

4 - Protection components

Fuse protection

Mini-VARIO switch disconnectors for standard applications

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VARIO switch disconnectors for high performance applications

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Fuse carriers for the protection of control circuits or transformers

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Fuse carriers for motor protection

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Switch-disconnector-fuses for motor or variable speed drive protection

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Cartridge fuses for protection of equipment with current peaks

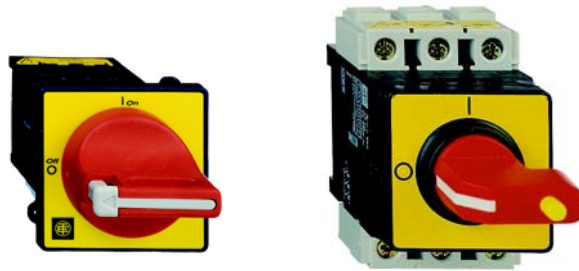
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Protection components

Mini-VARIO and VARIO switch disconnectors

Applications

Mini-Vario and Vario rotary switch disconnectors from 12 to 175 A are suitable for on-load making and breaking of resistive or mixed resistive and inductive circuits where frequent operation is required. They can also be used for direct switching of motors in utilisation categories AC-3 and DC-3 specific to motors. Vario switch disconnectors are suitable for isolator applications with fully visible breaking (since the handle cannot indicate the “open” position unless all the contacts are actually open and separated by the appropriate isolating distance) and it is possible to padlock the handles in the open position.



Switch type

Mini-VARIO for standard applications

VARIO for high performance applications

Thermal current

12 A

20 A

12 A

20 A

25 A

Operational current AC-23 A at 400 Volts

8.1 A

11 A

8.1 A

11 A

14.5 A

Number of poles

3...5

3...6

Number of auxiliary contacts

1 or 2

1...4

Switch fixing

From the front

From the back

Screw fixing, 1 or 4 holes

Fixing: 1 x Ø 22.5 hole or 4 x Ø 5.5 screws

Clip-on mounting on rail

Clip-on mounting on rail or screw fixing

Reversible terminal blocks

Yes

Door mounting, direct operator

Yes

Mounting at back of enclosure, indirect operator with door interlock

Yes

Enclosure reference

V●DN 12

V●DN 20

V●D 02

V●D 01

V●D 0

Product reference

VCFN 12GE

VCFN 20GE

V●F 02GE

V●F 01GE

V●F 0GE

Pages

23008/2 and 23007/2

23006/2 and 23006/3

Mini-Vario and Vario rotary switch disconnectors from 12 to 175 A are suitable for on-load making and breaking of resistive or mixed resistive and inductive circuits where frequent operation is required.
They can also be used for direct switching of motors in utilisation categories AC-3 and DC-3 specific to motors.
Vario switch disconnectors are suitable for isolator applications with fully visible breaking (since the handle cannot indicate the “open” position unless all the contacts are actually open and separated by the appropriate isolating distance) and it is possible to padlock the handles in the open position.



VARIO for high performance applications

32 A	40 A	63 A	80 A	125 A	175 A
21.8 A	29 A	41.5 A	57 A	68.5 A	83 A

3...6	3 + N + PE
1...4	

Screw fixing, 1 or 4 holes	
Fixing: 1 x Ø 22.5 hole or 4 x Ø 5.5 screws	Fixing 4 x Ø 5.5 screws
Clip-on mounting on rail or screw fixing	Screw fixing

Yes

Yes

Yes

V◊D 1 V◊F 1	V◊D 2 V◊F 2	V◊F 3	V◊F 4	V◊F 5	V◊F 6
V◊F 1GE	V◊F 2GE	V◊F 3GE	V◊F 4GE	V◊F 5GE	V◊F 6GE

23008/2 and 23007/2 and 23006/3

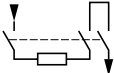
Characteristics										
Environment										
Switch type (bare type)		VN 12 VZN 12	V02 VZ 02	VN 20 VZN 20	V01 VZ 01	V0 VZ 0	VVD 0 VVE 0	V1 VZ 1	VVD 1 VVE 1	
Conforming to standards		IEC 60947-3								
Product certifications		UL, CSA, GL								
Protective treatment		“TC”								
Degree of protection with protection shroud		IP 20 conforming to IEC 60529								
Ambient air temperature		° C	- 20...+ 50							
Flame resistance		° C	960 conforming to IEC 60695-2-1							
Shock resistance 1/2 sine wave = 11ms conforming to IEC60068-2-27		gn	15	30	15	30				
Vibration resistance 10...150 Hz conforming to IEC 60068-2-6		gn	5	1						
Electrical characteristics, a.c. operation										
Switch type (bare type)		VN 12 VZN 12	V02 VZ 02	VN 20 VZN 20	V01 VZ 01	V0 VZ 0	VVD 0 VVE 0	V1 VZ 1	VVD 1 VVE 1	
Rated operational voltage (Ue)		V	690							
Rated impulse withstand voltage (Uimp)		kV	6	8	6	8				
Conventional thermal currents in free air (Ith) and rated uninterrupted (Iu)		A	12		20		25		32	
Conventional thermal current in enclosure (Ithe)		A	10		16		20		25	
Rated operational power and current	AC-21A/22A	230...690 V	A	12		20		25		32
	AC-23A	230 V	A/kW	10.6/3		14/4		19.7/5.5		
		240 V	A/kW	10.6/3		14/4		19.9/5.5		18.9/5.5
		400 V	A/kW	8.1/4		11/5.5		14.5/7.5		21.8/11
		415 V	A/kW	8.1/4		11/5.5		14/7.5		21/11
		500 V	A/kW	8.9/5.5		11.9/7.5		16.7/11		
		690 V	A/kW	8.6/7.5		12.3/11		17.5/15		
Rated operational power	AC -3	230/240 V	kW	1.5		3		4		
		400/415 V	kW	3		4		5.5		7.5
		500 V	kW	4		5.5		7.5		
		690 V	kW	4	5.5	7.5	11			
Intermittent duty class			30							
Characteristics in normal operating conditions	Rated making capacity AC-21A/22A/23A (I rms)		A/ 400 V	120		200		250		320
	Rated breaking capacity AC-21A/22A/23A (I rms)		A/ 400 V	120		200				250
Short-circuit characteristics	Permissible rms short time rating (Icw)		A/ 400V/1s	140	300	140	300			384
	Rated making capacity under short-circuit conditions (Icm) I peak		kA/ 400 V	0.5	1	0.5	1			
	Rated conditional short-circuit current (I rms) with aM/gG fuses		kA/ 400 V	6	10	6	10			
			A	12		20		25		35

Characteristics

Environment

V2 VZ 2	VVD 2 VVE 2	V3 VZ 3	VVD 3 VVE 3	V4 VZ 4	VVD 4 VVE 4	V5	V6	VZ7 VZ2 0	VZN 05 VZN 06
IEC 60947-3								IEC 60947-5	
UL, CSA, GL									
"TC"									
IP 20 conforming to IEC 60529									
- 20...+ 50									
960 conforming to IEC 60695-2-1									
30								-	
1								-	

V2 VZ 2	VVD 2 VVE 2	V3 VZ 3	VVD 3 VVE 3	V4 VZ 4	VVD 4 VVE 4	V5	V6	VZ7 VZ2 0	VZN 05 VZN 06
690									
8									6
40	63		80		125	175	12	6	
32	50		63		100	140	10	4	
40	63		80		125	160	le/AC-15		
25.8/7.5	50.3/15		61.2/18.5		71.9/22	96.6/30	6 A		
24.8/7.5	48.2/15		58.5/18.5		68/22	92.7/30	6 A		
29/15	41.5/22		57/30		68.5/37	83/45	4 A		
28/15	40/22		55/30		66/37	80/45	4 A		
28.5/18.5	44/30		54/37		64.5/45	79/55	2 A		
17.5/15	25/22		33/30		42/37	49/45	1 A		
5.5	11		15		22	30	–		
11	18.5		22		30	37	–		
15	22		30		37	45	–		
11	18.5				30	37	–		
30							–		
400	630		800		1250	1750	–		
320	500		640		1000	1400	–		
480	756		960		1500	2100	–		
1	2.1				2.8		–		
10							1		
50	63		80		125	200	16	1.6	

Characteristics												
Electrical characteristics, d.c. operation												
Switch type (bare type)				VN 12 VZN 12	V02 VZ 02	VN 20 VZN 20	V01 VZ 01	V0 VZ 0	VVD 0 VVE 0	V1 VZ 1	VVD 1 VVE 1	
Rated operational current DC-1 (L/R = 1ms) 	24 V	1 contact	A	12		20		25		32		
		2 contacts	A	12		20		25		32		
		3 contacts	A	12		20		25		32		
	48 V	1 contact	A	12		20		25		32		
		2 contacts	A	12		20		25		32		
		3 contacts	A	12		20		25		32		
	60 V	1 contact	A	12		20		25		32		
		2 contacts	A	12		20		25		32		
		3 contacts	A	12		20		25		32		
	110 V	1 contact	A	1.5		2		9		10		
		2 contacts	A	8		10		12		16		
		3 contacts	A	12		20		25		32		
220 V	1 contact	A	1.5		2		2.5		3			
	2 contacts	A	7		8		10		12			
	3 contacts	A	10		14		16		20			
250 V	1 contact	A	0.6		0.7		0.8		1			
	2 contacts	A	3		4		6		8			
	3 contacts	A	8		10		12		16			
Rated operational current DC-2 to DC-5 (L/R = 1ms)	24 V	1 contact	A	12		20		25		32		
		2 contacts	A	12		20		25		32		
		3 contacts	A	12		20		25		32		
	48 V	1 contact	A	12		20		25		32		
		2 contacts	A	12		20		25		32		
		3 contacts	A	12		20		25		32		
	60 V	1 contact	A	10		14		16		20		
		2 contacts	A	12		20		25		32		
		3 contacts	A	12		20		25		32		
	110 V	1 contact	A	1.5		2		2.5		3		
		2 contacts	A	3		4		5		6		
		3 contacts	A	12		20		25		32		
	220 V	1 contact	A	0.4		0.5		0.5		0.8		
		2 contacts	A	1.4		1.5		1.5		2		
		3 contacts	A	1		2		3		4		
	250 V	1 contact	A	0.3		0.4		0.5		0.8		
		2 contacts	A	0.4		0.6		0.8		1		
		3 contacts	A	1.2		2.4		1.6		2		
	Other characteristics											
	Switch type (bare type)				VN 12 VZN 12	V02 VZ 02	VN 20 VZN 20	V01 VZ 01	V0 VZ 0	VVD 0 VVE 0	V1 VZ 1	VVD 1 VVE 1
	Mechanical durability (millions of operating cycles)				0.05	0.1	0.05	0.1				
	Electrical durability in cat. AC-21 (millions of operating cycles)				0.05	0.1	0.05	0.1				
	Electrical durability in cat. DC-1 to 5 (operating cycles)				30 000							
	Suitable for isolation				Yes							
Cabling	Flexible cable + cable end	mm²	4	6	4	6						
	Solid cable	mm²	4	10	4	10						
Tightening torque		N.m	0.7	2.1	0.7	2.1						

V2 VZ 2	VVD 2 VVE 2	V3 VZ 3	VVD 3 VVE 3	V4 VZ 4	VVD 4 VVE 4	V5	V6	VZ7 VZ2 0	VZN 05 VZN 06
40		63		80		125	175	8 (le/DC-11)	
40		63		80		125	175	–	
40		63		80		125	175	–	
40		63		80		125	175	8 (le/DC-11)	
40		63		80		125	175	–	
40		63		80		125	175	–	
35		40		50		60	70	4 (le/DC-11)	
40		63		80		125	175	–	
40		63		80		125	175	–	
12		20		25		30	12	2 (le/DC-11)	
20		63		80		125	175	–	
40		63		80		125	175	–	
4		6		8		12	15	1 (le/DC-11)	
14		25		30		40	50	–	
25		30		40		80	100	–	
2		4		5		3	10	0.8 (le/DC-11)	
12		20		25		30	40	–	
20		30		40		50	61	–	
40		63		80		125	175	–	
40		63		80		125	175	–	
40		63		80		125	175	–	
40		63		80		125	175	–	
40		63		80		125	175	–	
40		63		80		125	175	–	
25		40		50		60	70	–	
40		63		80		125	175	–	
40		63		80		125	175	–	
5		6		8		10	12	–	
8		10		20		22	24	–	
40		50		63		70	80	–	
1		1.5		2		2.2	2.4	–	
3		4		6		7	8	–	
7		10		15		16	13	–	
1		1.2		1.5		1.6	1.8	–	
2		3		6		7	8	–	
6		8		10		12	14	–	
V2 VZ 2	VVD 2 VVE 2	V3 VZ 3	VVD 3 VVE 3	V4 VZ 4	VVD 4 VVE 4	V5	V6	VZ7 VZ2 0	VZN 05 VZN 06
0.1		0.03						0.1	0.05
0.1		0.03						0.1 (AC-15)	0.05
30 000								30 000 (DC-11)	
Yes								–	
6		16				70		2 x 0.75...1.5	
10		25				95		2 x 1...2.5	
2.1		4				22.6		0.7	

Protection components

Mini-VARIO switch disconnectors for standard applications

Complete units

- 3-pole rotary switch disconnectors, 12 to 20 A
- Marking on operator .
- Padlockable operating handle (padlocks not supplied).
- Degree of protection IP 65.

Main and Emergency stop switch disconnectors for door mounting

Operator			lth	Reference	Weight
Handle	Front plate	Fixing			
	mm	mm	A		kg
Red, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 60 x 60	Ø 22.5	12	VCDN 12	0.177
			20	VCDN 20	0.177



VCDN 20

Main and Emergency stop switch disconnectors for mounting at back of an enclosure (1)

Operator			lth	Reference	Weight
Handle	Front plate	Fixing			
	mm	mm	A		kg
Red, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 60 x 60	Ø 22.5	12	VCCDN 12	0.334
			20	VCCDN 20	0.334



VCCDN 20

Main switch disconnectors for door mounting

Operator			lth	Reference	Weight
Handle	Front plate	Fixing			
	mm	mm	A		kg
Black, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Black 60 x 60	Ø 22.5	12	VBDN 12	0.177
			20	VBDN 20	0.177



VBDN 20

(1) Switches supplied with a shaft extension **VZN 17** and a door interlock plate **KZ 32** (see page 23007/5)

Protection components
Mini-VARIO switch disconnectors
for standard applications
Switch bodies, add-on modules



VN 20



VZN 11



VZN 14



VZN 05



VZN 26

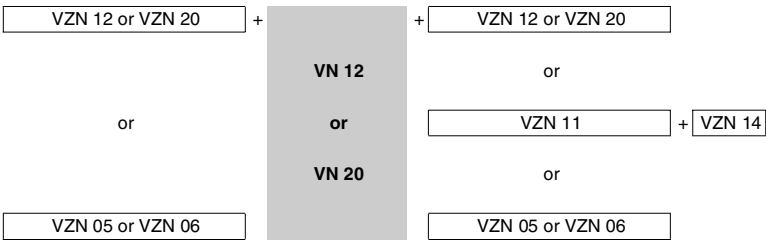


VZN 08

Switch bodies			
Description	Rating A	Reference	Weight kg
3-pole switch disconnectors	12	VN 12	0.110
	20	VN 20	0.110

