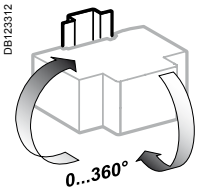


Terminal	Tightening torque	Without accessories: Copper cables — Rigid	Without accessories: Copper cables — Flexible	Without accessories: Copper cables — Flexible with ferrule
	DB122945	DB123553	DB123554	
Power supply (N/P) Inputs (Y1/Y2)	1 N.m	1 to 10 mm²	1 to 6 mm²	1 to 4 mm²
Outputs (O/C, auto/OFF)	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

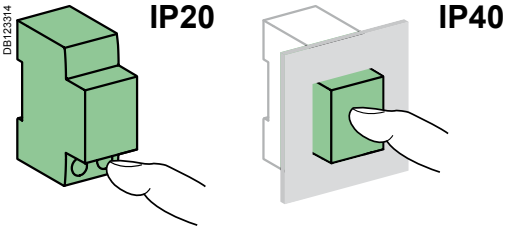
Reflex iC60N, iC60H (curves B, C, D) (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



Technical data

Control circuit		
Supply voltage (Ue) (N/P)		230 V AC - 50 Hz
Control voltage (Uc)	Inputs (Y1/Y2)	230 V AC - 5 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)		≤ 200 ms
Consumption		≤ 1 W
Inrush consumption		< 1000 VA
Length of control wires	Inputs (Y1/Y2)	Cable: 100 m
		Wires in a sheath: 500 m
	Input (Y3)	500 m
Inrush current at 230 V - 50 Hz	2P	4.2 Â
	3P	8.2 Â
	4P	16.2 Â
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 (1)
	AC5a - AC5b	Up to15,000 cycles (1)
	AC7c	Up to 20,000 cycles (1)
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

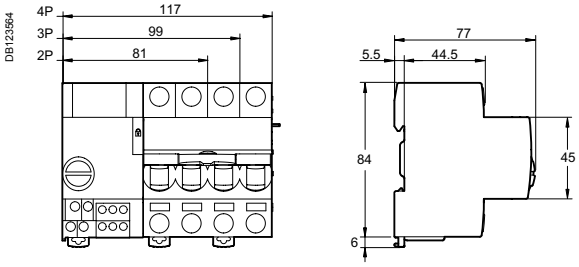
(1) See the derating table according to the load types and ratings

Reflex iC60N, iC60H (curves B, C, D) (cont.)

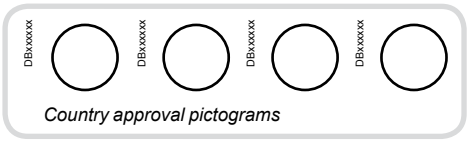
Weight (g)

Circuit breaker	
Type	**Reflex iC60**
2P	480
3P	620
4P	750

Dimensions (mm)



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

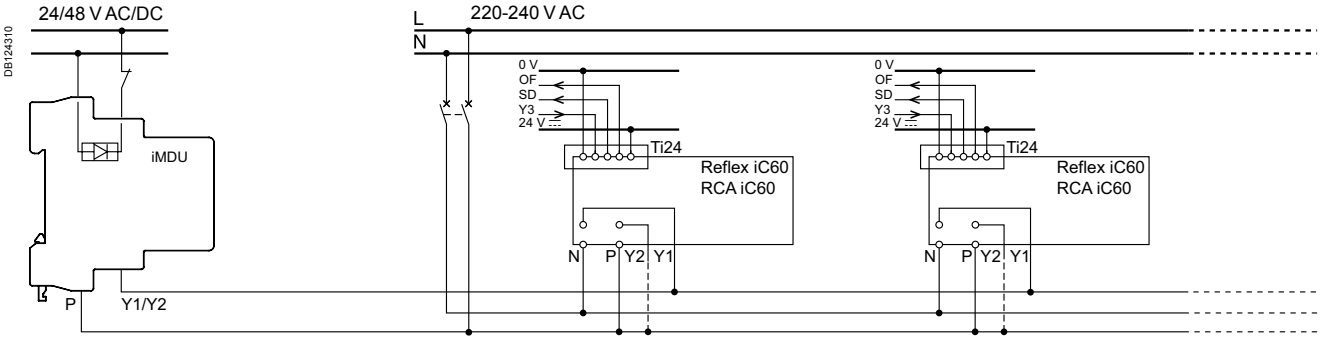
Catalogue numbers

Electrical auxiliary for Reflex iC60		
Type		**Width in 9 mm modules**
iMDU	**A9C18195**	1

Diagram

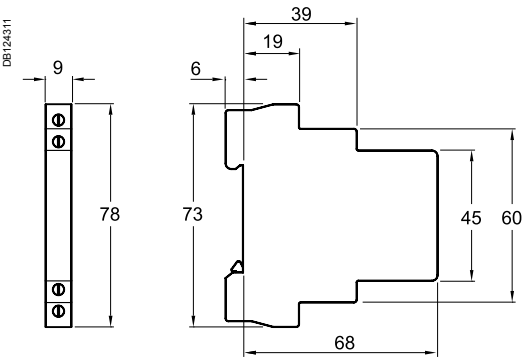
An iMDU electrical auxiliary allows up to a maximum of five Reflex iC60 to be controlled simultaneously at the same input.

DB124310



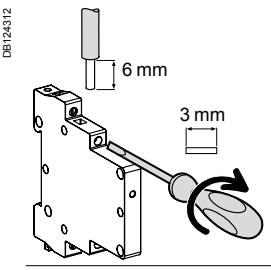
Dimensions (mm)

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
Tropicalisation		Treatment 2 (relative humidity 95 % at 55°C)
Weight		53 g

iCT contactors

For the realization of the catalogue France, replace following catalogue numbers:

- **AC920834** by **AC924834.**
- **AC920732** by **AC924732.**
- **AC921732** by **AC925732.**

Pages 152, 153 and 162, 163.

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

manual control

iCT 4P

- 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

Indication iACTs

- This auxiliary allows indication or control of the "open" or "closed" position of the contactor power contacts

Interference filtering iACTp

- This auxiliary is an interference suppressor which limits overvoltages on the control circuit

Dual control iACTc

- Used to control a contactor in impulse-type mode or to combine latched or impulse-type control orders

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

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

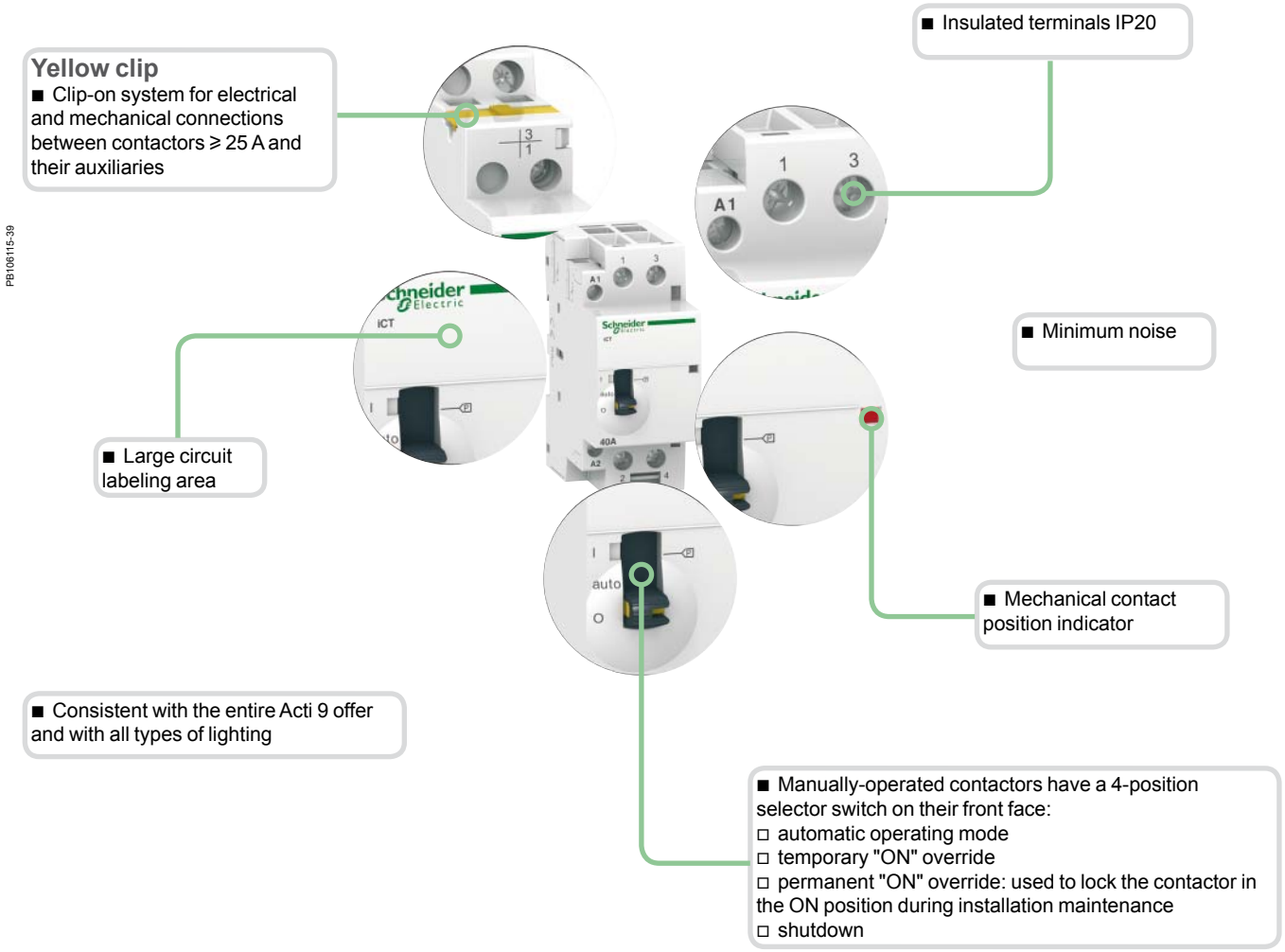
Function type C:
late opening
- Energize the contactor by closing a push button
- The time delay starts when the control contacts are opened

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.)

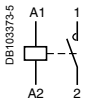
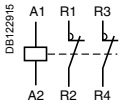
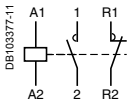
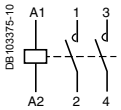
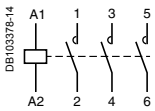
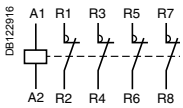
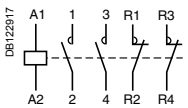
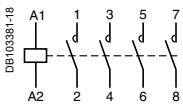
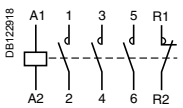


	Choice of 60 Hz contactors				
	Contactor				Manually-operated contactors
	16	25	40	63	40
	Contactors that can be equipped with auxiliaries				
	Yes				
	No	Yes			
	No	Yes			
	No				

iCT contactors (cont.)

Catalogue numbers

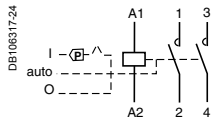
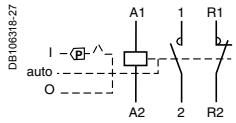
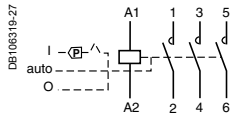
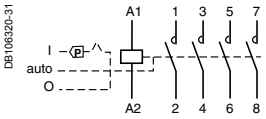
iCT contactors - 50 Hz

Type						Width in 9 mm modules
1P	Rating (In) AC7a	AC7b	Control voltage (V AC) (50 Hz)	Contact		
	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	6 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	6 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

iCT contactors (cont.)

Catalogue numbers

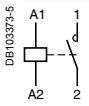
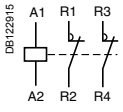
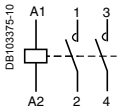
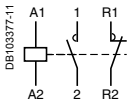
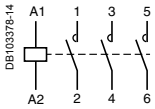
iCT manual control contactor 50 Hz

Type						Width in 9 mm modules
2P	**Rating (In)**		**Control voltage (V AC) (50/60 Hz)**	**Contact**		
	AC7a	**AC7b**				
 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

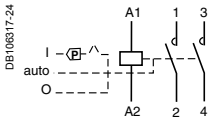
iCT contactors (cont.)

Catalogue numbers

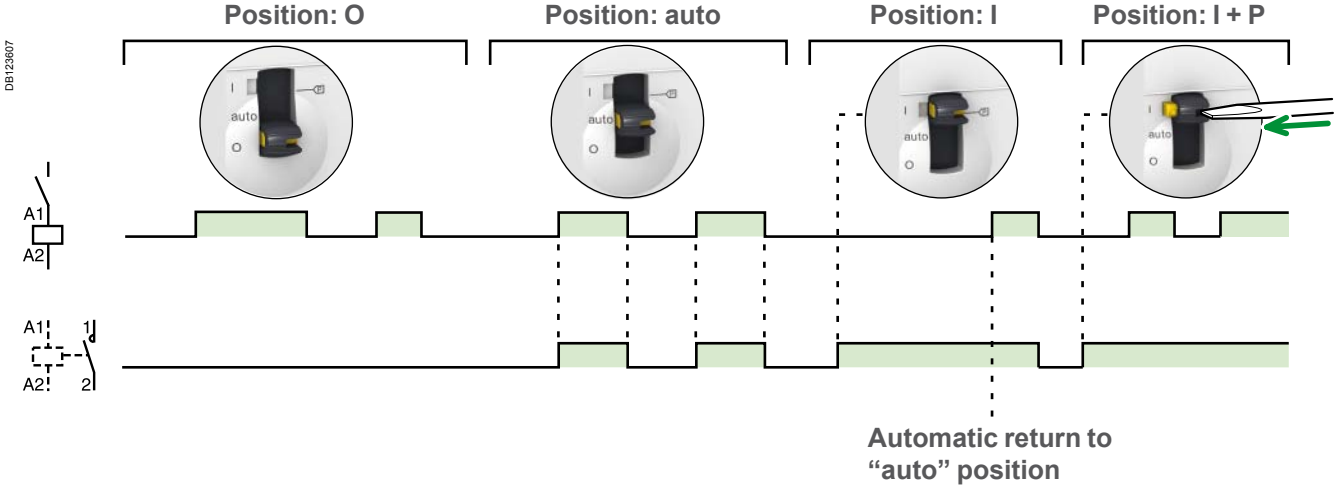
iCT contactors - 60 Hz

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

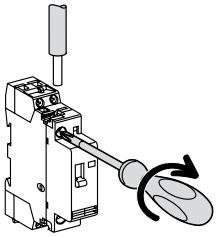
Operation (Manual control contactor)



iCT contactors (cont.)

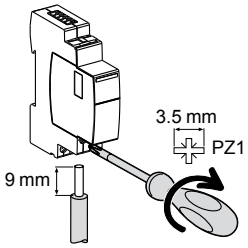
Connection

DB123606



Type		Rating	Lenght tripping	Circuit	Tightening torque	Copper cables	
						Rigid	Flexible or 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

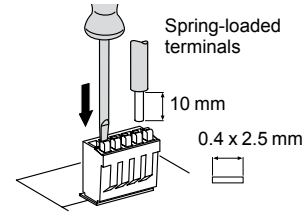
DB124308



Type	Terminals	Tightening torque	Copper cables		
			Rigid	Flexible	Flexible or 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

DB123580



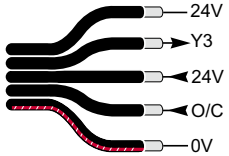
Type	Catalogue numbers	Copper cables	
		Rigid	Flexible
	DB122945	DB123553	
Ti24 Interface	**A9XC2412**	1 x 0.5 to 1.5 mm²	1 x 0.5 to 1.5 mm²

Ti24 prefabricated cables connection

PB107754-10

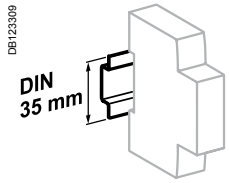
PB107755-14

DB404857

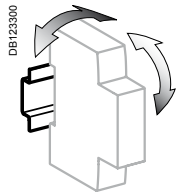


Type	Catalogue numbers	Length
Connection for Acti 9 Smartlink		
6 short prefabricated	**A9XCAS06**	100 mm
6 medium-sized prefabricated	**A9XCAM06**	160 mm
6 long prefabricated	**A9XCAL06**	870 mm
Connection for PLC type terminals		
6 long prefabricated on a single side	**A9XCAU06**	870 mm

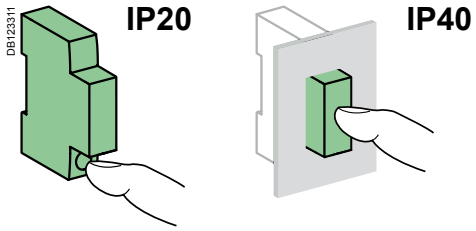
iCT contactors (cont.)

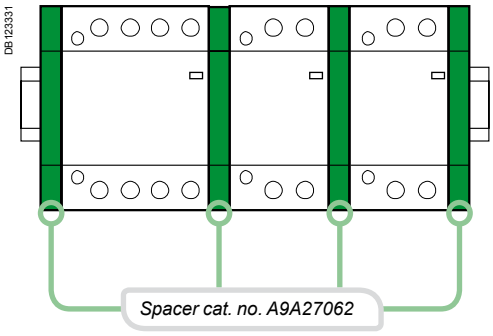


Clip on DIN rail 35 mm.



± 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

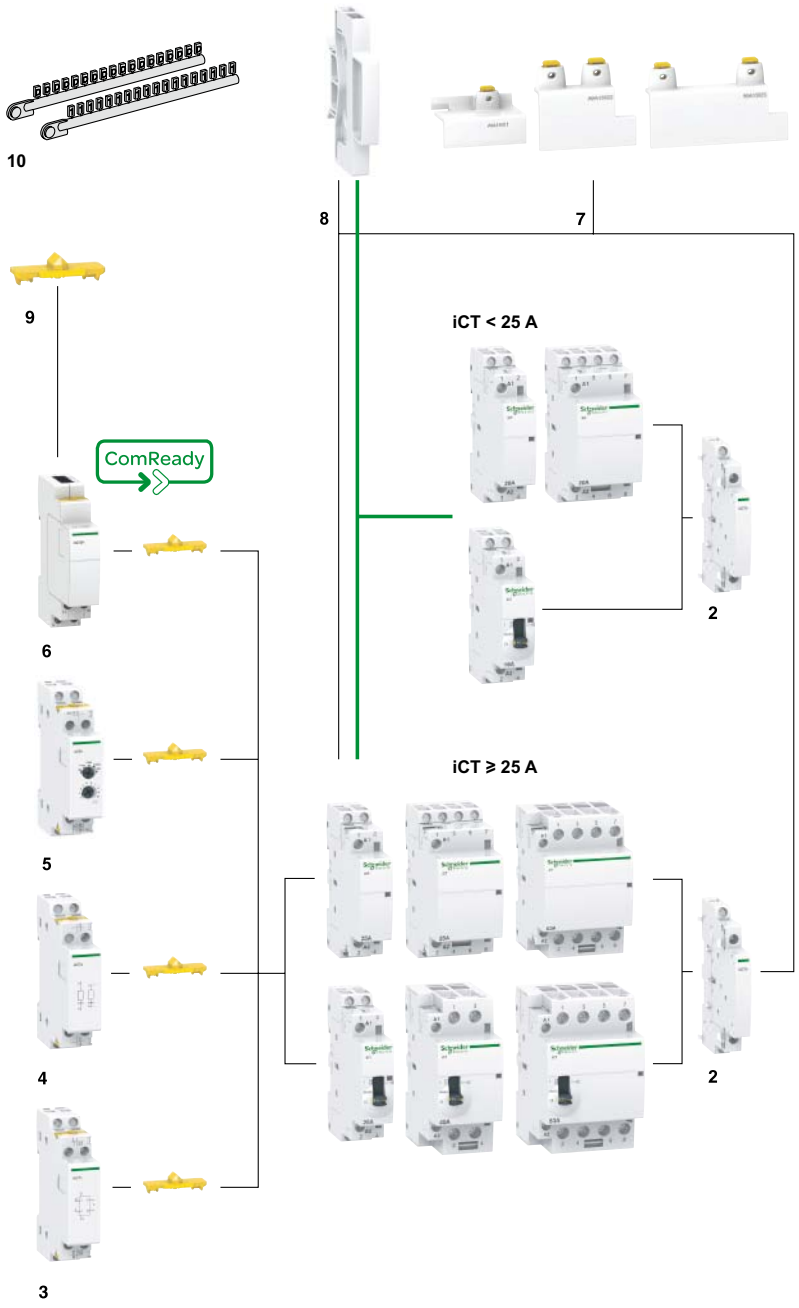
iCT contactors (cont.)

Mounting accessories

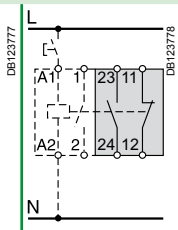
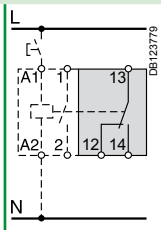
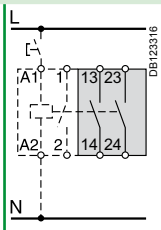
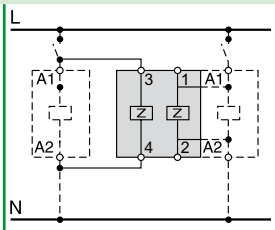
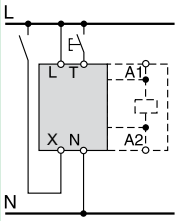
7	Sealable screw shields for top and bottom	3P, 4P 25 A	**A9A15921**
		2P 40/63 A	**A9A15922**
		3P, 4P 40/63 A	**A9A15923**
8	9 mm spacer		**A9A27062**
9	Yellow clips		**A9C15415**
10	Clip-on terminal markers	see module	**CA907001**

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								
								
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: □ < 1 s: keeps its initial status □ ⩾ 5 s: 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 - cos φ = 1 ■ Maximum: □ 5 A at 240 V AC - cos φ = 1 □ 1 A at 130 V DC			–			–	
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

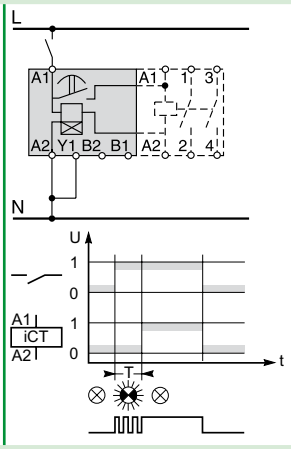
Time delay

PB106125-34

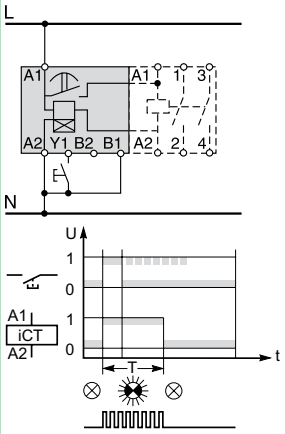
■ This auxiliary is used to time delay for iCT and iTL. According to cabling, there are 5 possible time delay types:
□ 1 for iTL
□ 4 for iCT.

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.

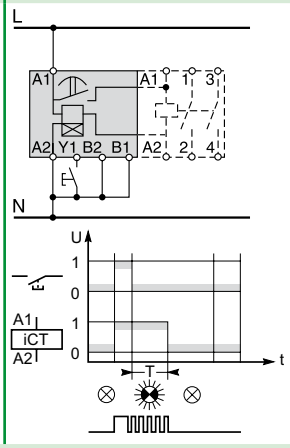
DB123321



DB124104



DB123323



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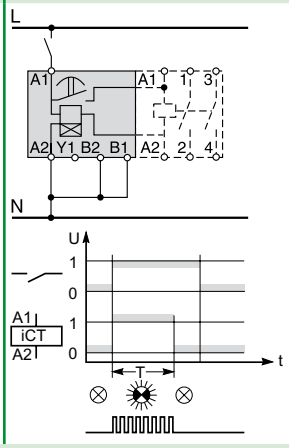


■ Mounted to the left of iCT by yellow clips (1)

–

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

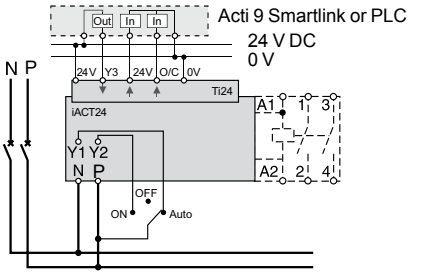
ComReady

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

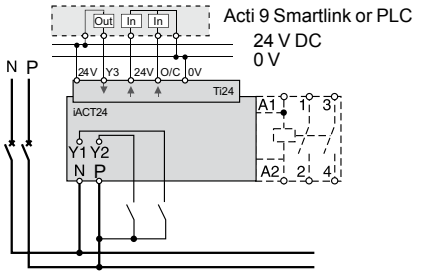
Wiring diagrams

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
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

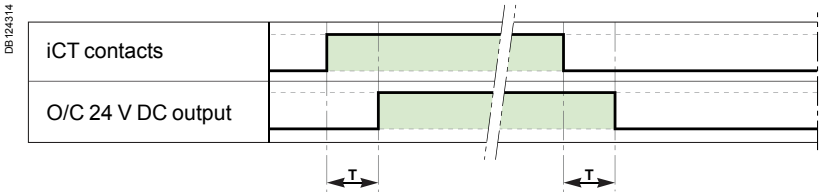
Accessories	Sealable screw shields			Yellow clips	Spacer
	PB104485-15	PB104486-15	PB104487-15	PB106143-10	PB104483-40
					
Function					
	■ Designed to cover terminals to avoid contact with device screws. ■ Allow sealing			■ Ensure the mechanical and/or electrical link between contactors and their auxiliaries.	■ 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

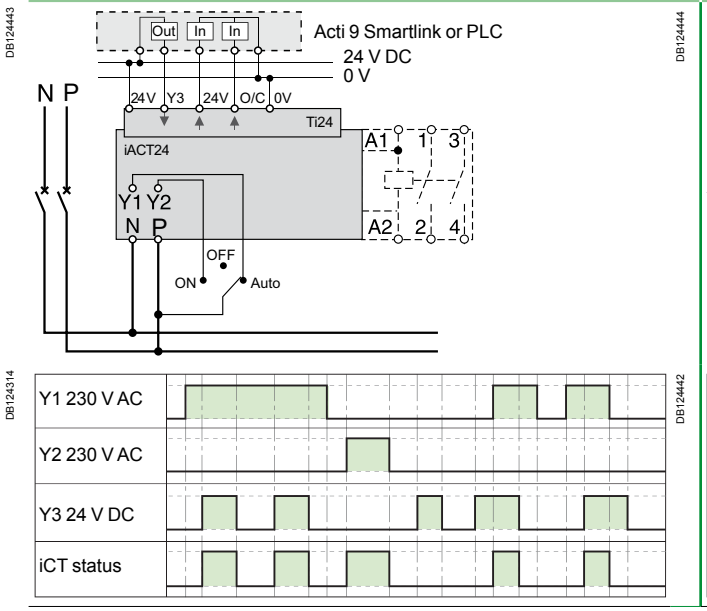
O/C 24 V DC output



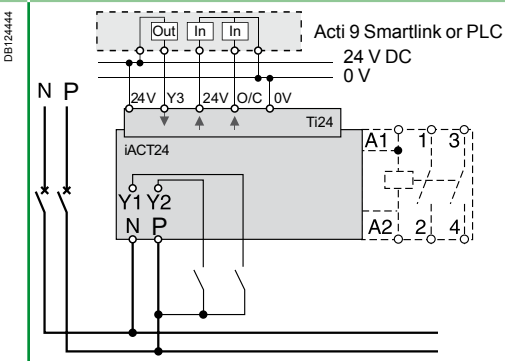
	Parameter	Min	Max
T	Time delay between iACT24 closing and indication	100 ms	200 ms

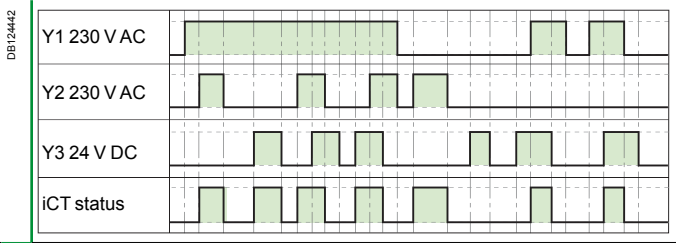
- Minimum duration of 230 V AC pulse (Y2): 200 ms.
- 30 iACT24 closing or opening actuations are authorized per minute: Minimum time delay between 2 actuations on the iACT4 via Y1,Y2, Y3 (closing or opening of the iCT coil): 220 ms.
- 10 closing or opening actuations spaced 440 milliseconds apart are 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**

iCT contactors
Technical advice for iCT (cont.)

Consumption (cont.)

iCT manual control contactor 50 Hz

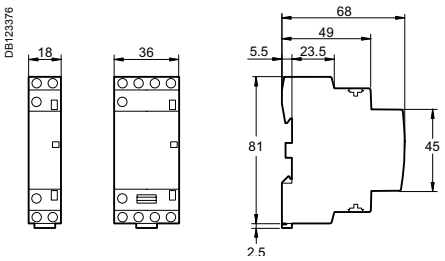
Type							
2P	Rating (In)		Control voltage (V AC) (50 Hz)	Consumption		Max. power	
	AC7a	AC7b		Holding	Inrush		
	16 A	5 A	220	2.7 VA	9.2 VA	1.2 W	A9C23512
			230...240	2.7 VA	9.2 VA	1.2 W	A9C23712
			220	3.8 VA	15 VA	1.3 W	A9C23515
			230...240	2.7 VA	9.2 VA	1.2 W	A9C23715
	25 A	8.5 A	24	3.8 VA	15 VA	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

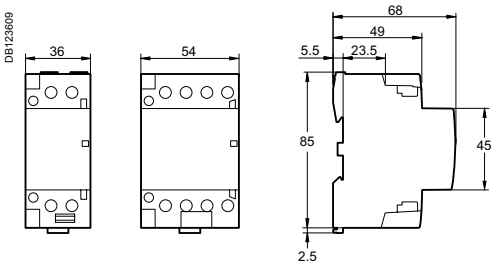
Type							
1P	Rating (In)		Control voltage (V AC) (60 Hz)	Consumption		Max. power	
	AC7a	AC7b		Holding	Inrush		
	25 A	8.5 A	127	3.8 VA	15 VA	1.3 W	A9C20431
			220 ...240	2.7 VA	9.2 VA	0.9 W	A9C20631
2P							
	16 A	5 A	127	3.8 VA	15 VA	1.3 W	A9C22415
			220...240	2.7 VA	9.2 VA	0.9 W	A9C22615
	25 A	8.5 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

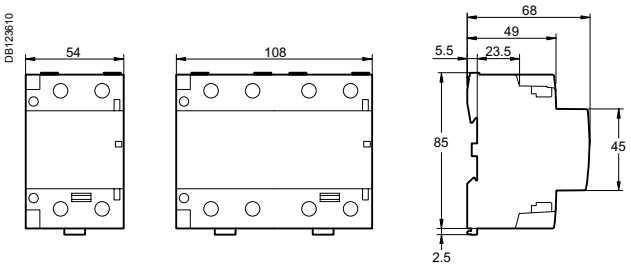
Dimensions (mm)



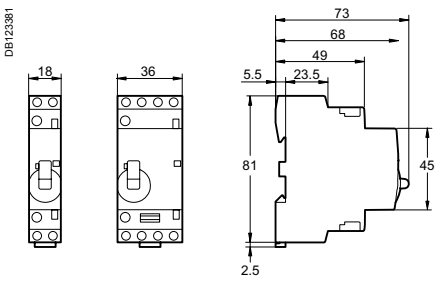
iCT 16/25 A



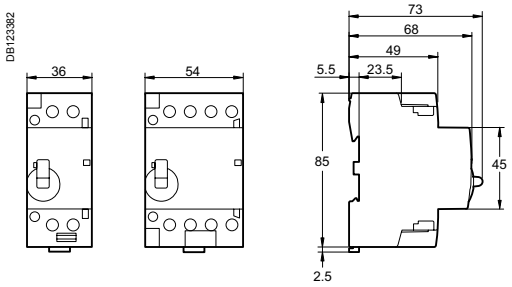
iCT 40/63 A



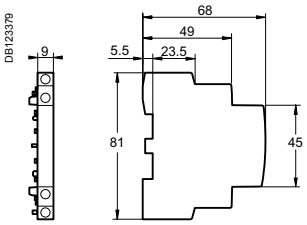
iCT 100 A



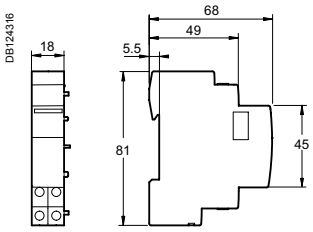
iCT manual control contactor 16/25 A



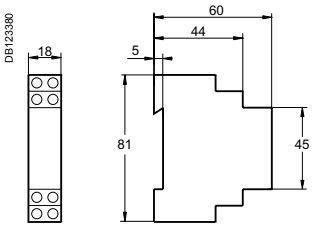
iCT manual control contactor 40/63 A



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

iTL impulse relays (cont.)

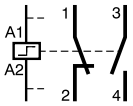
Impulse relays are used:

- 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

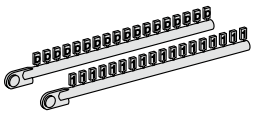
Specific auxiliaries

iTL impulse relays (cont.)

Mounting accessories

11	Yellow clips		**A9C15415**
12	9 mm spacer		**A9A27062**
13	Clip-on terminal markers	see module	**CA907001**

DB123631



13

12

11

Auxiliaries

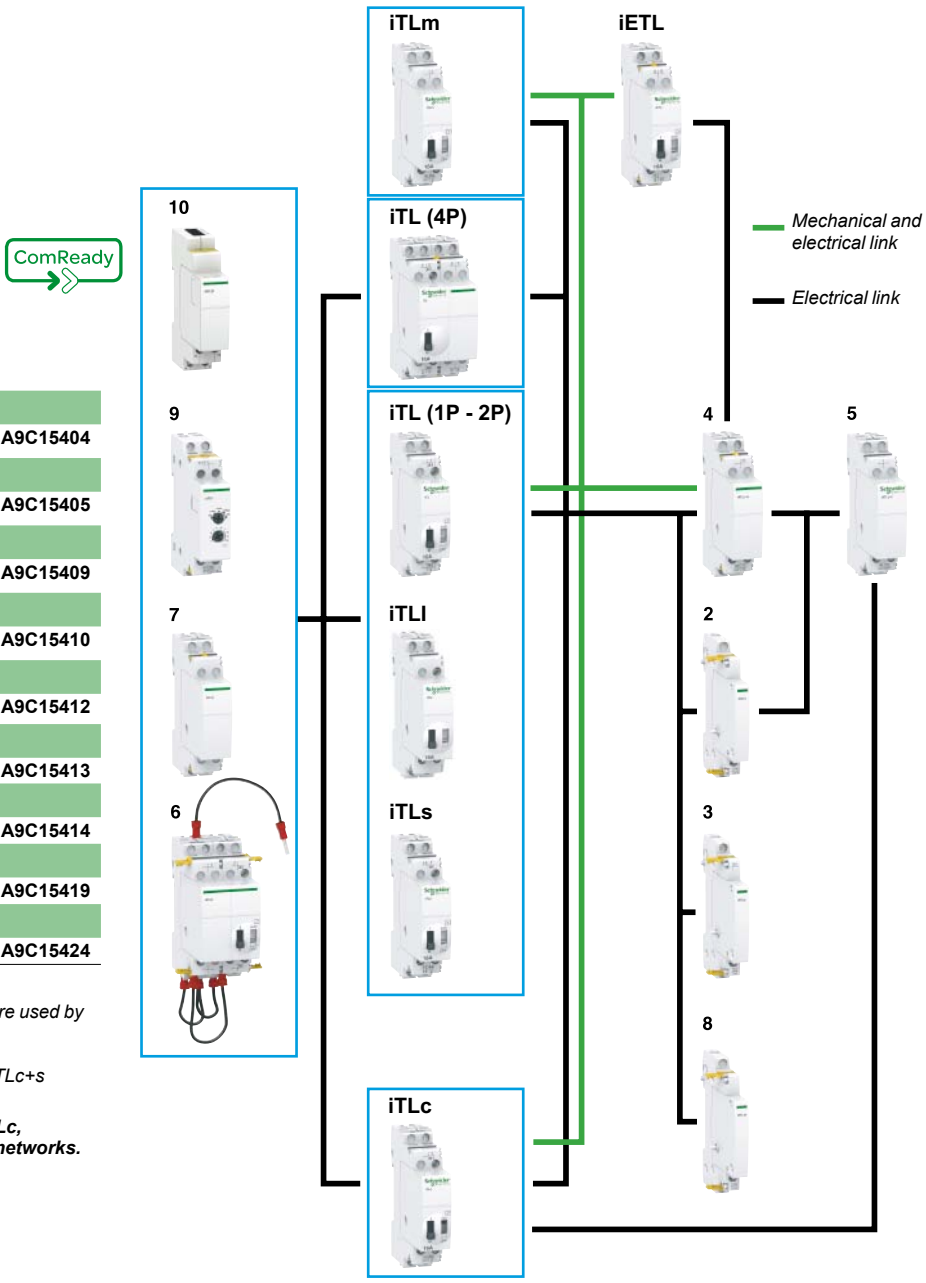
Centralised control			
2	iATLc (1), (3)	24...240 V AC	**A9C15404**
Indication			
3	iATLs (1)	24...240 V AC	**A9C15405**
Centralised control + indication			
4	iATLc+s (3)	24...240 V AC	**A9C15409**
Multi-level centralised control			
5	iATLc+c (2), (3)	24...240 V AC	**A9C15410**
Step by step control			
6	iATL4	230 V AC	**A9C15412**
Control by illuminated push-buttons			
7	iATLz	130...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 are used by themselves 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.

ComReady



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

■ Built-in or optional auxiliary function: state indication, centralised control, latched control, control for illuminated pushbutton, step-by-step control, time delay

■ Disconnection of remote control by selector switch (except for 4P single-piece iTL) for maintenance operation

■ Consistent with the entire Acti 9 offer and with all types of lighting

■ Manual controls on front face: direct and priority manual control by O-I toggle
■ Mechanical contact position indicator

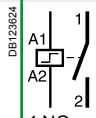
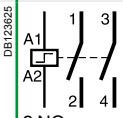
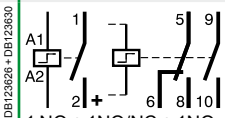
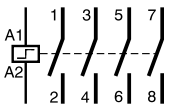
		Choice impulse relays auxiliaries																	
Type		**Standard iTL**						**Changeover iTLI**						**iTLc centralised control**			**iTLm control on latched order**	**iTLs remote indication**		
Rating	A	16					32	16						16			16	16		
Control voltage	V AC	230/240	130	48	24	12	230/240	230/240	130	48	24	12		230/240	48	24	230/240	230/240	48	24
	V DC	110	48	24	12	6	110	110	48	24	12	6		-			110	110	24	12
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		■	-	-	-	-	■	■	-	-	-	-		■	-	-	-	■	-	-

(*) iATEt : does not operate on 12 V DC.

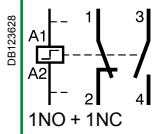
iTL impulse relays

Catalogue numbers

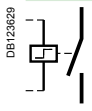
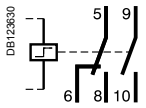
iTL impulse relays

Type			1P	2P	3P	4P
			 1 NO	 2 NO	 1 NO + 1NO/NC + 1NO	 4 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**
32 A	230...240	110	**A9C30831**	**A9C30831 + A9C32836**	**A9C30831 + 2 x A9C32836**	**A9C30831 + 3 x A9C32836**
Width in 9 mm modules			2	2	4	4

iTLI impulse relays

Type			1P
			 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

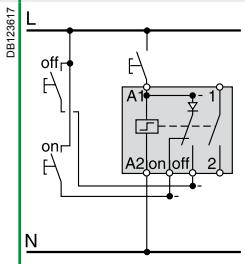
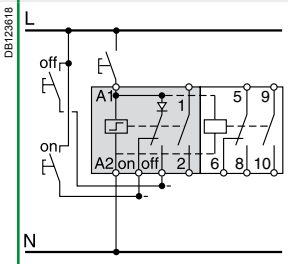
iETL extensions for iTL and iTLI

Type					Width in 9 mm modules
1P	Rating (In)	Control voltage (Uc) (V AC) (50/60 Hz)	(V DC)		
 1NO	32 A	230...240	110	**A9C32836**	2
2P					
 1NO/NC + 1NO	16 A	12	6	**A9C32016**	2
		24	12	**A9C32116**	2
		48	24	**A9C32216**	2
		130	48	**A9C32316**	2
		230...240	110	**A9C32816**	2

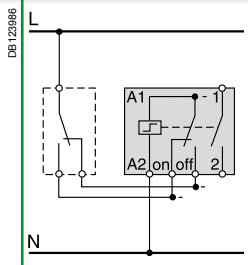
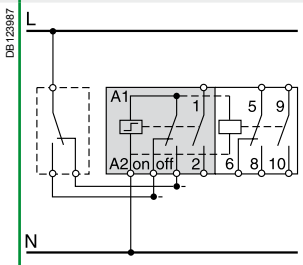
iTLc , iTLm, iTLs with built-in auxiliary function

Catalogue numbers (cont.)

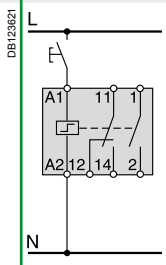
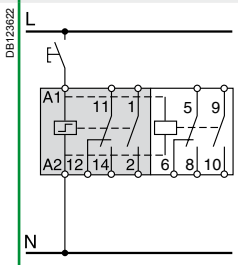
iTLc impulse relay with centralised control

Type		1P	3P
			
		1NO	3P
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	3P
Rating (In)	**Control voltage (Uc) (V AC) (50/60 Hz)**		
16 A	230...240	**A9C34811**	**A9C34811 + A9C32116**
Width in 9 mm modules		2	4

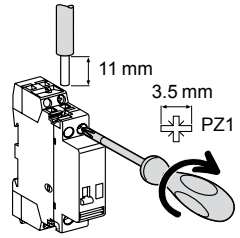
iTLs impulse relay with remote indication*

Type			1P	3P
				
			1NO	3P
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.

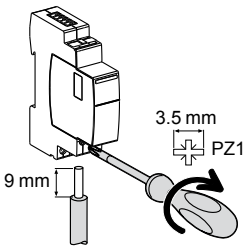
Connection

DB123132



Type	Rating	Circuit	Tightening torque	Copper cables	
				Rigid or ferrule	Flexible or 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

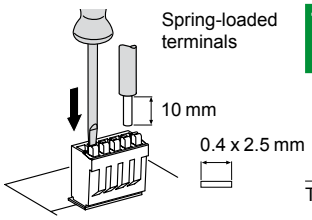
DB124308



Type	Terminals	Tightening torque	Copper cables		
			Rigid	Flexible	Flexible or 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

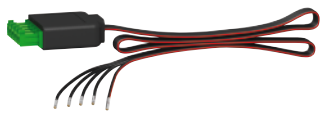


Type	Catalogue numbers	Copper cables	
		Rigid	Flexible
	DB122945	DB123553	
Ti24 interface	**A9XC2412**	1 x 0.5 to 1.5 mm²	1 x 0.5 to 1.5 mm²

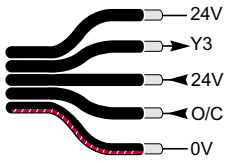
Ti24 prefabricated cables connection

PB107754-10

PB107755-14



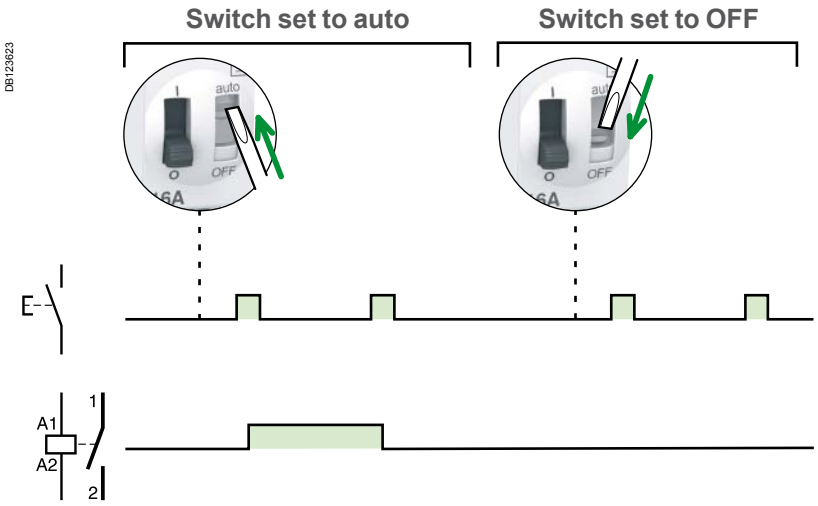
DB404857

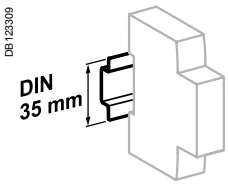


Type	Catalogue numbers	Length
Connection for Acti 9 Smartlink		
6 short prefabricated	**A9XCAS06**	100 mm
6 medium-sized prefabricated	**A9XCAM06**	160 mm
6 long prefabricated	**A9XCAL06**	870 mm
Connection for PLC type terminals		
6 long prefabricated on a single side	**A9XCAU06**	870 mm

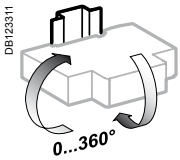
iTL impulse relays (cont.)

Operation

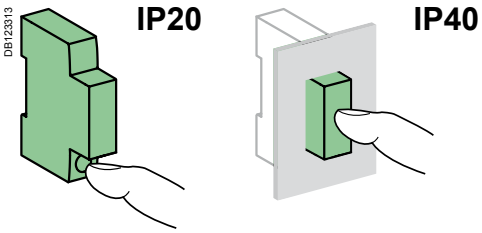




Clip on DIN rail 35 mm.



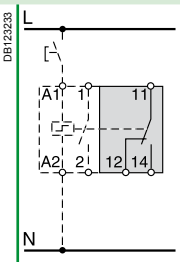
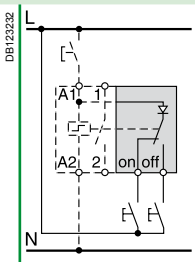
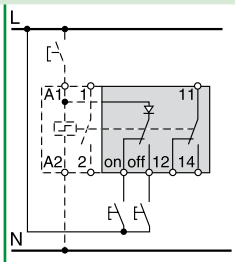
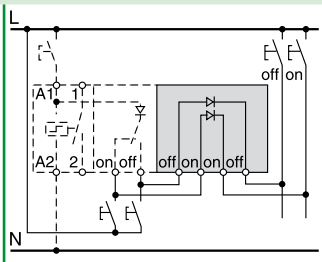
Indifferent position of installation.



Technical data

Control circuit			
		iTL and iTLI 16 A iTLc, iTLm, iTLs, iETL 16 A	**iTL 32 A, iETL 32 A**
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 to IEC/EN 60947-3			
Insulation voltage (Ui)		440 V AC	
Pollution degree		3	
Rated impulse withstand voltage (Uimp)		6 kV	
Endurance (O-C)			
Electrical to IEC/EN 60947-3		200,000 cycles (AC21)	50,000 cycles (AC21)
		100,000 cycles (AC22)	20,000 cycles (AC22)
Overvoltage category		IV	
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)	

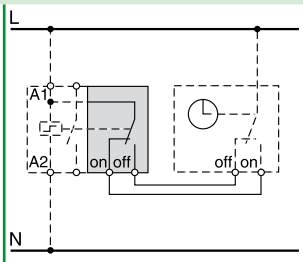
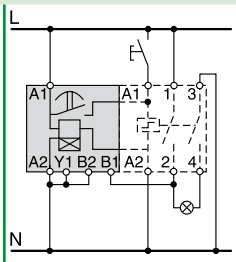
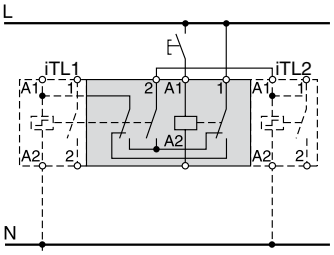
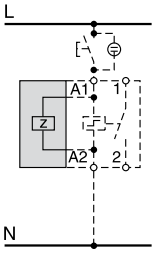
iTL impulse relays
Electrical auxiliaries
for iTL impulse relays

	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 (Ue)	V AC	24…240	24…240	24…240	24 …240
	V DC	24…240	–	–	–
Control voltage frequency	Hz	50/60	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
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**
	PB106138-34 	PB106125-34 	PB106142-63 	PB106141-34 
	■ 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
	DB123234 	DB123237 	DB123562 	DB123230 
	–	■ 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	130…240
	6…110	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
Electrical auxiliaries
for iTL impulse relays (cont.)

Control and indication

Auxiliaire	iATL24
Type	**Control and indication 24 V DC**
	With Ti24 connector

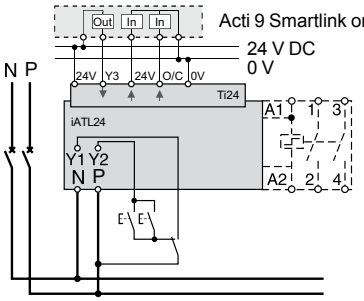
PB107752-34

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

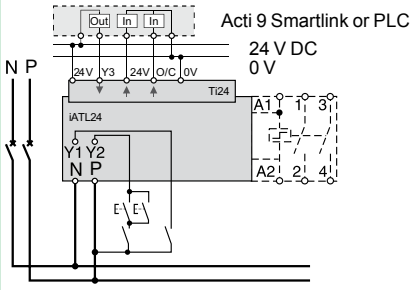
Wiring diagrams

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 (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
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.

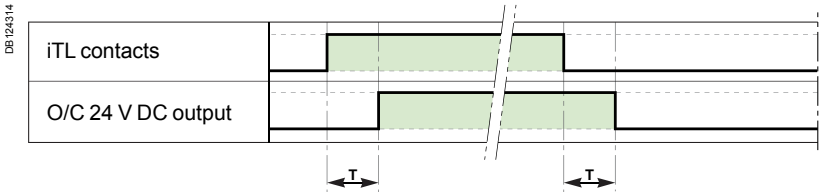
iTL impulse relays
Electrical auxiliaries
for iTL impulse relays (cont.)

ComReady

Operation of the iATL24

O/C 24 V DC output

DB124314

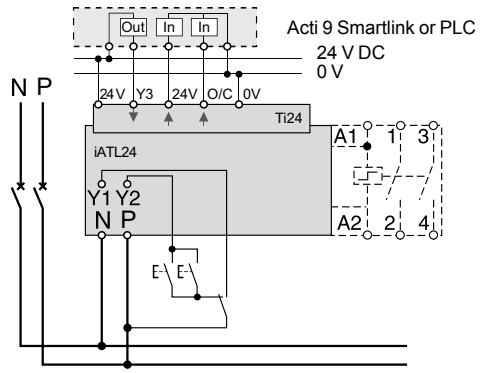


	Parameter	Min	Max
T	Time delay between iATL24 closing and indication	100 ms	200 ms

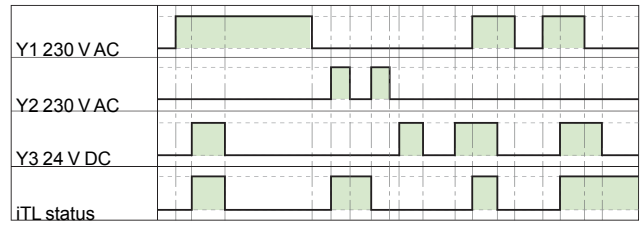
- Minimum duration of 230 V AC pulse (Y2): 200 ms.
- 30 iATL24 closing or opening actuations are authorized per minute: Minimum time delay between 2 actuations on the iATL24 via Y1,Y2, Y3 (closing or opening of the iTL coil): 440 ms.
- 10 closing or opening actuations spaced 440 milliseconds apart are 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

DB124446

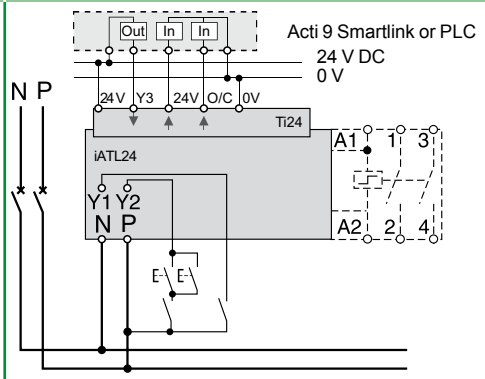


DB124448

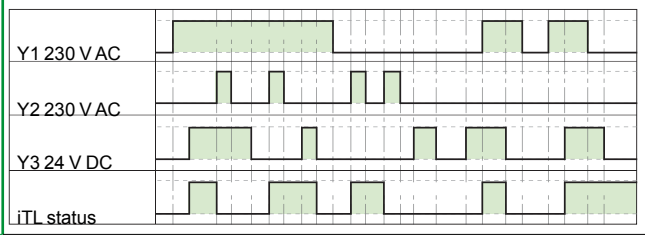


Wiring for non-exclusive 230 V AC and 24 V DC controls

DB124447



DB124449

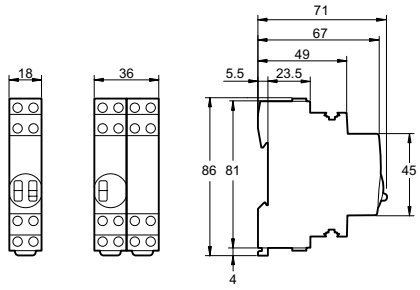


Security

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)

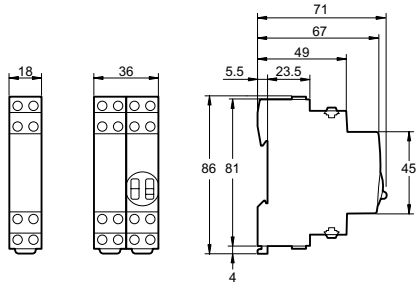
DB123375



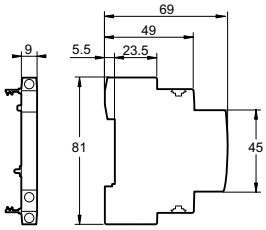
iTL 1P
iTLc
iTLm
iTLs
iTLi
iETL

iTL+iETL
iTL 4P

DB123383

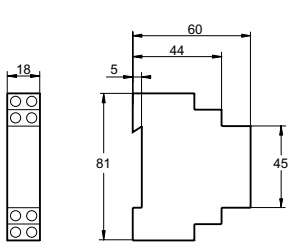


iATLc+s
iATLc+c
iATLz
iATL4



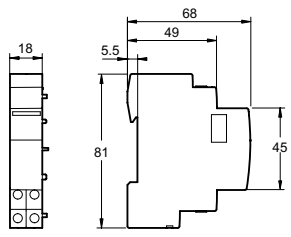
iATLc
iATLs
iATLm

DB123380



iATEt

DB124316



iATL24

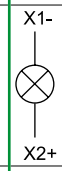
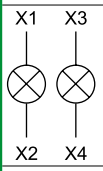
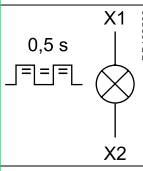
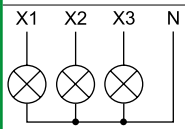
iIL indicator lights

IEC 60947-5-1

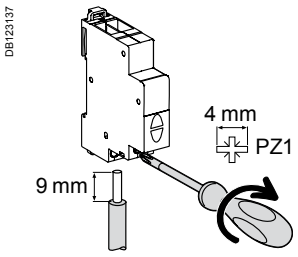
■ iIL indicator lights light up to indicate that a voltage is present.

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	**A9E18320**	**A9E18321**	**A9E18322**	**A9E18323**	**A9E18324**	**A9E18325**	**A9E18328**	**A9E18326**	-
230...400 V AC (3 phases)	-	-	-	-	-	-	-	-	**A9E18327**
Width in 9 mm modules	2					2		2	2

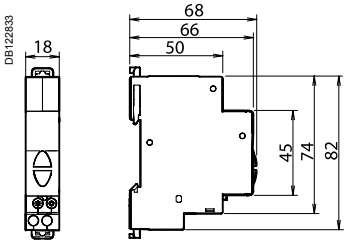
Connection



Tightening torque	Copper cables	
	Rigid	Flexible or ferrule
		
1 N.m	0.5 mm² min.	0.5 mm² min.
	2 x 2.5 mm² max.	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)



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)

SO bells and iRO buzzers

SO

iRO

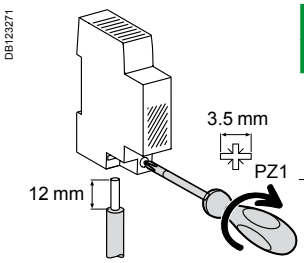
SO and iRO

Audible indication in housing and the tertiary sector.

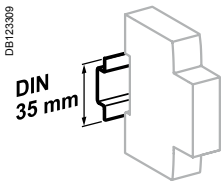
Catalogue numbers

Bell and buzzer			
Type			**Width in 9 mm modules**
SO bell	**Voltage (Ue)**		
	230 V AC	**15320**	2
	8…12 V AC	**15321**	2
iRO buzzer			
	230 V AC	**A9A15322**	2
	8…12 V AC	**A9A15323**	2
Operating frequency	50...60 Hz		

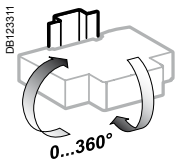
Connection



Tightening torque	Copper cables	
	Rigid	Flexible or ferrule
		
1.3 N.m	< 4 mm²	< 4 mm²



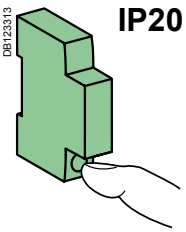
Clip on DIN rail 35 mm.

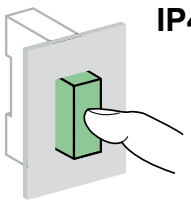


Indifferent position of installation.

Technical data

Main characteristics		SO	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

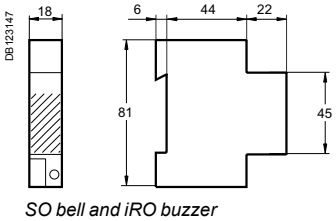




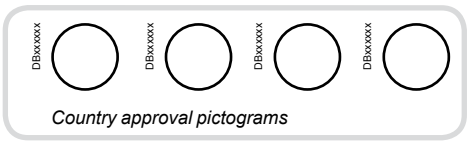
Weight (g)

Bell and buzzer	
Type	
SO	77
iRO	64

Dimensions (mm)



SO bell and iRO buzzer



Country approval pictograms

PB107156-35

PB107158-35

NF EN 60742, EN and IEC 61558-2-6, Approval NF USE

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 1 — 230 V — 7 4 — 8 V — 8	4 VA	8 V AC	**A9A15214**	4
E56760 1 — 230 V — 7 4 — 6 — 8 V — 8 12 V	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 1 — 230 V — 7 4 — 6 — 12 V — 8 24 V	25 VA	12-24 V AC	**A9A15215**	6

Safety transformer

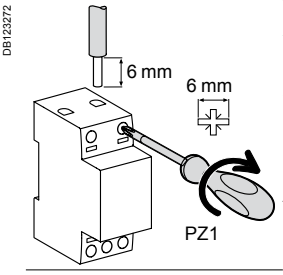
Type	Power	Secondary voltage		Width in 9 mm modules
DB124153 1 — 230 V — 11 8 — 10 — 12 V — 12 24 V	16 VA	12-24 V AC	**A9A15218**	10
	25 VA	12-24 V AC	**A9A15219**	10
DB124154 1 — 230 V — 11 6 — 8 — 10 — 12 24 V	40 VA	12-24 V AC	**A9A15220**	10
	63 VA	12-24 V AC	**A9A15222**	10
DB124155 1 — 230 V — 11 6 — 8 — 10 — 12 12 V				
Operating frequency	50/60 Hz			

Terminal shield

Type		Width in 9 mm modules
	15228	4
	15229	6
	15230	10

iTR transformers (cont.)

Connection



Tightening torque	Copper cables	
	Rigid	Flexible or with ferrule
		
0.5 N.m	< 2.5 mm²	< 2.5 mm²

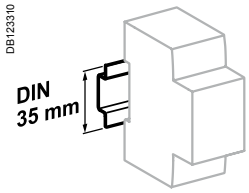
Technical data

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 %

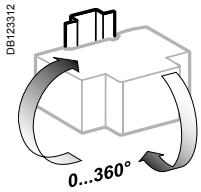
Transformer catalogue numbers	Rated secondary voltage	Off load voltage
A9A15214	8 V	12 V
A9A15213	8 V	12 V
	12 V	16 V
A9A15216	8 V	13 V
	12 V	18 V
A9A15212	8 V	13 V
	12 V	18 V
A9A15215	12 V	16 V
	24 V	32 V
A9A15218	12 V	14 V
	24 V	28 V
A9A15219	12 V	14 V
	24 V	28 V
A9A15220	12 V	14 V
	24 V	28 V
A9A15222	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

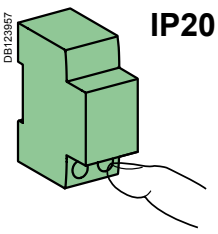
Note: Transformers have an off load operating voltage that is higher than the rated voltage. For loads that are sensitive to overloads (electro-magnetic circuits), the transformer must be made to operate at In. After operation of the protection device upon an overload, cut-off the power supply and let the transformer cool down before restart.



Clip on DIN rail 35 mm.



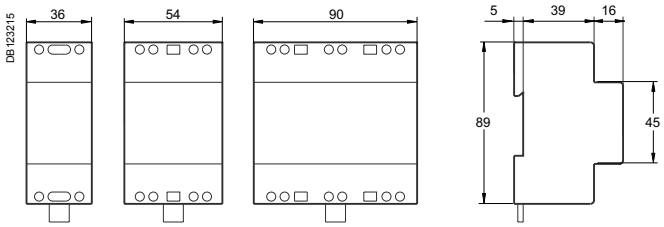
Bell transformer: indifferent position of installation.
Safety transformer: vertical position.



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

IC100, IC2000, IC2000P+, IC 100k, 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

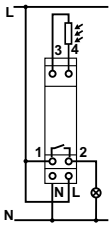
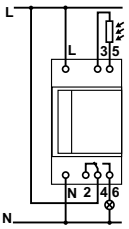
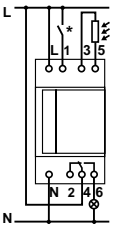
It operates without photoelectric cell and calculates sunrise and sunset times according to its geographic position.
It can be customised by using its programmation function.

IC 100k

Adjustable from 2 to 99000 lux.
Its 4 keys and large screen facilitate its programming.
It comes with a digital wall-mounted or a switchboard cell.

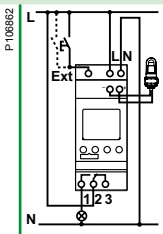
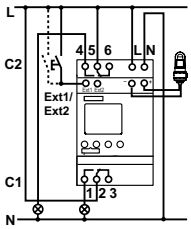
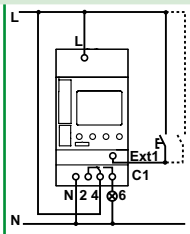
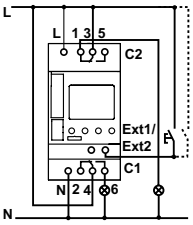
IC100, IC2000, IC2000P+, IC 100k, IC Astro (cont.)

Selection table

	IC100	IC2000		IC2000P+
	P111637 + P83237 	P111639 + P116858 + P106856 		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 (**CCT15281**)	Wall-mounted cell (**CCT15268**)	Wall-mounted cell
Optional accessories	Wall-mounted cell (**CCT15268**)	Switchboard cell (**CCT15281**) Wall-mounted cell (**CCT15268**)	Wall-mounted cell (**CCT15268**) Switchboard cell (**CCT15281**)	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) $\cos \varphi = 1$	16 A	16 A		16 A
Output contact rating (under 250 VAC) $\cos \varphi = 0.6$	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*

	IC 100k				IC Astro	
	IC 100k+ 1C	IC 100k+ 2C	IC100kp+ 1C	IC100kp+ 2C	IC Astro 1C	IC Astro 2C
	 P116853 + P116858	 P116854	 P116855 + P116858	 P116856	 P116866	 P116867
	The IC 100k+ 1C/2C control 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 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
	CCT15250 (2) **CCT15251** (3)	**CCT15252** (2) **CCT15253** (3)	**CCT15490** (2) **CCT15491** (3)	**CCT15492** (2) **CCT15493** (3)	**CCT15223** (2) **CCT15224** (3)	**CCT15243** (2) **CCT15244** (3)
	Digital wall-mounted cell (**CCT15260**)		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**)		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		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	100-240 V AC, 50/60 Hz	230 V AC, 50/60 Hz	
	3 VA		3 VA		3 VA	6 VA
	-30°C to +50°C		-30°C to +50°C		-25°C to +45°C	
	4	6	4	6	5	
	Class II		Class II		Class II	
	IP20C		IP20C		IP20B	
	16 A		16 A		16 A	
	10 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		Back-lit	
	■		■		■	
	10 years		10 years		6 years	
	–		–		■	
	–		–		–	
	1	2	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, turkish.*

IC100, IC2000, IC2000P+, IC 100k, 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	IP65	IP54	–	–	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**	**IC 100k**
Incandescent and halogen lamps	2300 W	2300 W	2300 W	2300 W	2600 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. (80uF)
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°
External inputs for external control with a standard switch or a push-button	■ 1 input "Ext1" for IC Astro 1C ■ 2 inputs "Ext1" and "Ext2" for IC Astro 2C □ consumption: < 0.5 mA □ cable length: ≤ 100 m
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
IC 100k, 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
Memory key delivered on front face for IC100kp+ 1C, IC100kp+ 2C and IC Astro	
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.

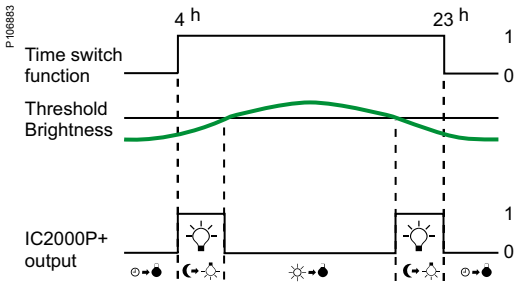


Fig. 1.

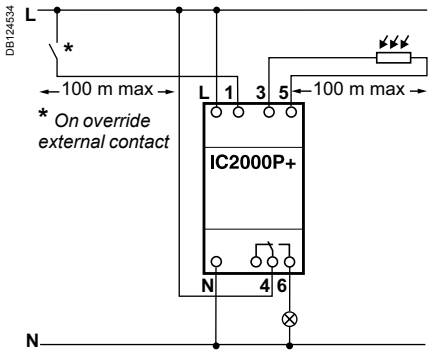


Fig. 2.

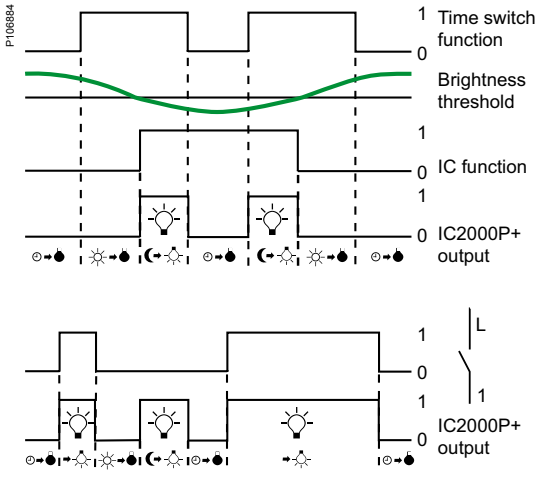


Fig. 3.

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.

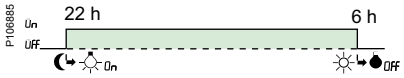


Fig. 3.

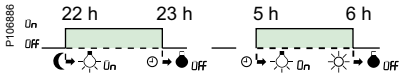


Fig. 4.

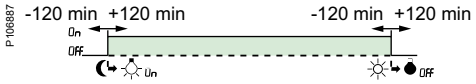


Fig. 5.

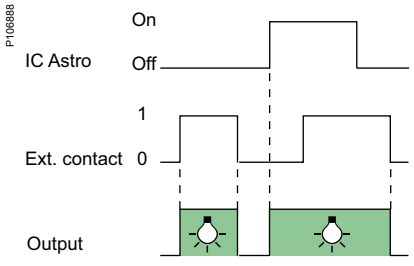


Fig. 6.

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".

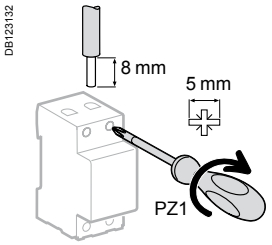
■ Hold down (>2 s) the keys to move to "ON PERM" or "OFF PERM".

■ 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+, IC 100k, IC Astro (cont.)