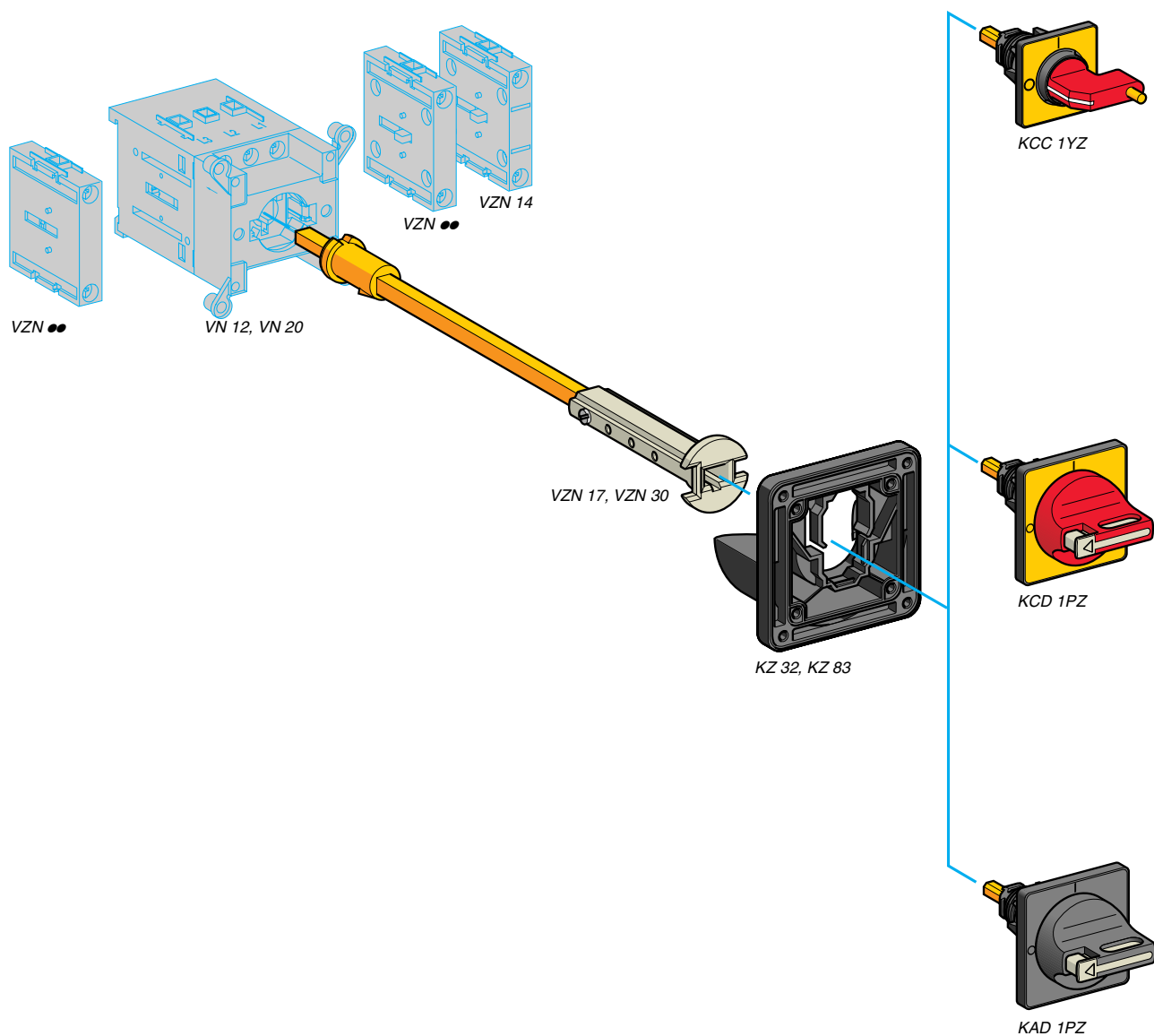
Add-on modules			
Description	Rating A	Reference	Weight kg
Main pole modules	12	VZN 12	0.020
	20	VZN 20	0.020
Neutral pole module with early make and late break contacts	12 and 20	VZN 11	0.020
Earthing module	12 and 20	VZN 14	0.016
Auxiliary contact block modules	1 N/O late make contact	VZN 05	0.020
	1 N/C early break contact	VZN 06	0.020
Input terminal protection shrouds	For add-on pole modules or auxiliary contact block modules (single-pole shroud)	VZN 26	0.004
	For switch bodies (3-pole shroud)	VZN 08	0.007

Maximum number of add-on modules that can be fitted on a switch body



Protection components

Mini-VARIO switch disconnectors
for standard applications
Operators and accessories



Protection components

Mini-VARIO switch disconnectors

for standard applications

Operators and accessories

- Degree of protection IP 65.
- Marking on operator .
- Padlockable operating handle (padlocks not supplied).
- Operator fixing by 1 Ø 22.5 hole; for other operators see pages 23005/3 and 23005/5.
- For other accessories and empty enclosures, see pages 23005/6, 23005/7 and 23008/3.

Operators for main and Emergency stop switch disconnectors

Handle	Front plate mm	Reference	Weight kg
Red, padlockable with 1 padlock (Ø 4 to Ø 6)	Yellow 45 x 45	KCC 1YZ	0.050
Red, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 60 x 60	KCD 1PZ	0.084

Operators for main switch disconnectors

Handle	Front plate mm	Reference	Weight kg
Black, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Black 60 x 60	KAD 1PZ	0.084

Accessories for door interlocking

For rear fixing switch disconnectors mounted at the back of an enclosure, in addition to a direct operator

Description	Front plate mm	Distance enclosure back/door mm	Sold in lots of	Unit reference	Weight kg
Shaft extensions	–	300...330	1	VZN 17	0.100
		400...430	1	VZN 30	0.130
Door interlock plate	45 x 45 or 60 x 60	–	5	KZ 32	0.170
Plate for door mounting	45 x 45 or 60 x 60	–	5	KZ 83	0.205

Protection components

VARIO switch disconnectors

for high performance applications

Complete units



VCF 0



VCF 5



VCCF 0

- 3-pole rotary switch disconnectors, 12 to 175 A
- Marking on operator
- Padlockable operating handle (padlocks not supplied).
- Degree of protection IP 65.

Main and Emergency stop switch disconnectors for door mounting

Handle	Front plate mm	Fixing	Rating A	Reference	Weight kg
Red, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 60 x 60	Ø 22.5	12	VCD 02	0.215
			20	VCD 01	0.215
			25	VCD 0	0.215
			32	VCD 1	0.215
			40	VCD 2	0.215
		4 screws	12	VCF 02	0.250
			20	VCF 01	0.250
			25	VCF 0	0.250
			32	VCF 1	0.250
			40	VCF 2	0.250
			63	VCF 3	0.560
			80	VCF 4	0.560
Red, long, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 90 x 90	4 screws	125	VCF 5	1.200
			175	VCF 6	1.200

Main and Emergency stop switch disconnectors for mounting at back of an enclosure (1)

Handle	Front plate mm	Fixing	Rating A	Reference	Weight kg
Red, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 60 x 60	Ø 22.5	12	VCCD 02	0.392
			20	VCCD 01	0.392
			25	VCCD 0	0.392
			32	VCCD 1	0.392
			40	VCCD 2	0.392
		4 screws	12	VCCF 02	0.527
			20	VCCF 01	0.527
			25	VCCF 0	0.527
			32	VCCF 1	0.527
			40	VCCF 2	0.527
			63	VCCF 3	0.440
			80	VCCF 4	0.680
Red, long, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 90 x 90	4 screws	125	VCCF 5	1.320
			175	VCCF 6	1.320

(1) Unit supplied with a shaft extension **VZN 17** and a door interlock plate **KZ 32** or **KZ 74** (see page 23005/6).

Protection components

VARIO switch disconnectors

for high performance applications

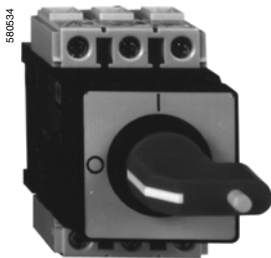
Complete units



VBD 0



VBF 4



VVE 1

- 3-pole rotary switch disconnectors, 12 to 175 A
- Marking on operator 
- Padlockable operating handle (padlocks not supplied).
- Degree of protection IP 65.

Main switch disconnectors for door mounting

Handle	Front plate mm	Fixing	Rating A	Reference	Weight kg
Black, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Black 60 x 60	Ø 22.5	12	VBD 02	0.215
			20	VBD 01	0.215
			25	VBD 0	0.215
			32	VBD 1	0.215
			40	VBD 2	0.215
		4 screws	12	VBF 02	0.250
			20	VBF 01	0.250
			25	VBF 0	0.250
			32	VBF 1	0.250
			40	VBF 2	0.250
			63	VBF 3	0.560
			80	VBF 4	0.560
Red, long, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Black 90 x 90	4 screws	125	VBF 5	1.200
			175	VBF 6	1.200

Main and Emergency stop switch disconnectors

For mounting in an enclosure or for modular distribution boards

Handle	Front plate mm	Rating A	Reference	Weight kg
Red, padlockable with 1 padlock (Ø 4 to Ø 6)	Yellow 45 x 45	25	VVE 0	0.250
		32	VVE 1	0.250
		40	VVE 2	0.250
		63	VVE 3	0.530
		80	VVE 4	0.530

Main switch disconnectors

For mounting in an enclosure or for modular distribution boards

Handle	Front plate mm	Rating A	Reference	Weight kg
Black, not padlockable	Black 45 x 45	25	VVD 0	0.250
		32	VVD 1	0.250
		40	VVD 2	0.250
		63	VVD 3	0.560
		80	VVD 4	0.560

Protection components

VARIO switch disconnectors

for high performance applications

Switch bodies, add-on modules, auxiliary contacts

(for customer assembly)



V0



V5



VZ 0



VZ 11



VZ 15



VZ 20

Switch bodies

Description	Rating A	Reference	Weight kg
3-pole switch disconnectors (1)	12	V02	0.200
	20	V01	0.200
	25	V0	0.200
	32	V1	0.200
	40	V2	0.200
	63	V3	0.500
	80	V4	0.500
	125	V5	0.900
	175	V6	0.900

Add-on modules

Description	Rating A	Reference	Weight kg
Main pole modules	12	VZ 02	0.050
	20	VZ 01	0.050
	25	VZ 0	0.050
	32	VZ 1	0.050
	40	VZ 2	0.050
	63	VZ 3	0.100
	80	VZ 4	0.100
Neutral pole modules with early make and late break contacts (1)	12 to 40	VZ 11	0.050
	63 to 80	VZ 12	0.100
	125 and 175	VZ 13	0.250
Earthing modules	12 to 40	VZ 14	0.050
	63 and 80	VZ 15	0.100
	125 and 175	VZ 16	0.250

Auxiliary contact block modules

Description	Type	Reference	Weight kg
Auxiliary contact block modules with 2 auxiliary contacts	N/O + N/C (2)	VZ 7	0.050
	N/O + N/O	VZ 20	0.050

(1) Protection shrouds are available if required: see page 23005/6.

(2) Late make N/O, early break N/C contacts

Protection components
VARIO switch disconnectors
for high performance applications
Switch bodies, add-on modules, auxiliary contacts
(for customer assembly)

Maximum number of add-on modules that can be fitted on a switch body

1 add-on module on each side of the switch body

VZ 7 or VZ 20	+	V0●	+	VZ 7 or VZ 20	VZ 7	+		+	VZ 7
or				or	or		V5		or
VZ 11 or VZ 12	+	V0	+	VZ 11 or VZ 12	VZ 20	+		+	VZ 20
or		to		or	or		or		or
VZ 14 or VZ 15	+		+	VZ 14 or VZ 15	VZ 13	+	V6	+	VZ 13
or		V4		or	or				or
VZ 0●/VZ 0 to VZ 4	+		+	VZ 0●/VZ 0 to VZ 4	VZ 16	+		+	VZ 16

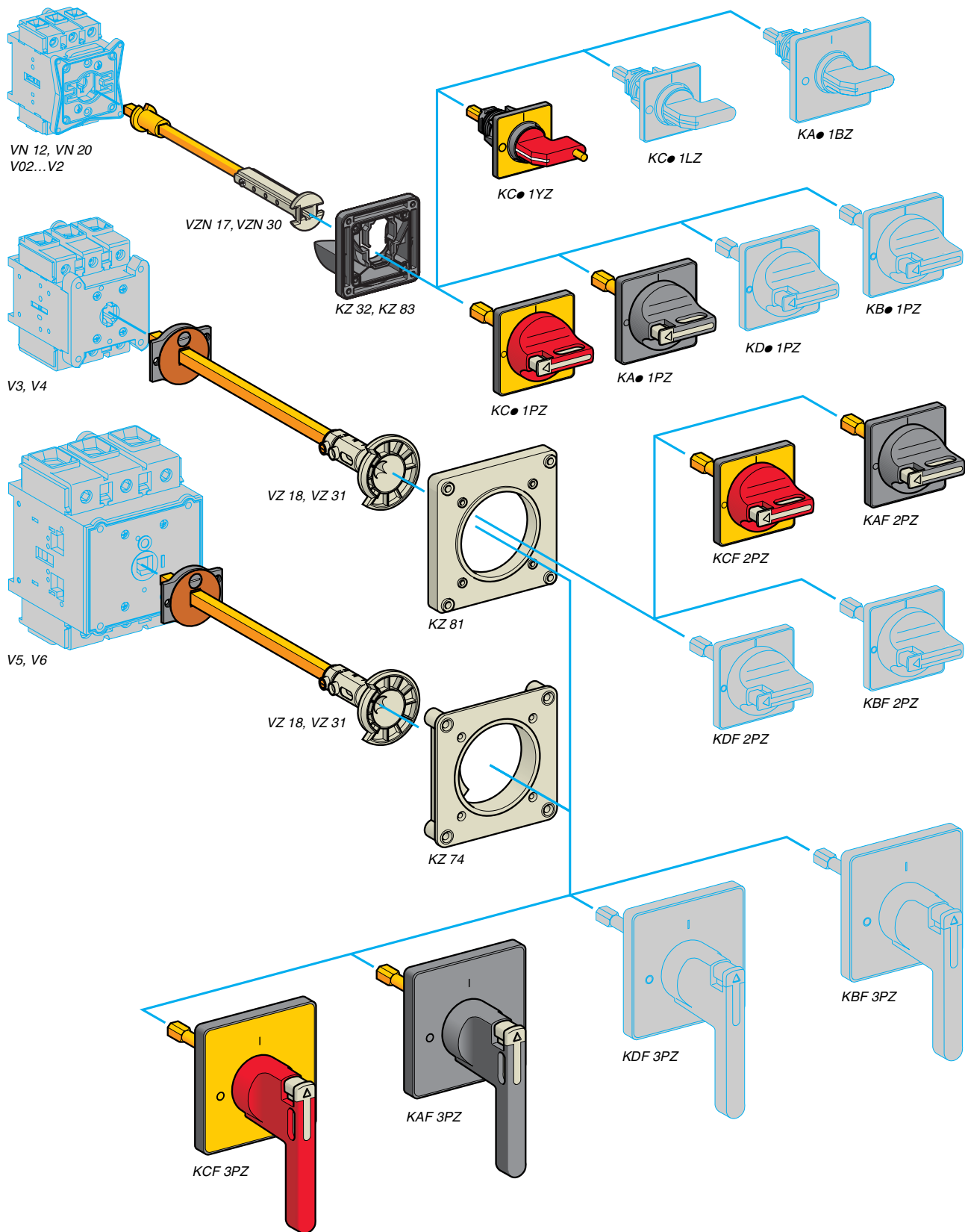
2 add-on modules on each side of the switch body

VZ 0●	+	VZ 0●	+	V0●	+	VZ 0●	+	VZ 7	or	VZ 20	or	VZ 11	or	VZ 14
VZ 0	+	VZ 0	+	V0	+	VZ 0	+	VZ 7	or	VZ 20	or	VZ 11	or	VZ 14
VZ 1	+	VZ 1	+	V1	+	VZ 1	+	VZ 7	or	VZ 20	or	VZ 11	or	VZ 14
VZ 2	+	VZ 2	+	V2	+	VZ 2	+	VZ 7	or	VZ 20	or	VZ 11	or	VZ 14
VZ 3	+	VZ 3	+	V3	+	VZ 3	+	VZ 7	or	VZ 20	or	VZ 12	or	VZ 15
VZ 4	+	VZ 4	+	V4	+	VZ 4	+	VZ 7	or	VZ 20	or	VZ 12	or	VZ 15

Nota : The add-on modules mounted next to the switch body are main pole modules. Maximum of 3 main pole modules per switch body.