Connection



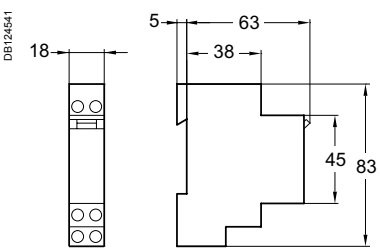
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
	DB122945	DB123553	
IC100, IC2000P+	1.2 N.m	≤ 6 mm²	≤ 6 mm²
IC2000, IC Astro, IC 100k	2 screwless / pole	2 x 2.5 mm²	2 x 2.5 mm²

IC100, IC Astro are mechanical compatible with electrical distribution comb busbar.

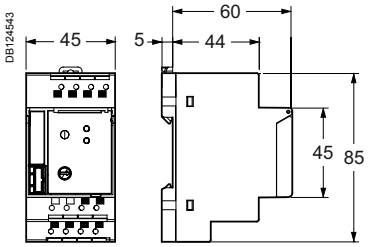
Weight (g)

Twilight switches	
IC100	173
IC2000	280
IC2000P+	323
IC Astro	132
IC 100k+/kp+ 1C / IC 100k+/kp+ 2C	183/ 352

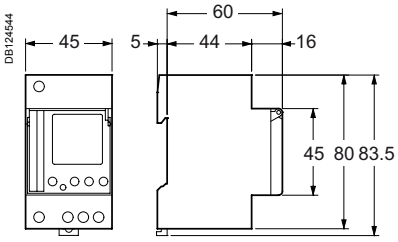
Dimensions (mm)



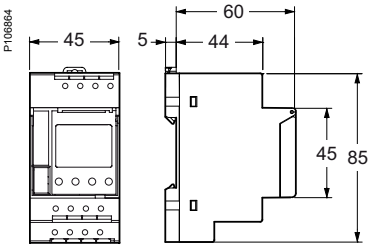
IC100



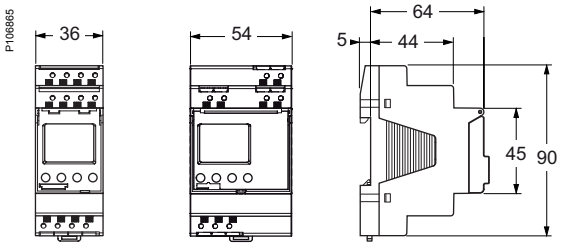
IC2000



IC2000P+

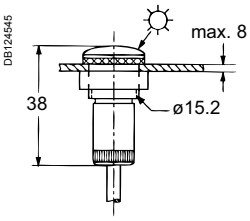


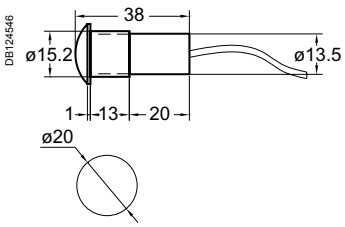
IC Astro 1C/2C

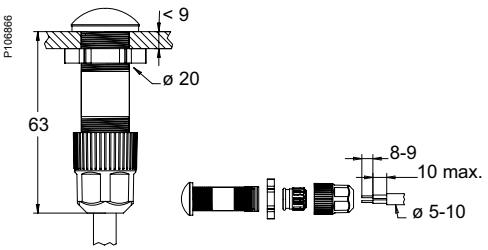


IC 100k+ 1C/2C, IC100kp+ 1C/2C

Cells

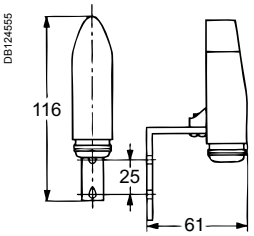


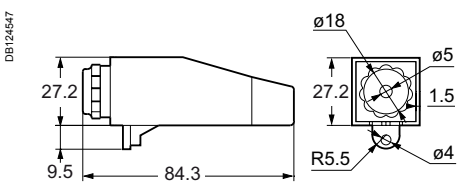




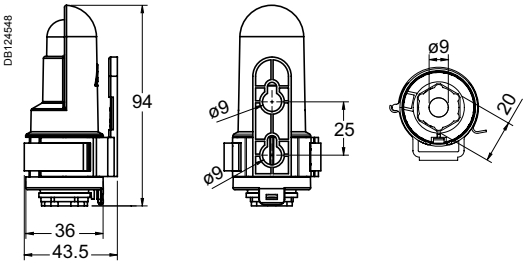
Standard switchboard cell (15281) Fixed externally in vertical position by 2 ø 4 mm screws

Digital switchboard cell (CCT15261)





Wall-mounted cell (delivered with IC100, IC2000P+)



Standard and digital wall-mounted cell (CCT15268, CCT15260)

IHP, IH, IHH, ITM

Time switches

The 45 mm intuitive 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 + ANT DCF

Synchronised on the frankfort transmitter via the ANT DCF antenna.

The 18 mm intuitive 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 switches

P116860

IH 60mn 1c SRM

P116862

IH 24h 1c SRM/ ARM

P116616

IH 24h 2c ARM

P116619

P116863

IH 24h + 7j 1+1c ARM **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 switches

P111614

P111613

IH 24h 1c SRM/ ARM **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 multifunctional switch

P111612

ITM 4c-6E

They operate with weekly or annual time programming distributed across 1, 2, 3 or 4 channels, 6 inputs to condition the functions.

IHP, IH, IHH, ITM

Time switches

The 45 mm intuitive 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 + ANT DCF

Synchronised on the frankfort transmitter via the ANT DCF antenna.

The 18 mm intuitive 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 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 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 multifunctional switch

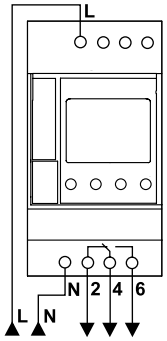
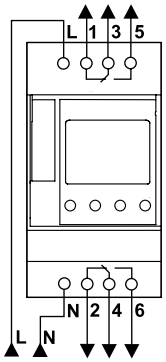
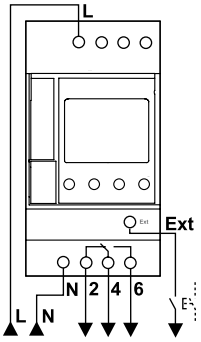
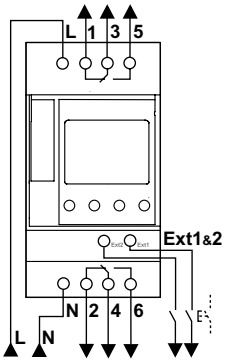
P111612

ITM 4c-6E

They operate with weekly or annual time programming distributed across 1, 2, 3 or 4 channels, 6 inputs to condition the functions.

Selection table

Programmable time switches

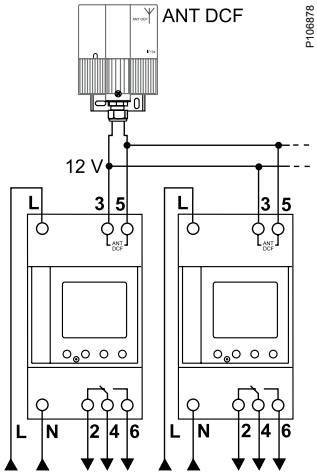
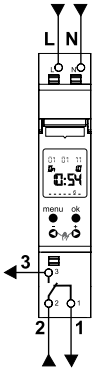
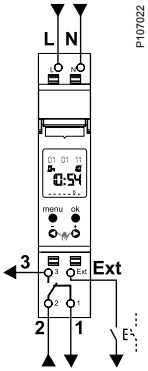
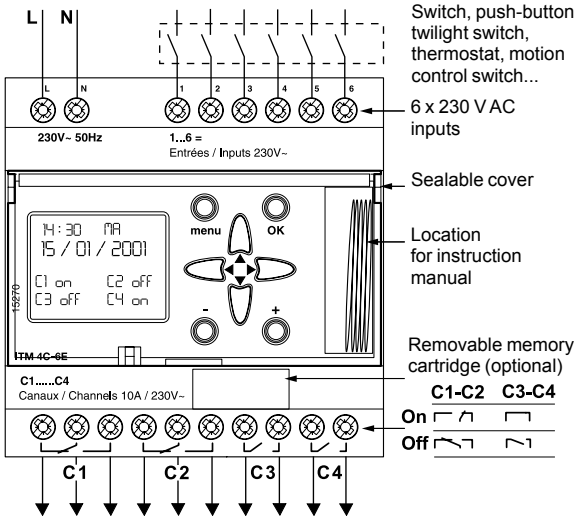
	IHP 1c	IHP2c	IHP+1c	IHP+2c
	P111627  P111625	 P111624	 P111626	
Function	■ These time switches automatically switch on and off loads according to the program entered by the user ■ They operate on weekly cycle: the same program is repeated week after week ■ They offer automatic summer/winter time change 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 (**CT15861**) and a programming kit (**CCT15860**) can be used to duplicate on another IHP+ 1C/2c or to save the program created by the contractor (see "Accessories selection table")	
Wiring diagrams	P106873 	P106874 	P106875 	P106876 
Catalogue numbers	**CCT15400** (1) **CCT15420** (2) **CCT15450** (3) **CCT15720** (4) **CCT15850** (5)	**CCT15402** (1) **CCT15422** (2) **CCT15452** (3) **CCT15722** (4) **CCT15852** (5)	**CCT15401** (1) **CCT15421** (2) **CCT15451** (3) **CCT15721** (4) **CCT15851** (5)	**CCT15403** (1) **CCT15423** (2) **CCT15453** (3) **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		4 VA	7 VA	4 VA	7 VA
Output contact current (250 V AC)	Cos φ = 1	16 A	16 A	16 A	16 A
	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
Saving of program and time by lithium battery	Lifetime	6 years	6 years	6 years	6 years
	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.

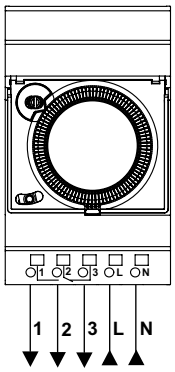
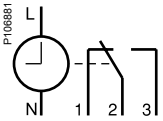
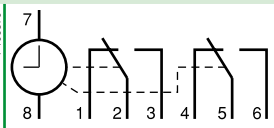
Multifunctional time switch

	IHP DCF 1c	IHP 1c 18 mm	IHP+1c 18 mm	ITM 4c-6E
	P111633 	P111630 	P131535 P131536 	
				■ Weekly or annual time programming to be distributed over 1, 2, 3 or 4 channels. 6 inputs to condition these functions ■ A memory cartridge can be used to duplicate on another ITM or to save the program created by the contractor
		■ A memory key (**CT15861**) and a programming kit (**CCT15860**) can be used to duplicate on another IHP		
	P106877 	P106878 	P107021 P107022 	
	15857	**CCT15854** (6)	**CCT15837** (6)	**15270**
	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, ±10 %, 50 Hz
	2 VA	2.3 VA	2.3 VA	4.5 VA
	16 A	16 A	16 A	10 A
	10 A	4 A	4 A	6 A
	IP20B	IP20B	IP20B	IP20B
	-10°C to +50°C	-25°C to +55°C	-25°C to +55°C	-5°C to +50°C
	1 s on 1 million years thanks to the synchronisation on the DCF Frankfurt's DCF77 radio station via the ANT DCF	± 0.5 s per day at 25°C	± 0.5 s per day at 25°C	± 1 s per day at 20°C
	12 years	10 years	10 years	10 years
	4 years	10 years	10 years	5 years

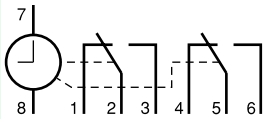
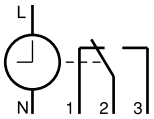
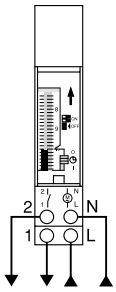
(5) French, english, swedish, dutch, finnish, norwegian/danish. (6) French, english, italian, spanish, german, portuguese, dutch.

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				
	P106923 	P106881 		P106879 
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
	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
	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
	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 
	P106879 	P106881 	P106882 		
	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
	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

Accessories selection table

	Program	Memory		Antenna	Additional jumpers
	IHP+ programming kit for PC	**IHP+ key**	**Cartridge**	**IHP ANT DCF**	**IH jumpers**
	P93580  P93581 		059236N 		
Function					
	Consists of a programming device, a memory key, a CDROM and a 2 m USB cable	Saving and duplicating programs: For IHP+ 1c/2c, ICAstro 1c/2c, IC100kp+ 1c/2c, IHP 1c 18 mm, IHP+ 1c 18 mm	For ITM	Antenna for IHP DCF	They are used to program a larger number of sequences for: ■ IH 24h 2c ARM (**15337**) ■ IH 24h + 7j 1+1c ARM (**15366**)
Mounting					
	–	Located on front face		■ 5 IHP DCF maximum per antenna, maximum distance between the IHP DCF and the antenna: 200 m ■ Outside the electrical switchboard, outdoors, under shelter	1 bag containing: ■ 5 red ■ 5 green ■ 5 white ■ 5 yellow
Catalogue numbers	**CCT15860**	**CCT15861**	**15280**	**15858**	**15341**
Technical spécifications					
Degree of protection	–	–	–	IP54	–
Operating temperature	–	–	–	-20°C to +70°C	–
Overall dimensions L x W x H (mm)	–	–	–	70 x 57 x 92	–

Specific technical data

IHP+ 1c, IHP+ 2c, IHP DCF	
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
Synchronisation on the Frankfurt's DCF 77 radio station signal (only for IHP DCF)	
Automatic on commissioning, then at 1 am, 2 am, 3 am and 4 am every day	
Manual by pressing the IHP 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)	

IHP, IH, IHH, ITM (cont.)
Praticle advices

Programming principle

■ For the IHP switches, this consists of memorising the days and times of the required switching operations.
■ For the IH - IHH 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

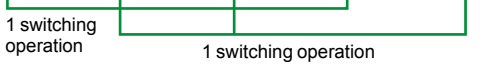
(1) Closed on Mondays
(2) Non-stop

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	42
IHP 2c	56
IHP + 2c	84
IHP 1c 18 mm	56
IHP + 1c 18 mm	84
ITM 4C-6E	45 time brackets in weekly time programming, 15 time brackets in annual time programming and 20 different pulses in pulse programming
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 IHP switches equipped with this function, a lithium battery is used for saving. The program, date and time are preserved. Switching operations are not performed.

IHP, IH, IHH, ITM (cont.)
Praticle advices

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.
- ITM 4C-6E.

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.
- ITM 4C-6E.

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.
■ ITM 4C-6E.

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

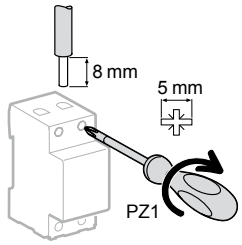
Relevant time switches

■ ITM 4C-6E.

IHP, IH, IHH, ITM (cont.)

Connection

DB123947



Type		Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
		DB122945	DB123553	
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	1.2 N.m	≤ 6 mm²	≤ 6 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
ITM 4c-6E		1.2 N.m	≤ 6 mm²	≤ 6 mm²

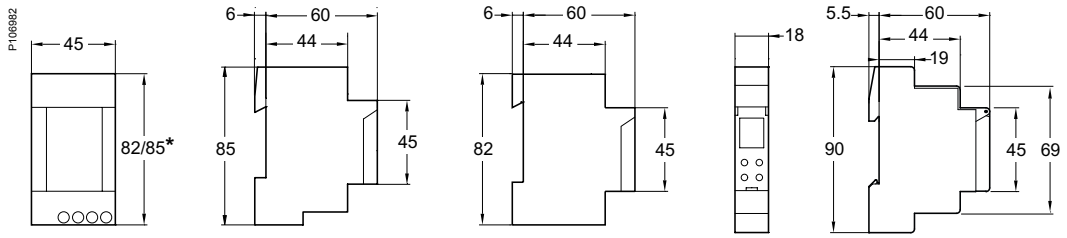
IHP 1c/2c, IHP+ 1c/2c are mechanical compatible with electrical distribution comb busbar.

Weight (g)

Time switches		
IHP	1c / 2c	170/ 205
IHP+	1c / 2c	190/ 211
IHP 18 mm	1c / +1c	90
IHP DCF		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
ITM 4c-6E		415
Accessories		
Programming kit for PC		150
ANT DCF		168

Dimensions (mm)

IHP programmable time switches



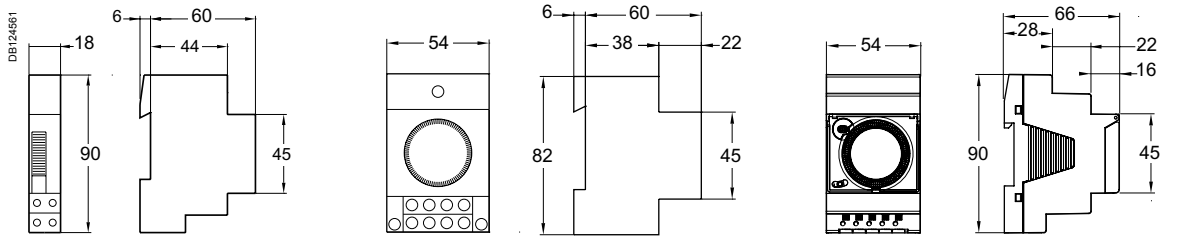
5P: IHP DCF
*5P: IHP 1C/2C/+1C/+2C

5 P: IHP 1C/2C/+1C/+2C

5P : IHP DCF

2P (18 mm)
IHP 1C /+

IH, IHH time switches

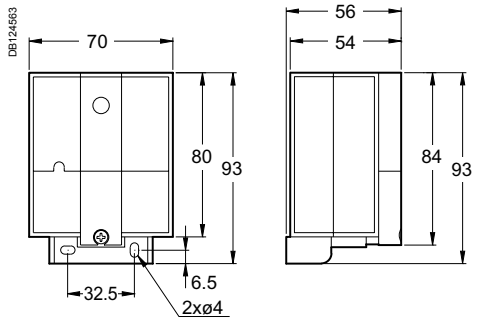


2P (18 mm)

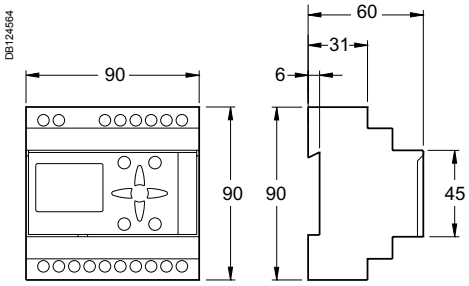
6P (IH 24h 2c ARM,
IH 24h +7j 1+1c ARM)

6P (IH 60mn 1c SRM, IH 24h 1c SRM/ARM
IH 7j 1c ARM)

ANT DCF antenna



ITM 4C-6E



MIN, MINs, MINp, MINt

Timers

Electromechanical timer

MIN
Adjustable time delay from 1 to 7 min.

Silent electronic timers

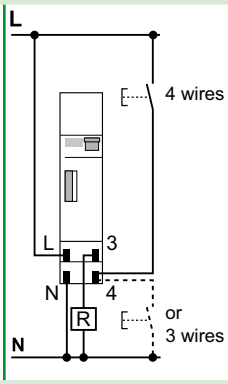
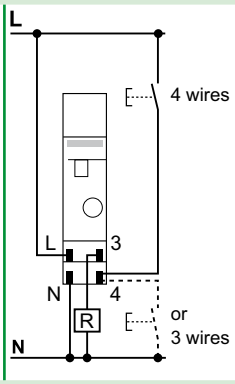
MINs
Adjustable time delay from 0.5 to 20 min.

MINp
Adjustable time delay from 0.5 to 20 min. with switch-off warning.

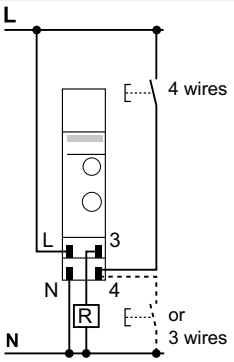
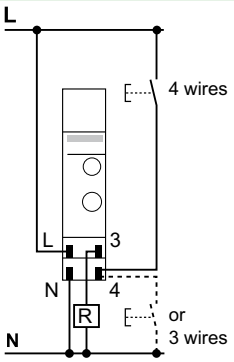
MINt
Adjustable time delay from 0.5 to 20 min. with switch-off warning and impulse relay function.

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		
	P106867 	P106869 
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 ■ Specific shield for terminal blocks insulation (Cat. no. **15359**)	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
	Silent electronic timer	
	P111643 	P111644 
	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
	P106871 	P106871 
	■ 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 1h. Pressing again a push-button for less than 2 s relaunch the time delay of 1h 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 1h. Pressing again a push-button for less than 2 s relaunch the time delay of 1h 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**
	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
	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.)

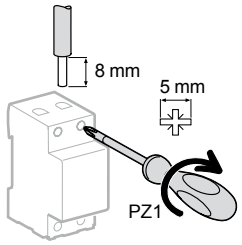
Load table

Products	MIN	MINs	MINp, MINt
Type of lighting	**Maximum power**		
230 V incandescent and halogen lamps	2300 W	2300 W	3600 W
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

DB123947



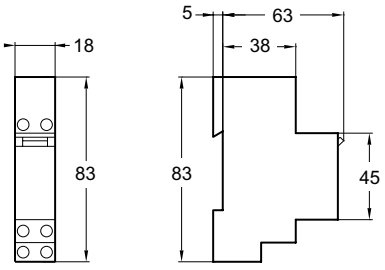
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
	DB122945	DB123553	
MIN, MINs, MINp, MINt	1.2 N.m	≤ 6 mm²	≤ 6 mm²

Weight (g)

Time switches	
MIN	84
MINs	75
MINp	103
MINt	76

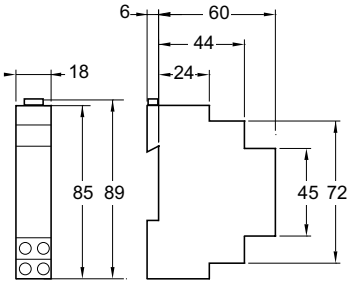
Dimensions (mm)

DB124571



MIN

DB124572



MINs, MINp, MINt

STD and SCU range
STD400RC/RL-DIN & SAE
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.

SCU

P112221-35

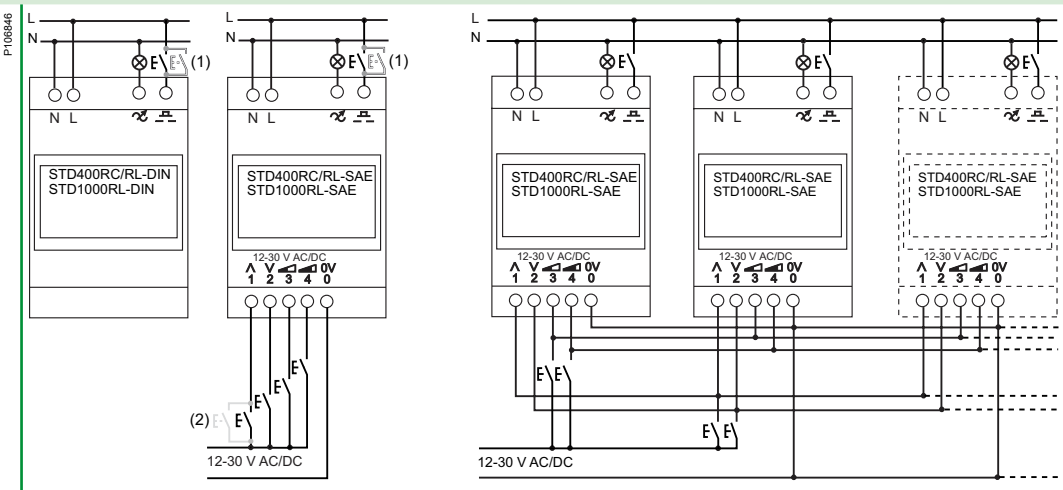
SCU10-SAE

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
STD1000RL-DIN & SAE
SCU10-DIN & SAE

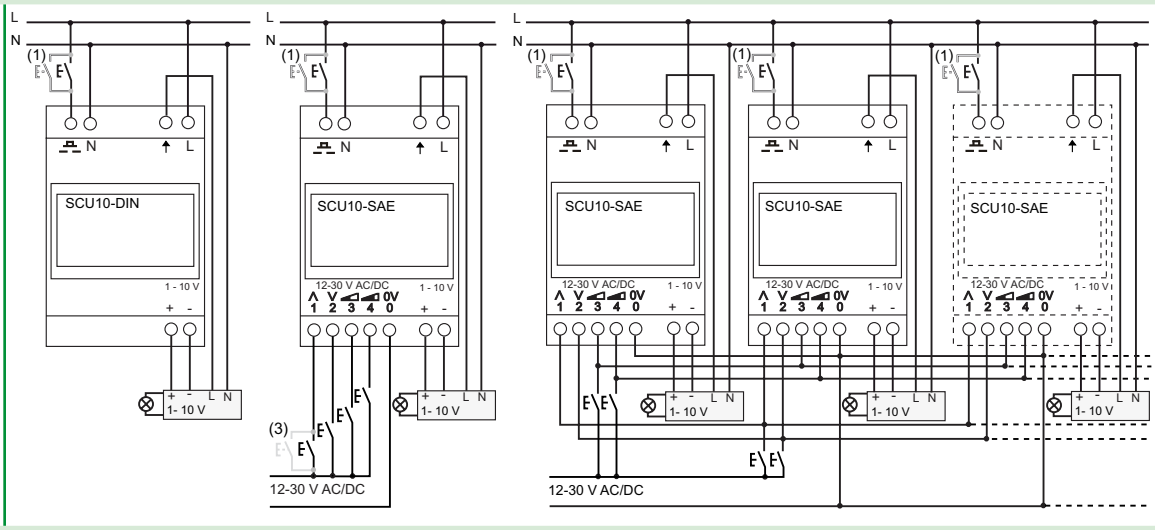
Selection table
STD

	STD400RC/RL-DIN	STD400RC/RL-SAE	STD1000RL-DIN	STD1000RL-SAE
Type	**400 W**		**1000 W**	
	 P112245	 P112246	 P112247	 P112248
Wiring diagrams	 P106846			
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			
Consumption	0.8 VA			
Power loss	3 W			
Current sink for 1-10 V output	-			
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)	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.

SCU

	SCU10-DIN	SCU10-SAE
1 - 10 V		
P112250 / P112221		
P106847		
	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	
	CCTDD20011	**CCTDD20012**
	230 V AC ± 10 %, 50 Hz	
	0.8 VA	
	3 W	
	0.2- 100 mA	
	Short push for On/Off control, long push for dimming	
	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	
	■	
	Illuminates during the on-state. The LED is blinking in error mode	
	IP20	
	0°C to +40°C, 40°C to +70°C with - 6 W /°C de-rating	
	0°C to +60°C	
	8	8
	■ Electronic overload, overvoltage and over temperature protection ■ Single shot thermal fuse	
	According to EN 60669-2-1	
	According to CE, EMC 89/336/EEC and LVD 73/73/23/EEC	

(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
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

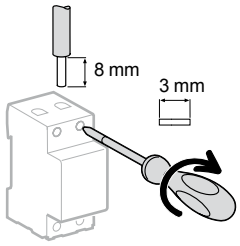
■ The dimmer is turned On/Off by shortly pushing the front panel push-button. This push-button lights blue when the dimmer is On.
■ The light level is controlled by keeping the front panel push-button pushed until wanted level has been reached.
■ The direction of dimming (up/down) is changed every time 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.

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 - 300 W
Motors (fans, ventilators...)	40 - 200 W
STD1000RL-DIN, STD1000RL-SAE	
230 V incandescent and halogen lamps	60 - 1000 W
Low voltage halogen lamps with electronic transformer	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



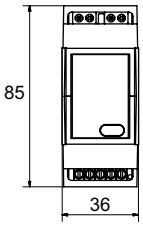
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
	DB122945	DB123553	
STD and SCU (top connection)	0.5 N.m	< 4mm²	< 4 mm²
STD and SCU (bottom connection)	0.5 N.m	< 2.5 mm²	< 2.5 mm²

Weight (g)

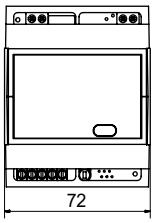
Dimmers	
STD400RC/RL-DIN	80
STD400RC/RL-SAE	90
STD1000RL-DIN	120
STD1000RL-SAE, SCU10	130

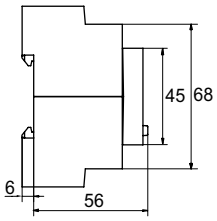
Dimensions (mm)

P106845



STD400RC/RL





STD1000RL
SCU10

TH4, TH7 and THP1, THP2

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 thermostats

P126317

THP1 and THP2

Programmable thermostats control the operating periods of all heating types by monitoring and regulating ambient temperature between 5°C and 30°C, using a programme pre-set by the user and memorised:

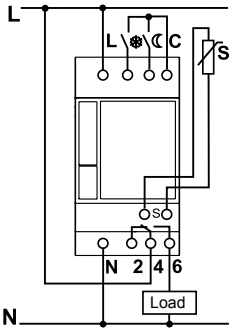
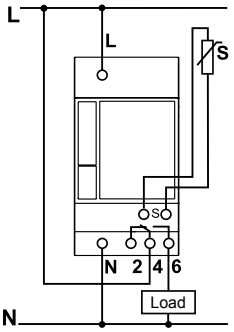
- THP1: 1 zone,
- THP2: 2 zones.

P126318

TH4, TH7 and THP1, THP2 (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**

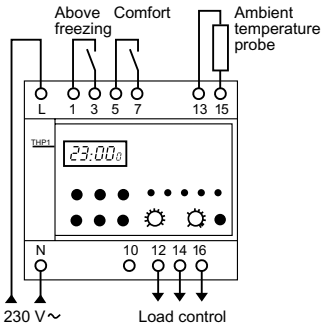
Technical specifications		
Voltage rating (Ue)		230 V AC, ± 10 %, 50/60 Hz
		–
Consumption		< 4 VA
Output contact current (250 V AC)	Cos φ = 1	16 A
	Cos φ = 0.6	3 A
Power reserve		–
Time base		–
Difference between tripping and activation		±0.2°C
Degree of protection		IP20
Operating temperature		-10°C 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 thermostats

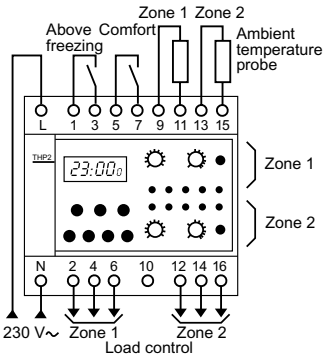
	THP1	THP2
	P126317 	P126318 

■ The THP1 and THP2 programmable thermostats control the operating periods of all heating types by monitoring and regulating ambient temperature between 5°C and 30°C, using a programme pre-set by the user and memorised
■ The THP1 and THP2 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: 5°C to 30°C while the premises are occupied
□ reduced: 5°C to 26°C while the premises are unoccupied
□ above freezing: the temperature in the premises is maintained at approximately 6°C
■ The THP1 and THP2, can control the following loads:
□ convectors
□ a burner
□ a "hot air" heating system
□ heating valves: hydraulic, electromagnetic or electrothermal

P106851



P106852

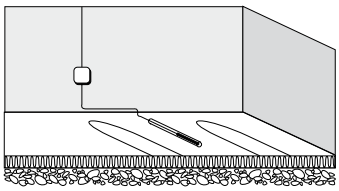
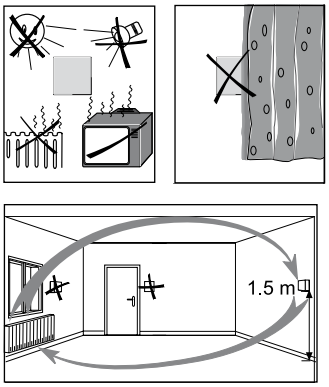


	Delivered with 1 non-adjustable ambient temperature probe	Delivered with -2 non-adjustable ambient temperature probes
	15833	**15834**

	230 V AC
	–
	1 VA
	5 A
	1 A
	6 years
	Quartz
	±0.2°C
	IP20.1
	-5°C to +55°C
	-25°C to +70 °C
	–
	30-50 % RH (no condensation)
	10
	White RAL 9003
	–
	NF C 47-121 EN 60730-1: 1991
	–
	–
	–

TH4, TH7 and THP1, THP2 (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 and THP2 probes cables can be extended up to 50 m by using 6/10th telephone cable or shielded copper cable.

Specific technical data

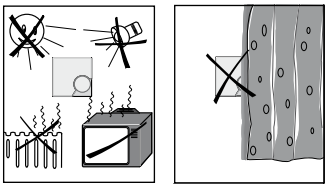
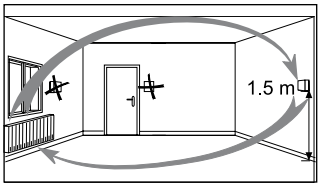
TH4		
Settings	Comfort	From +8°C to +26°C
	Reduced	From 0°C to 10°C below the selected "comfort" temperature set point: control (manual or automatic) by external dry contact
	Above freezing	Maintains room temperature according to a factory adjusted temperature set point of +5°C: control (manual or automatic) 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,THP2 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	Spare battery
	P123735  P123736	 P126320	 049540r	 P126321	
			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**	**16358**

THP1, THP2	
Display	By liquid crystal display of hour, minutes, day of the week and of contact status
	Indicator lights: 5 LEDs for 1 zone and 10 for 2 zones displaying: ■ the automatic, comfort and reduced operating modes (yellow) ■ the above freezing operating mode (green) ■ the ON position of the output contact(s) (red)
Choosing the operating mode	By local pushbutton: automatic, reduced, comfort, above freezing
	By external remote contact overriding the local push-button
	The comfort operating mode overrides the above freezing mode
Programming	Minimum programming time between 2 switching operations: 1 minute
	Memory: ■ THP1: up to 42 switching operations ■ THP2: up to 168 switching operations
	Programming 24 h / 7 days with: ■ possible anticipation of switching ■ deletion of a switching operation in order to modify or cancel a sequence
	Changeover to "summer-winter" time in a single operation

TH4, TH7 and THP1, THP2 (cont.)
Practical advice

P106774

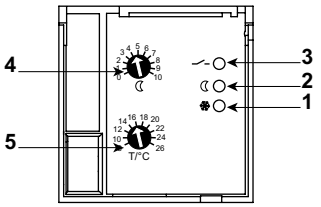


Fig. 1.

P106775

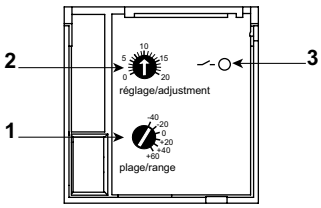


Fig. 2.

P106885

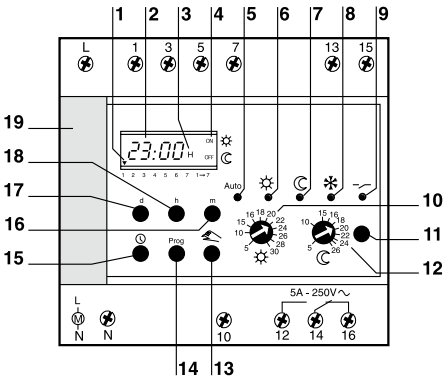


Fig. 3.

P106886

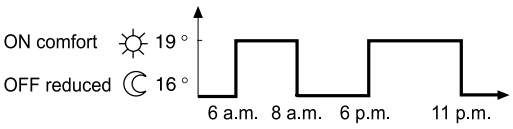


Fig. 4.

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

Front face (see Fig. 3)

1 Days indication: cursor on 1 = Monday, on 2 = Tuesday, etc.
2 Hours and minutes indication.
3 Stopping during holiday periods (holiday override mode).
4 Visualisation of switching status:
ON: comfort ☼
OFF: reduced ☾
5 Yellow indicator light: "Auto" position.
6 Yellow indicator light: "comfort" position.
7 Yellow indicator light: "reduced" position.
8 Green indicator light: "above freezing" position.
9 Red indicator light: output contact status.
10 Button for setting the "comfort" operating mode.
11 Pushbutton for selecting the operating mode for zone 1.
12 Button for setting the "reduced" operating mode.
13 Key for anticipation of switching and programming over 7 days.
14 Key for scrolling the switching and memorisation operations.
15 Function key for time and day updating and return to the time display.
16 Minutes setting key.
17 Days setting key.
18 Hours setting key.
19 Manual slot.

THP1 programming

A programmable clock, built into the THP1, is used for programming (see Fig. 4).
■ The various operations for:
□ updating time and day,
□ introduction of the programme, are the same as those used to programme the IHP 24 hours and 7 days.
■ 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: 6 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.

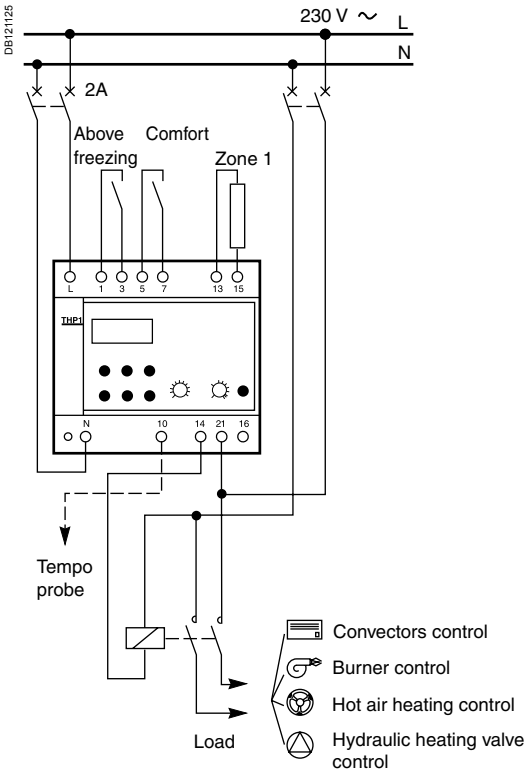


Fig. 5. THP1 connection example.

Local control

The operating mode pushbutton (**11**) is used to select the operating mode and to light up the relevant indicator lights in turn:

Auto (indicator light **5**)
Operation takes place according to a pre-set programme (see § on "programming").
■ Temperature is regulated with respect to the following temperature thresholds:
□ comfort (ON symbol visible) which is set using the button (**10**),
□ reduced (OFF symbol visible) which is set using the button (**12**).

Comfort (indicator light **6**)
The ON symbol is visible.
■ Indicator light ON: temperature is regulated only with respect to the "comfort" temperature threshold (setting button **10**).
■ Flashing indicator light (see § on "remote control").

Reduced (indicator light **7**)
Temperature is regulated only with respect to the "reduced" temperature threshold (setting button **12**). The OFF symbol is visible.

Above freezing (indicator light **8**)
■ Indicator light ON: temperature is regulated only with respect to the 6.5°C temperature threshold pre-set in the factory.
■ Flashing indicator light (see § on "remote control").

Remote control

This operating mode corresponds to the closing of a contact external to the THP (e.g. switch or TRC).

Closing a comfort operation contact
(Red indicator light (**6**) flashing on the THP). Once closed, temperature is only regulated with respect to the "comfort" temperature threshold.
This external contact (terminals 5 and 7) takes priority over:
■ The local controls ("Auto", "comfort", "reduced", "above freezing").
■ The external "above freezing" contact.

Closing an above freezing operation contact
(Green indicator light (**8**) flashing on the THP). Once closed, temperature is only regulated with respect to the "above freezing" temperature threshold.
This external contact (terminals 1 and 3) takes priority over local controls ("Auto", "comfort", "reduced", "above freezing").

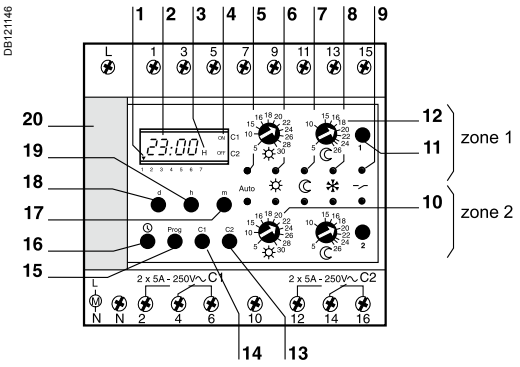


Fig. 6.

THP2

Front face (see Fig. 6)

1 Days indication: cursor on 1 = Monday, on 2 = Tuesday, etc.
2 Hours and minutes indication.
3 Stopping during holiday periods (holiday override).
4 Visualisation of switching status.

		Comfort ☼	Reduced ☾
Zone 1	C1	ON	OFF
Zone 2	C2	ON	OFF

5 Yellow indicator light: "Auto" position.
6 Yellow indicator light: "comfort" position.
7 Yellow indicator light: "reduced" position.
8 Green indicator light: "above freezing" position.
9 Red indicator light: output contact status.
10 Button for setting the "comfort" operating mode.
11 Pushbutton for selecting the operating mode for the zone.
12 Button for setting the "reduced" operating mode.
13 Zone 2 selection key.
14 Zone 1 selection key.
15 Key for scrolling switching and memorisation operations.
16 Function key for updating time and day and return to the time display.
17 Minutes setting key.
18 Days setting key.
19 Hours setting key.
20 Manual slot.

TH4, TH7 and THP1, THP2 (cont.)
Practical advice

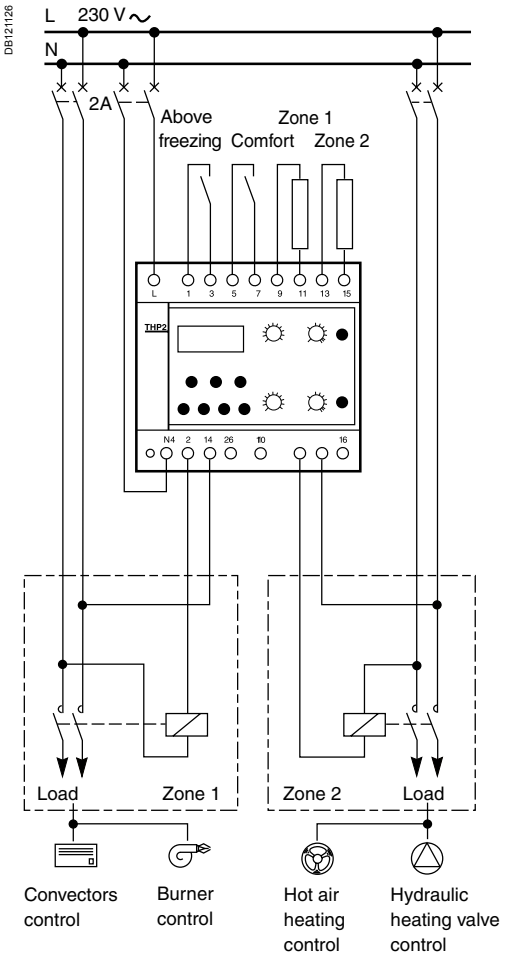
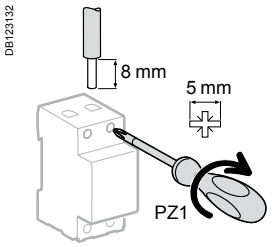


Fig. 7. THP2 connection example.

THP2 programming

■ Programming is carried out by a 2 channel, IHP 24 hours and 7 days programmable time switch, built into the THP2.
■ Programming possibilities:
□ 24 hours and 7 days: a separate programme for each day of the week,
□ 24 switching operations memorised, to be divided up over the 2 zones,
□ the same switching operation, used over several days, only counts for the same operation,
□ power reserve: 6 years.

Connection

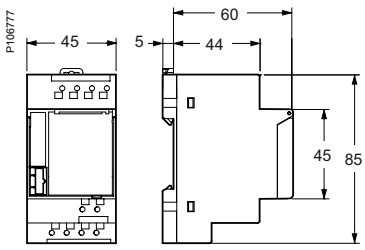


Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
	DB122945	DB123553	
THP1, THP2	1.2 N.m	4 mm²	4 mm²
TH4, TH7	2 screwless / pole	2 x 2.5 mm²	2 x 2.5 mm²

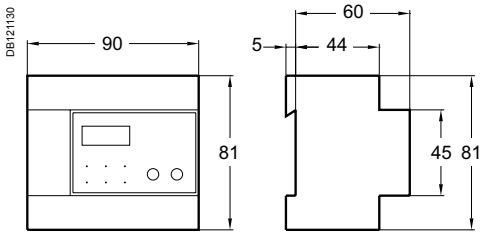
Weight (g)

Thermostats	
TH4, TH7	125
TH4 with probe	205
Programmable thermostats	
THP1	489
THP2	570

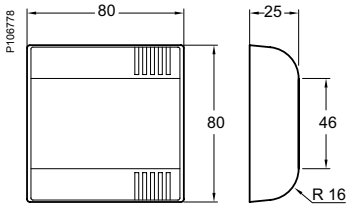
Dimensions (mm)



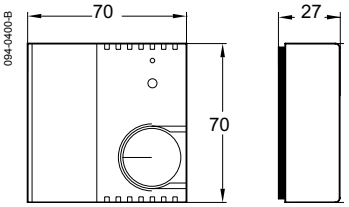
TH4 and TH7 thermostats



THP1 and THP2 programmable thermostats



TH4, TH7, ambient temperature probe



THP1, THP2, ambient temperature probes

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
■ Applies a time delay to energizing of a load upon closing of an auxiliary contact (push button)

iRTC
■ Delays de-energizing of a load upon closing 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.)

PB107136-35

iRTH

■ Applies a time delay to energizing of a load

PB107137-35

iRTL

■ Applies a time delay to energizing and de-energizing of a load during different times, repeatedly (flasher)

PB107138-35

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

PB107109-35

iRLI
Changeover

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

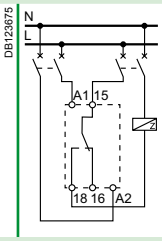
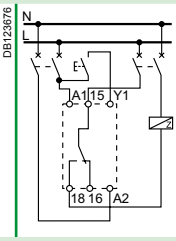
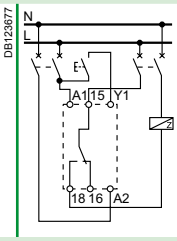
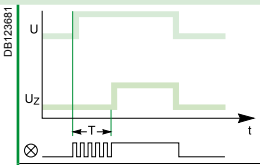
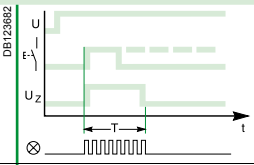
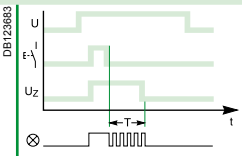
PB107127-35

iRCC
Compressor control

■ Monitors the compressor power supply and prevents its immediate restarting upon detection of a power cut or voltage dip

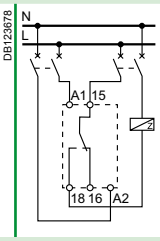
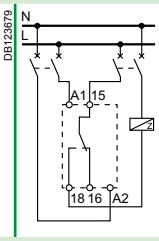
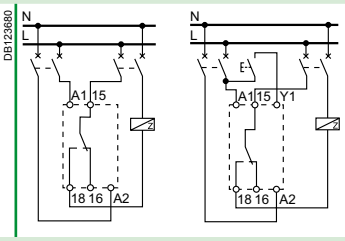
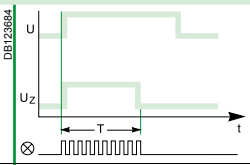
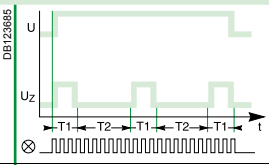
Time delay relays iRTA, iRTB, iRTC, iRTH, iRTL and iRTMF

Time delay relays

		iRTA	iRTB	iRTC
Type				
		 PB107133-35	 PB107134-35	 PB107135-35
Function				
		■ Delays energizing of a load	■ Applies a time delay to energizing of a load upon closing of an auxiliary contact (push button)	■ Delays de-energizing of a load upon closing of an auxiliary contact (push button)
Wiring diagrams		 DB123675	 DB123676	 DB123677
Use		 DB123681	 DB123682	 DB123683
		■ 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**

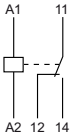
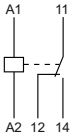
Technical specifications				
Control and power supply voltage (Uc)	V AC	24…240, ±10 %	24…240, ±10 %	24…240, ±10 %
	V DC	24, ±10 %	24, ±10 %	24, ±10 %
Operating frequency	Hz	50/60	50/60	50/60
Time delay range		0.1 s to 100 h	0.1 s to 100 h	0.1 s to 100 h
Precision		±10 % of full scale	±10 % of full scale	±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
	PB107136-35 	PB107137-35 	PB107138-35 
	■ Applies a time delay to 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

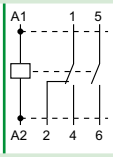
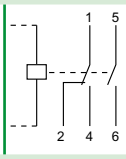
Interface relays iRBN, iRTBT

Interface relays

		iRBN	iRTBT
Type		**Low level**	**Extra low voltage**
		PB107144-35 	PB107164-35 
Standard		IEC 255 100 and IEC 529	IEC 255 100 and IEC 529
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

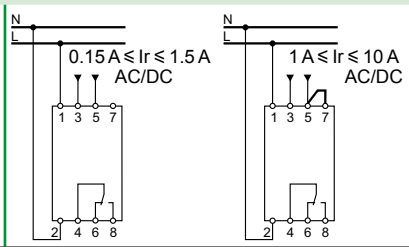
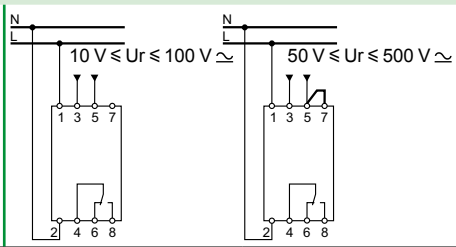
iRLI changeover and iERL extension relays

Changeover and extension relays

		iRLI				iERL			
Type		**Changeover relay**				**Extension for RLI**			
		PB107108-35 				PB107109-35 			
Standard		IEC 255 and NF C 45-250				IEC 255 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)			
Commande directe en face avant	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			

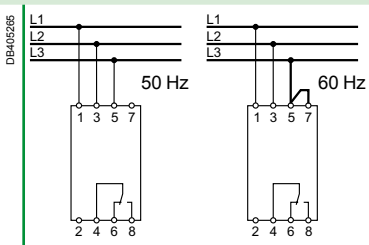
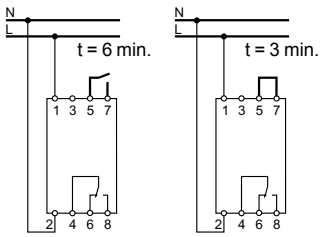
iRCP phase control, iRCI current control, iRCU voltage control and iRCC compressor control relays

Control relays

	iRCI	iRCU
Type	**Current control**	**Voltage control**
	PB107125-35 	PB107126-35 
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	DB405286 	DB405286 
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)

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

PB110008-34

Single-phase DSE1

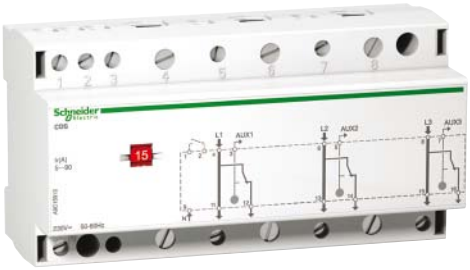
- Load-shedding and restoration of 1 non-priority channel
- Tripping threshold adjustable from 0.8 kW to 7 kW (by default: 3.7 kW)
- Pre-alarm time before load-shedding (Ton) adjustable from 0 s to 9999 s (by default: 60 s)
- Load-shedding time (Toff) adjustable from 0 s to 9999 s (by default: 120 s)
- Buzzer operating time (Tbe) adjustable from 1 s to 9999 s (by default: 60 s)
- Backlit LCD display, 3 digits after the decimal point

PB107189-34

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

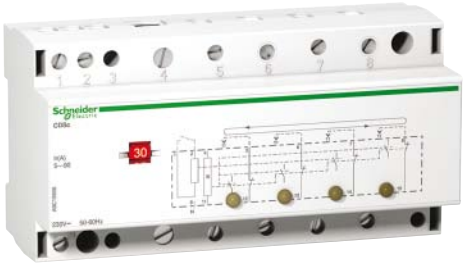
PB107190-36



Three-phase CDS

- Load-shedding and restoration separately phase by phase
- 1 relay per phase
- Load-shedding time: 5 min. for each channel

PB107188-36



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.

DSE1 CDS

DSE1, CDS, CDSc load-shedders (cont.)

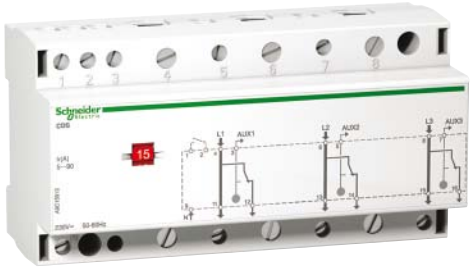
PB110008-34

DSE1

PB107189-34

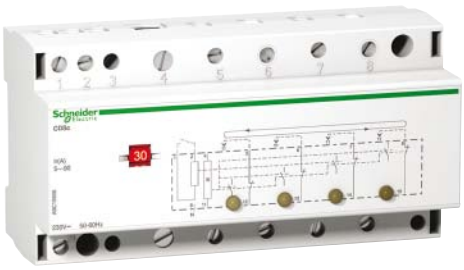
CDS 1P

PB107190-36



CDS 3P

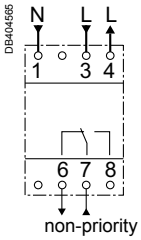
PB107188-36



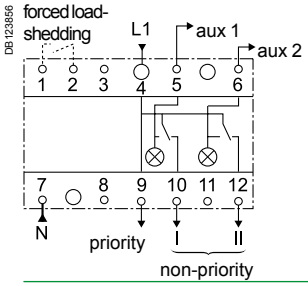
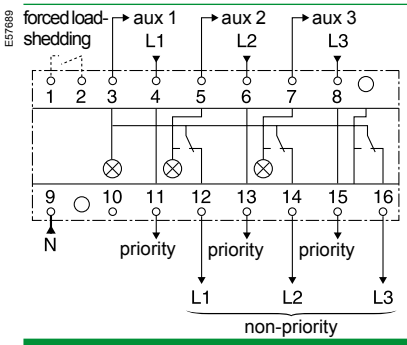
CDSc

Catalogue numbers

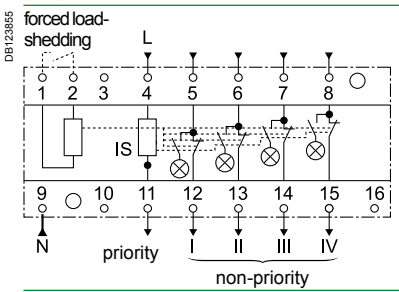
DSE1

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

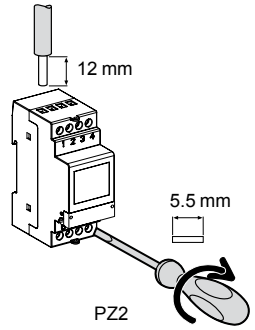
CDSc

Type		Width in 9-mm modules
Single-phase		
	**A9C15906**	16

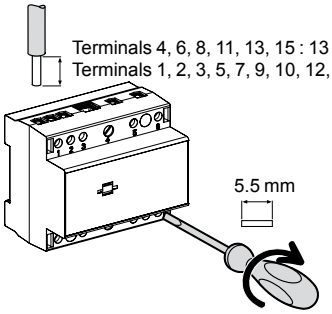
DSE1, CDS, CDSc load-shedders (cont.)

Connection

DB404593



DB124422



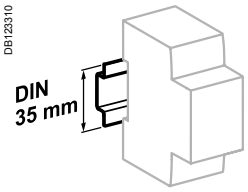
Type		Tightening torque	Copper cables	
			Rigid	Flexible or with ferrule
		DB122945	DB122946	
DSE1		1.2 N.m	6 mm²	6 mm²
CDS, CDSc	Priority circuit	3.5 N.m	10 to 50 mm²	10 to 35 mm²
	Non-priority circuit	2 N.m	2.5 to 10 mm²	2.5 to 10 mm²

■ Connection via tunnel terminals (captive screws).

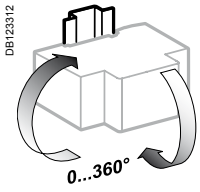
Technical data

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.

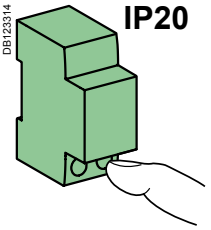


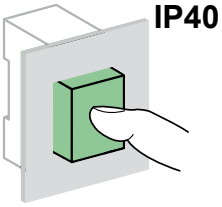
Indifferent position of installation.

Technical data (cont.)

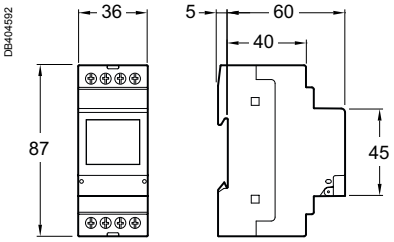
Weight (g)

Load-shedders			
Type	**DSE1**	**CDS**	**CDSc**
1P	130	300	600
3P	-	500	-

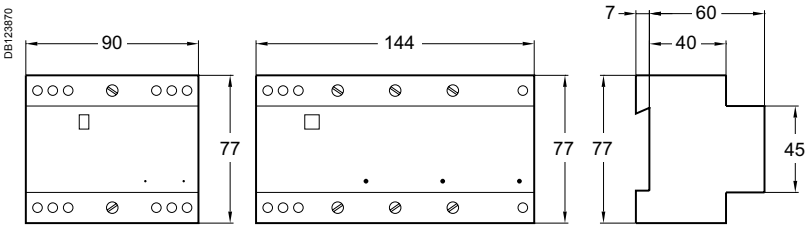




Dimensions (mm)



DSE1



CDS 1P

CDS 3P
CDSc

DSE1, CDS, CDSc load-shedders (cont.)

Installation

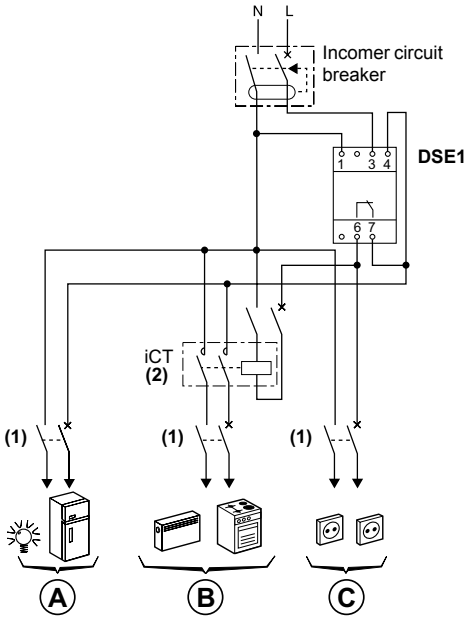
⚠ **Use a contactor for any load-shedding above 16 A.**

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.)

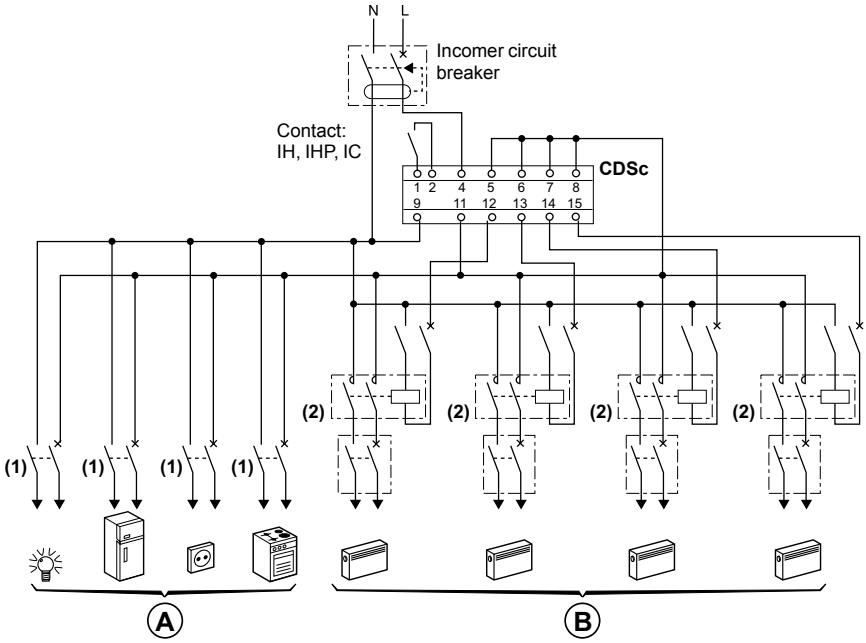
Installation (cont.)

⚠ 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

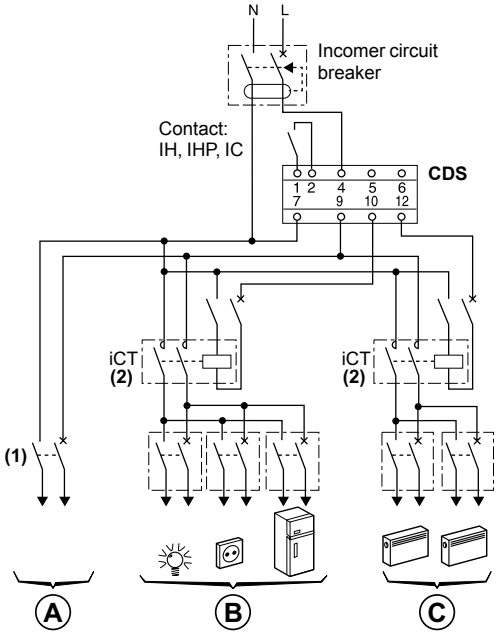


(1) Determine the circuit-breaker rating according to the cable cross-section.
(2) Calculate the contactor rating according to the load power.

A Non load-sheddable priority loads
B Load-sheddable non-priority loads.

CDS

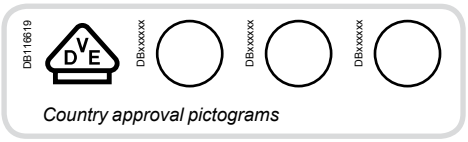
DB124423



(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.

Kilowatt-hour meters



Country approval pictograms

iEM2000T	iME
IEC 62053-21 and IEC 61557-12	IEC 61557-12
PMD/DD/K55/1	PMD/DD/K55/1 PMD/SD/K55/1 (iME4zrt)
MID approval	IEC 62053-21 (accuracy)

Single-phase

Kilowatt-hour meter	iEM2000T	iME1	iME1z	iME1zr
Type	**0…40 A**	**0…63 A**	**0…63 A** **With partial meter**	**0…63 A** **With partial meter and remote transfer of metering impulses**
	PB105291-30 	DB123207 	DB123208 	DB123209 
Function				
	Digital kilowatt-hour meters designed for sub-metering of active energy (rms) consumed by a single-phase or three-phase electric circuit with or without distributed neutral.			
Catalogue numbers	**A9MEM2000T**	**A9M17065**	**A9M17066**	**A9M17067**
Technical specifications				
Rating (A)	0…40	0…63		
Voltage (Ue) V AC	230 ± 20 %	230 ± 20 %		
Operating frequency Hz	48/62	48/62		
Direct measurement	Up to 40 A	Up to 63 A		
Measurement by CT	–	–		
Metering and activity indicator light (yellow)	3,200 flashes per kWh	1,000 flashes per kWh		
Total meter (max. capacity) on all 3 phases	–	999.99 MWh		
Total meter display	–	In kWh or MWh with 5 significant digits. No decimal point in kWh; 2 digits after the decimal point in MWh		
Partial meter (max. capacity) on all 3 phases with RESET	–	–	99.99 MWh	
Partial meter display	–	–	In kWh or MWh with 4 significant digits. No decimal point in kWh; 2 digits after the decimal point in MWh	
Remote transfer	By static output: ■ ELV insulation voltage: 4 kV, 50 Hz ■ 20 mA/35 V DC max. ■ 100 impulses of 120 ms per kWh	–	–	By NO impulse contact: ■ ELV insulation voltage: 4 kV, 50 Hz ■ 18 mA/24 V DC, 100 mA/230 V AC ■ 1 impulse of 200 ms (contact closing) per kWh
Width in 9 mm modules	2	4		
Use with contactor				
	■ Mount the kilowatt hour meter upstream of the contactor ■ Move the kilowatt hour meter away from the switchgear to limit interference			

(1) example: 500/5 CT = 10,000/500 flashes per kWh = 20 flashes per kWh
(2) example: 500/5 CT = 500/10 kWh per impulse = 50 kWh per impulse.

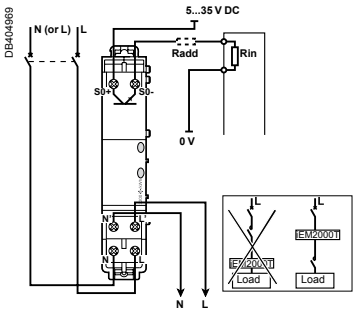
Kilowatt-hour meters (cont.)

	Three-phase			Three-phase + neutral		
	iME3	**iME3zr**	**iME4zrt**	**iME4**	**iME4zr**	**iME4zrt**
	0…63 A	**0…63 A**	**40…6000 A via CT**	**40…6000 A via CT**	**0…63 A**	**40…6000 A via CT**
		With partial meter and remote transfer of metering impulses			**With partial meter and remote transfer of metering impulses**	
	DB123210 	DB123211 	DB123212 	DB123213 	DB123214 	DB123212 
	Digital kilowatt-hour meters designed for sub-metering of active energy (rms) consumed by a single-phase or three-phase electric circuit with or without distributed neutral.					
	A9M17075	**A9M17076**	**A9M17072**	**A9M17070**	**A9M17071**	**A9M17072**
	0…63		40…6000	0…63		40…6000
	400 ± 20 %			230/400 ± 20 %		
	48/62			48/62		
	Up to 63 A		–	Up to 63 A		–
	–		Up to 6000 A	–		Up to 6000 A
	100 flashes per kWh		10,000/x flashes per kWh (1) (x = CT rating)	100 flashes per kWh		10,000/x flashes per kWh (1) (x = CT rating)
	999.99 MWh		■ Where CT ⩽ 150/5 A: 999.99 MWh ■ Where CT > 150/5 A: 9,999.9 MWh	999.99 MWh		■ Where CT ⩽ 150/5 A: 999.99 MWh ■ Where CT > 150/5 A: 9,999.9 MWh
	In kWh or MWh with 5 significant digits. No decimal point in kWh; 2 digits after the decimal point in MWh			–	In kWh or MWh with 5 significant digits. No decimal point in kWh; 2 digits after the decimal point in MWh	
	–	99.99 MWh	■ Where CT ⩽ 150/5 A: 99.99 MWh ■ Where CT > 150/5 A: 999.99 MWh	–	99.99 MWh	■ Where CT ⩽ 150/5 A: 99.99 MWh ■ Where CT > 150/5 A: 999.99 MWh
	–	In kWh or MWh with 4 significant digits. 1 digit after the decimal point in kWh		–	In kWh or MWh with 4 significant digits. 1 digit after the decimal point in kWh	
	–	By NO impulse contact: ■ ELV insulation voltage: 4 kV, 50 Hz ■ 18 mA/24 V DC, 100 mA/230 V AC ■ 1 impulse of 200 ms (contact closing) every 10 kWh	By NO impulse contact: ■ ELV insulation voltage: 4 kV, 50 Hz ■ 18 mA/24 V DC, 100 mA/230 V AC ■ 10/x impulse of 200 ms (contact closing) per kWh = x/10 kWh per impulse (2) (x = CT rating)	–	By NO impulse contact: ■ ELV insulation voltage: 4 kV, 50 Hz ■ 18 mA/24 V DC, 100 mA/230 V AC ■ 1 impulse of 200 ms (contact closing) every 10 kWh	By NO impulse contact: ■ ELV insulation voltage: 4 kV, 50 Hz ■ 18 mA/24 V DC, 100 mA/230 V AC ■ 10/x impulse of 200 ms (contact closing) per kWh = x/10 kWh per impulse (2) (x = CT rating)
	8			8		
	■ Mount the kilowatt hour meter upstream of the contactor ■ Move the kilowatt hour meter away from the switchgear to limit interference					

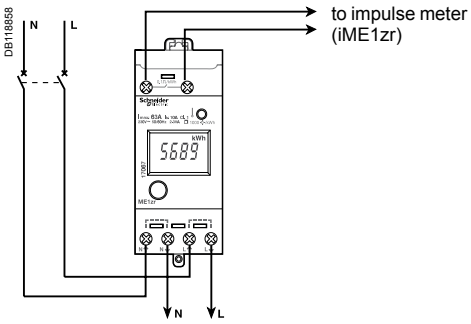
Kilowatt-hour meters (cont.)