Protection components

Mini-VARIO and VARIO switch disconnectors
Operators, handles and front plates
(for customer assembly)



Protection components

Mini-VARIO and VARIO switch disconnectors

Operators, handles and front plates

(for customer assembly)

- Marking on operator .
- Padlockable operating handle (padlocks not supplied).
- Degree of protection IP 65.

Handles and front plates for main and Emergency stop switch disconnectors

For switch body	Operator Handle	Front plate		Reference	Weight
		Dimensions	Fixing		
		mm			kg
VN 12, VN 20 V02...V2	Red, padlockable with 1 padlock (Ø 4 to Ø 6)	Yellow 45 x 45	Ø 22.5	KCC 1YZ	0.050
			4 screws	KCE 1YZ	0.040
	Red, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 60 x 60	Ø 22.5	KCD 1PZ	0.082
			4 screws	KCF 1PZ	0.075
V3 and V4	Red, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 60 x 60	4 screws	KCF 2PZ	0.070
V5 and V6	Red, long, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 90 x 90	4 screws	KCF 3PZ (1)	0.160

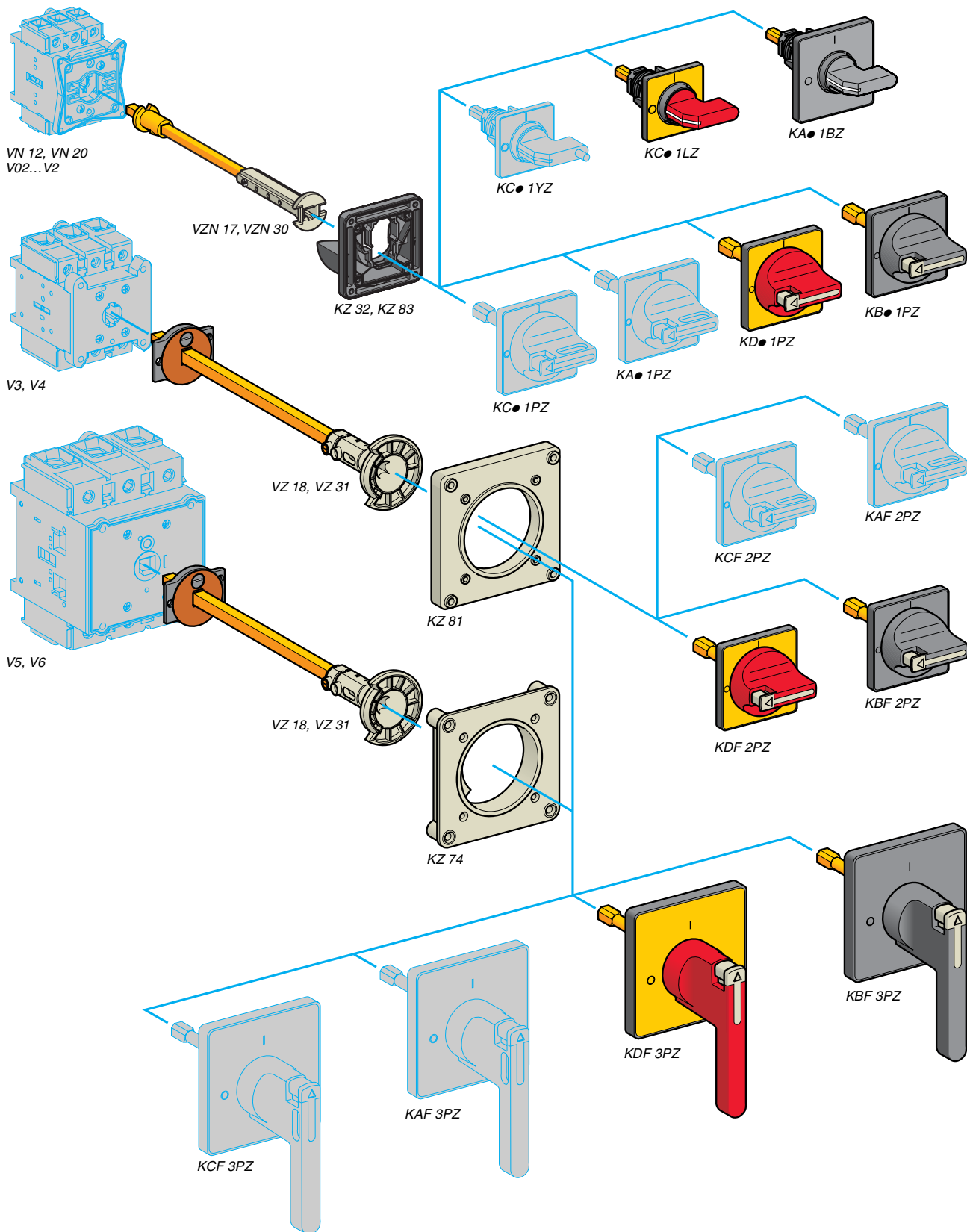
Handles and front plates for main switch disconnectors

For switch body	Operator Handle	Front plate		Reference	Weight
		Dimensions	Fixing		
		mm			kg
VN 12, VN 20 V02...V2	Black, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Black 60 x 60	Ø 22.5	KAD 1PZ	0.082
			4 screws	KAF 1PZ	0.075
V3 and V4	Black, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Black 60 x 60	4 screws	KAF 2PZ	0.070
V5 and V6	Black, long, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Black 90 x 90	4 screws	KAF 3PZ (1)	0.160

(1) For door mounting of 63 and 80 A switch disconnectors, adapter plate **KZ 106** must be ordered separately (see page 23005/6).

Protection components

Mini-VARIO and VARIO switch disconnectors
Operators, handles and front plates
(for customer assembly)



Protection components

Mini-VARIO and VARIO switch disconnectors
Operators, handles and front plates
(for customer assembly)

- Marking on operator 
- Degree of protection IP 65.

Handles and front plates for Emergency stop switch disconnectors

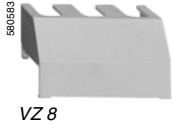
For switch body	Operator Handle	Front plate		Reference	Weight
		Dimensions	Fixing		
		mm			kg
VN 12, VN 20 V02...V2	Red, not padlockable	Yellow 45 x 45	Ø 22.5	KCC 1LZ	0.050
			4 screws	KCE 1LZ	0.040
		Yellow 60 x 60	Ø 22.5	KDD 1PZ	0.082
			4 screws	KDF 1PZ	0.075
V3 and V4	Red, long, not padlockable	Yellow 60 x 60	4 screws	KDF 2PZ	0.070
V5 and V6	Red, long, not padlockable	Yellow 90 x 90	4 screws	KDF 3PZ (1)	0.160

Handles and front plates for switch disconnectors

For switch body	Operator Handle	Front plate		Reference	Weight
		Dimensions	Fixing		
		mm			kg
VN 12, VN 20 V02...V2	Black, not padlockable	Black 45 x 45	Ø 22.5	KAC 1BZ	0.050
			4 screws	KAE 1BZ	0.040
		Black 60 x 60	Ø 22.5	KBD 1PZ	0.055
			4 screws	KBF 1PZ	0.045
V3 and V4	Black, not padlockable	Black 60 x 60	4 screws	KBF 2PZ	0.070
V5 and V6	Black, not padlockable	Black 90 x 90	4 screws	KBF 3PZ (1)	0.160

(1) For door mounting of 63 and 80 A switch disconnectors, adapter plate **KZ 106** must be ordered separately (see next page).

Protection components

Mini-VARIO and VARIO switch disconnectors
Accessories

VZ 8



VZ 26



VZ 18



KZ 32



KZ 81

Input terminal protection shrouds

Description	For use on	Reference	Weight kg
For switch bodies (3-pole shroud)	V02...V2	VZ 8	0.015
	V3 and V4	VZ 9	0.020
	V5 and V6	VZ 10	0.060
For add-on pole modules (single-pole shroud)	VZ 02...VZ 2, VZ 11, VZ 14	VZ 26	0.005
	VZ 3, VZ 4, VZ 12, VZ 15	VZ 27	0.007
	VZ 13, VZ 16	VZ 28	0.020
For contact blocks with 2 auxiliary contacts	–	VZ 29	0.005

Components for door interlocking

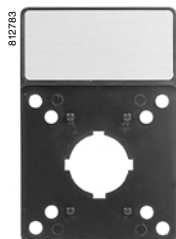
For rear fixing switch disconnectors mounted at the back of an enclosure, in addition to a direct operator

Description	For use on	Distance enc.back/door mm	Sold in lots of	Unit reference	Weight kg
Shaft extensions	VN 12, VN 20 V02...V2	300...330	1	VZN 17 (1)	0.100
		400...430	1	VZN 30 (1)	0.130
	V02...V2	300...330	1	VZ 17	0.075
		400...430	1	VZ 30	0.125
	V3 and V4	300...320	1	VZ 18	0.170
		400...420	1	VZ 31	0.215
Door interlock plates	VN 12, VN 20 V02...V2	–	5	KZ 32	0.177
		–	5	KZ 74	0.020
	V3...V6	–	5	KZ 74	0.020
		–	5	KZ 74	0.020

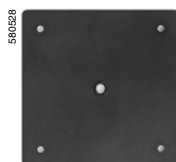
Description	For use on	Front plate dimensions mm	Sold in lots of	Unit reference	Weight kg
Plates for door mounting of handles with 4 screw fixing	VN 12, VN 20 V02...V2	45 x 45 or 60 x 60	5	KZ 83	0.205
	V3...V6	60 x 60 or 90 x 90	5	KZ 81	0.010
Adapter plate for switch disconnectors	V3 and V4	90 x 90	5	KZ 106	0.075

(1) Can be used with V02 to V2 switches.

Protection components

Mini-VARIO and VARIO switch disconnectors
Accessories

KZ 15



KZ 67



Z01

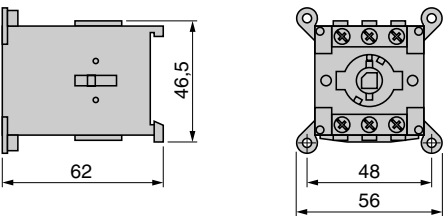
Accessories for operators

Description	For use on	Front plate dimensions mm	Sold in lots of	Unit reference	Weight kg
Legend holder with silver coloured blank legend plate	Front plate	45 x 45	5	KZ 13	0.060
		60 x 60	5	KZ 15	0.065
		90 x 90	5	KZ 103	0.070
Legend holders without legend plate	Front plate	45 x 45	20	KZ 14	0.060
		60 x 60	10	KZ 16	0.065
		90 x 90	5	KZ 101	0.070
Silver coloured blank legend plates for engraving by customer	KZ 14	—	20	KZ 76	0.020
	KZ 16	—	10	KZ 77	0.010
	KZ 101	—	5	KZ 100	0.005
Seals	VN 12, VN 20	45 x 45	5	KZ 65	0.037
	V02...V2	60 x 60	5	KZ 66	0.033
	V3 and V4	60 x 60	5	KZ 62	0.033
	V3...V6	90 x 90	5	KZ 67	0.064
Tightening tool	For operators with Ø 22.5 fixing	—	5	Z01	0.050

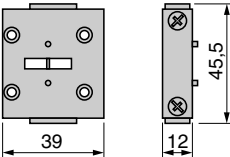
Dimensions

Switch disconnectors

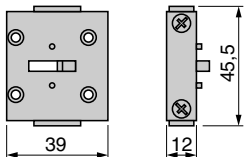
Switch bodies VN 12, VN 20



Add-on modules VZN 12, VZN 20



Add-on modules VZN 11, VZN 14 VZN 05 and VZN 06

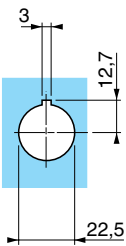
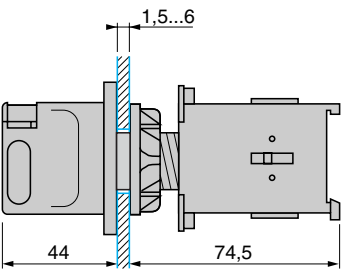


Mounting

Switch disconnector mounted on enclosure door

VN 12, VN 20

Single hole fixing

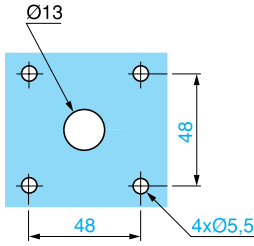
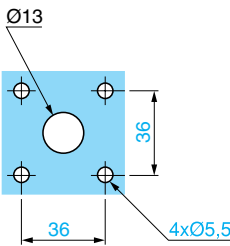
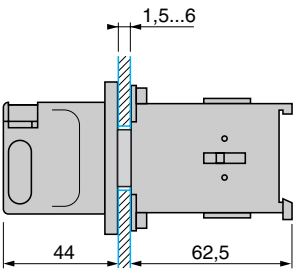


VN 12, VN 20

4 screw fixing

45 x 45 front plate

60 x 60 front plate



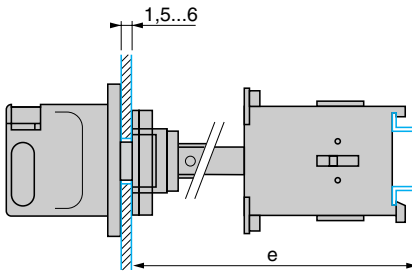
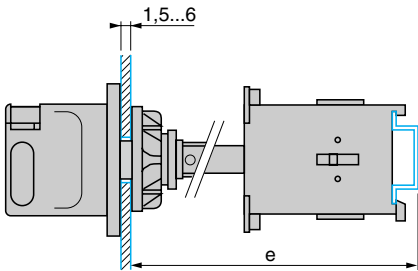
Mounting (continued)

Switch disconnector mounted at back of enclosure with shaft extension VZN 17 or VZN 30 (clip-on mounting on  rail)

VN 12, VN 20

Single hole fixing

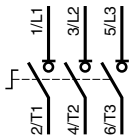
4 screw fixing



	Shaft extension	Distance (e) enclosure back/door mm
VN 12, VN 20	VZN 17	300...330
	VZN 30	400...430

Schemes

Switch body
VN 12, VN 20



Main pole module
VZN 12, VZN 20



Neutral pole module
VZN 11



Auxiliary contact blocks
VZN 05



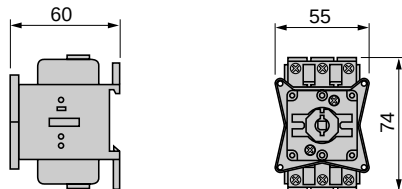
VZN 06



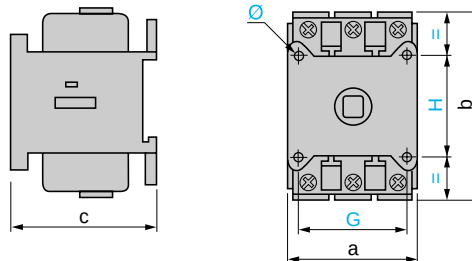
Dimensions

Switch disconnectors

Switch bodies V0●, V0 to V2



Switch bodies V3 to V6



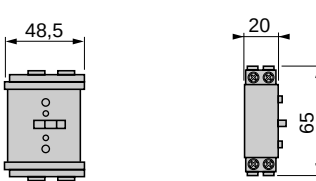
	a	b	c	G	H	Ø
V3, V4	60	83	65	48	48	5.5
V5, V6	90	125	90	68	68	5.5

Add-on modules VZ 02 to VZ 4 and VZ 11 to VZ 16



	a	b	c
VZ 02 and VZ 01, VZ 0 to VZ 2, VZ 11, VZ 14	16	74	35
VZ 3, VZ 4, VZ 12, VZ 15	20	83	46
VZ 13, VZ 16	30	125	63

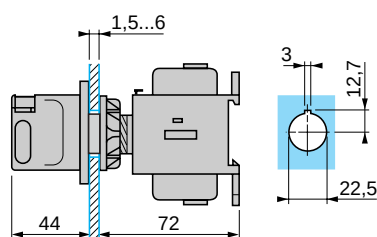
Add-on modules VZ 7, VZ 20



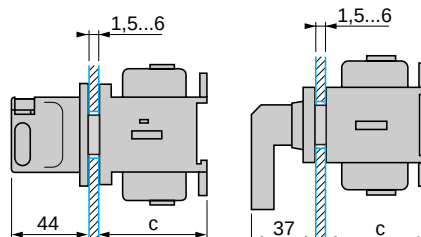
Mounting

Switch disconnector mounted on enclosure door

Single hole fixing V0●, V0 to V4

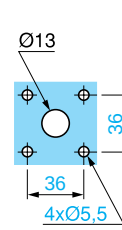


4 screw fixing V0●, V0 to V4

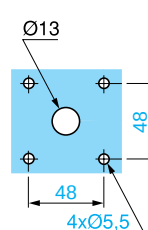


	c
V0●, V0 to V2	60
V3, V4	65

4 screw fixing 45 x 45 front plate V0●, V0 to V2

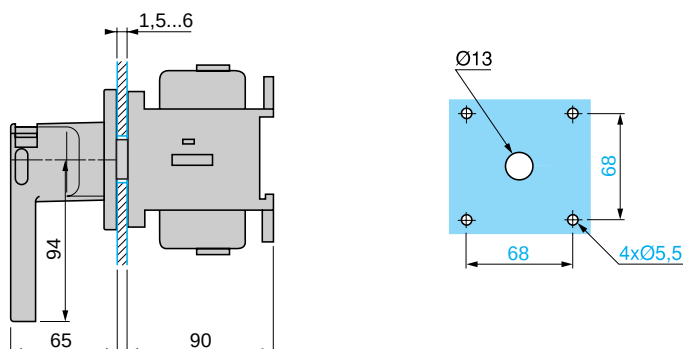


4 screw fixing 60 x 60 front plate V0●, V0 to V4



V5 and V6. 4 screw fixing

90 x 90 front plate



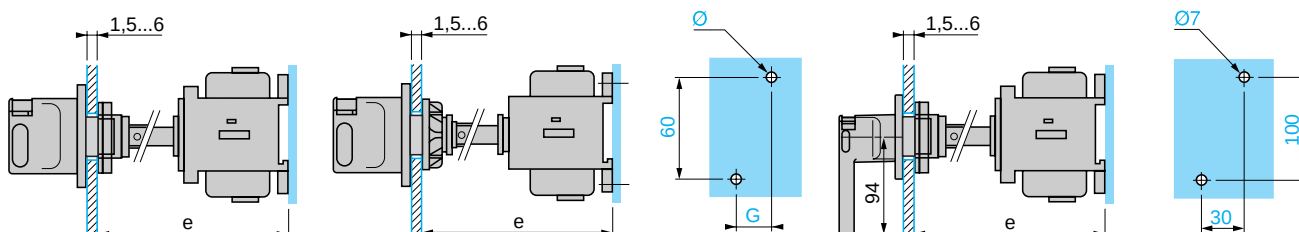
Mounting (continued)

Switch disconnector mounted at back of enclosure

4 screw fixing
V0●, V0 to V2 with shaft
extension VZ 17 or VZ 30
(clip-on mounting on  rail
possible for V0● to V2)

Single hole fixing
V3 to V4 with shaft extension
VZ 18 or VZ 31

V5 and V6 with shaft extension
VZ 18 or VZ 31



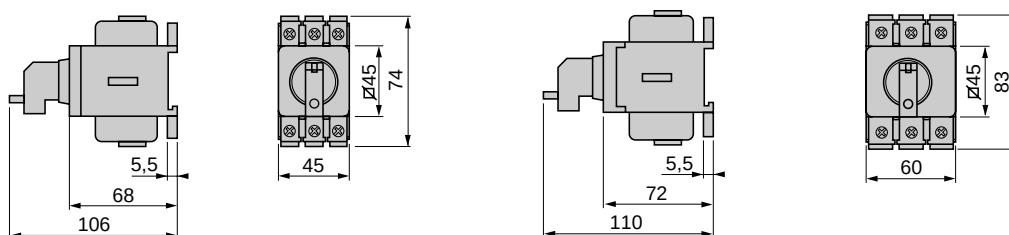
Shaft extension		Distance (e) enc.back/door mm	Ø	G
V02 and V01 V0 to V2	VZ 17	300...330	2 x 4.2	15
	VZ 30	400...430	2 x 4.2	15
V3 and V4	VZ 18	300...320	2 x 5	20
	VZ 31	400...420	2 x 5	20

Shaft extension		Distance (e) enc.back/door mm
V5 and V6	VZ 18	300...350
	VZ 31	430...450

Switch disconnectors for modular distribution boards

VV● 0 to VV● 2

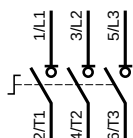
VV● 3 to VV● 4



Schemes

Switch body

V02 and V01
V0 to V6



Main pole module

VZ 02 and VZ 01
VZ 0 to VZ 4



Neutral pole module

VZ 11 to VZ 13



Auxiliary contact blocks

VZ 7



VZ 20



Applications	Protection of control circuits or transformers
	
Breaking under load	—
Fuse type	NF C or DIN
Cartridge fuses	1...125 A
Device type	Fuse carriers
References	DF6, GK1 C, D, E, F
Pages	23041/3

Motor protection



Yes, only if combined with a contactor

NF C or DIN

1...125 A

Fuse carriers

LS1, GK1 E, GK1 F (without fuses)

23027/2

Protection of motors or variable speed drives



Yes

NF C, DIN, BS or UL

1...1250 A

Switch-disconnector-fuses

GS1

4/40 and 4/41

Fuse carrier type		DF6 AB08	GK1 C	DF6 AB10	GK1 D	GK1 E	GK1 F
Environment							
Conforming to standards		NF C 61-201	–	NF C 61-201	–	–	–
		IEC 60947-3					
Protective treatment		“TC”					
Ambient air temperature for operation with tubular links without derating	° C	- 50...+70					
Maximum tilt in relation to normal vertical mounting plane		± 23°					
Pole characteristics							
Fuse size		8.5 x 31.5	8.5 x 31.5	10 x 38	10 x 38	14 x 51	22 x 58
Rated operational voltage with tubular links, a.c. supply	V	480	480	690	690	690	690
Maximum continuous current (for ambient air temperature ≤ 40 °C) (1)							
With tubular links	A	20	20	32	32	50	125
With aM cartridge fuses	A	10	10	25	25	50	125
With gG cartridge fuses	A	20	20	30	30	40	100
Permissible short-circuit current (with tubular links)							
Maximum peak value (dynamic stress)	kA	8	8	8	8	8	8
Short-time rating (rms value cos φ = 0.35)	kA	4	4	4	4	4	4
Duration	ms	100	100	100	100	100	100
Cabling							
Maximum c.s.a. (without cable end)							
Number of conductors		1 2	1 2	1 2	1 2	1 2	1 2
Flexible cable	mm²	10 6	10 6	10 6	10 6	25 10	35 16
Solid cable	mm²	10 6	10 6	10 6	10 6	25 10	50 25
Tightening torque	Nm	1.2	1.2	1.2	1.2	2	2

(1) For use in an installation with ambient temperature > 40 °C, apply a derating coefficient equivalent to $\sqrt{\frac{120 - \text{ambient temperature}}{80}}$

Protection components

Fuse carriers



DF6 N10



GK1 CF



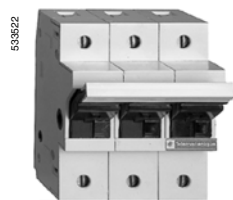
DF6 AB10



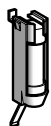
GK1 DN



GK1 EN



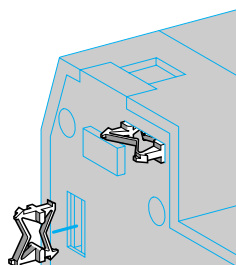
GK1 EF



GK1 AS



GK1 AP●



Detail of assembly clip mounting

Fuse carriers (1)

Rated thermal current A	Size of cartridge fuse or link	Composition	Sold in lots of	Unit reference	Weight kg
20	8.5 x 31.5	1 P	12	DF6 AB08	0.070
		1 N	12	DF6 N10	0.080
		3 P + N (2)	6	GK1 CC	0.152
		2 P	6	GK1 CD	0.142
		3 P	4	GK1 CF	0.213
		3 P + N (2)	3	GK1 CH	0.294
32	10 x 38	1 P	12	DF6 AB10	0.070
		1 N	12	DF6 N10	0.080
		3 P + N (2)	6	GK1 DC	0.152
		2 P	6	GK1 DD	0.142
		3 P	4	GK1 DF	0.213
		3 P + N (2)	3	GK1 DH	0.294
50	14 x 51	1 P	12	GK1 EB	0.130
		1 N	12	GK1 EN	0.140
		3 P + N (2)	6	GK1 EC	0.273
		2 P	6	GK1 ED	0.263
		3 P	4	GK1 EF	0.394
		3 P + N (2)	3	GK1 EH	0.536
125	22 x 58	1 P	12	GK1 FB	0.230
		1 N	12	GK1 FN	0.250
		3 P + N (2)	6	GK1 FC	0.480
		2 P	6	GK1 FD	0.460
		3 P	4	GK1 FF	0.690
		3 P + N (2)	3	GK1 FH	0.940

Blown fuse indicators (neon)

For use on fuse carriers	Operational voltage V	Sold in lots of	Unit reference	Weight kg
DF6, GK1 C, D and E	80...400	10	GK1 AS	0.003

Fuse carrier assembly strips (3)

Fuse carriers to be assembled	Number	Sold in lots of	Unit reference	Weight kg
DF6	2	10	GK1 AP2	0.002
	3	10	GK1 AP3	0.003
	4	10	GK1 AP4	0.004
GK1 E	2	10	GK1 AP3	0.004
	3	10	GK1 AP5	0.004
	4	10	GK1 AP6	0.006
GK1 F	2	10	GK1 AP4	0.004
	3	10	GK1 AP6	0.006
	4	10	GK1 AP9	0.007

(1) Each pole can be marked. A groove is provided on the control lever for this purpose. Marking by means of **AR1 M001** markers using positioning tool **AT1 PA3**.

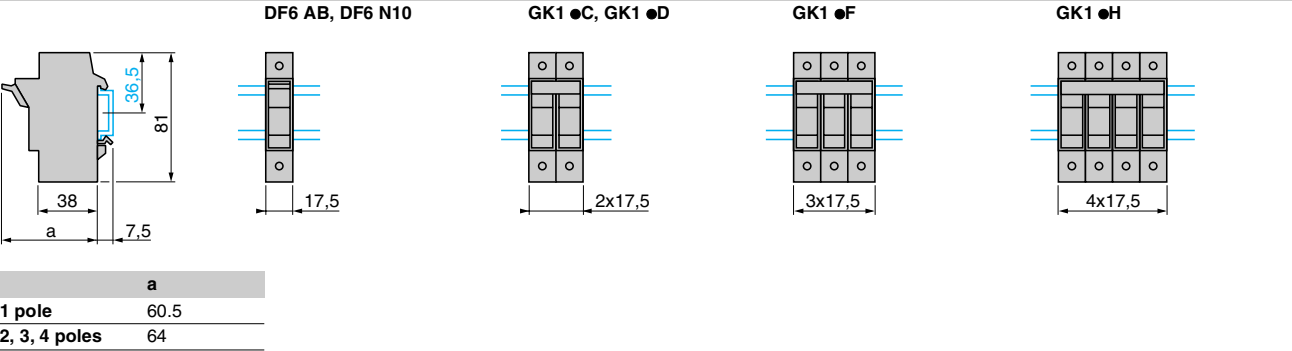
(2) N: neutral pole fitted with a locked tubular link as standard.

(3) Strips are supplied with all the clips needed for assembling the fuse carriers together.

Dimensions, mounting

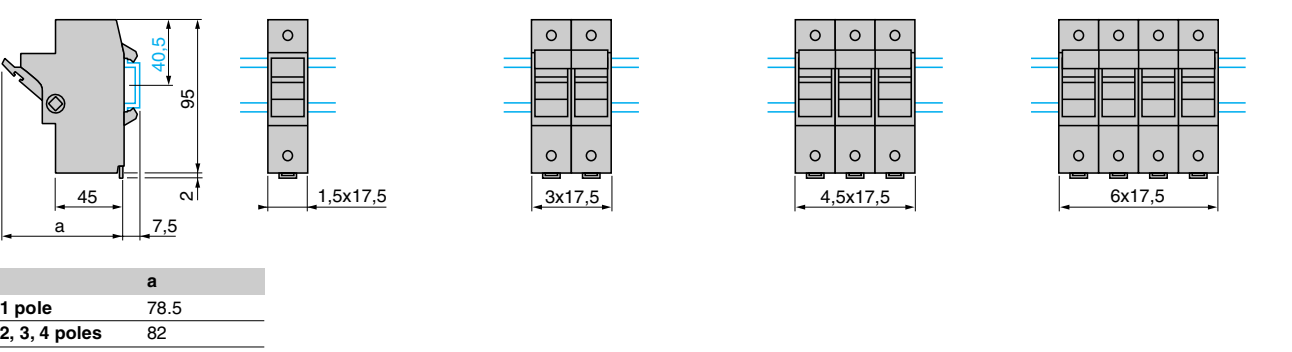
Modular fuse carriers 20 A and 32 A

Mounting on rail AM1 DP200



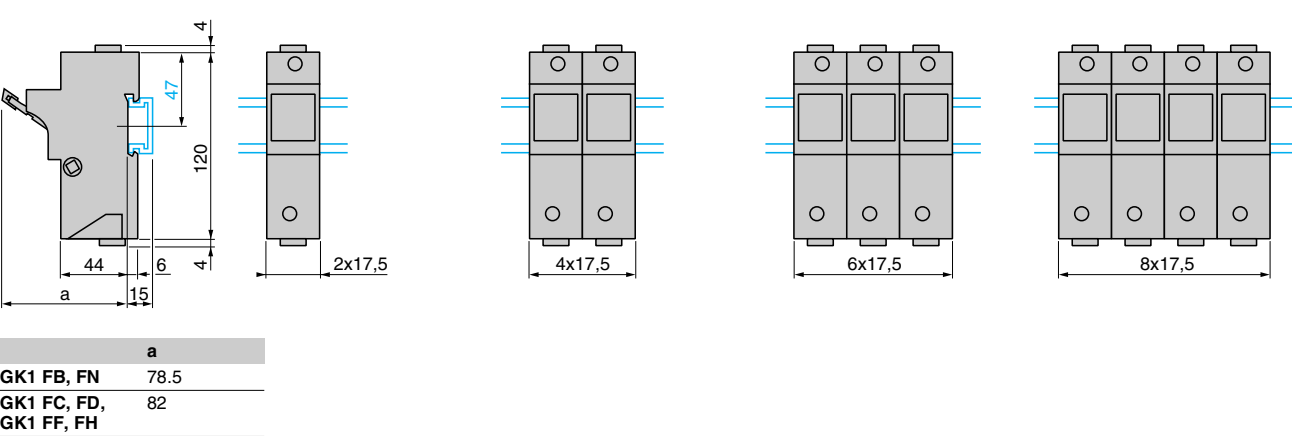
Modular fuse carriers 50 A

Mounting on rail AM1 DP200



Modular fuse carriers 125 A

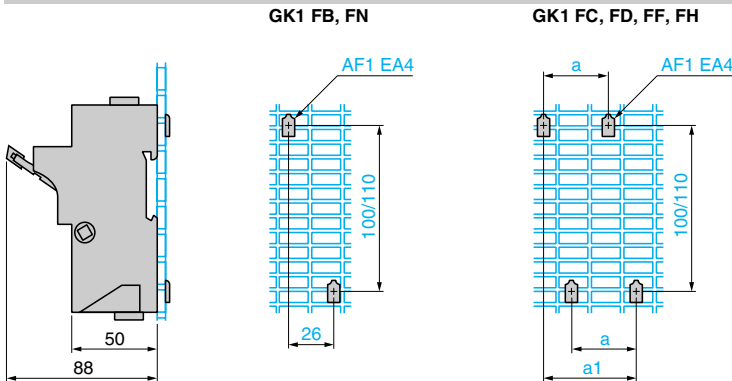
Mounting on rail AM1 ED



Mounting

Modular fuse carriers 125 A

Mounting on pre-slotted plate AM1PA



GK1	FC	FD	FF	FH
a	35	35	70	105
a1	61	61	96	131

Schemes

Modular fuse carriers

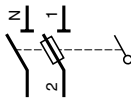
DF6 AB●



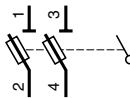
DF6 N



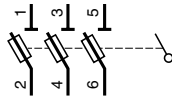
GK1 ●C



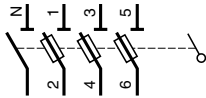
GK1 ●D



GK1 ●F



GK1 ●H



GK1 ●B



GK1 ●N



Fuse carriers

Operation: safety

The fuse carrier performs two basic functions:

- it isolates the downstream circuit by means of a visible break and wide opening contacts,
- it holds the cartridge fuses designed to protect the installation against short-circuits.