Electrical diagrams

Single-phase circuit

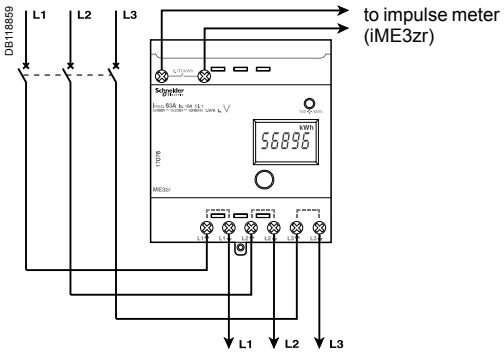


iEM2000T

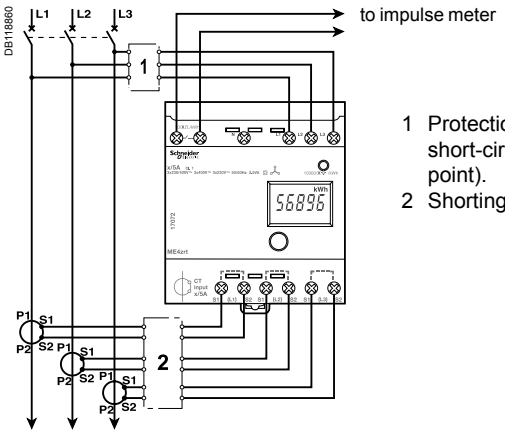


iME1 / iME1zr.

Three-phase circuit



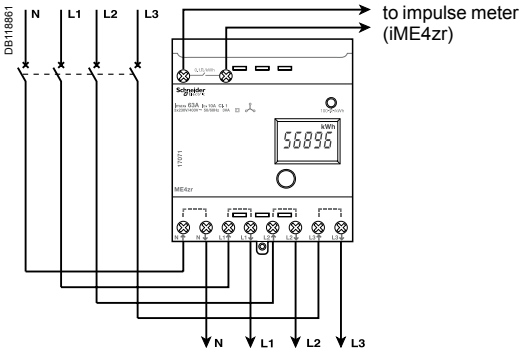
iME3 / iME3zr.



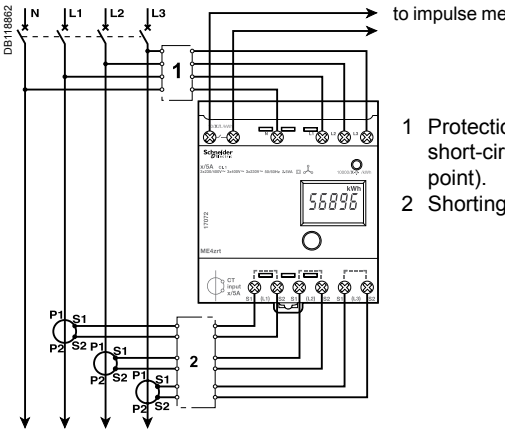
iME4zrt.

1 Protection (to be adapted to suit the short-circuit current at the connection point).
2 Shorting switch unit.

Three-phase + neutral circuit



iME4 / iME4zr.

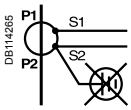


iME4zrt.

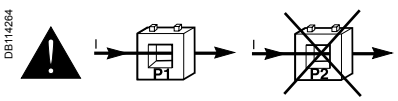
1 Protection (to be adapted to suit the short-circuit current at the connection point).
2 Shorting switch unit.

Caution

■ Do not earth the CT secondary (S2).



■ You must comply with the routing direction of power cables in the current transformer primary. Cables enter in "P1" and leave in "P2" to the loads.

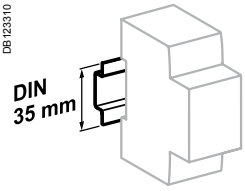


Kilowatt-hour meters (cont.)

Connection

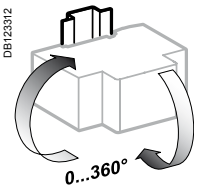
Type		Tightening torque	Copper cables	
			Rigid	Flexible or ferrule
		DB122945	DB122946	
iEM2000T	Remote transfer	0.8 ± 0.1 N.m	4 mm²	4 mm²
	Power	1.2 ± 0.2 N.m	10 mm²	10 mm²
iME	Remote transfer	0.9 ± 0.1 N.m	6 mm²	6 mm²
	Power	1.5 ± 0.3 N.m	16 mm²	16 mm²

DB123310



Clip on DIN rail 35 mm.

DB123312

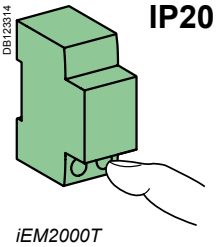


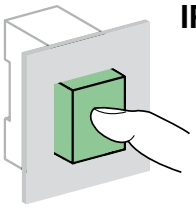
Indifferent position of installation.

Technical data

Main characteristics		iEM2000T	iME
Accuracy class		1	1
Consumption		< 10 VA	2.5 VA
Sealable screw shield		Yes	Except iME4zrt
Additional characteristics			
Degree of protection (IEC 60529)	Device only	IP20	IP50, IK05
	Device in modular enclosure	IP40	IP50, IK05
Operating temperature		-25°C to +65°C if < 32 A -25°C to +55°C if ≥ 32 A	-25°C to +55°C
Storage temperature		-40°C at +70°C	
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95% at 55°C)	

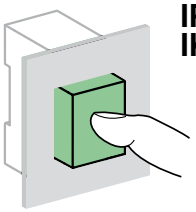
DB123314





iEM2000T

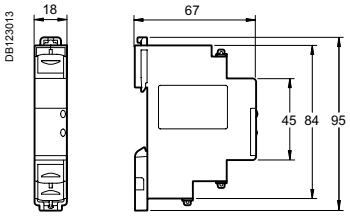
DB123314



iME

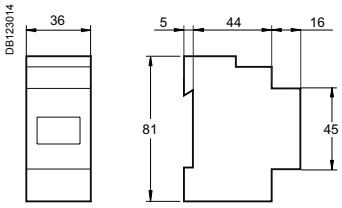
Dimensions (mm)

DB123013



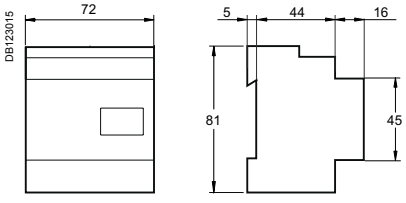
iEM2000T

DB123014



iME1, iME1z and iME1zr

DB123015



iME3, iME3zr, iME4, iME4zr and iME4zrt

Modular iPC power sockets

DB106604 DB116619 DB122858

Country approval pictograms

These power sockets allow low-voltage devices to be connected to the electrical network.

iPC 16 A power sockets

IEC 60884
NF C 61314
NF C 15100 (sockets with “baby safe” type cover)
(2) German standard: VDE 0620
(3) Italian standard: IMQ as per IEC 2316 standard

PB107159-35

A9A15306

PB107160-35

A9A15307

PB104003_SE-35

15033

PB107161-35

A9A15310

PB107162-35

A9A15035

Catalogue numbers

iPC 16 A power sockets

Type			Rating (In)		Width in 9-mm modules
With cover	NF	2P+E	16 A	A9A15306	5
		2P+E + indicator		A9A15307	
Differentiated yellow with cover	NF	2P+E		15324	
German standard (2)	VDE	2P+E		A9A15310	
		2P+E + indicator		A9A15035	
Differentiated yellow		2P+E		15033	
Italian standard (3) with cover	IMQ	2P+E		A9A15303	
Voltage rating (Ue)				250 V AC	

Note: 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.

iPC 20 A power sockets

NF C 61316
NF C 15100 (sockets with “baby safe” type cover)

PB107185-35

A9A15311

PB107186-35

A9A15312

PB107187-35

A9A15313

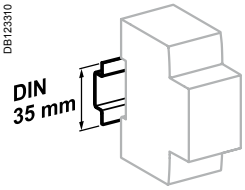
Catalogue numbers

iPC 20 A power sockets

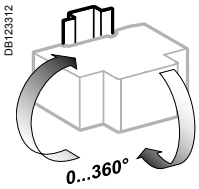
Type			Rating (In)		Width in 9-mm modules
With cover	NF	2P+E	20 A	A9A15311	8
		3P+E		A9A15312	
		3P+N+E		A9A15313	
Voltage rating (Ue)				400 V AC	

Note: Three-phase power sockets cannot be installed in a weatherproof enclosure of the Pragma C12 or D18 type.

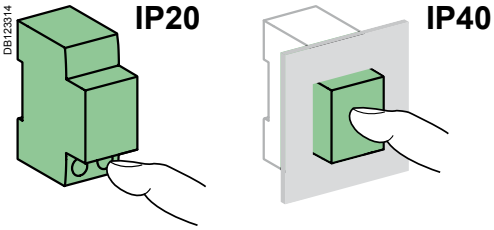
Modular iPC power sockets (cont.)



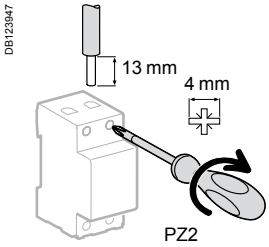
Clip on DIN rail 35 mm.



Indifferent position of installation.



Connection



Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
	DB122945	DB122946	
iPC 16 A	1.2 N.m	10 mm²	6 mm²
iPC 20 A	1.2 N.m	16 mm²	10 mm²

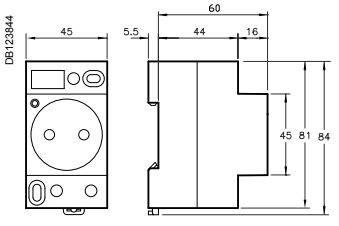
Technical data

Main characteristics		iPC 16 A	iPC 20 A
Voltage rating (Ue)		250 V AC	400 V AC
Power on indicator		LED technology long service life: 100,000 hours	-
Additional characteristics			
Degree of protection (IEC 60529)	Appareil seul	IP20	
	Appareil en coffret modulaire	IP40	
Operating temperature		-25°C to +70°C	-25°C to +70°C
Storage temperature		-40°C to +80°C	-40°C to +80°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity of 95 % at 55°C)	

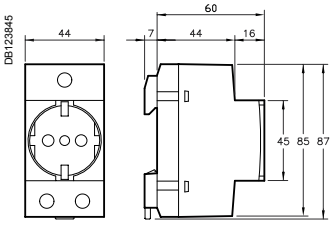
Weight (g)

iPC power sockets	
Type	
iPC 16 A	98
iPC 20 A	200

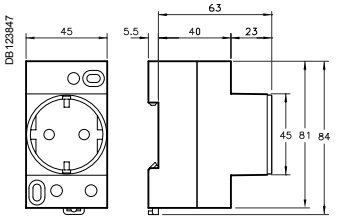
Dimensions (mm)



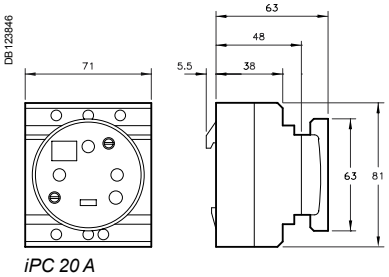
iPC 16 A NF



iPC 16 A Italian standard



iPC 16 A German standard



iPC 20 A

Dissipated power

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.

Switching devices		Rating (A)												
		0.5	1	1.6	2	2.5	3	4	6	6.3	10	12.5	13	16
Circuit breakers	DPN		2.5		1.9		2.1	2.6	2.7		2.7		3.3	3.2
	C60/C60H-DC	2.2	2.3		2.6		2.2	2.4	2.7		1.8		2.5	2.5
	C120										1.3			2.1
	NG125										1.7			2.4
	C60L-MA			2.4		2.5		2.4		3.0	2.0	2.5		2.6
	NG125L-MA							3.0		2.0	2.0	3.1		2.5

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

		Rating (A)											
		20	25	32	40	50	63	80	100	125	160	200	250
	DPN	4.7	4.7	4.6	5.8								
	C60/C60H-DC	3.0	3.1	3.5	4.3	4.8	6.1						
	C120	2.3	2.5	3.2	3.1	3.2	3.0	3.2	2.0	4.1			
	NG125	2.7	2.7	3.8	3.8	4.2	3.8	4.8	4.3	7.9			
	C60L-MA		3.0		4.6								
	NG125L-MA	3.0	3.2	3.5	4.0	4.7	5.5	6.0	7.0	9.0			

Influence of ambient temperature

Influence of temperature on the operation

Devices		Characteristics influenced by temperature	Temperature	
			Min.	Max.
iDPN, C60H-DC, C60, C120, NG125, C60PV-DC circuit breakers		Tripping on overload	-30°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
C60H RCBO, C60H2 RCBO		Tripping on overload	-15°C	+60°C
C60NA-DC, SW60PV-DC switch-disconnectors		Maximum operating current	-25°C	+70°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	Maximum operating current	-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
iCT, iTL auxiliaries		None	-20°C	+50°C
Distribloc		Maximum operating current	-25°C	+60°C
Multiclip		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 causes lowering of the thermal threshold (tripping on overload).
■ 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 thermal tripping threshold of the circuit breaker.
■ 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)

iDPN derating table (IEC 60898-1)

iDPN		Ambient temperature (°C)																				
Rating	Curve	-30	-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	1.55	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	0.65	0.55	0.43	0.27
2 A	B, C, D	2.51	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	3.8	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	4.97	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	7.13	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	11.9	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	12.3	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	15.6	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	11
13 A	C, D	15.7	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	19	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	19.1	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	23.7	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	23.9	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	29.6	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	38.3	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	48.3	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)

iDPN		Ambient temperature (°C)																				
Rating	Curve	-30	-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	1.69	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	2.68	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	4.03	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	5.26	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	7.51	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	12.5	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	13	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	17	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	17.2	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	20.6	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	20.8	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	25.7	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	26	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	32	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	41.6	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	52.7	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	11.8	10.5	10.3	**10**	9.7	9.4	9.2	9.9	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	16.7	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

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

Tertiary/Industry (IEC 61009-1)

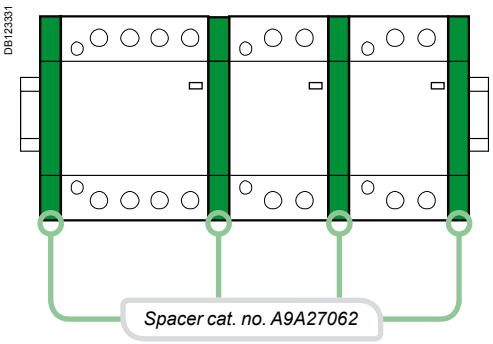
C60H2 RCBO derating table (IEC 61009-1)

C60H2 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

C60N/H RCBO derating table (IEC 61009-1)

C60H 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

Influence of ambient temperature (cont.)



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

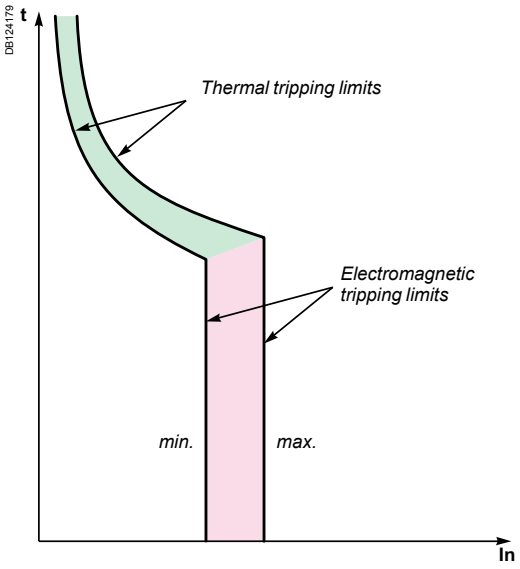
In the case of contactor mounting in an enclosure for which the interior temperature is in a range between 50°C and 60°C, it is necessary to use a spacer, cat. no. A9A27062, between each contactor.

Splitter blocks

In the event of a temperature higher than 40°C, the maximum acceptable current is limited to the values in the table below:

Type	Temperature				
	40°C	45°C	50°C	55°C	60°C
Multiclip 80 A	80	76	73	69	66
Distribloc 63 A	63	60	58	55	53

Tripping curves



The following curves show the total fault current breaking time, depending on its amperage. For example: based on the curve on page 3, 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.

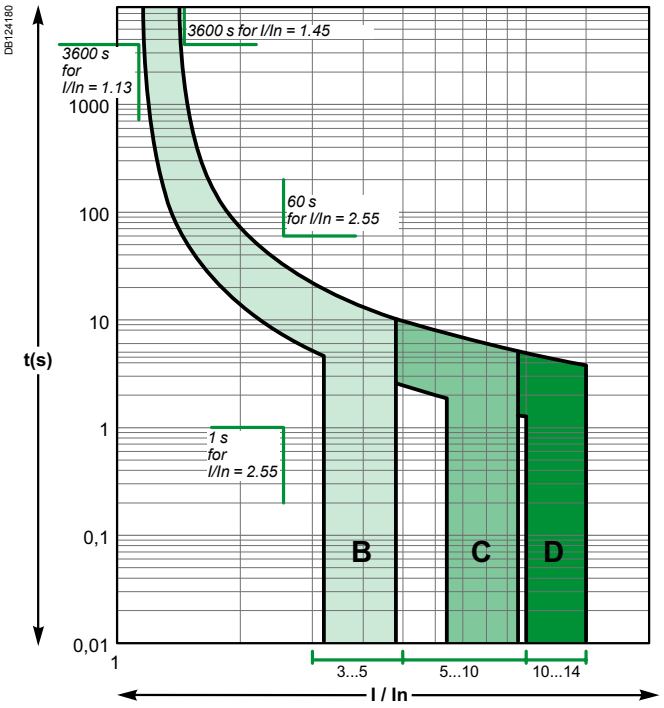
Tripping curves
According to IEC/EN 60898 standards

Alternative current 50/60 Hz

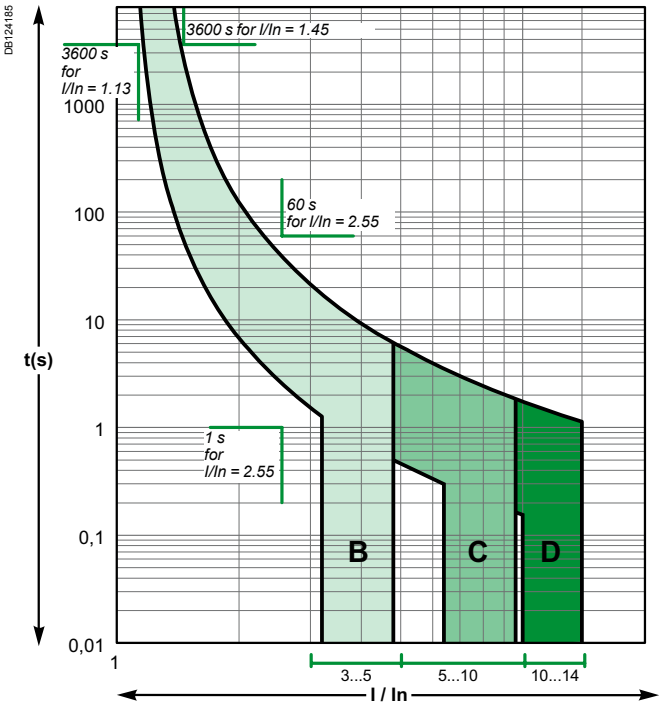
iC60a/N/H/L

According to IEC/EN 60898 (reference temperature 30°C)

Curves B, C, D rating up to 4 A



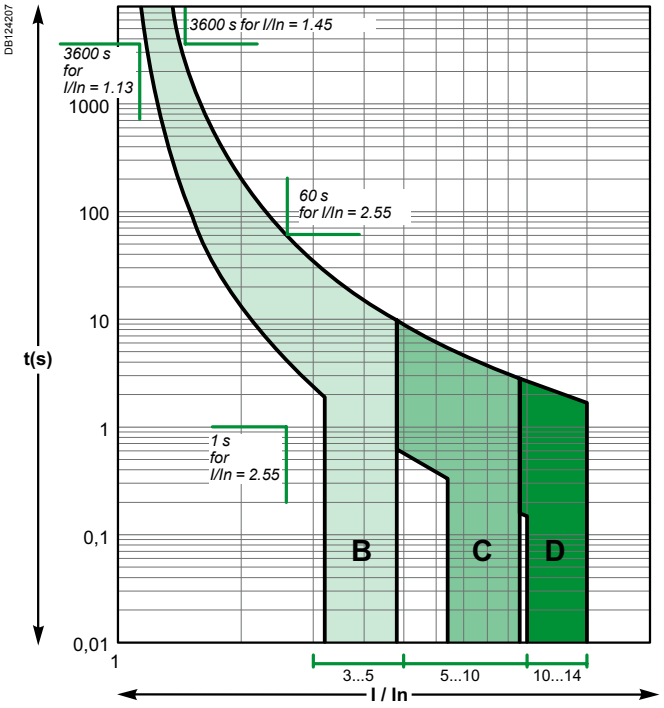
Curves B, C, D rating 6 A to 63 A



C120N/H

According to IEC/EN 60898 (reference temperature 30°C)

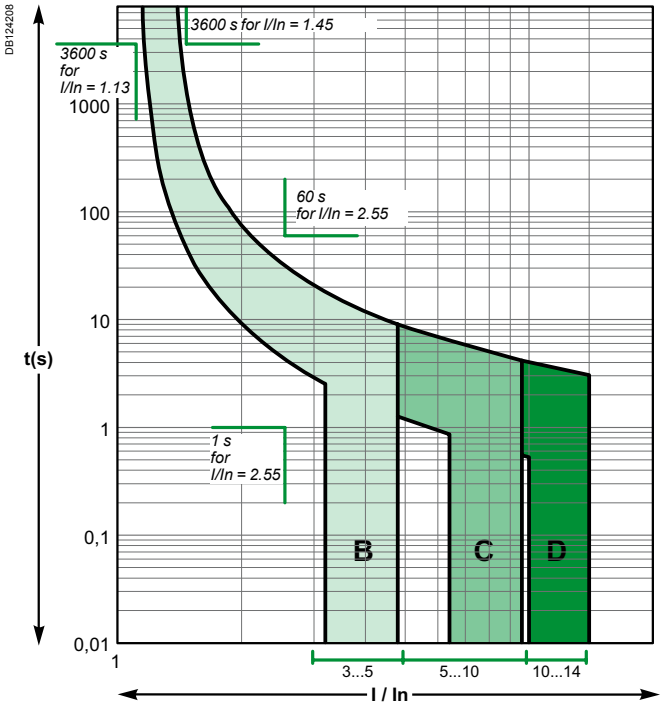
Curves B, C, D



DPN, DPN N, *i* DPN, *i* DPN N

According to IEC/EN 60898 (reference temperature 30°C)

Curves B, C, D



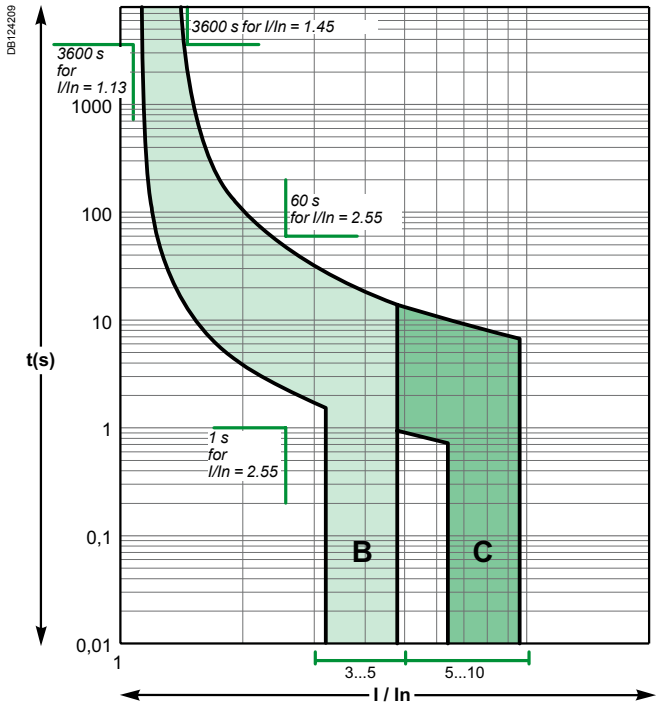
Tripping curves
According to IEC/EN 60898 standards

Alternative current 50/60 Hz

iK60

According to IEC/EN 60898 (reference temperature 30°C)

Curves B, C



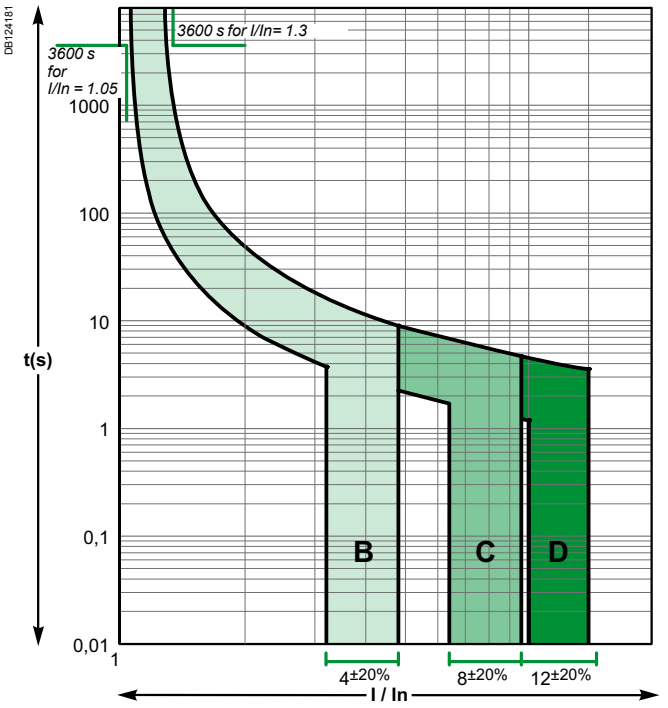
Tripping curves
According to IEC/EN 60947-2 standards

Alternative current 50/60 Hz

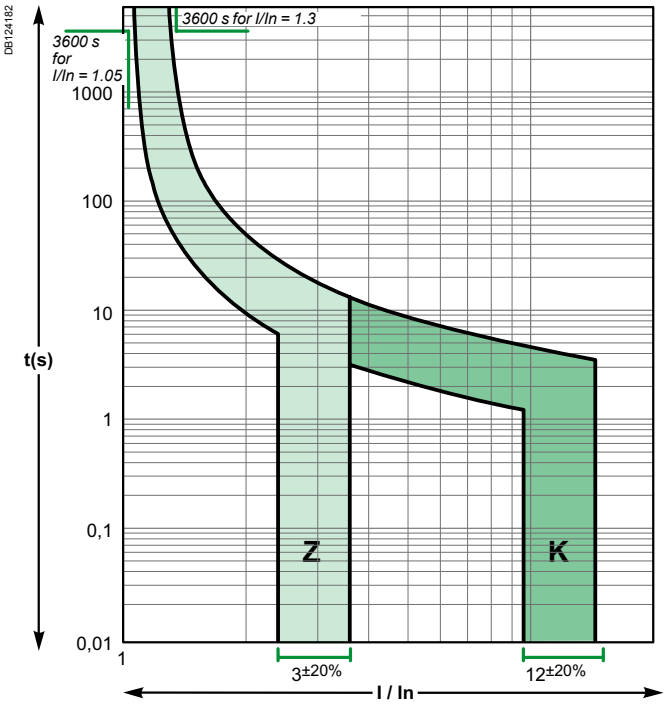
iC60N/H/L

According to IEC/EN 60947-2 (reference temperature 50°C)

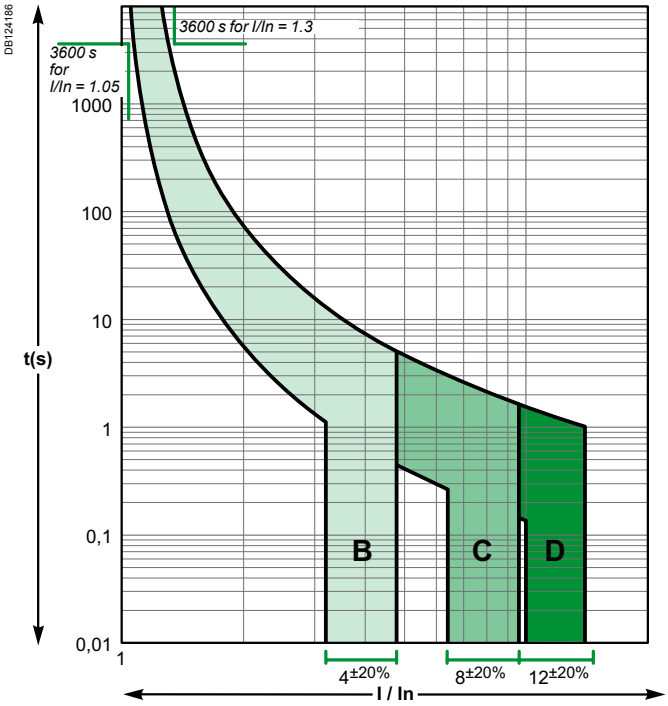
Curves B, C, D rating up to 4 A



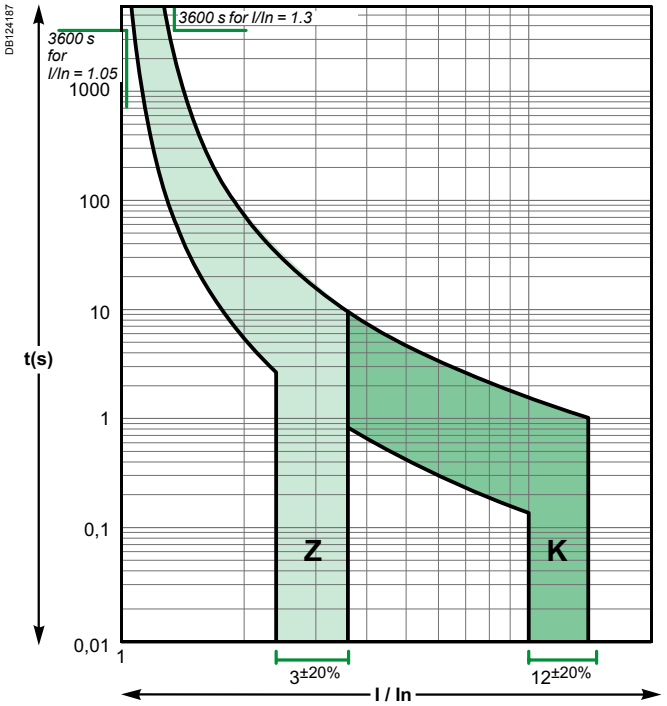
Curves Z, K rating up to 4 A



Curves B, C, D rating 6 A to 63 A



Curves Z, K rating 6 A to 63 A



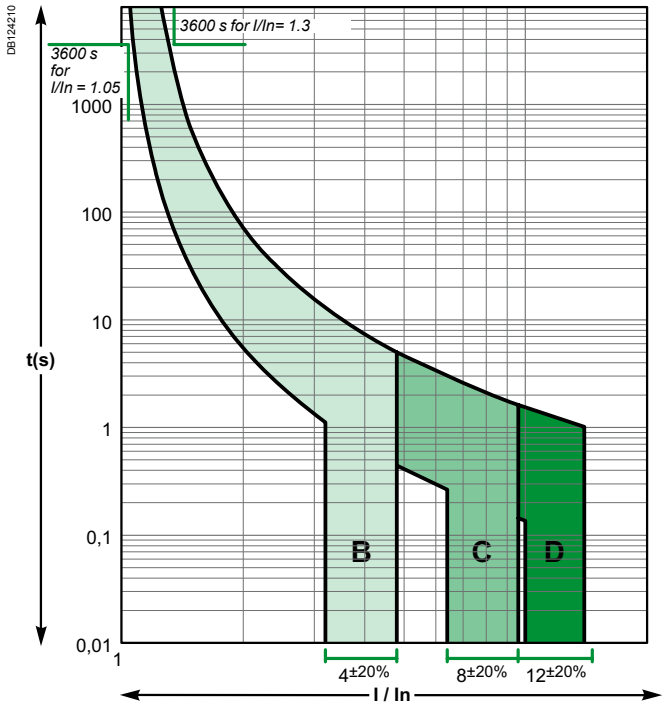
Tripping curves
According to IEC/EN 60947-2 standards

Alternative current 50/60 Hz

Reflex iC60N/H

According to IEC/EN 60947-2 (reference temperature 50°C)

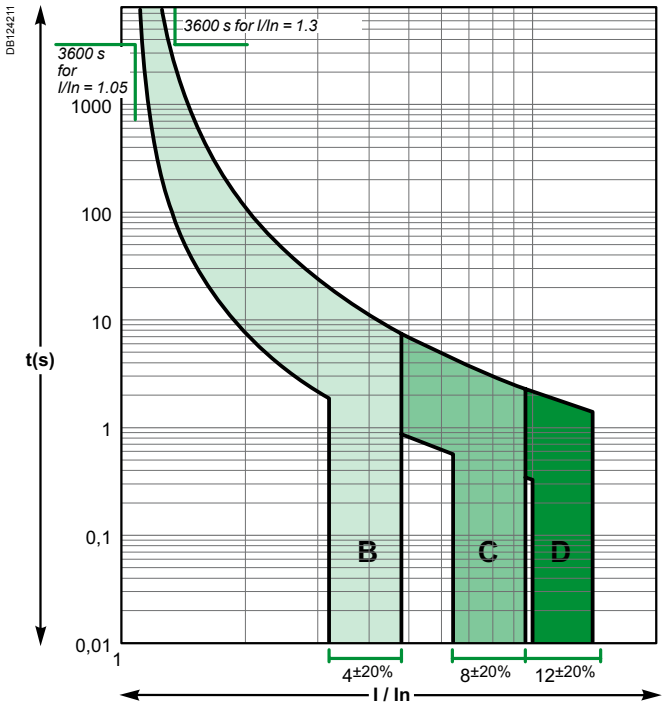
Curves B, C, D



NG125a/N/H/L

According to IEC/EN 60947-2 (reference temperature 40°C)

Curves B, C, D



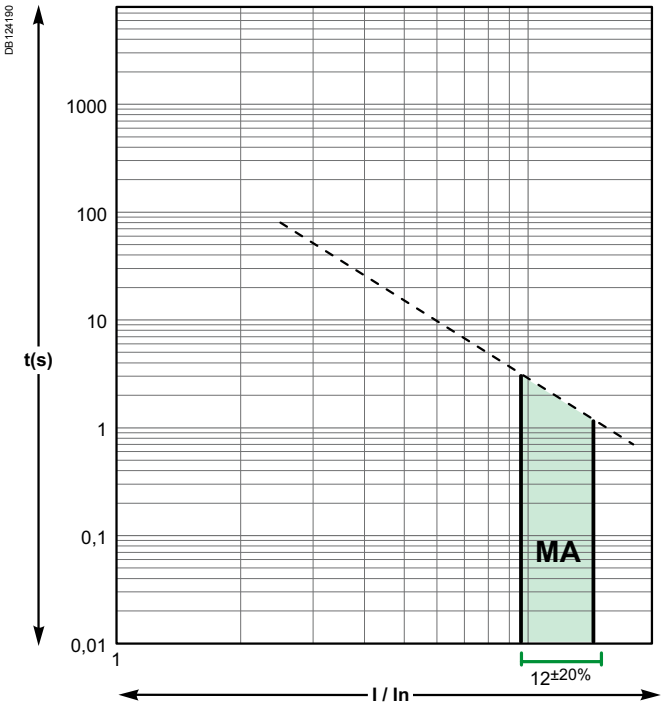
Tripping curves
According to IEC/EN 60947-2 standards

Motor curve

iC60L-MA

According to IEC/EN 60947-2

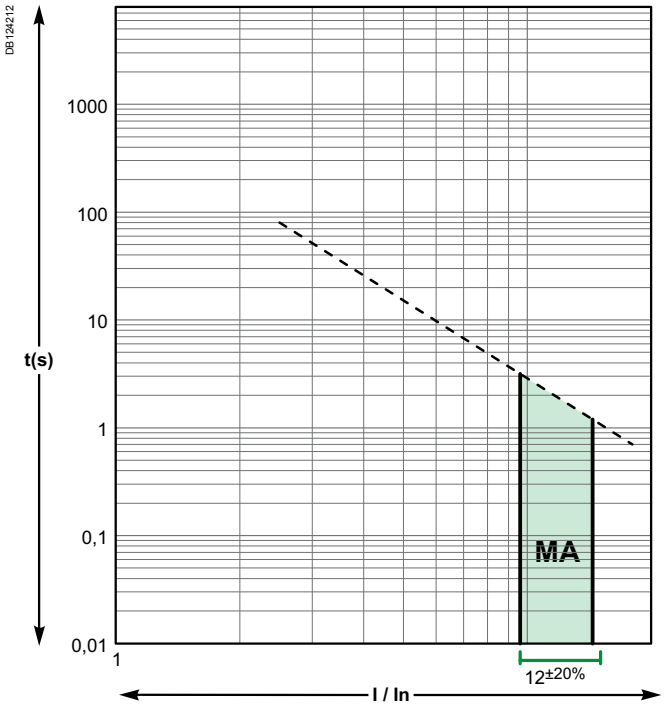
Curve MA



NG125L-MA

According to IEC/EN 60947-2

Curve MA

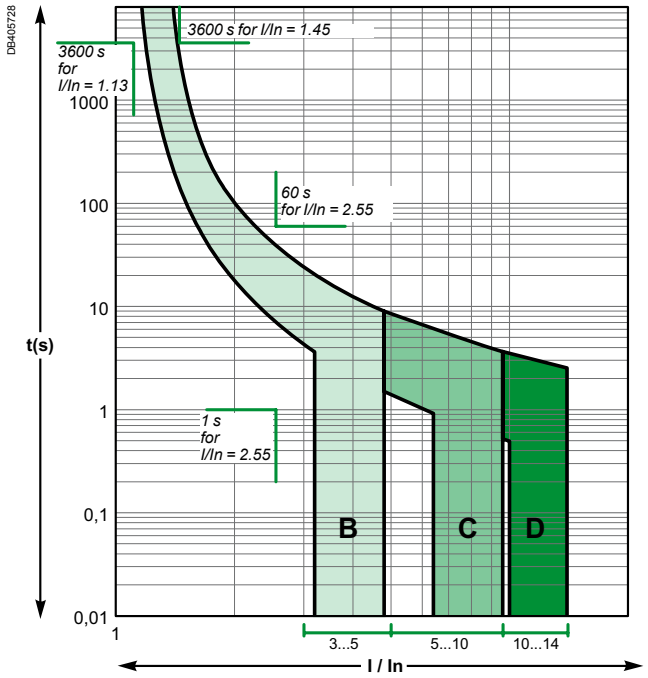


Alternative current 50/60 Hz

C60

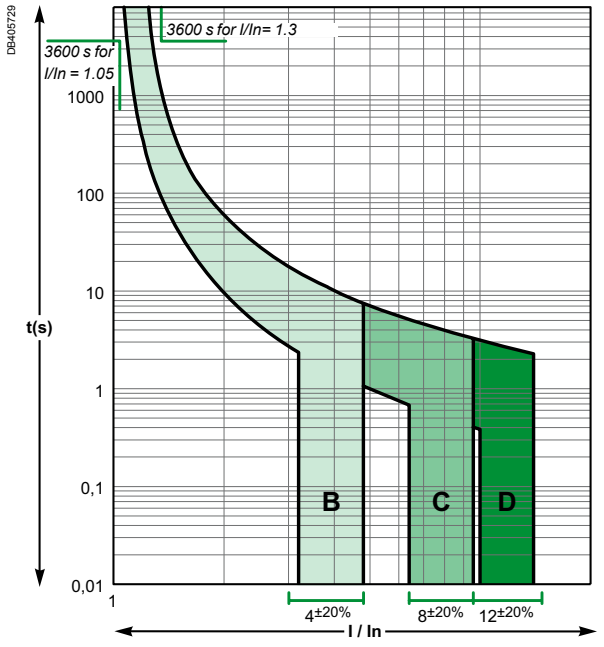
According to IEC/EN 60898 (reference temperature 30°C)

Curves B, C, D



According to IEC/EN 60947-2 (reference temperature 50°C)

Curves B, C, D



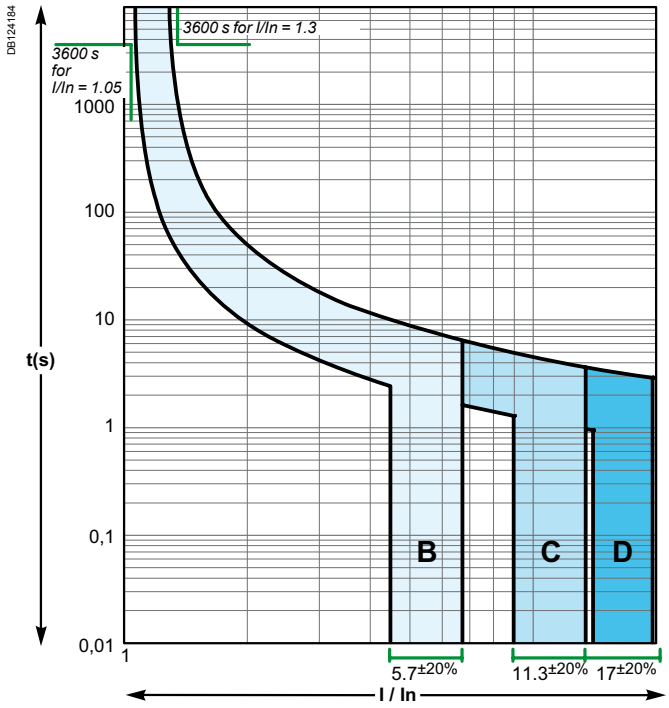
Tripping curves
According to IEC/EN 60947-2 standards

Direct current

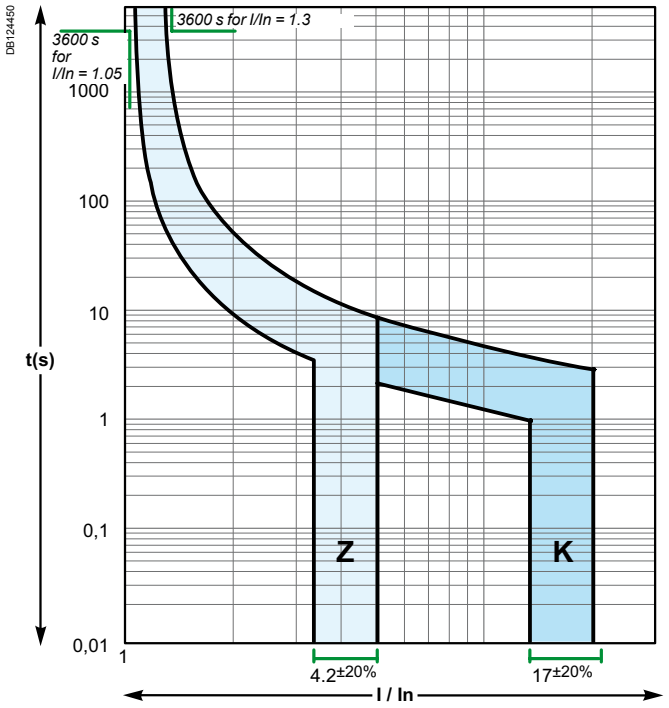
iC60N/H/L

According to IEC/EN 60947-2 (reference temperature 50°C)

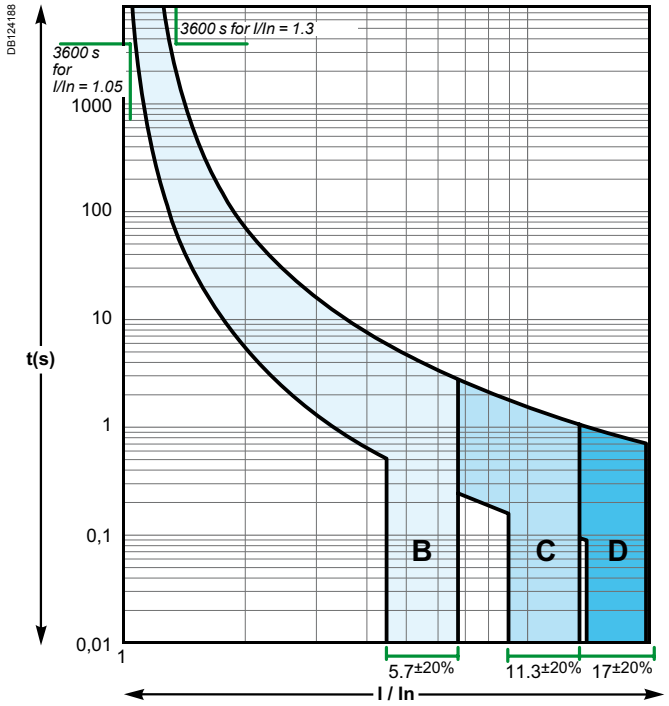
Curves B, C, D rating up to 4 A



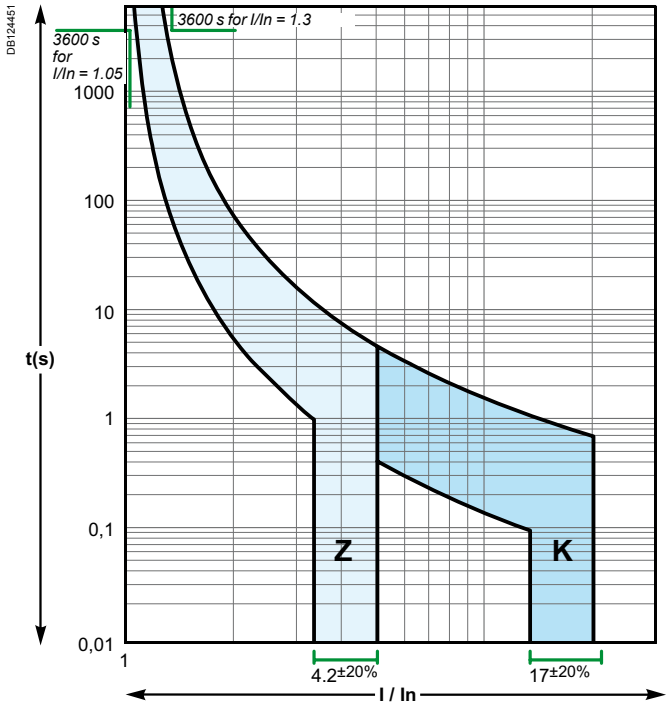
Curves Z, K rating up to 4 A



Curves B, C, D rating 6 A to 63 A



Curves Z, K rating 6 A to 63 A



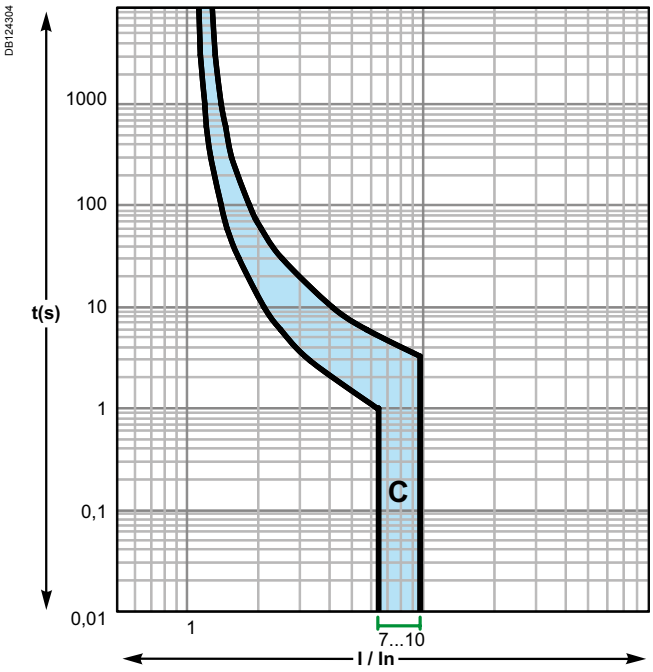
Tripping curves
According to IEC/EN 60947-2 standards

Direct current

C60H-DC

According to IEC/EN 60947-2 (reference temperature 25°C)

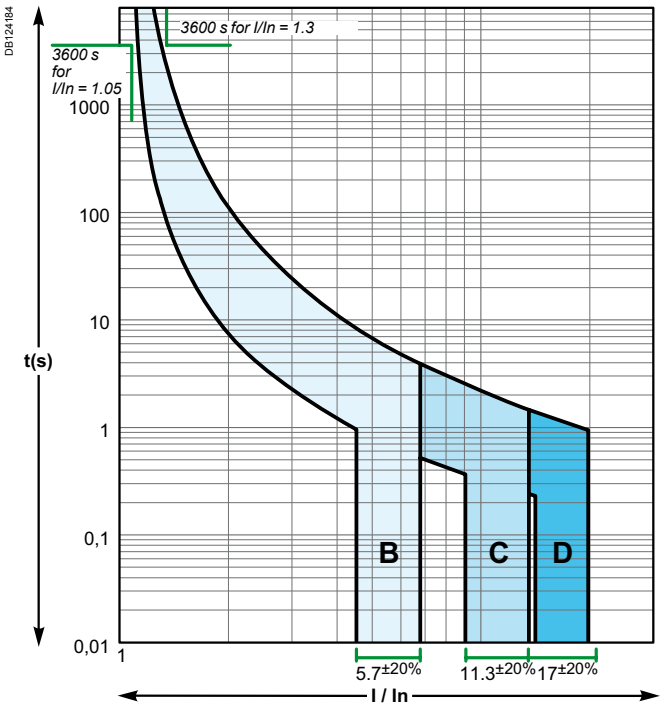
Curve C



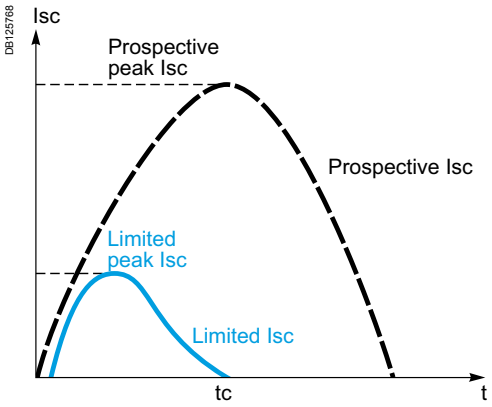
NG125a/N/H/L

According to IEC/EN 60947-2 (reference temperature 40°C)

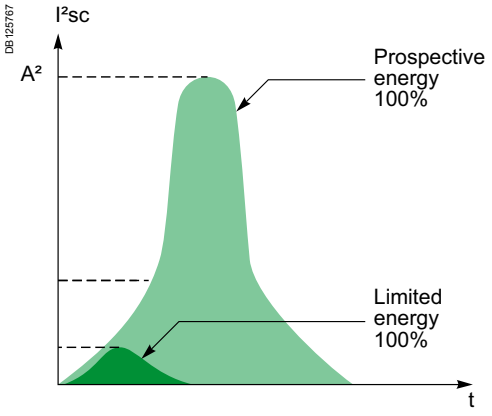
Curves B, C, D



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.

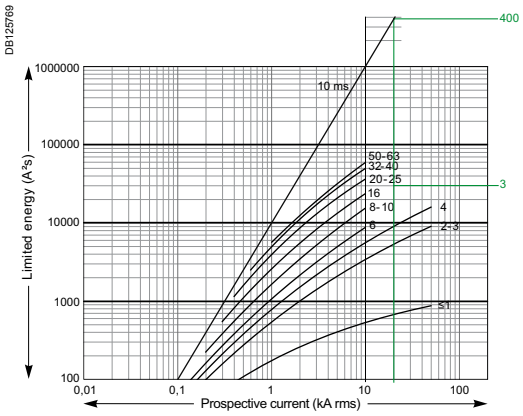
Discrimination of protection devices

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: 45 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 280 - 281).

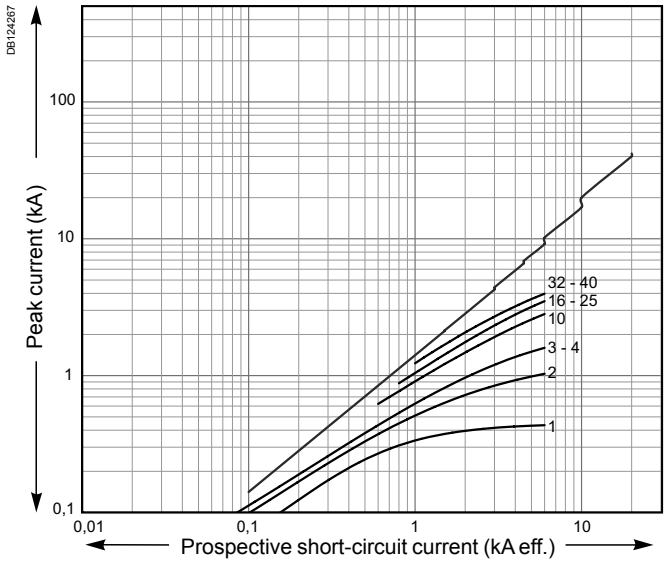
The cable is therefore always protected up to the breaking capacity of the circuit breaker.

Short-circuit current limiting (cont.)

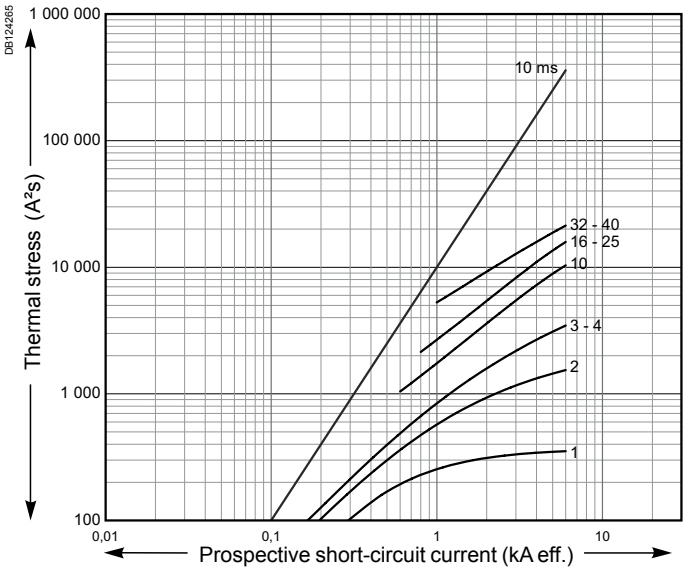
Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

DPN (MCB and RCBO)

1P+N / 3P+N
Peak current

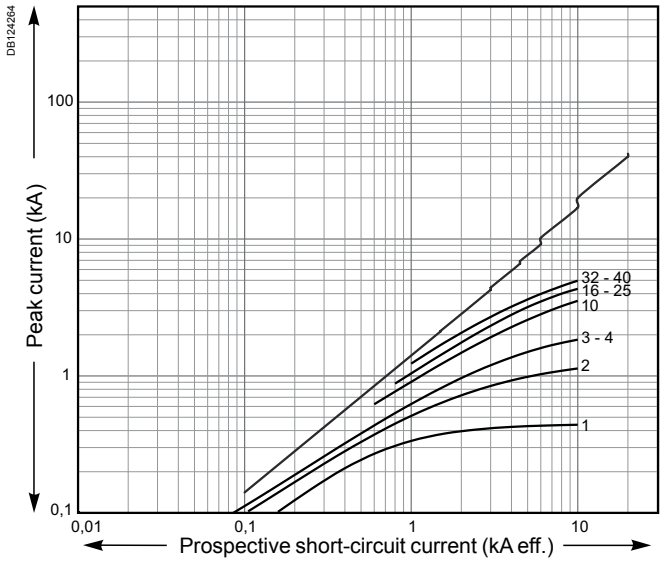


Thermal stress

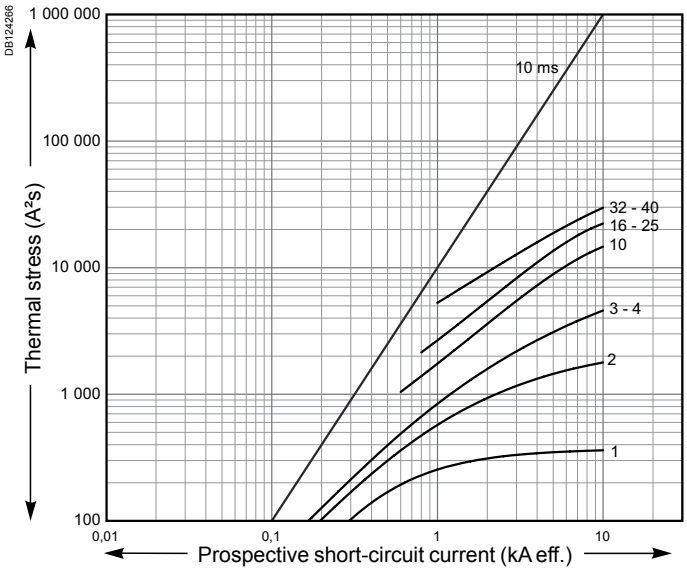


DPN N (MCB and RCBO)

1P+N / 3P / 3P+N
Peak current



Thermal stress

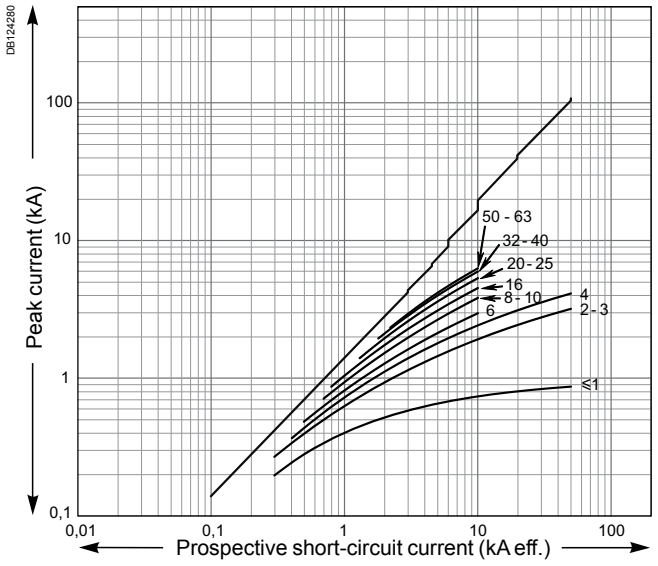


Short-circuit current limiting (cont.)

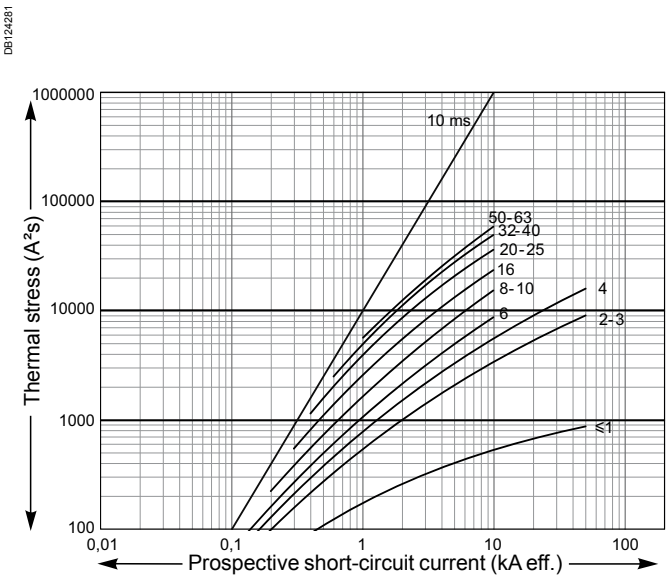
Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

iC60N

1P / 1P+N / 2P / 3P / 4P
Peak current

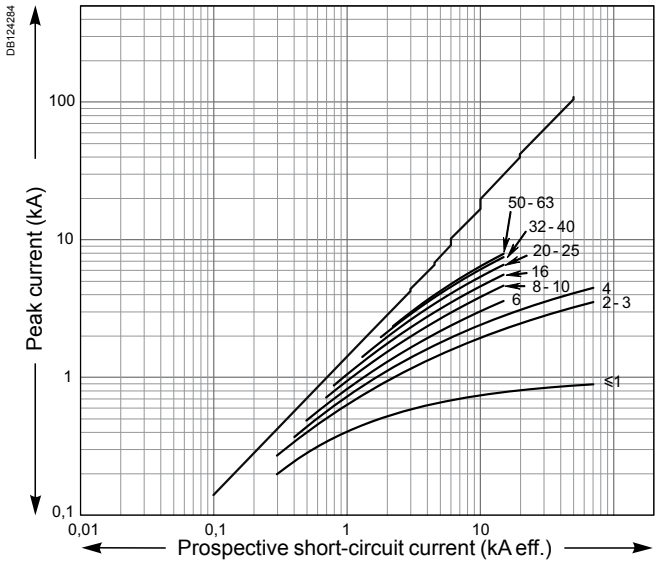


Thermal stress

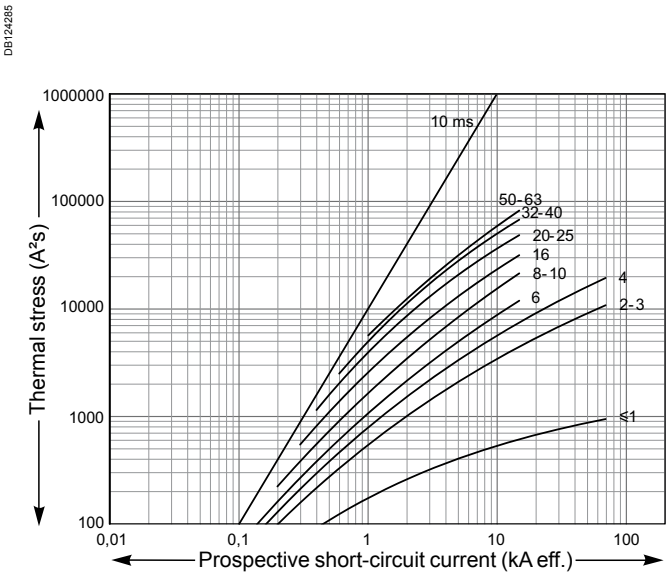


iC60H

1P / 1P+N / 2P / 3P / 4P
Peak current



Thermal stress

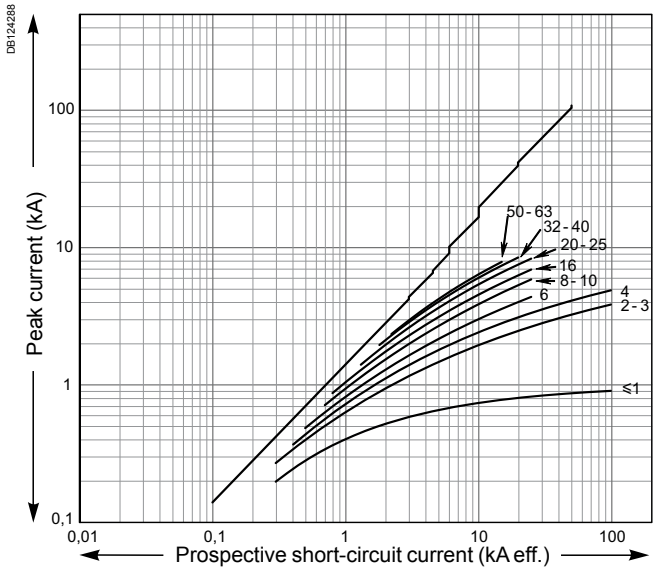


Short-circuit current limiting (cont.)

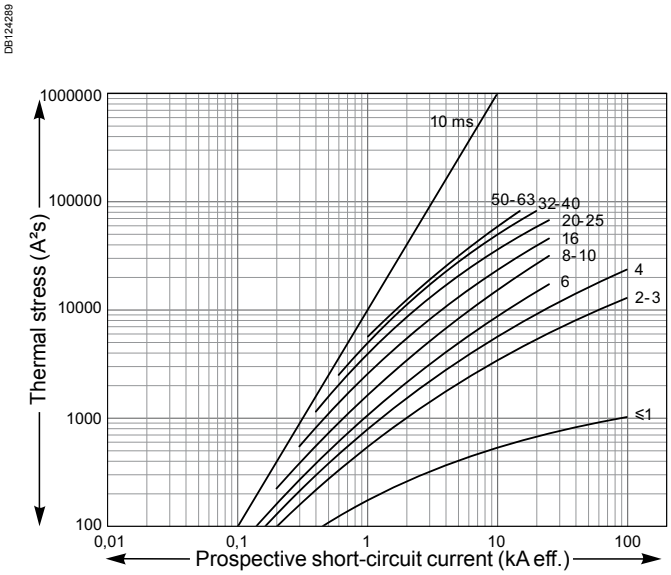
Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

iC60L

1P / 2P / 3P / 4P
Peak current



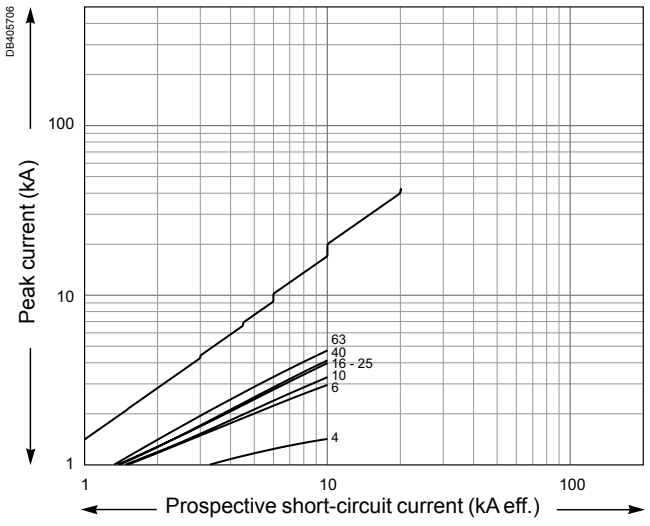
Thermal stress



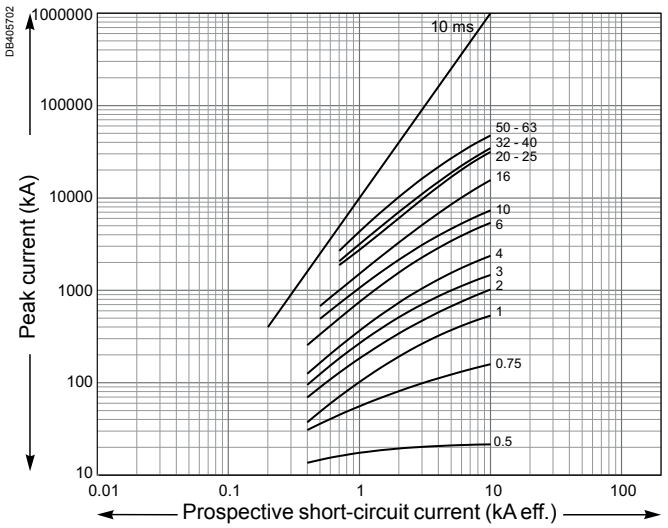
Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

C60a

1P / 1P+N
Peak current

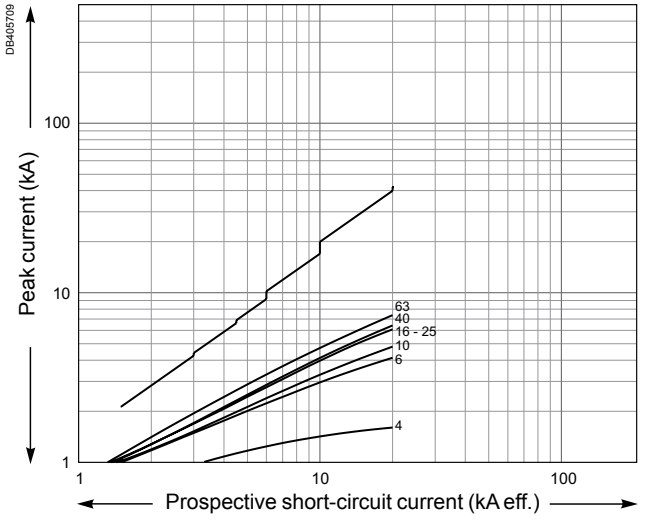


Thermal stress

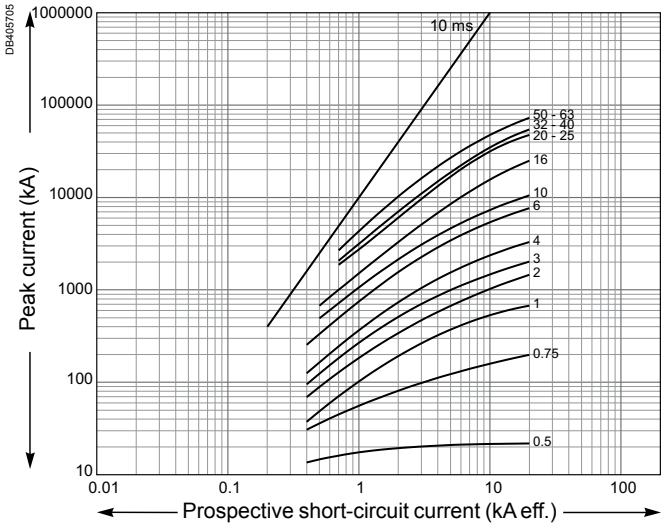


C60N

1P / 1P+N
Peak current



Thermal stress

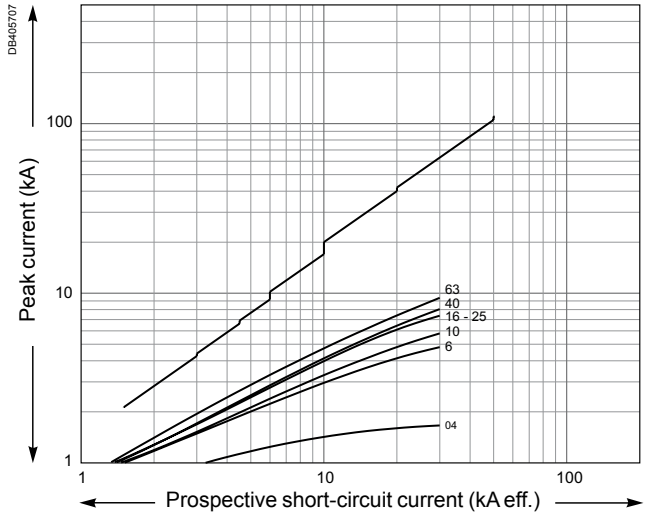


Short-circuit current limiting (cont.)