The type of cartridge fuse needed to protect the circuit must be determined before selecting the fuse carrier.

Cartridge fuse selection (type, rating, size)

Type

Application	■ Motor protection. ■ Transformer protection.
Solution	■ aM type fuses. These fuses are designed to withstand high current peaks of a very short duration. They must be combined with a thermal overload relay coupled with a contactor.
Application	■ Lighting circuit protection. ■ Supply line protection. ■ Furnace protection.
Solution	■ gG type fuses, which are more widely used but whose limiting capacity is weaker than that of aM type fuses.

Rating

gG fuses aM fuses	See standard NF C 15-100. Table 53 A paragraph 532-2-1 and table 52 C paragraph 523-1.						
	Motors 3 x 220 V		Motors 3 x 400 V		Cartridge fuses type aM		Fuse carrier
	P	in	P	in	Size	Rating	
	kW	A	kW	A	A		
	9	32	15	28.5	10 x 38	32	LS1 D32
	11	39	22	44	14 x 51	50	GK1 EK
	22	75	37	73	22 x 58	80	GK1 FK
30	103	55	105	22 x 58	125	GK1 FK	

Size

Use the “fuse characteristics” table opposite to select the correct fuse size according to:

- the nominal current of the circuit to be protected,
- the operational voltage.

Fuse carrier selection

Application	Isolation of a circuit for safety reasons only.
Solution	The fuse carrier may be fitted with links. The maximum permissible current is indicated in the “pole characteristics” table opposite.
Application	Isolation of a circuit and its protection against short-circuits.
Solution	Select a fuse carrier according to: ■ the type of cartridge fuse required, ■ the maximum permissible current in the fuse carrier poles (see “pole characteristics” table opposite). If the operational current is greater than the maximum permissible current in the poles of the fuse carrier corresponding to the cartridge fuse size selected, select the fuse carrier the next size up. The safety provided by using a fuse carrier can be increased by adding a padlocking device with up to three padlocks.

Recommendations for use

The fuse carrier conforms to utilisation category AC-21A/22A of standard IEC 60947-3. It is therefore recommended that the fuse carrier early break auxiliary contacts always be inserted in the coil circuit of the contactor with which it is in series. If the fuse carrier is not associated with a contactor, it is essential to ensure that it will be operated off-load.

Fuse carrier type			LS1 D32	LS1 D323	GK1 E●	GK1 F●				
Environment										
Conforming to standards	NF EN 60947-3		●		●	●				
	IEC 60947-3		●		●	●				
Product certifications			BV, UR		–	–				
Protective treatment			“TH”		“TC”	“TC”				
Ambient air temperature for operation with links without derating		° C	- 50...+ 70		- 50...+ 70	- 50...+ 70				
Maximum tilt in relation to normal vertical mounting plane			± 23°		± 23°	± 23°				
Pole characteristics										
Fuse size			10 x 38	10 x 38	14 x 51	22 x 58				
Rated operational voltage with links. a.c. supply		V	690	690	690	690				
Maximum continuous current at ambient temperature ≤ 40 °C (1) (Min. cable Ø/le)										
	With tubular links	mm²/A	6/32 or 4/25 or 2.5/16	4/25 or 2.5/16	10/50 or 6/40	35/125 or 25/100				
	With aM fuses	mm²/A	6/32 or 4/22 or 2.5/20	4/25 or 2.5/20	10/50 or 6/35	35/125 or 25/100				
	With gG fuses	mm²/A	4/25 or 2.5/20 or 1.5/16	2.5/20 or 1.5/16	10/40 or 6/32	25/100 or 16/80				
Early break contact characteristics										
Rated operational voltage		V	~ 250. ... 60	~ 250. ... 60	~ 500. ... 440	~ 500. ... 220				
Conventional thermal current		A	2.5	2.5	6	6				
Cartridge fuse characteristics										
Fuse size			10 x 38	10 x 38	14 x 51	22 x 58				
	Type aM	~ 400 V	A	32 (2)	25	50	125			
		~ 500 V	A	20	20	40	80			
		~ 660 V	A	–	–	25	50			
	Type gG	~ 400 V	A	25 (2)	25	40	100			
		~ 500 V	A	25	25	40	80			
		~ 660 V	A	–	–	25	50			
Maximum power dissipated by fuse		W	3	3	8.5	18				
Cabling										
Connection by screw clamp terminals or connectors										
Number and c.s.a. of conductors			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
	Solid cable	mm²	2 x 1	2 x 6	–	–	1 x 2.5	1 x 25	1 x 16	1 x 70
	Flexible cable without cable end	mm²	2 x 1.5	2 x 6	–	–	1 x 2.5	1 x 25	1 x 16	1 x 50
	Flexible cable with cable end	mm²	2 x 1	2 x 4	–	–	1 x 2.5	1 x 16	1 x 16	1 x 25
Connection			Screw clamp terminals		–	–	Connector		Connector	
Tightening torque		Nm	1.7		–	–	2		2	
Connection by spring terminals										
Number and c.s.a. of conductors			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
	Solid cable	mm²	–	–	2 x 1 (3)	2 x 4	–	–	–	–
	Flexible cable without cable end	mm²	–	–	2 x 1.5 (3)	2 x 4	–	–	–	–

(1) For use in an installation with ambient temperature > 55 °C, apply a derating coefficient equivalent to $\sqrt{\frac{120 - \text{ambient temperature}}{80}}$

(2) These values are for fuse carriers mounted side by side with a gap of 10 mm between them or mounted with sets of busbars GV2 ●54. If mounted side by side without a gap, use the following fuse sizes: aM fuse: 25 A and gG fuse: 20 A.

(3) For cross-sections 1 to 1.5 mm², the use of an LA9 D99 cable end reducer is recommended.

Protection components

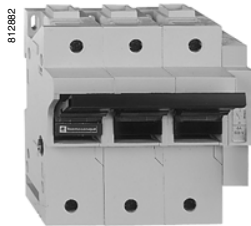
Fuse carriers



LS1 D323



LS1 D32



GK1 FK



LS1 D32

+ LA8 D324

3-pole basic blocks

Rating	Cartridge fuse size	Number of early break contacts (1)	Single-phase protection device (2)	Reference (3)	Weight kg
Connection by spring terminals					
25 A	10 x 38	– (4)	Without	LS1 D323	0.270
Connection by screw clamp terminals or connectors					
32 A	10 x 38	– (4)	Without	LS1 D32	0.300
50 A	14 x 51	1	Without	GK1 EK	0.430
			With	GK1 EV	0.470
		2	Without	GK1 ES	0.470
			With	GK1 EW	0.510
125 A	22 x 58	1	Without	GK1 FK	0.860
			With	GK1 FV	0.900
		2	Without	GK1 FS	0.900
			With	GK1 FW	0.940

4-pole basic blocks

Connection by screw clamp terminals or connectors					
32 A	10 x 38	– (4)	Without	LS1 D32 + LA8 D324 (5)	0.300
50 A	14 x 51	1	Without	GK1 EM	0.570
			With	GK1 EY	0.600
		2	Without	GK1 ET	0.610
			With	GK1 EX	0.650
125 A	22 x 58	1	Without	GK1 FM	1.090
			With	GK1 FY	1.130
		2	Without	GK1 FT	1.130
			With	GK1 FX	1.160

Fuse carriers for the North American market

25 and 30 A basic blocks: please consult your Regional Sales Office.

- (1) With 1 or 2 early break contacts to be inserted in the contactor control circuit.
 (2) Fuse carriers with single-phase protection device must be fitted with striker fuses.
 (3) LS1 D: clips directly onto a 35 mm rail or screw fixing.
 GK1: clips directly onto a 35 mm rail or Telequick mounting plate.
 (4) Addition of add-on contact block, see page 23027/3.
 (5) Can be mounted on left-hand or right-hand side of the basic block.

Protection components

Fuse carriers

Operators and accessories

Add-on contact blocks

Description	For use on	Mounting	Maximum number	Type of contacts	Sold in lots of	Unit reference	Weight kg
Instantaneous auxiliary contacts (early break contacts)	LS1 D32	Front	1	N/O + N/C	10	GV AE11	0.020
				N/O + N/O	10	GV AE20	0.020
	LS1 D323	Front	1	N/O + N/C	10	GV AE113	0.030
				N/O + N/O	10	GV AE203	0.030

Operators

For fuse carrier		For mounting on	Reference	Weight kg
Rating	Number of poles			
Side handles				
125 A	3 or 4	Right-hand side	GK1 AP07	0.300
		Left-hand side	GK1 AP08	0.300
Front handles (1)				
32 - 50 - 125 A			Fitted as standard	—
External handles				
32 A	3 or 4	Right-hand side	LS1 D32005 (2)	0.200
		Left-hand side	LS1 D32006	0.200
50 A	3 or 4	Right-hand side	GK1 AP05	0.180
		Left-hand side	GK1 AP06	0.180
125 A	3 or 4	Right-hand side	GK1 AP07	0.300
		Left-hand side	GK1 AP08	0.300

Padlocking devices (3)

For fuse carrier			Reference	Weight kg
Rating	Number of poles	Single-phase protection device		
32 A	3 or 4	Without	integral	—
50 A	3	Without	GK1 AV07	0.100
		With	GK1 AV08	0.110
	4	Without	GK1 AV08	0.110
		With	GK1 AV09	0.070

Links

Tubular links				
For fuse carrier		Sold in lots of	Unit reference	Weight kg
Rating	Number of poles			
32 A	3 or 4	10	DK1 CB92 (4)	0.007
50 A	3 or 4	10	DK1 EB92 (5)	0.012
125 A	3 or 4	10	DK1 FA92 (5)	0.020

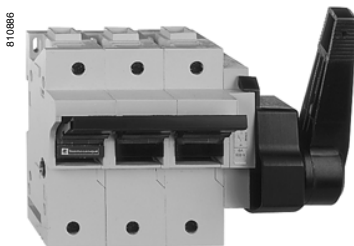
(1) Fitted as standard on 32, 50 and 125 A fuse carriers type GK1.

(2) Reference LS1 D32005 replaces reference DK1 FB005.

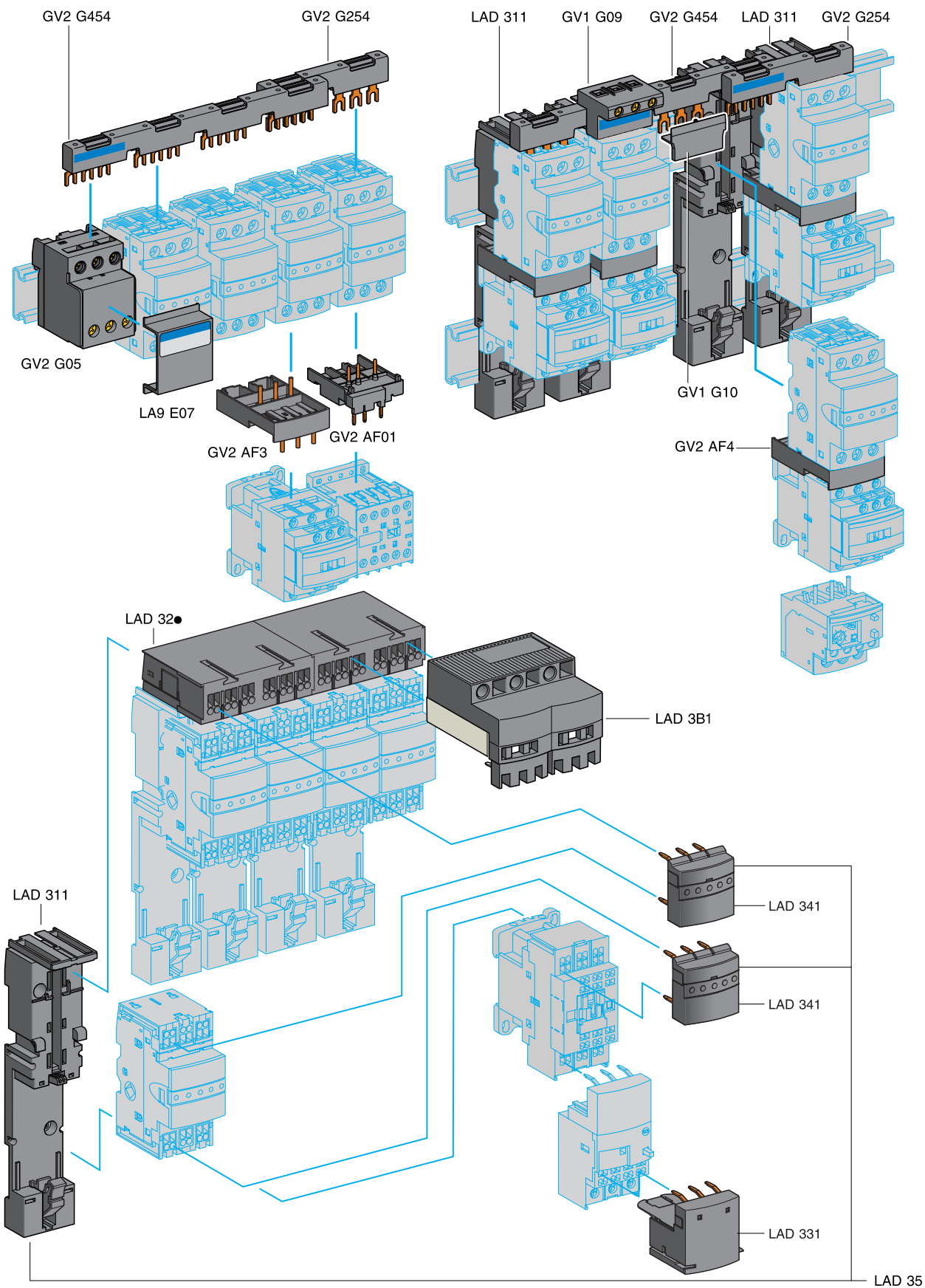
(3) For the 125 A rating, use side handles GK1 AP07 or GK1 AP08.

(4) For use on a neutral circuit, the tubular link can be interlocked with special device LA8 D25906 (sold in lots of 10).

(5) 50 and 125 A fuse carriers type GK1 are fitted with an interlocked neutral tubular link as standard.



GK1 FK + GK1 AP07



Protection components

Accessories

Accessories for LS1 D32 (screw clamp terminals)

Description	Application	Sold in lots of	Unit reference	Weight kg
Plate for mounting	LS1 D32 and contactor LC1 D09...D38 with front faces aligned	1	LAD 311	0.040
Combination blocks	Between LS1 D32 and contactor LC1 K or LP1 K	10	GV2 AF01	0.020
	Between LS1 D32 and contactor LC1 D09...D38	10	GV2 AF3	0.016
	Between LS1 D32 mounted on LAD 311 and contactor LC1 D09...D38	10	GV2 AF4	0.016

Description	Application	Pitch mm	Reference	Weight kg
Sets of 3-pole 63 A busbars	2 tap-offs	45	GV2 G245	0.036
		54	GV2 G254	0.038
		72	GV2 G272	0.042
	3 tap-offs	45	GV2 G345	0.058
		54	GV2 G354	0.060
	4 tap-offs	45	GV2 G445	0.077
		54	GV2 G454	0.085
		72	GV2 G472	0.094
	5 tap-offs	54	GV2 G554	0.100

Description	Application	Sold in lots of	Unit reference	Weight kg
Protective end cover	For unused busbar outlets	5	GV1 G10	0.005
Terminal blocks	For supply to one or more GV2 G busbar sets	1	GV1 G09	0.040
Connection from the top				
Cover for terminal block	For mounting in modular panels	10	LA9 E07	0.005
Padlocking device	For use with up to 4 padlocks (not supplied) Ø 6 mm shank max	1	GV2 V03	0.092

Accessories for LS1 D323 (spring terminals)

Description	Application	Reference	Weight kg
Plate for mounting	LS1 D323 and contactor LC1 D09...D38 with front faces aligned	LAD 311	0.040

Description	Extension by	Number of starters	Reference	Weight kg
Power splitter box, 63 A	LAD 32●	2	LAD 322	0.120
		3	LAD 323	0.180
		4	LAD 324	0.240

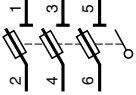
Description	Kit contents	Reference	Weight kg
Assembly and power connection kit for LS1 D323 and LC1 D093...D323	1 LAD 311 plate for mounting LS1 D323 2 LAD 341 power connection modules - between LS1 D323 and power splitter box - between LS1 D323 and contactor	LAD 352	0.078

Description	Maximum capacity	Application	Sold in lots of	Unit reference	Weight kg
Upstream terminal block	16 mm ²	Power supply to 1 or 2 power splitter boxes	1	LAD 3B1	0.212
Downstream terminal block	16 mm ²	Connection of motor cables	1	LAD 331	0.050
Cable end reducer	—	For connection of conductors from 1 to 1.5 mm ²	20	LAD 99	—

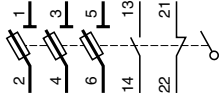
Fuse carriers without single-phase protection device

3-pole

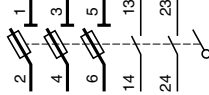
LS1 D32, D323



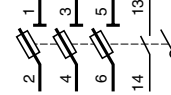
LS1 D32, D323 + GV AE11●



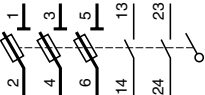
LS1 D32, D323 + GV AE20●



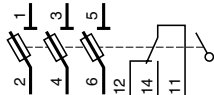
GK1 EK



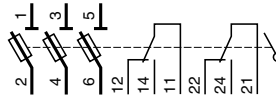
GK1 ES



GK1 FK

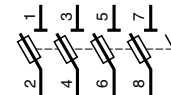


GK1 FS



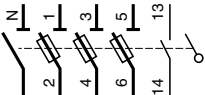
4-pole

LS1 D32 + LA8 D324

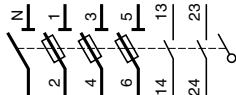


3-pole + Neutral

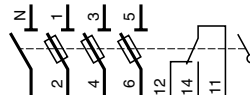
GK1 EM



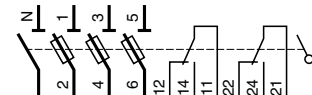
GK1 ET



GK1 FM



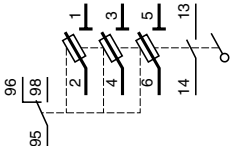
GK1 FT



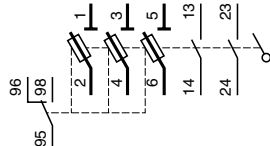
Fuse carriers with single-phase protection device

3-pole

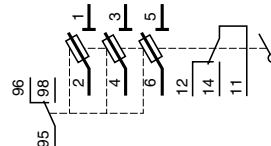
GK1 EV



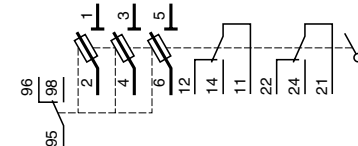
GK1 EW



GK1 FV

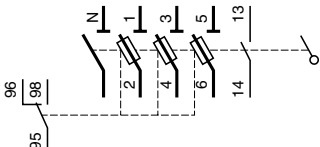


GK1 FW

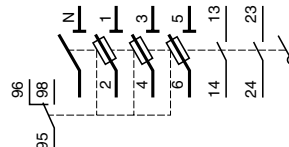


3-pole + Neutral

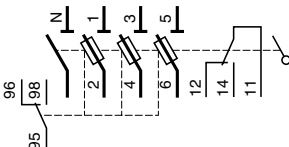
GK1 EY



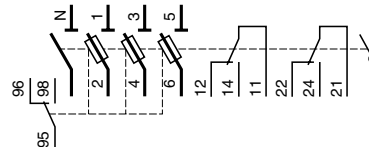
GK1 EX



GK1 FY



GK1 FX



Protection components

Switch-disconnector-fuses, 32 to 1250 A

Applications

GS1 switch-disconnector-fuses provide on-load breaking and making, safe isolation and They are used, in particular, on the incoming supply for control panels, for protecting and switching They provide simultaneous disconnection, together with all the other associated functions such as Their compact design means that they can also be fitted in small automation system equipment to



Fuse type

NF C or DIN

Rated thermal current (I_{th})

32 A 50 A 63 A 100 A 125 A 160 A 250 A 400 A 630 A 1250 A

Number of poles

3
3 + Nc 3 or 4

Fuse size

10 x 38 14 x 51 T000 22 x 58 22 x 58 T0 T00 T1 T2 T3 T4

Internal operator, packlockable

Front Side Side or front

External operator, padlockable and lockable

Side or front

Rated operational voltage (U_e)

690 V

Rated operational current (I_e) at 400 V, AC-23A

32 A 50 A 63 A 100 A 125 A 160 A 250 A 400 A 630 A 1250 A

Rated breaking capacity at 400 V, AC-23B

256 A 400 A 500 A 800 A 1000 A 1280 A 2000 A 3200 A 5040 A 10 000 A

Rated making capacity at 400 V, AC-23B

320 A 500 A 630 A 1000 A 1250 A 1600 A 2500 A 4000 A 6300 A 12 500 A

Rated rms conditional short circuit current at 400 V, with gG (gl) fuses

100 kA 100 kA 100 kA 100 kA 100 kA 100 kA 100 kA 100 kA 100 kA 100 kA

Switch-disconnector-fuse type references

GS1 DD GS1 F GS1 G GS1 J GS1 K or KK GS1 L or LL GS1 N GS1 QQ GS1 S GS1 V

Pages

23024/2 and 23024/3

overcurrent protection.
off main circuits (including Emergency stop).
padlocking and interlocking.
provide disconnect and protection functions on the incoming supply of equipment, generators or starters, including motors.



BS										
32 A	63 A	100 A	160 A	200 A	250 A	315 A	400 A	630 A	800 A	1250 A

A1	A2-A3	A4 Ø ≤ 31 mm	A4-B1-B2	B1-B2	B1...B3	B1...B3	B1...B4	C1-C2	C1...C3	D1
Front	Side							Side or front		
Side or front										

32 A	63 A	100 A	160 A	200 A	250 A	315 A	400 A	630 A	800 A	1000 A
256 A	500 A	800 A	1280 A	1600 A	2000 A	2520 A	3200 A	5040 A	6400 A	10,000 A
320 A	630 A	1000 A	1600 A	2000 A	2500 A	3150 A	4000 A	6300 A	8000 A	8000 A
100 kA	100 kA	100 kA	80 kA	100 kA	80 kA	80 kA	80 kA	100 kA	100 kA	100 kA
GS1 DDB	GS1 GB	GS1 JB	GS1 LB or LLB	GS1 MMB	GS1 NB	GS1 PPB	GS1 QQB	GS1 SB	GS1 TB	GS1 VB

23024/4

Protection components

Switch-disconnector-fuses, 32 to 1250 A

Functions

Breaking

- Quick break and quick tripping mechanism.
 - Breaking mechanism independent of fuses.
-
- Utilisation categories AC-23/690 V and DC-23/500 V.

Isolation

- Upstream and downstream breaking of fuses.
Up to 630 A: NFC/DIN, up to 800 A: BS
Upstream breaking of fuses for 1250 A.
-
- GS1 AN auxiliary contacts.
-
- Contacts forced open in the event of welding.
-
- Visible isolation distance between the open contacts.

Protection

- Addition of gG (gl) fuses.
-
- Addition of aM fuses (associated with thermal overload relays).
-
- Addition of quick-blow fuses.
-
- “Blown fuse” detection device.
-
- Conditional short-circuit withstand voltage of 100 kA for all ratings.
-
- Handles with padlocking facility.
 - Interlocking of handles by means of lock.
 - Door interlock in “I” position.
-
- Fuse covers fitted as standard on all ratings.
-
- IPXXB terminal blocks fitted as standard up to 63 A, available as an option on other ratings.

Information and testing

- Up to 10 auxiliary contacts.
- Test facility with auxiliary contacts GS1 ANT and handles GS1 AHT.

Product overview

NF C and DIN fuses



BS fuses



- ☐ Opening and closing independent of operator speed.
- ☐ Quality and durability of mechanical and electrical lives.

- ☐ On-load making and breaking of resistive, inductive or mixed resistive and inductive circuits.

- ☐ Durable performance in severe duty applications.

- ☐ Direct switching of motors.

- ☐ Double break isolation of the power circuit and safe replacement of fuses.

- ☐ Total isolation of power and control circuits to ensure safety of persons and equipment.

- ☐ Control circuit isolation.

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- ☐ Fully apparent break (up to 315 A rating). “Open” position cannot be indicated unless all contacts are actually open.

- ☐ Safe opening and clear indication of “Open” state of switch-disconnector.

- ☐ Visible break (400 to 1250 A ratings).

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- ☐ Protection of distribution circuits and power switching circuits without significant current peak.

- ☐ Type 2 coordination ($I_q > 50$ kA) for motor starters consisting of fuses, contactor, relay.

- ☐ Protection of motors.

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- ☐ Protection of electronic variable speed controllers and soft starters.

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- ☐ Protection against single-phasing.

- ☐ Equivalence between the breaking capacity of the fuses and the ability of the switch-disconnector-fuse to withstand this maximum capacity.

- ☐ Use in installations where very high short-circuit currents can develop.

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- ☐ Protection against accidental contact.

- ☐ Protection of persons.

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- ☐ Early break, “Open” and “Closed” position signalling, and “blown fuse” signalling.

- ☐ Use in automation systems.

Accessories

Handles

- ☐ Internal or external.
- ☐ Mounted on right-hand side.
- ☐ Mounted on left-hand side.
- ☐ Mounted on front with door interlock.
- ☐ Padlockable with up to 3 padlocks.
- ☐ Lockable.
- ☐ Black / Black or Yellow / Red.

Contacts

- ☐ Addition of up to 8 auxiliary contacts GS1 AN suitable for isolation. Reversibility of these contacts to convert an N/C contact into an N/O contact and vice versa.
- ☐ Control circuit test facility, off-load, with auxiliary contacts GS1 ANT used in conjunction with handles GS1 AHT.
- ☐ Two auxiliary early break and “O” and “I” position signalling contacts.
- ☐ Auxiliary “blown fuse” signalling contacts.

Protection components

Switch-disconnector-fuses, 32 to 1250 A
for use with NF C or DIN fuses

Type		GS1 DD	GS1 F	GS1 G	GS1 J
Environment					
Conforming to standards	Switch-disconnector-fuses	IEC 60947-3 and 5, NF C 63-130, VDE 0660, NBN 63408			
	Circuit-breakers	IEC 60269-1 and 2, NFC 63-210 and 63-211, VDE 0636-1, DIN 43620			
Product certifications		ASEFA/LOVAG, KEMA, LROS, CEBEC			
Protective treatment		"TH"			
Flame resistance conforming to IEC 60695-2-1	Body	°C	960	960	
	Fuse cover	°C	—	850	
Pole characteristics					
Rated thermal current at 40 °C (I _{th})	A	32	50	63	100
Fuse size		10 x 38	14 x 51	T000	22 x 58
Rated insulation voltage (U _i)	V	690	750	750	750
Rated impulse withstand voltage (U _{imp})	kV	8	8	8	8
Rated operational power	Cat. AC-23A/B (1) ~ 400 V	kW	15	25	33
	~ 500 V	kW	18.5 (2)	33	45
	~ 690 V	kW	25 (2)	45	55
Rated operational current (I _e)	Cat. AC-23A/B (1) ~ 400 V	A	32	50	63
	~ 500 V	A	32 (2)	50	63
	~ 690 V	A	32 (2)	50	63
	Cat. DC-23A/B (1) --- 500 V (3)	A	20	40	40
Short-circuit withstand	I rms with protection by gG (gl) fuses	kA	100	100	100
Short-circuit making capacity	I rms with protection by gG (gl) fuses	kA	100	100	100
Fuse ratings		A	32	50	63
Rated breaking capacity	I rms at 400 V Cat. AC-23B	A	256	400	500
Rated making capacity	I rms at 400 V Cat. AC-23B	A	320	500	630
Mechanical durability	Number of operating cycles		30 000	10 000	10 000
Electrical durability	Number of operating cycles Cat. AC/DC-23A/B (1)		1500/300	1500	1500
Cabling	Cable c.s.a. min/max	mm ²	2.5/16	6/25	10/25
	Bars min c.s.a./max width	mm	—	—	—
Tightening torque		N.m	3	3.2	3.2
GS1 AM●11 and GS1 AM1 to AM4 early break and signalling contact characteristics					
Rated thermal current at 40 °C (I _{th})	A	16			
Rated operational current (I _e)	Cat. AC-15	A	127 V 5; 230 V: 4; 400/415 V: 3; 440 V: 2		
	Cat. DC-13	A	24 V: 12; 48 V: 2; 110 V: 0.6; 220 V: 0.4		
Durability	Number of operating cycles		Mechanical: 1 000 000; electrical Cat. AC-15: 30 000		
Fuse protection	gG	A	6 max		
Cabling		mm	Faston connectors: 1 x 6.35 or 2 x 2.8		
GS1 AN and GS1 ANT signalling contact characteristics (4)					
Rated thermal current at 40 °C (I _{th})	A	20			
Rated operational current (I _e)	Cat. AC-15	A	230 V 10; 400/415 V: 8; 440 V: 6		
	Cat. DC-13	A	48 V: 4; 110 V: 1.2; 220 V: 1		
Durability	Number of operating cycles		Mechanical: 30 000; electrical Cat. AC-15: 10 000		
Protection by fuses	gG	A	16 max		
Cabling	Cable c.s.a. min/max	mm ²	Min: 1.5; max: 16		

(1) Category "A" frequent operating cycles, category "B" infrequent operating cycles.

(2) With tubular links.

(3) 2 poles in series per phase.

(4) Cannot be used on **GS1 DD**.