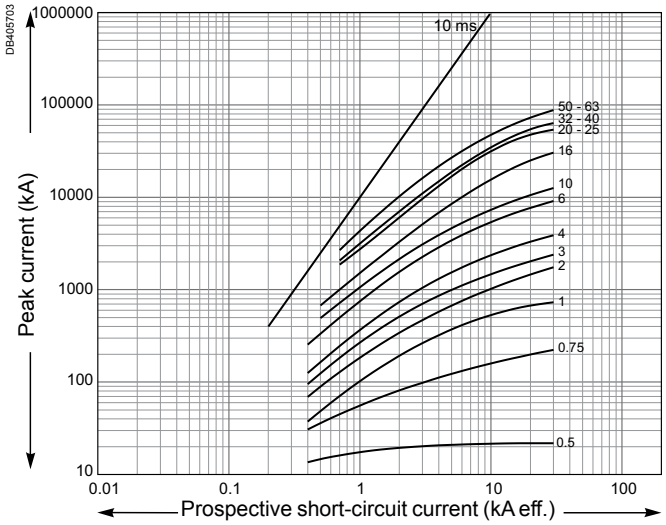
Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

C60H

1P / 1P+N
Peak current

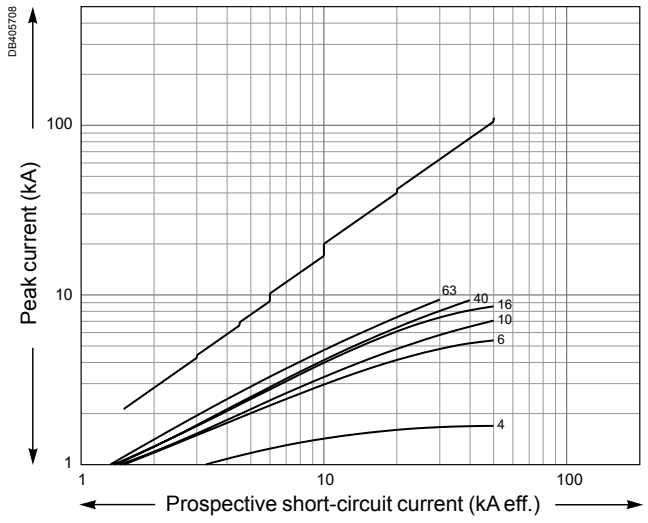


Thermal stress

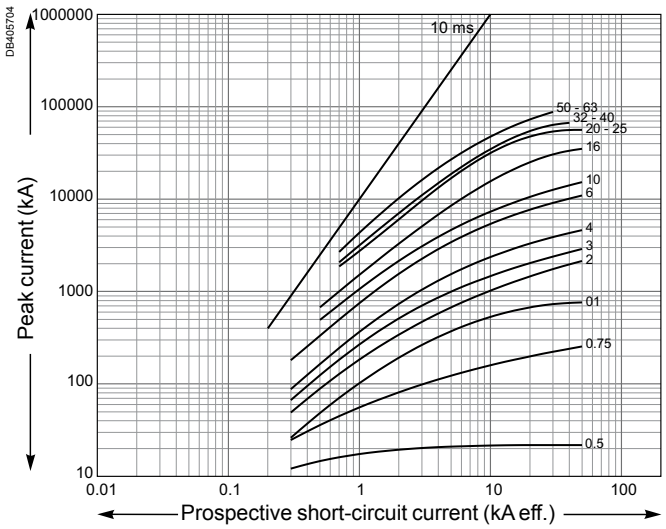


C60L

1P / 1P+N
Peak current



Thermal stress

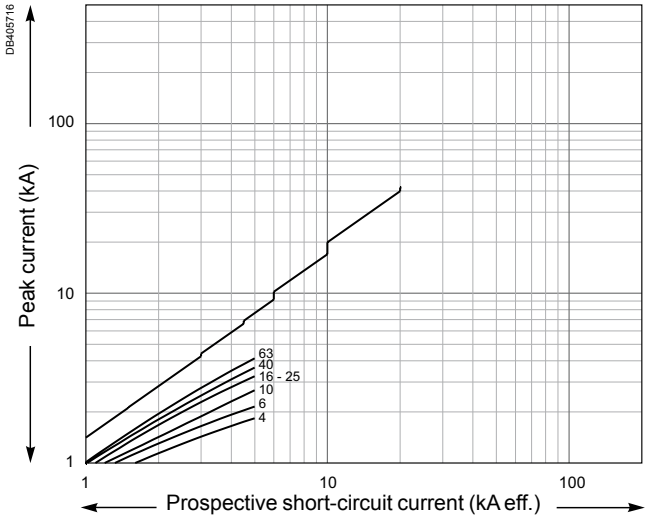


Short-circuit current limiting (cont.)

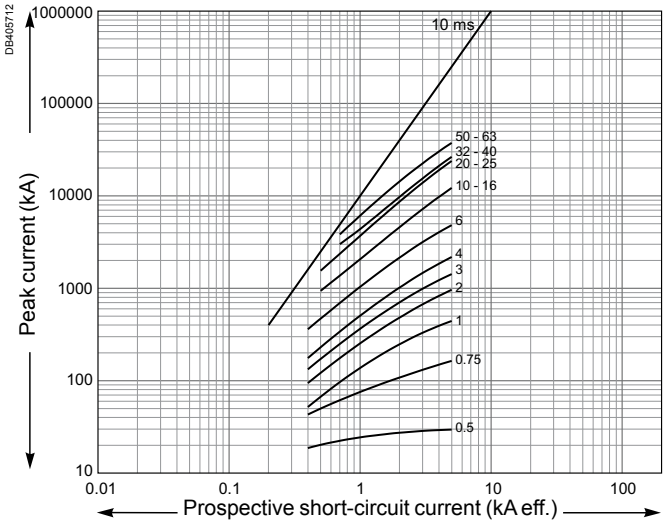
Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

C60a

2P / 3P / 4P
Peak current

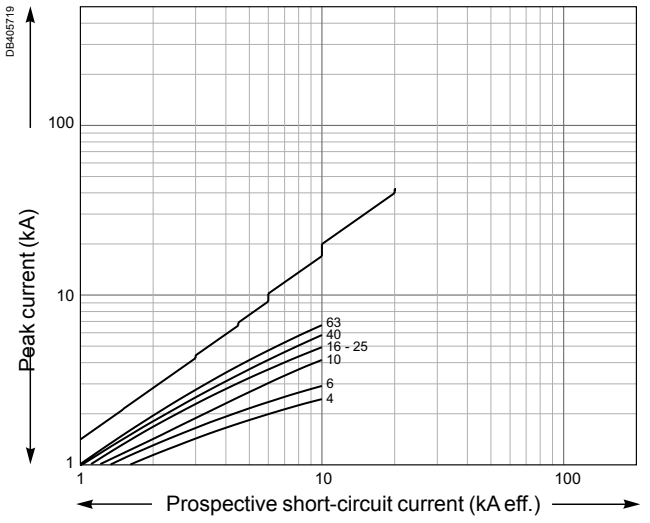


Thermal stress

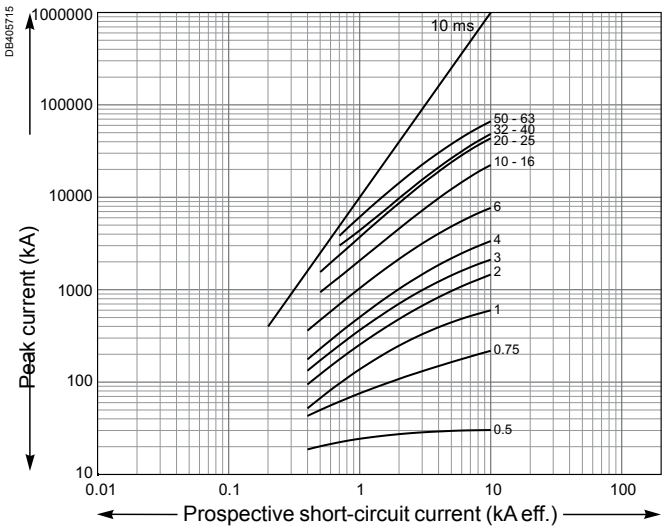


C60N

2P / 3P / 4P
Peak current



Thermal stress

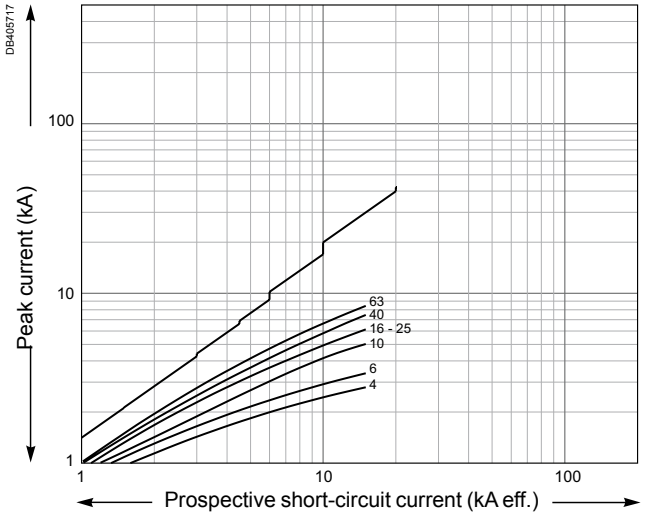


Short-circuit current limiting (cont.)

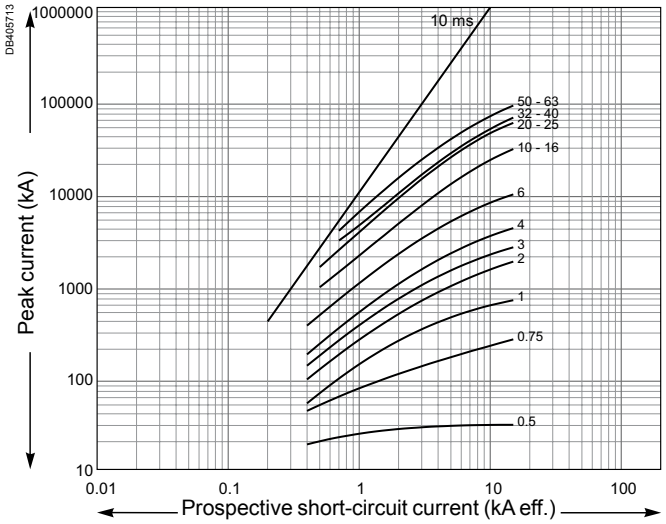
Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

C60H

2P / 3P / 4P
Peak current

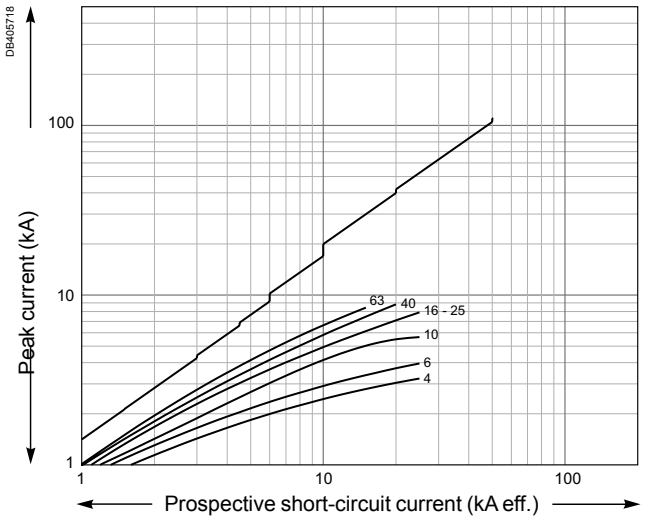


Thermal stress

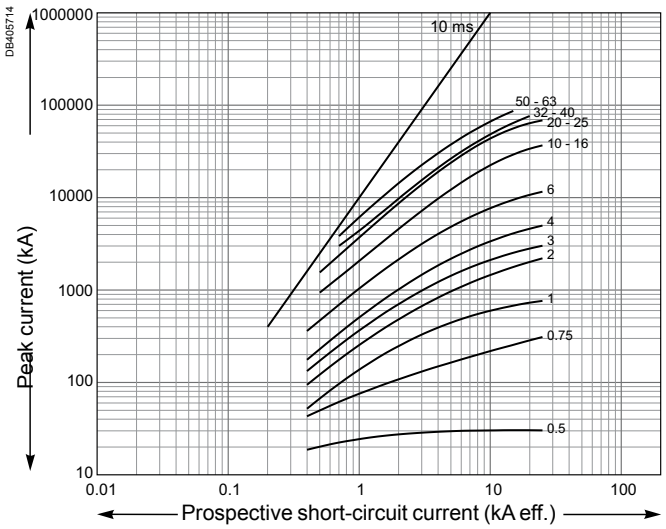


C60L

2P / 3P / 4P
Peak current



Thermal stress

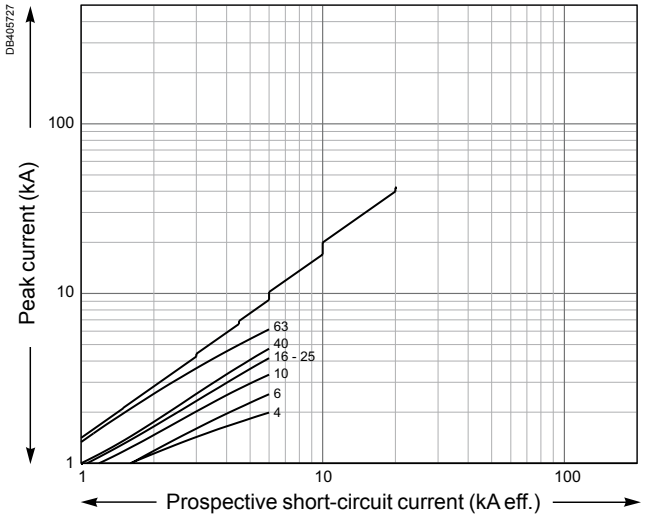


Short-circuit current limiting (cont.)

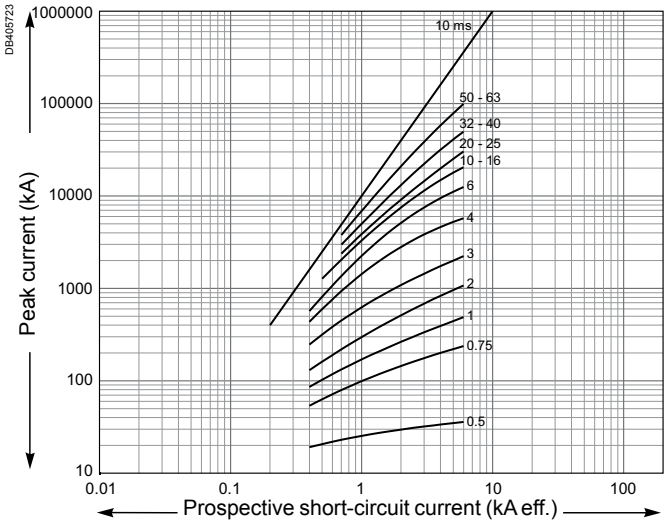
Limitation curves for network
Ue: 440 V AC

C60N

2P / 3P / 4P
Peak current



Thermal stress

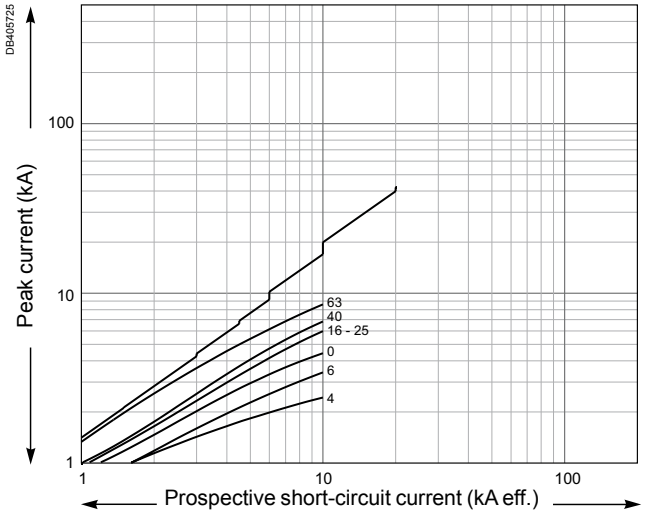


Short-circuit current limiting (cont.)

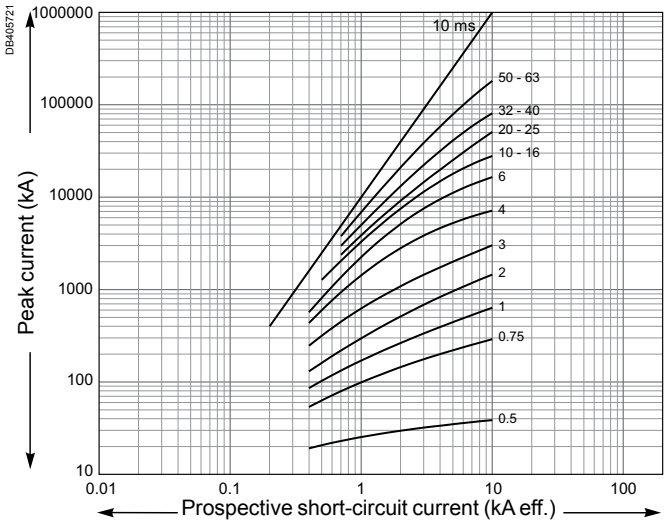
Limitation curves for network
Ue: 440 V AC

C60H

2P / 3P / 4P
Peak current

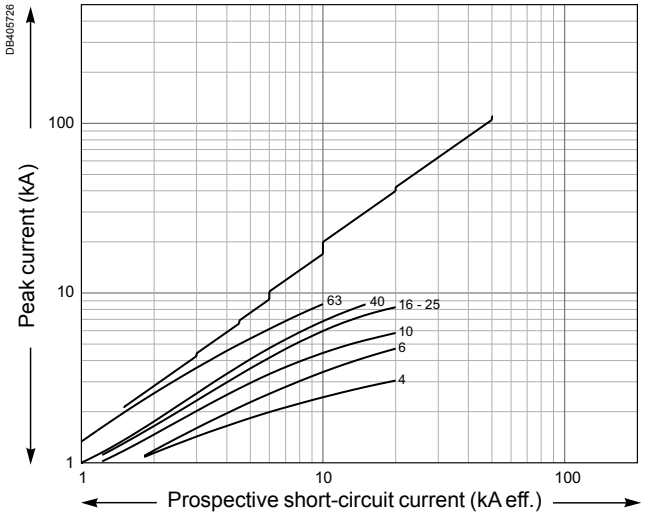


Thermal stress

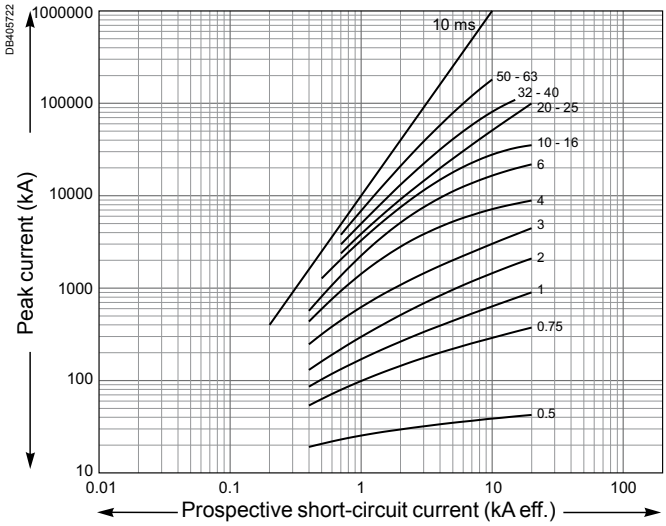


C60L

2P / 3P / 4P
Peak current



Thermal stress

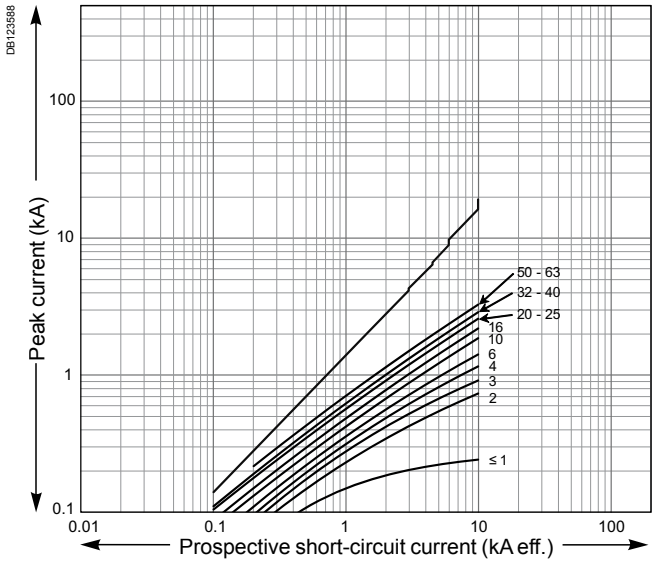


Short-circuit current limiting (cont.)

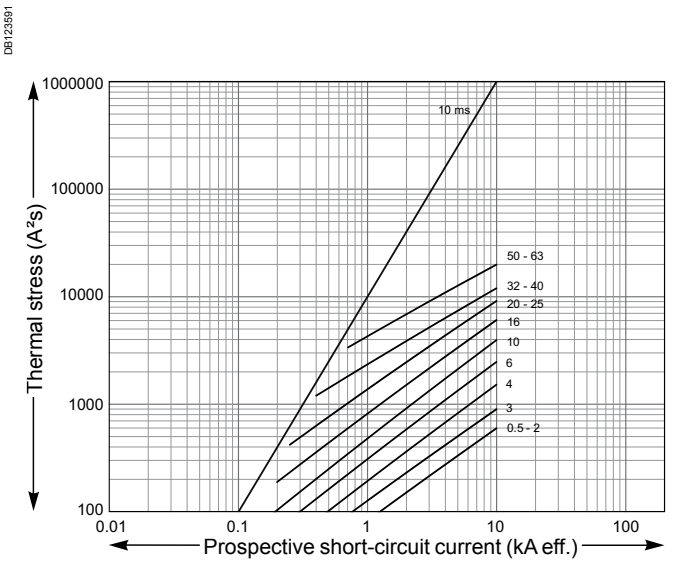
Limitation curves for direct current network

C60H-DC curve C

1P (220 V) - 2P (440 V)
Peak current

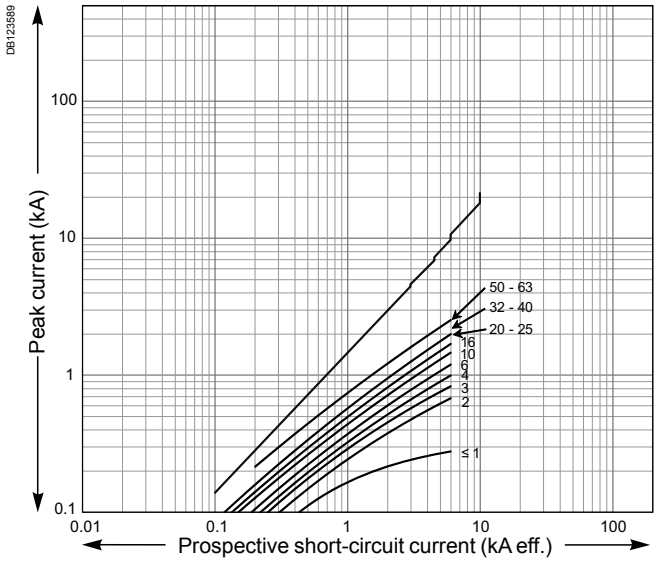


Thermal stress

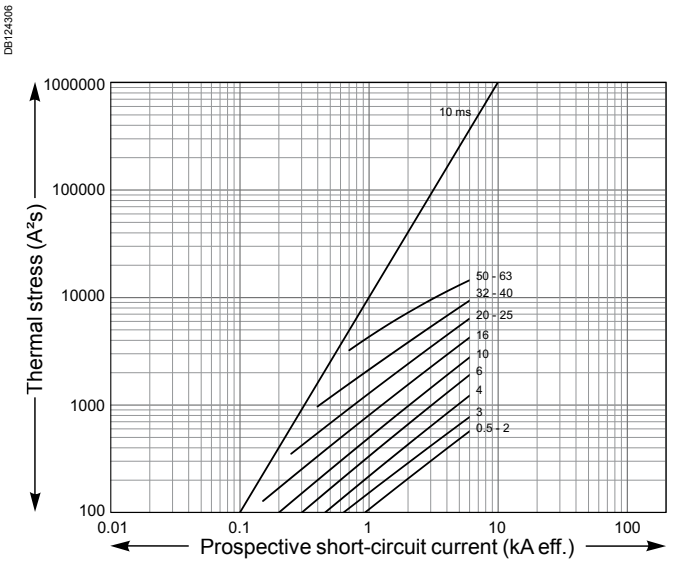


C60H-DC curve C

1P (250 V DC) - 2P (500 V DC)
Peak current



Thermal stress

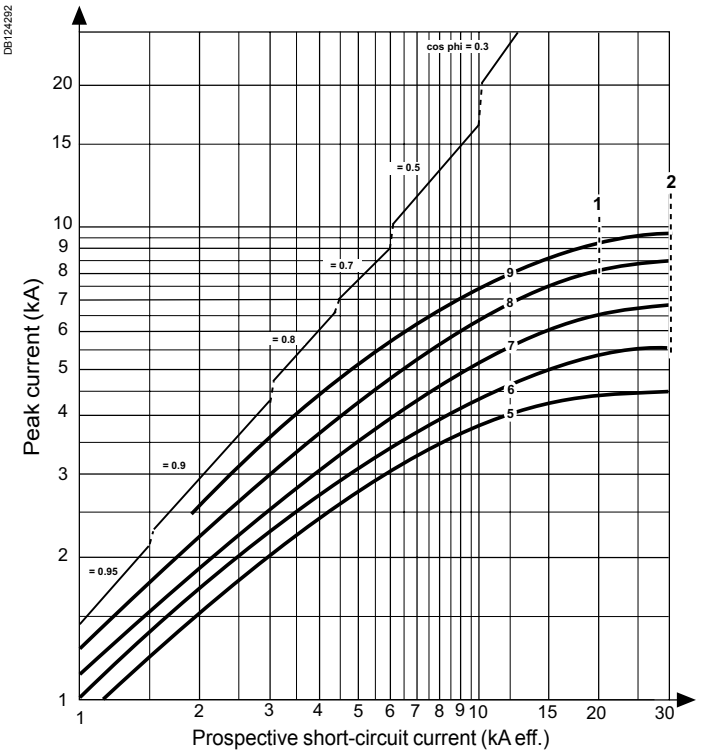


Short-circuit current limiting (cont.)

Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

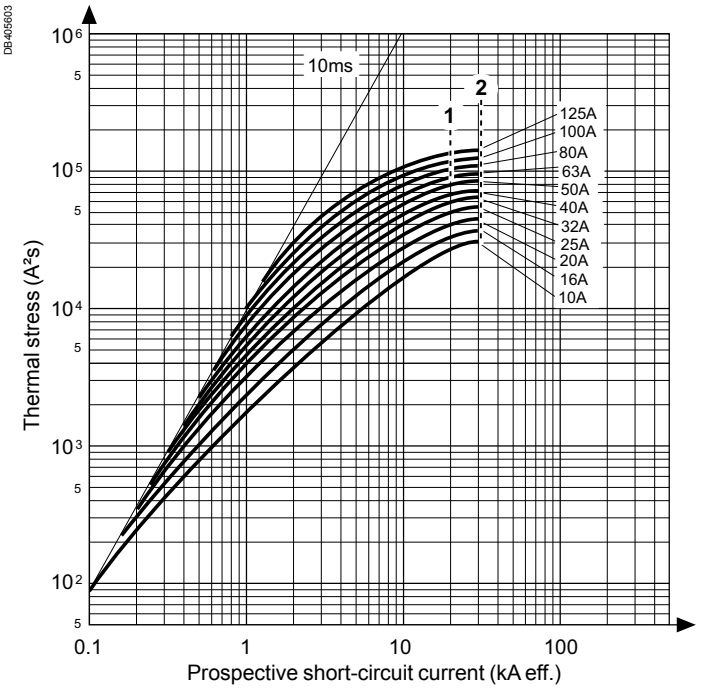
C120N, H

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

2P / 3P / 4P
Thermal stress



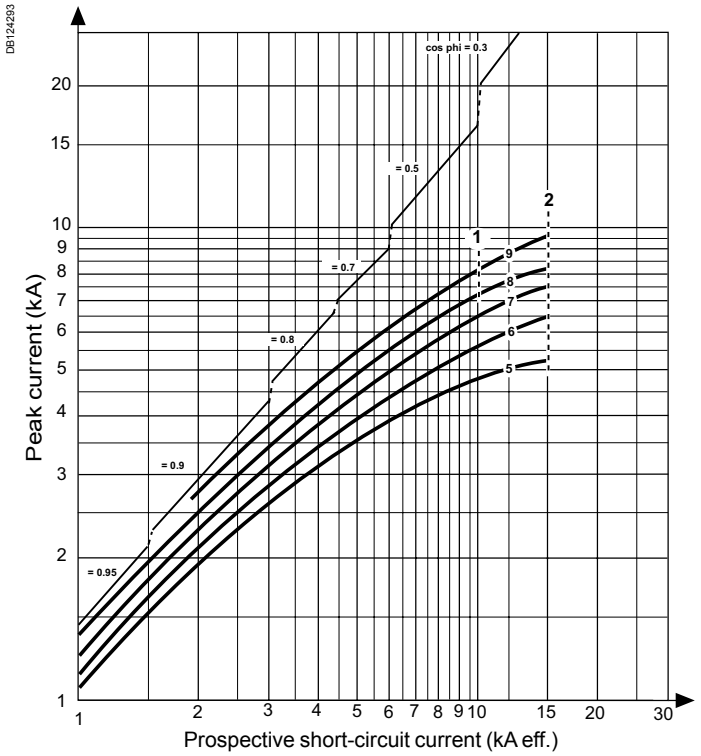
■ Circuit breaker type in accordance with the mark:
□ 1: C120N
□ 2: C120H

Short-circuit current limiting (cont.)

Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

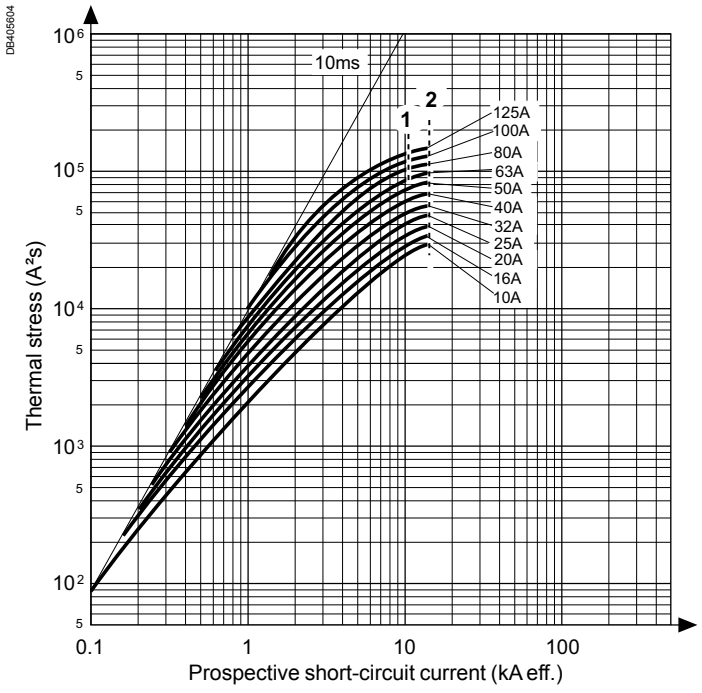
C120N, H

1P (240 V) - 2P / 3P / 4P (415 V)
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

1P (240 V) - 2P / 3P / 4P (415 V)
Thermal stress



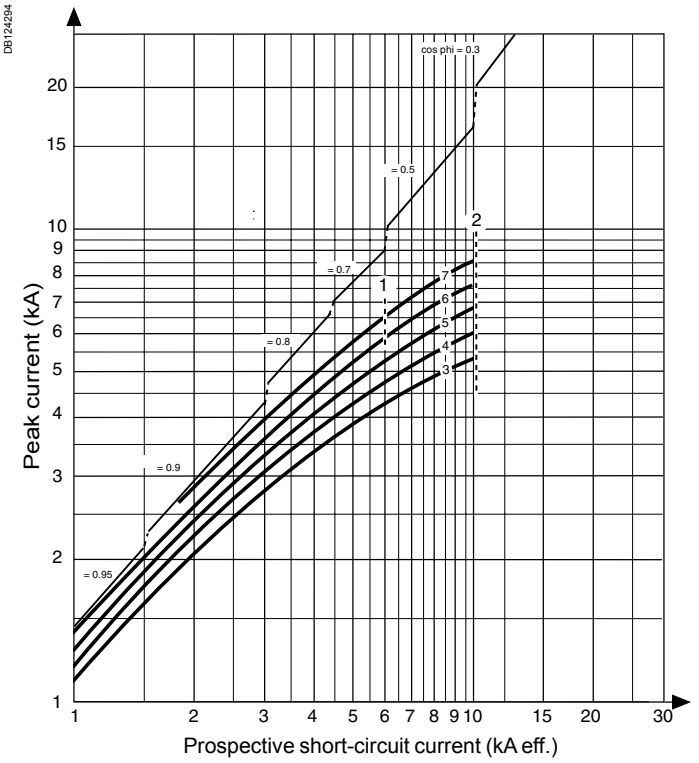
- ■ Circuit breaker type in accordance with the mark:
- □ 1: C120N
- □ 2: C120H

Short-circuit current limiting (cont.)