GS1 K	GS1 KK	GS1 L	GS1 LL	GS1 N	GS1 QQ	GS1 S	GS1 V
IEC 60947-3 and 5, NF C 63-130, VDE 0660, NBN 63408							
IEC 60269-1 and 2, NFC 63-210 and 63-211, VDE 0636-1, DIN 43620							
ASEFA/LOVAG, KEMA, LROS, CEBEC							
"TH"							
960							
850							
125	125	160	160	250	400	630	1250
22 x 58	T00	T0	T00	T1	T2	T3	T4
750	750	750	750	750	750	1000	1000
8	8	8	8	8	8	12	12
63	63	90	90	132	220	355	710
90	90	110	110	160	220	355	670/710
90	90	110	110	220	220/295	295/400	600/750
125	125	160	160	250	400	630	1250
125	125	160	160	250	315/315	500	900/1000
100	100	125	125	250	250/315	315/400	630/800
100	100	125/80	125/80	160	200/315	400/630	800/1000
100	100	100	100	100	100/50	100	100
100	100	100	100	100	100/50	100	100
125	125	160	160	250	315/400	630	1250
1000	1000	1280	1280	2000	3200	5040	10 000
1250	1250	1600	1600	2500	4000	6300	12 500
10 000	10 000	10 000	10 000	10 000	10 000	5000	5000
1000	1000	1000/200	1000/200	1000/200	1000/200	1000/200	500/100
35/95	35/95	50/95	50/95	95/240	185/240	2 x 150 / 2 x 300	– / 4 x 185
–	–	–	–	–	– /45	2 x 30 x 5 / 63	2 x 60 x 5 / 100
12	12	12	12	25	25	44	44
16							
127 V: 5; 230 V: 4; 400 /415 V: 3; 440 V: 2							
24 V: 12; 48 V: 2; 110 V: 0.6; 220 V: 0.4							
Mechanical: 1 000 000; electrical Cat. AC-15: 30 000							
6 max							
Faston connectors: 1 x 6.35 or 2 x 2.8							
20							
230 V: 10; 400 /415 V: 8; 440 V: 6							
48 V: 4; 110 V: 1.2; 220 V: 1							
Mechanical: 30 000; electrical Cat. AC-15: 10 000							
16 max							
Min: 1.5; Max: 16							

Protection components

Switch-disconnector-fuses, 32 to 1250 A
for use with BS fuses

Type			GS1 DDB	GS1 GB	GS1 JB
Environment					
Conforming to standards	Switch-disconnector-fuses		IEC 60947-3 and 5, NF C 63-130, VDE 0660, NBN 63408		
	Circuit-breakers		IEC 60269-1 and 2, NFC 63-210 and 63-211, VDE 0636-1, DIN 43620		
Product certifications			ASEFA/LOVAG, KEMA, pending: LROS		
Protective treatment			“TH”		
Flame resistance conforming to IEC 60695-2-1	Body	°C	960		
	Fuse cover	°C	–		850
Pole characteristics					
Rated thermal current at 40 °C (I _{th})		A	32	63	100
Fuse size			A1	A2-A3	A4 Ø ≤ 31 mm
Rated insulation voltage (U _i)		V	690	750	750
Rated impulse withstand voltage (U _{imp})		kV	8	8	8
Rated operational power	Cat. AC-23A/B (1) ~ 400 V	kW	15	30	51
	~ 500 V	kW	18.5	40	63
	~ 690 V	kW	25	55	90
Rated operational current (I _e)	Cat. AC-23A/B (1) ~ 400 V	A	32	63	100
	~ 500 V	A	32	63	100
	~ 690 V	A	32	63	100
	Cat. DC-23A/B (1) --- 500 V (2)	A	20	40	100
Short-circuit withstand	I rms with protection by BS fuses	kA	80	100	100
Short-circuit making capacity	I rms with protection by BS fuses	kA	80	100	100
Fuse ratings		A	32	63	100
Rated breaking capacity	I rms at 400 V Cat. AC-23B	A	256	500	800
Rated making capacity	I rms at 400 V Cat. AC-23B	A	320	630	1000
Mechanical durability	Number of operating cycles		30 000	10 000	10 000
Electrical durability	Number of operating cycles Cat. AC/DC-23A/B (1)		1500/300	1500/300	1500/300
Cabling	Cable c.s.a. min/max	mm ²	2.5/16	10/25	25/95
	Bars min c.s.a./max width	mm	–	–	–
Tightening torque		N.m	3	3.2	12
GS1 AM●11 and GS1 AM1 to AM4 early break and signalling contact characteristics					
Rated thermal current at 40 °C (I _{th})		A	16		
Rated operational current (I _e)	Cat. AC-15	A	127 V 5; 230 V: 4; 400 /415 V: 3; 440 V: 2		
	Cat. DC-13	A	24 V: 12; 48 V: 2; 110 V: 0.6; 220 V: 0.4		
Durability	Number of operating cycles		Mechanical: 1 000 000; electrical Cat. AC-15: 30 000		
Fuse protection	gG	A	6 max		
Cabling		mm	Faston connectors: 1 x 6.35 or 2 x 2.8		
GS1 AN and GS1 ANT signalling contact characteristics					
Rated thermal current at 40 °C (I _{th})		A	20		
Rated operational current (I _e)	Cat. AC-15	A	230 V 10; 400/415 V: 8; 440 V: 6		
	Cat. DC-13	A	48 V: 4; 110 V: 1.2; 220 V: 1		
Durability	Number of operating cycles		Mechanical: 30 000; electrical Cat. AC-15: 10 000		
Fuse protection	gG	A	16 max		
Cabling		mm ²	Min: 1.5; max: 16		

(1) Category "A" frequent operating cycles, category "B" infrequent operating cycles.

(2) 2 poles in series per phase.

(3) Fit switch-disconnector-fuses **GS1 LB** with B1 or B2 fuses and **GS1 LLB** with A4 fuses.

GS1 LB or LLB (1)	GS1 MMB	GS1 NB	GS1 PPB	GS1 QQB	GS1 SB	GS1 TB	GS1 VB
IEC 60947-3 and 5, NF C 63-130, VDE 0660, NBN 63408							
IEC 60269-1 and 2, NFC 63-210 and 63-211, VDE 0636-1, DIN 43620							
ASEFA/LOVAG, KEMA, pending: LROS							
"TH"							
960							
850							
160	200	250	315	400	630	800	1250
A4, B1-B2 (3)	B1-B2	B1...B3	B1...B3	B1...B4	C1-C2	C1...C3	D1
750	750	750	750	1000	1000	1000	1000
8	8	8	8	12	12	12	12
80	100	132	132	220	355	450	560
110	140	160	160	400	355	450	560
110	150	220	220	220/295	295/400	600/750	600
160	200	250	250	400	630	800	1000
160	200	250	250	315	500	630	800
125	160	250	250	250/315	315/400	630/800	630
125	125	160	160	200/315	400/630	800	800/1000
80	80	80	80	80	—	—	—
80	80	80	55	80/50	100	100	100
160	200	250	315	400	630	800	1250
1280	1600	2000	2000	3200	5040	6400	10 000
1600	2000	2500	2500	4000	6300	8000	8000
10 000	10 000	10 000	10 000	8000	6000	6000	6000
1000/200	1000/200	1000/200	1000/200	1000/200	1000/200	500/100	500/100
50/95	50/95	95/240	95/240	185/240	2 x 150 / 2 x 300	—	— / 4 x 185
—	—	—	—	— / 40	2 x 30 x 5 / 63	2 x 60 x 5 / 63	2 x 60 x 5 / 100
12	12	25	25	25	44	44	44
16							
127 V: 5; 230 V: 4; 400 /415 V: 3; 440 V: 2							
24 V: 12; 48 V: 2; 110 V: 0.6; 220 V: 0.4							
Mechanical: 1 000 000; electrical Cat. AC-15: 30 000							
6 max							
Faston connectors: 1 x 6.35 or 2 x 2.8							
20							
230 V: 10; 400 /415 V: 8; 440 V: 6							
48 V: 4; 110 V: 1.2; 220 V: 1							
Mechanical: 30 000; electrical Cat. AC-15: 10 000							
16 max							
Min: 1.5; max: 16							

Protection components

Switch-disconnector-fuses, 32 to 1250 A
for use with NF C or DIN fuses

532783



GS1 DD3

532783



GS1 FD3

532785



GS1 ND4

532786



GS1 KKG3

Switch-disconnector-fuse switch bodies for use with NF C or DIN fuses

Switch rating	Fuse size	Number of poles	Reference	Weight
A				kg
For external operators mounted on RH or LH side, and front-mounted internal or external operators				
32	10 x 38	3	GS1 DD3	0.510
		3 + Nc (1)	GS1 DD4	0.540
For internal or external operators mounted on right-hand side				
50	14 x 51	3	GS1 FD3	0.900
		4	GS1 FD4	1.100
63	Size 000 (2)	3	GS1 GD3	1.100
		4	GS1 GD4	1.400
100	22 x 58	3	GS1 JD3	1.700
		4	GS1 JD4	2.100
125	22 x 58	3	GS1 KD3	1.700
		4	GS1 KD4	2.100
	Size 00	3	GS1 KKD3	1.700
		4	GS1 KKD4	2.100
160	Size 0	3	GS1 LD3	2.200
		4	GS1 LD4	2.800
	Size 00	3	GS1 LLD3	1.700
		4	GS1 LLD4	2.100
250	Size 1	3	GS1 ND3	3.500
		4	GS1 ND4	4.500
400	Size 2	3	GS1 QGD3	4.700
		4	GS1 QGD4	6.600
630	Size 3	3	GS1 SD3	16.500
		4	GS1 SD4	20.500
1250	Size 4	3	GS1 VD3	27.500
		4	GS1 VD4	34.500
For external operators mounted on left-hand side				
50	14 x 51	3	GS1 FG3	0.900
		4	GS1 FG4	1.100
63	Size 000 (2)	3	GS1 GG3	1.100
		4	GS1 GG4	1.400
100	22 x 58	3	GS1 JG3	1.700
		4	GS1 JG4	2.100
125	22 x 58	3	GS1 KG3	1.700
		4	GS1 KG4	2.100
	Size 00	3	GS1 KKG3	1.700
		4	GS1 KKG4	2.100
160	Size 0	3	GS1 LG3	2.200
		4	GS1 LG4	2.800
	Size 00	3	GS1 LLG3	1.700
		4	GS1 LLG4	2.100
250	Size 1	3	GS1 NG3	3.500
		4	GS1 NG4	4.500
400	Size 2	3	GS1 QQG3	4.700
		4	GS1 QQG4	6.600

(1) Nc = Switched neutral.

(2) Compact fuses for German market.

Protection components

Switch-disconnector-fuses, 50 to 1250 A
for use with NF C or DIN fuses

53/2787



GS1 K4

Switch-disconnector-fuse switch bodies for use with NF C or DIN fuses

Switch rating	Fuse size	Number of poles	Reference	Weight
A				kg
For front-mounted external operators				
50	14 x 51	3	GS1 F3	1.200
		4	GS1 F4	1.400
63	Size 000 (1)	3	GS1 G3	1.400
		4	GS1 G4	1.700
100	22 x 58	3	GS1 J3	2.000
		4	GS1 J4	2.400
125	22 x 58	3	GS1 K3	2.000
		4	GS1 K4	2.400
	Size 00	3	GS1 KK3	2.000
		4	GS1 KK4	2.400
160	Size 0	3	GS1 L3	2.500
		4	GS1 L4	3.100
	Size 00	3	GS1 LL3	2.000
		4	GS1 LL4	2.400
250	Size 1	3	GS1 N3	3.800
		4	GS1 N4	4.800
400	Size 2	3	GS1 QQ3	4.500
		4	GS1 QQ4	6.800
For front-mounted internal and external operators				
630	Size 3	3	GS1 S3	16.500
		4	GS1 S4	20.500
1250	Size 4	3	GS1 V3	27.500
		4	GS1 V4	34.500

(1) Compact fuses for German market.

Protection components

Switch-disconnector-fuses, 32 to 1250 A
for use with BS fuses

532788



GS1 DDB3

532789



GS1 NBR3

532790



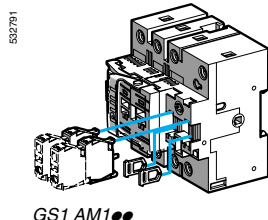
GS1 GB3

Switch-disconnector-fuse switch bodies for use with BS fuses

Switch rating	Fuse size	Number of poles	Reference	Weight
A				kg
For external operators mounted on RH or LH side, and front-mounted internal or external operators				
32	A1	3	GS1 DDB3	0.510
		3 + Nc (1)	GS1 DDB4	0.540
For internal or external operators mounted on right-hand side				
63	A2-A3	3	GS1 GBR3	1.100
		4	GS1 GBR4	1.400
100	A4 Ø ≤ 31 mm	3	GS1 JBR3	1.700
		4	GS1 JBR4	2.100
160	A4	3	GS1 LLBR3	2.200
		4	GS1 LLBR4	2.900
	B1-B2	3	GS1 LBR3	2.200
		4	GS1 LBR4	2.900
200	B1-B2	3	GS1 MMBR3	2.200
		4	GS1 MMBR4	2.900
250	B1...B3	3	GS1 NBR3	3.500
		4	GS1 NBR4	4.500
315	B1...B3	3	GS1 PPBR3	3.500
		4	GS1 PPBR4	4.500
400	B1...B4	3	GS1 QQBR3	4.700
		4	GS1 QQBR4	6.600
630	C1-C2	3	GS1 SBR3	17.500
		4	GS1 SBR4	21.500
800	C1...C3	3	GS1 TBR3	22.000
		3 + N	GS1 TBR4	26.500
1250	D1	3	GS1 VBR3	27.500
		4	GS1 VBR4	34.500
For front-mounted external operators				
32	A1	3	GS1 DB3	1.200
		4	GS1 DB4	1.400
63	A2-A3	3	GS1 GB3	1.400
		4	GS1 GB4	1.700
100	A4 Ø ≤ 31 mm	3	GS1 JB3	2.000
		4	GS1 JB4	2.400
160	A4	3	GS1 LLB3	2.200
		4	GS1 LLB4	2.900
	B1-B2	3	GS1 LB3	2.500
		4	GS1 LB4	3.200
200	B1-B2	3	GS1 MMB3	2.500
		4	GS1 MMB4	3.200
250	B1...B3	3	GS1 NB3	3.800
		4	GS1 NB4	4.800
315	B1...B3	3	GS1 PPB3	3.800
		4	GS1 PPB4	4.800
400	B1...B4	3	GS1 QQB3	4.500
		4	GS1 QQB4	6.800
For front-mounted internal or external operators				
630	C1-C2	3	GS1 SB3	17.500
		4	GS1 SB4	21.500
800	C1...C3	3	GS1 TB3	22.000
		3 + N	GS1 TB4	26.500
1250	D1	3	GS1 VB3	27.500
		4	GS1 VB4	34.500

(1) Nc = Switched neutral.