Limitation curves for network
Ue: 440 V AC

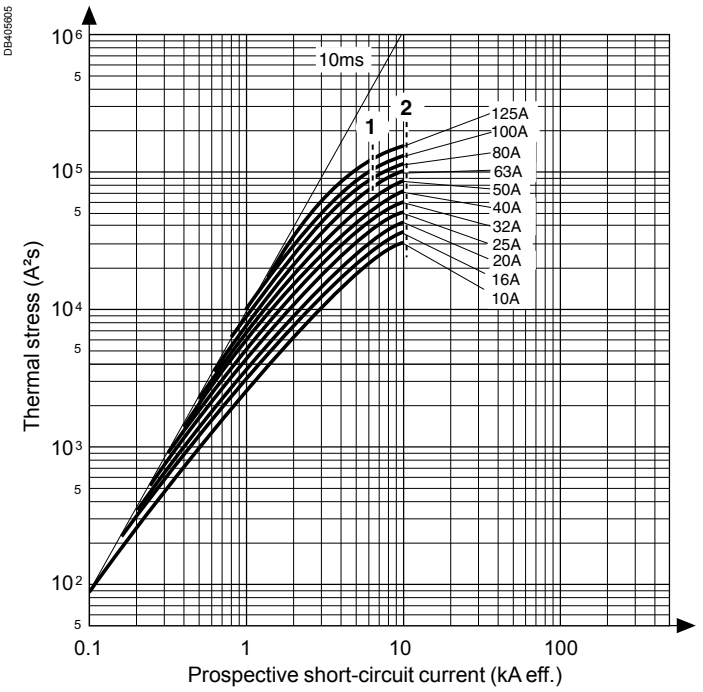
C120N, H

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

2P / 3P / 4P
Thermal stress



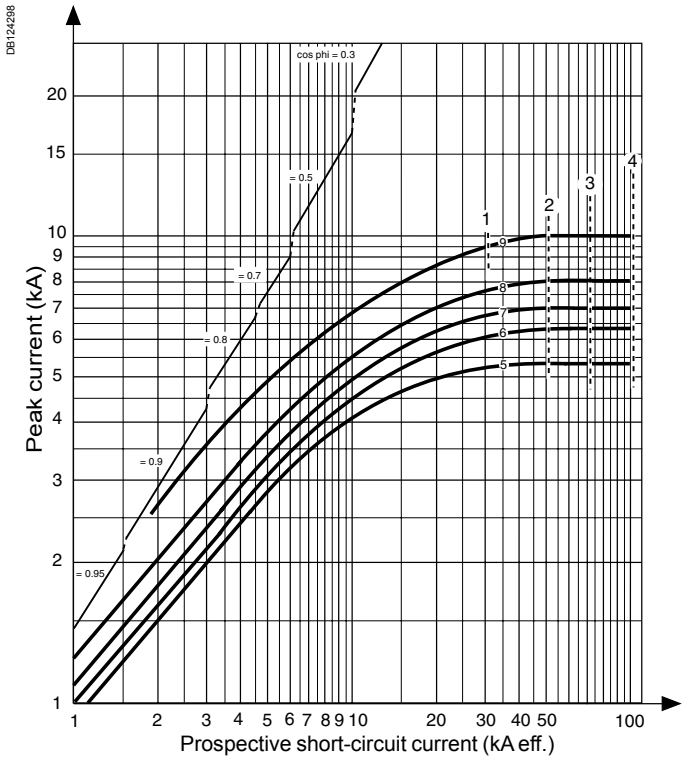
■ Circuit breaker type in accordance with the mark:
□ 1: C120N
□ 2: C120H

Short-circuit current limiting (cont.)

Limitation curves for network
Ue: 220-240 V AC (Ph/N 110-130 V AC)

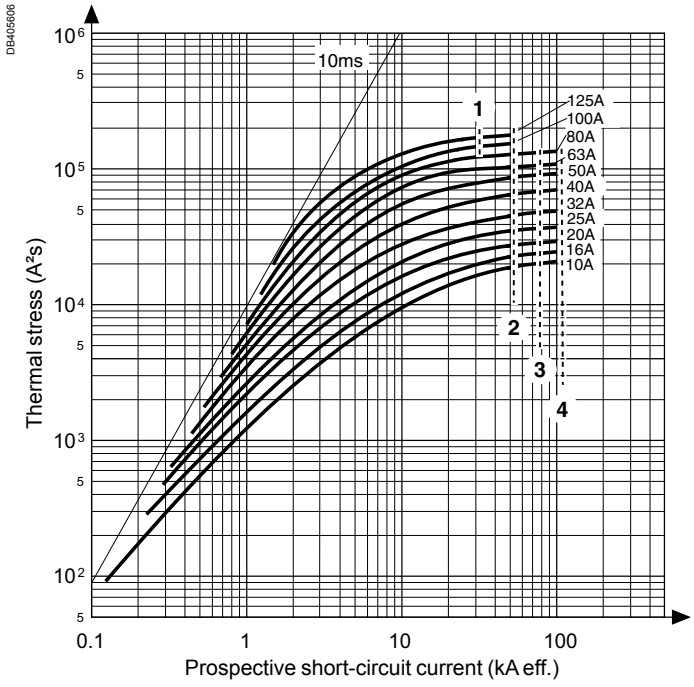
NG125a, N, H, L

2P / 3P / 4P
Peak current



■ 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

2P / 3P / 4P
Thermal stress



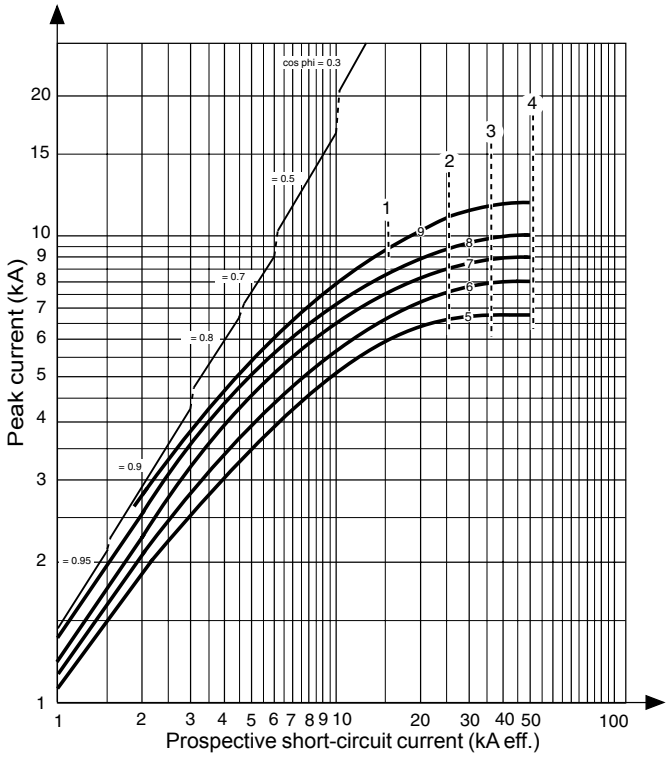
■ Circuit breaker type in accordance with the mark:
□ 1: NG125a 80-100-125 A
□ 2: NG125N
□ 3: NG125H
□ 4: NG125L

Short-circuit current limiting (cont.)

Limitation curves for network
Ue: 380-415 V AC (Ph/N 220-240 V AC)

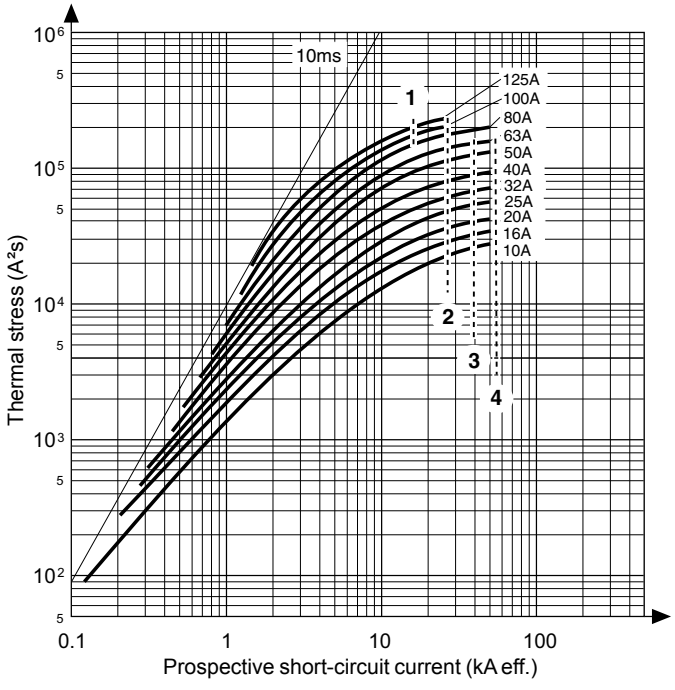
NG125a, N, H, L

1P (240 V) - 2P / 3P / 4P (415 V)
Peak current



- ■ 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

1P (240 V) - 2P / 3P / 4P (415 V)
Thermal stress



- ■ Circuit breaker type in accordance with the mark:
- □ 1: NG125a 80-100-125 A
- □ 2: NG125N
- □ 3: NG125H
- □ 4: NG125L

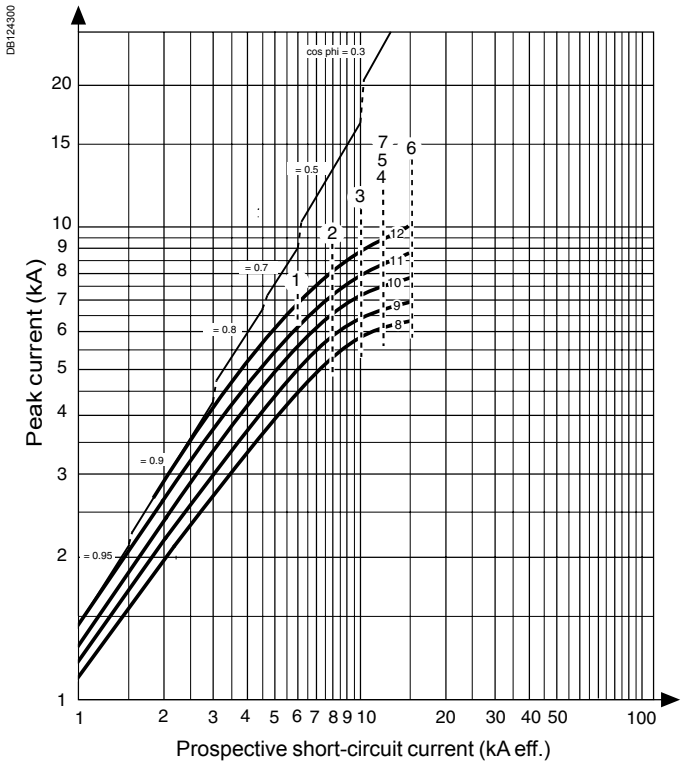
Short-circuit current limiting (cont.)

Limitation curves for network

Ue: 550 V AC

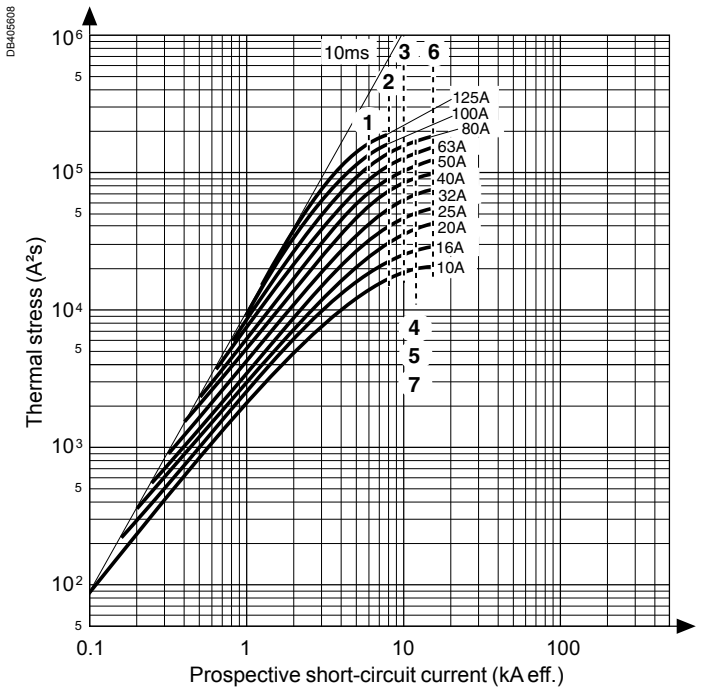
NG125a, N, H, L

2P / 3P / 4P
Peak current



- ■ 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

2P / 3P / 4P
Thermal stress



- ■ 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

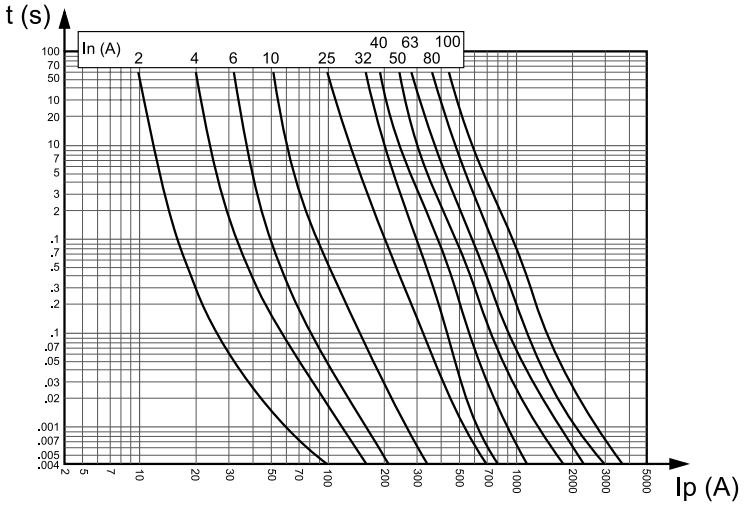
SBI / STI Fuse cartridges

aM fuses curves

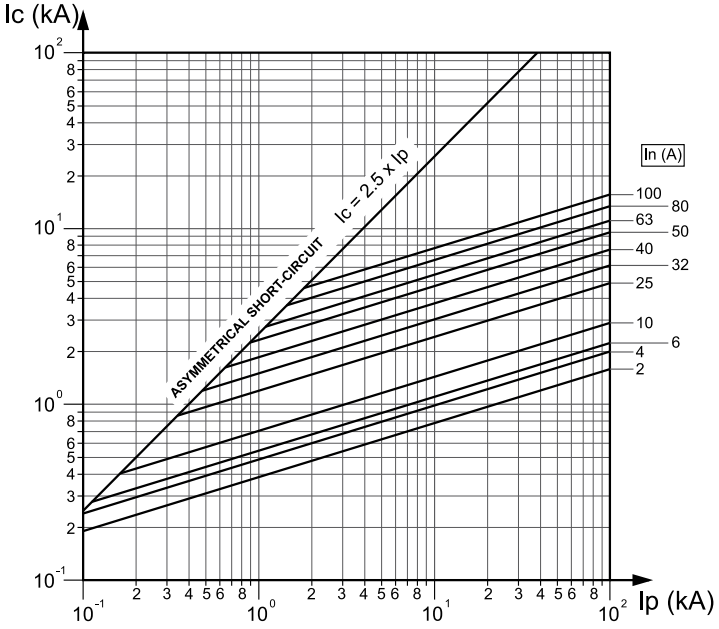
8.5 x 31.5 - 10.3 x 38 - 14 x 51 - 22 x 58

aM fuses curves

Time/Current operating curves



Current limitation curves



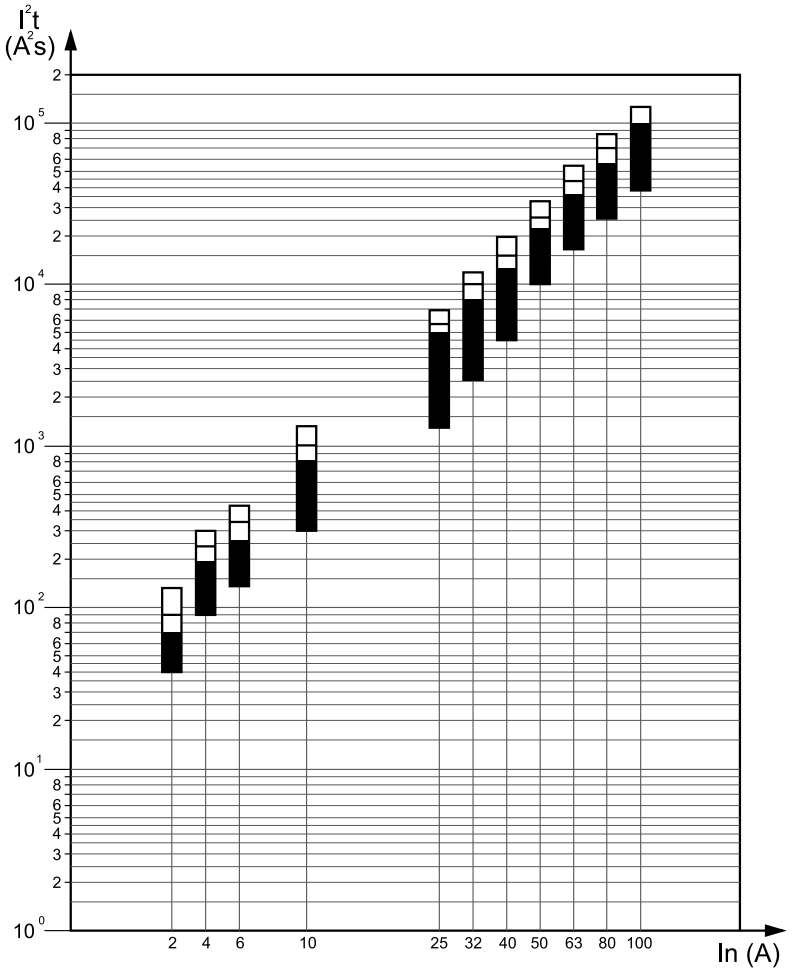
SBI / STI Fuse cartridges

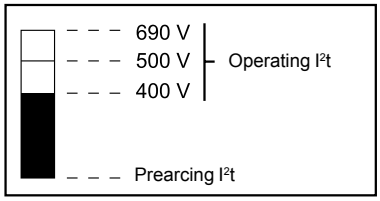
aM fuses curves

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

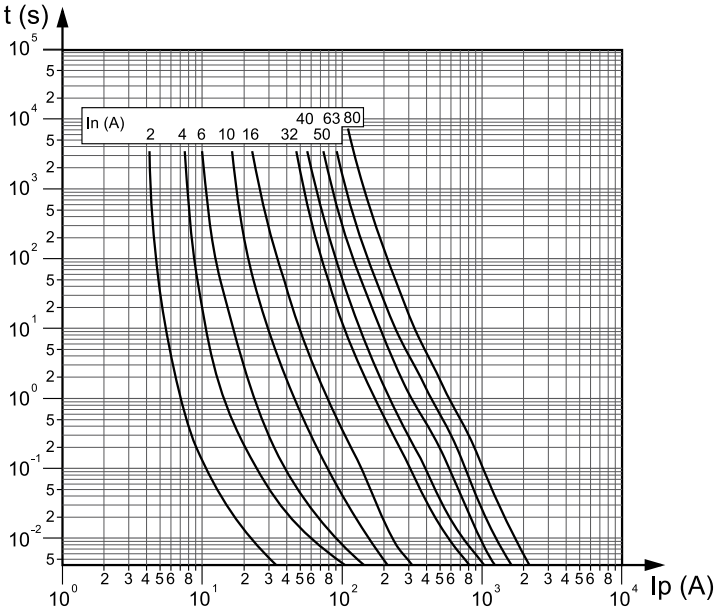
SBI / STI Fuse cartridges

gG fuses curves

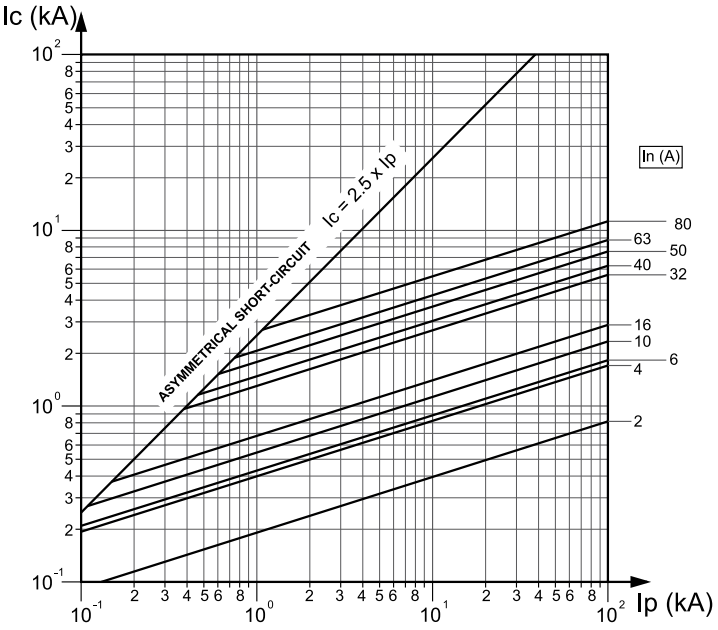
8.5 x 31.5 - 10.3 x 38 - 14 x 51 - 22 x 58

gG fuses curves

Time/Current operating curves



Current limitation curves



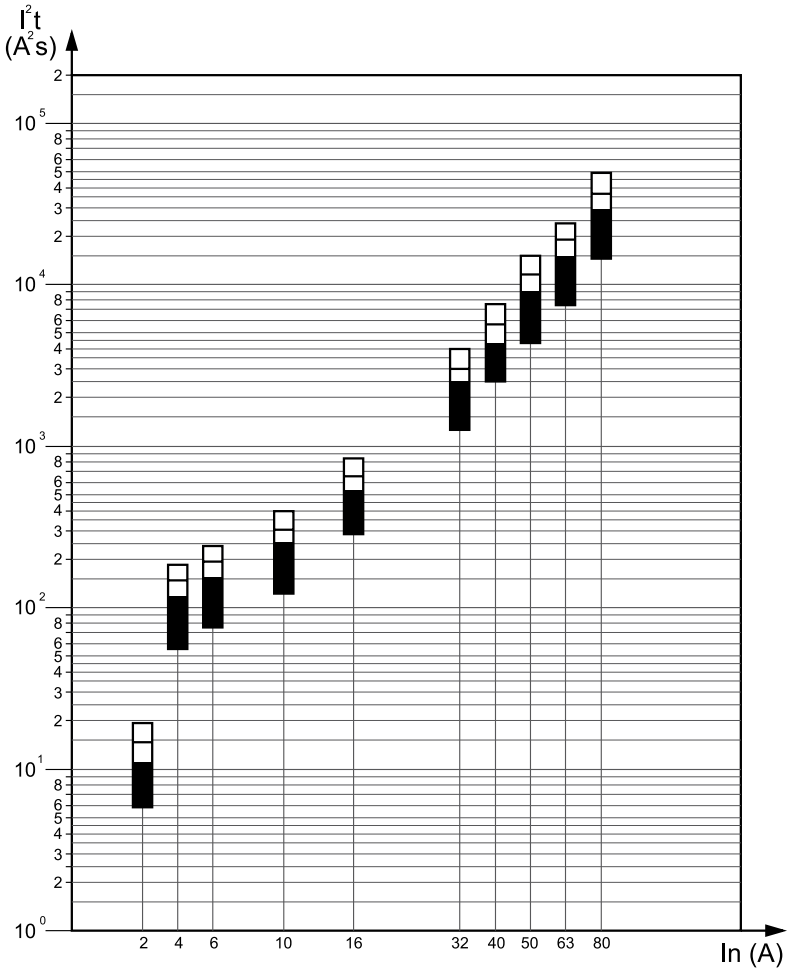
SBI / STI Fuse cartridges

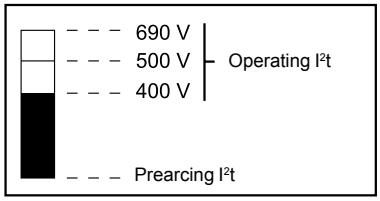
gG fuses curves

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

Use of contactors from 16 to 100 A

For automation needs in the housing, tertiary and industrial sectors, the range of modular CT contactors is used for:

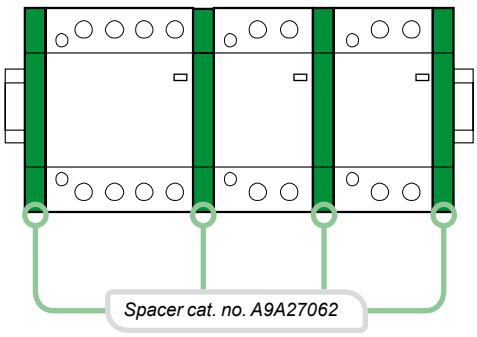
- ■ Power control of final circuits for housing and the tertiary sector:
- □ lighting (luminous signs, shop windows, safety lighting, etc.)
- □ heating, heat pumps, ovens
- □ hot water for domestic use
- □ small utility motors (pumps, fans, barriers, garage doors, etc.)
- □ emergency stops and safety systems
- □ air conditioning
- ■ Energy distribution control:
- □ load shedding and restoration
- □ source changeover, etc.

Characterisation on load types

■ Standard IEC 61095 applies to electromechanical contactors for domestic and similar purposes. It differs from standard IEC 60947.4 (designed for industrial applications) by specific requirements relating to safety of persons and equipment in premises and corridors accessible to the general public.

Applications	Industrial: IEC 60947.4	Domestic: IEC 61095
Motor	AC3	AC7b
Heating	AC1	AC7a
Lighting	AC5a and b	AC5a and b

DB123331



Use for temperatures between 50°C and 60°C

When contactors are mounted in enclosures with an internal temperature of between 50°C and 60°C, a spacer, catalogue number A9A27062, must be placed between each contactor.

iTL impulse relays and iCT contactors

Choice of rating according to load type

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			iTL impulse relays				iCT contactors											
Type of lamp	Unit power and capacitance of power factor correction capacitor		Maximum number of light fittings for a single-phase circuit and maximum power output per circuit															
			16 A		32 A		16 A		25 A		40 A		63/100 A	
Basic incandescent lamps, LV halogen lamps, replacement mercury vapour lamps (without ballast)																		
	40 W		40	1500 W	106	4000 W	38	1550 W	57	2300 W	115	4600 W	172	6900 W
	60 W		25	to	66	to	30	to	45	to	85	to	125	to
	75 W		20	1600 W	53	4200 W	25	2000 W	38	2850 W	70	5250 W	100	7500 W
	100 W		16		42		19		28		50		73	
	150 W		10		28		12		18		35		50	
	200 W		8		21		10		14		26		37	
	300 W		5	1500 W	13	4000 W	7	2100 W	10	3000 W	18	5500 W	25	7500 W
	500 W		3		8		4		6		10	to	15	to
	1000 W		1		4		2		3		6	6000 W	8	8000 W
	1500 W		1		2		1		2		4		5	
ELV 12 or 24 V halogen lamps																		
With ferromagnetic transformer	**20 W**		70	1350 W	180	3600 W	15	300 W	23	450 W	42	850 W	63	1250 W
	50 W		28	to	74	to	10	to	15	to	27	to	42	to
	75 W		19	1450 W	50	3750 W	8	600 W	12	900 W	23	1950 W	35	2850 W
	100 W		14		37		6		8		18		27	
With electronic transformer	**20 W**		60	1200 W	160	3200 W	62	1250 W	90	1850 W	182	3650 W	275	5500 W
	50 W		25	to	65	to	25	to	39	to	76	to	114	to
	75 W		18	1400 W	44	3350 W	20	1600 W	28	2250 W	53	4200 W	78	6000 W
	100 W		14		33		16		22		42		60	
Fluorescent tubes with starter and ferromagnetic ballast																		
1 tube without compensation (1)	15 W		83	1250 W	213	3200 W	22	330 W	30	450 W	70	1050 W	100	1500 W
	18 W		70	to	186	to	22	to	30	to	70	to	100	to
	20 W		62	1300 W	160	3350 W	22	850 W	30	1200 W	70	2400 W	100	3850 W
	36 W		35		93		20		28		60		90	
	40 W		31		81		20		28		60		90	
	58 W		21		55		13		17		35		56	
	65 W		20		50		13		17		35		56	
	80 W		16		41		10		15		30		48	
	115 W		11		29		7		10		20		32	
1 tube with parallel compensation (2)	15 W	5 µF	60	900 W	160	2400 W	15	200 W	20	300 W	40	600 W	60	900 W
	18 W	5 µF	50		133		15	to	20	to	40	to	60	to
	20 W	5 µF	45		120		15	800 W	20	1200 W	40	2400 W	60	3500 W
	36 W	5 µF	25		66		15		20		40		60	
	40 W	5 µF	22		60		15		20		40		60	
	58 W	7 µF	16		42		10		15		30		43	
	65 W	7 µF	13		37		10		15		30		43	
	80 W	7 µF	11		30		10		15		30		43	
	115 W	16 µF	7		20		5		7		14		20	
2 or 4 tubes with series compensation	2 x **18 W**		56	2000 W	148	5300 W	30	1100 W	46	1650 W	80	2900 W	123	4450 W
	4 x **18 W**		28		74		16	to	24	to	44	to	68	to
	2 x **36 W**		28		74		16	1500 W	24	2400 W	44	3800 W	68	5900 W
	2 x **58 W**		17		45		10		16		27		42	
	2 x 65 W		15		40		10		16		27		42	
	2 x 80 W		12		33		9		13		22		34	
	2 x 115 W		8		23		6		10		16		25	

iTL impulse relays and iCT contactors (cont.)

Choice of rating according to load type

Choice table (cont.)

Products			iTL impulse relays		iCT contactors			
Type of lamp	Unit power and capacitance of power factor correction capacitor		Maximum number of light fittings for a single-phase circuit and maximum power output per circuit					
			16 A	32 A	16 A	25 A	40 A	63/100 A
Fluorescent tubes with electronic ballast								
1 or 2 tubes	**18 W**		80 1450 W	212 3800 W	74 1300 W	111 2000 W	222 4000 W	333 6000 W
	36 W		40 to	106 to	38 to	58 to	117 to	176 to
	58 W		26 1550 W	69 4000 W	25 1400 W	37 2200 W	74 4400 W	111 6600 W
	2 x **18 W**		40	106	36	55	111	166
	2 x **36 W**		20	53	20	30	60	90
	2 x **58 W**		13	34	12	19	38	57
Compact fluorescent lamps								
With external electronic ballast	**5 W**		240 1200 W	630 3150 W	210 1050 W	330 1650 W	670 3350 W	Not tested
	7 W		171 to	457 to	150 to	222 to	478 to	
	9 W		138 1450 W	366 3800 W	122 1300 W	194 2000 W	383 4000 W	
	11 W		118	318	104	163	327	
	18 W		77	202	66	105	216	
	26 W		55	146	50	76	153	
With integral electronic ballast (replacement for incandescent lamps)	**5 W**		170 850 W	390 1950 W	160 800 W	230 1150 W	470 2350 W	710 3550 W
	7 W		121 to	285 to	114 to	164 to	335 to	514 to
	9 W		100 1050 W	233 2400 W	94 900 W	133 1300 W	266 2600 W	411 3950 W
	11 W		86	200	78	109	222	340
	18 W		55	127	48	69	138	213
	26 W		40	92	34	50	100	151
High-pressure mercury vapour lamps with ferromagnetic ballast without ignitor **Replacement high-pressure sodium vapour lamps** with ferromagnetic ballast with integral ignitor (3)								
Without compensation (1)	50 W		Not tested, infrequent use		15 750 W	20 1000 W	34 1700 W	53 2650 W
	80 W				10 to	15 to	27 to	40 to
	125 / 110 W (3)				8 1000 W	10 1600 W	20 2800 W	28 4200 W
	250 / 220 W (3)				4	6	10	15
	400 / 350 W (3)				2	4	6	10
	700 W				1	2	4	6
With parallel compensation (2)	50 W	7 µF			10 500 W	15 750 W	28 1400 W	43 2150 W
	80 W	8 µF			9 to	13 to	25 to	38 to
	125 / 110 W (3)	10 µF			9 1400 W	10 1600 W	20 3500 W	30 5000 W
	250 / 220 W (3)	18 µF			4	6	11	17
	400 / 350 W (3)	25 µF			3	4	8	12
	700 W	40 µF			2	2	5	7
	1000 W	60 µF			0	1	3	5
Low-pressure sodium vapour lamps with ferromagnetic ballast with external ignitor								
Without compensation (1)	**35 W**		Not tested, infrequent use		5 270 W	9 320 W	14 500 W	24 850 W
	55 W				5 to	9 to	14 to	24 to
	90 W				3 360 W	6 720 W	9 1100 W	19 1800 W
	135 W				2	4	6	10
	180 W				2	4	6	10
With parallel compensation (2)	**35 W**	20 µF	38 1350 W	102 3600 W	3 100 W	5 175 W	10 350 W	15 550 W
	55 W	20 µF	24	63	3 to	5 to	10 to	15 to
	90 W	26 µF	15	40	2 180 W	4 360 W	8 720 W	11 1100 W
	135 W	40 µF	10	26	1	2	5	7
	180 W	45 µF	7	18	1	2	4	6

iTL impulse relays and iCT contactors (cont.)

Choice of rating according to load type

Choice table (cont.)

Products			iTL impulse relays		iCT contactors			
Type of lamp	Unit power and capacitance of power factor correction capacitor		Maximum number of light fittings for a single-phase circuit and maximum power output per circuit					
			16 A	32 A	16 A	25 A	40 A	63/100 A
High-pressure sodium vapour lamps Metal-iodide lamps								
With ferromagnetic ballast with external ignitor, without compensation (1)	35 W		Not tested, infrequent use		16 600 W	24 850 W	42 1450 W	64 2250 W
	70 W				8	12 to	20 to	32 to
	150 W				4	7 1200 W	13 2000 W	18 3200 W
	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	34 1200 W	88 3100 W	12 450 W	18 650 W	31 1100 W	50 1750 W
	70 W	12 µF	17 to	45 to	6 to	9 to	16 to	25 to
	150 W	20 µF	8 1350 W	22 3400 W	4 1000 W	6 2000 W	10 4000 W	15 6000 W
	250 W	32 µF	5	13	3	4	7	10
	400 W	45 µF	3	8	2	3	5	7
	1000 W	60 µF	1	3	1	2	3	5
	2000 W	85 µF	0	1	0	1	2	3
With electronic ballast	35 W		38 1350 W	87 3100 W	24 850 W	38 1350 W	68 2400 W	102 3600 W
	70 W		29 to	77 to	18 to	29 to	51 to	76 to
	150 W		14 2200 W	33 5000 W	9 1350 W	14 2200 W	26 4000 W	40 600 W

(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.
(3) High-pressure mercury vapour lamps without ignitor, of power 125, 250 and 400 W, are gradually being replaced by high-pressure sodium vapour lamps with integral ignitor, and respective power of 110, 220 and 350 W.

iTL impulse relays and iCT contactors (cont.)

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

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