Protection components

Switch-disconnector-fuses, 32 to 1250 A
Auxiliary and signalling contacts

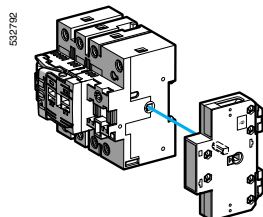
GS1 AM1●●

Auxiliary early break and/or O and I position signalling contacts

Switch rating	Type of contact	Mounting	Reference	Weight
A				kg
32	1 N/O	Front (1)	GS1 AM110	0.015
	1 N/C	Front (1)	GS1 AM101	0.015
	1 C/O	Side (2)	GS1 AM111	0.060
	2 C/O	Side (2)	GS1 AM211	0.070

Auxiliary early break and O and I position signalling contacts

Switch rating	Type of contact	Reference	Weight
A			kg
50...400	1 C/O	GS1 AM1 (3)	0.030
630...1250	1 C/O	GS1 AM3	0.030
50...400	2 C/O	GS1 AM2 (3)	0.050
630...1250	2 C/O	GS1 AM4	0.050



GS1 AM1●11

Auxiliary O and I position signalling contacts (4)

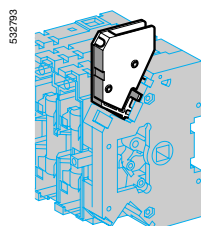
Switch rating	Type of contact	Reference	Weight
A			kg
Standard contacts			
50...400	1 N/C + 1 N/O	GS1 AN11 (5)	0.100
	2 N/C + 2 N/O	GS1 AN22 (5)	0.200

Contacts with test facility (6)

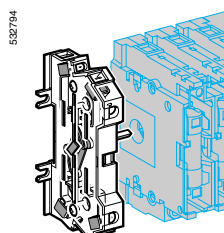
50...400	1 N/C + 1 N/O	GS1 ANT11	0.100
	2 N/C + 2 N/O	GS1 ANT22	0.200

Auxiliary "blown fuse" signalling contacts for use with NF C and DIN fuses (7)

Type of contact	Switch rating	Fuse size	Number of poles	Reference	Weight
A					kg
1 st C/O	50	14 x 51	3	GS1 AF1	0.030
			4	GS1 AF1	0.030
	100 and 125	22 x 58	3	GS1 AF23	0.040
			4	GS1 AF24	0.050
	160	T0	3	GS1 AF33	0.050
			4	GS1 AF34	0.060
	250 and 400	T1 and T2	3	GS1 AF43	0.060
			4	GS1 AF44	0.060
	630	T3	3	GS1 AF63	0.070
			4	GS1 AF64	0.070
2 nd C/O	50...400	—	3	GS1 AF73	0.070
			4	GS1 AF74	0.070
	630...1250	—	3	GS1 AF	0.020
			4	GS1 AF	0.020
	630...1250	—	3	GS1 AFF	0.020
			4	GS1 AFF	0.020



GS1 AM1



GS1 AN●

(1) For use with front or side-mounted external operator.

(2) For use only with front-mounted internal operator.

(3) Except for switch-disconnector-fuses with operator mounted on left-hand side.

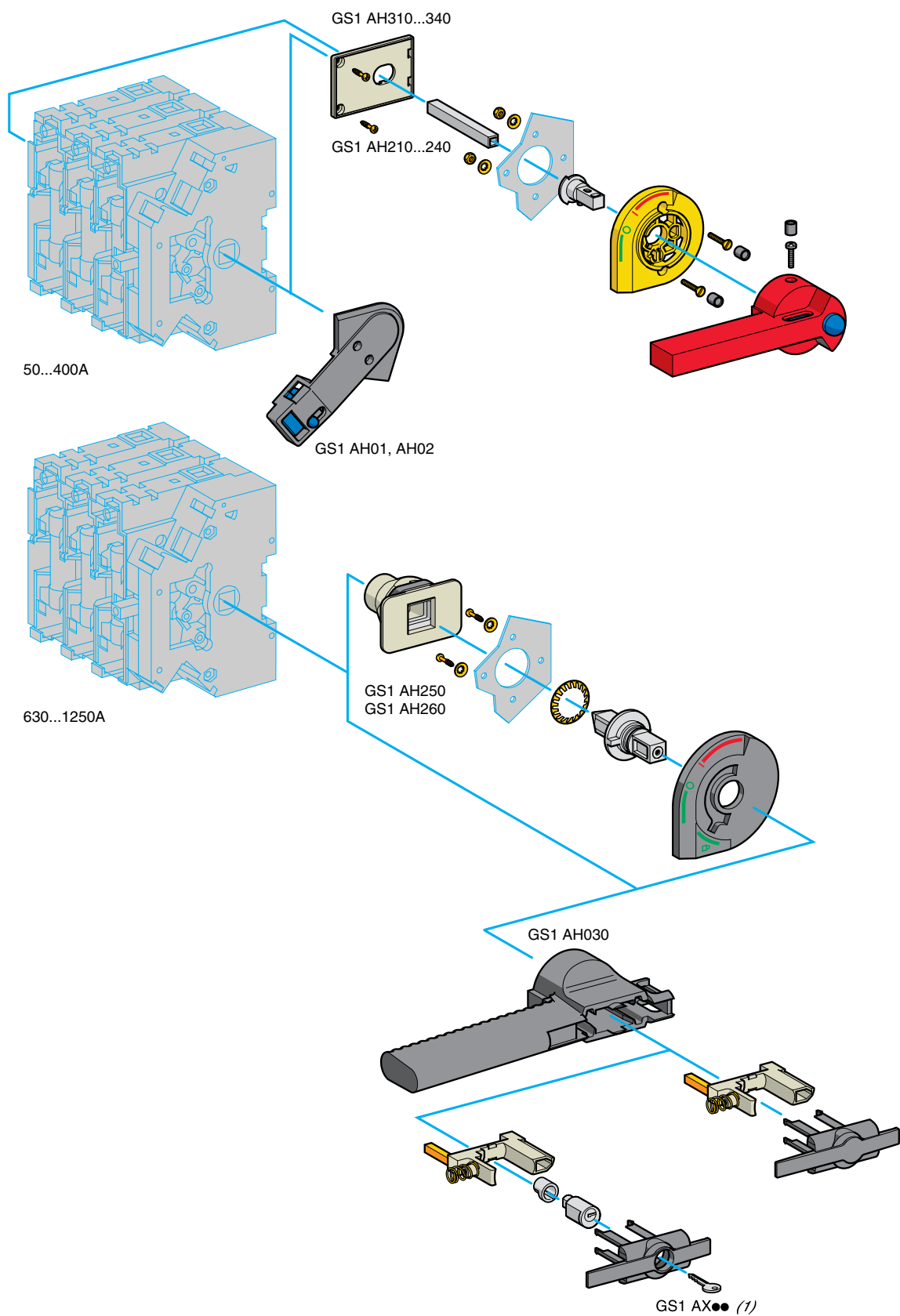
(4) Reversible add-on attachments for converting an N/C contact to an N/O contact and vice versa.

(5) For switch-disconnector-fuses with external operator mounted on left-hand side, add suffix G to the reference.

Example: GS1 AN11G.

(6) Provides Test function only with handles GS1 AHT●●●.

(7) BS fuses are not available with striker.



(1) See page 23024/10

Protection components

Switch-disconnector-fuses, 32 to 1250 A
Side-mounted operators

Side-mounted operators

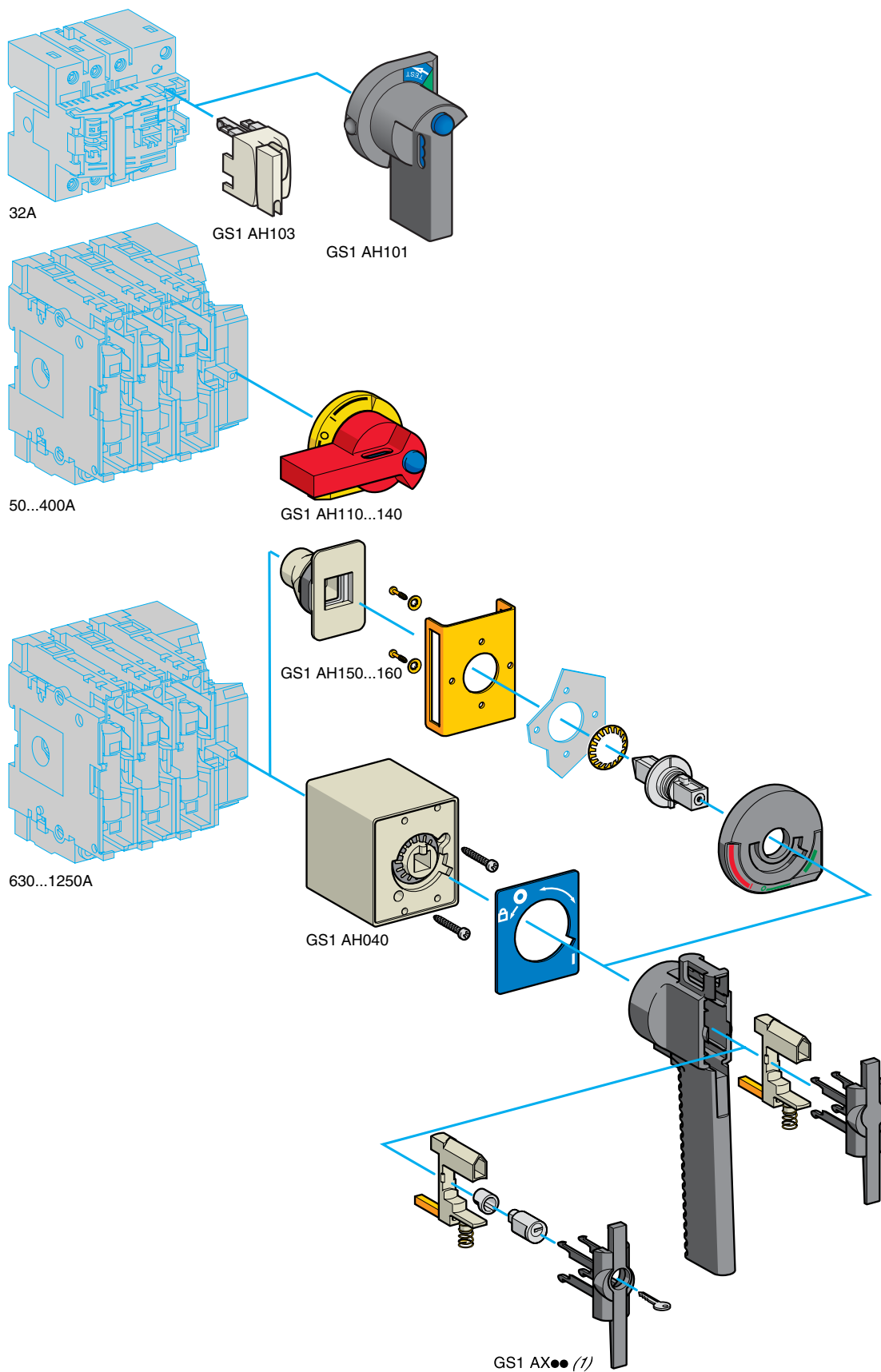
Switch rating	Type of operator	Colour of handle/front plate	Reference	Weight
A				kg
Handles for internal operators mounted on right-hand side, padlockable				
50 and 63	—	Black/—	GS1 AH01	0.050
100...400	—	Black/—	GS1 AH02	0.090
630...1250	Lockable (1) in "O" position	Black/—	GS1 AH030	0.300
Handles for external operators mounted on right-hand side, padlockable, IP 65				
32	—	Black/Black	GS1 AH101	0.160
		Red/Yellow	GS1 AH102	0.160
50 and 63	Lockable (2) in "O" position	Black/Black	GS1 AH210	0.320
		Red/Yellow	GS1 AH220	0.320
100...400	Lockable (2) in "O" position	Black/Black	GS1 AH230	0.350
		Red/Yellow	GS1 AH240	0.350
630...1250	Lockable (1) or (3) in "O" position	Black/Black	GS1 AH250	0.600
		Red/Yellow	GS1 AH260	0.600
Handles for external operators mounted on left-hand side, padlockable, IP 65 (4)				
32	—	Black/Black	GS1 AH311	0.160
		Red/Yellow	GS1 AH321	0.160
50 and 63	Lockable (2) in "O" position	Black/Black	GS1 AH310	0.320
		Red/Yellow	GS1 AH320	0.320
100...400	Lockable(2) in "O" position	Black/Black	GS1 AH330	0.350
		Red/Yellow	GS1 AH340	0.350

(1) Lockable with device **GS1 AX11** to be ordered separately.

(2) Lockable with device **GS1 AX31** to be ordered separately.

(3) Lockable with device **GS1 AX21** to be ordered separately.

(4) For switch-disconnector-fuses with NF C and DIN fuses.



(1) See page 23024/10

Protection components

Switch-disconnector-fuses, 32 to 1250 A
Front-mounted operators

Front-mounted operators

Switch rating	Type of operator	Colour of handle/front plate	Reference	Weight
A				kg
Handles for front-mounted internal operators, padlockable				
32	–	Black/–	GS1 AH103	0.045
630...1250	Lockable (1) or (2) in "O" position	Black/–	GS1 AH040	0.600

Handles for front-mounted external operators, padlockable, IP 65.

Door interlock in "I" position (4)

32	–	Black/Black	GS1 AH101	0.160
		Red/Yellow	GS1 AH102	0.160
50 and 63	Lockable(3) in "O" position	Black/Black	GS1 AH110	0.320
		Red/Yellow	GS1 AH120	0.320
100...400	Lockable(3) in "O" position	Black/Black	GS1 AH130	0.350
		Red/Yellow	GS1 AH140	0.350
630...1250	Lockable(1) in "O" position	Black/Black	GS1 AH150	0.700
		Red/Yellow	GS1 AH160	0.700

Handles for front-mounted external operators, padlockable, with test facility IP 65.

Door interlock in "I" position (4)

50 and 63	Lockable(3) in "O" position	Black/Black	GS1 AHT110	0.320
		Red/Yellow	GS1 AHT120	0.320
100...400	Lockable(3) in "O" position	Black/Black	GS1 AHT130	0.350
		Red/Yellow	GS1 AHT140	0.350

(1) Lockable with device **GS1 AX11** to be ordered separately.

(2) Lockable with device **GS1 AX21** to be ordered separately.

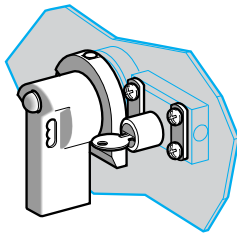
(3) Lockable with device **GS1 AX31** to be ordered separately.

(4) Door interlock can be overridden with a tool on ratings up to 400 A.

Protection components

Switch-disconnector-fuses, 32 to 1250 A
Accessories

532797



GS1 AX●●

Shaft extensions for external operators

Switch rating	Operator		Shaft cross section	Reference	Weight
	Type	length			
A		mm	mm		kg
32	Side or front-mounted	200	5 x 5	GS1 AE9	0.105
50...400	Side-mounted	200	10 x 10	GS1 AE1	0.050
	Front-mounted	320	10 x 10	GS1 AE2	0.200
630...1250	Side-mounted	200	15 x 15	GS1 AE5	0.500
	Front-mounted	200	15 x 15	GS1 AE6	0.450

Kits for handle locking devices

Switch rating	Type of operator	Key description	Reference	Weight
A				kg
50...400	External	Ronis EL11AP	GS1 AX31	0.400
	Side or front-mounted			
630...1250	Internal or external	Ronis 1104	GS1 AX11	0.020
	Side or front-mounted			
	Internal	Ronis EL11AP	GS1 AX21	0.200
	Front-mounted			

Cage terminals for connection of bare cables (without lug)

Switch rating	Number of poles	Reference	Weight
A			kg
100...160	3	GS1 AW33	0.070
	4	GS1 AW34	0.090
250	3	GS1 AW43	0.013
	4	GS1 AW44	0.017

Protection components

Switch-disconnector-fuses, 32 to 1250 A

Accessories

Terminal covers for upstream or downstream connector plates

Switch rating	Number of poles	Reference	Weight
A			kg
50 and 63	3 or 4	(1)	–
100...160	3	GS1 AP33	0.100
	4	GS1 AP34	0.100
200...400	3	GS1 AP43	0.250
	4	GS1 AP44	0.300
630	3	GS1 AP63	0.400
	4	GS1 AP64	0.500

Terminal covers for upstream connector plates

Switch rating	Number of poles	Reference	Weight
A			kg
800	3	GS1 AP73	0.400
	4	GS1 AP74	0.500
1250	3	GS1 AP83	0.300
	4	GS1 AP84	0.400

Fuse cover locking devices (2)

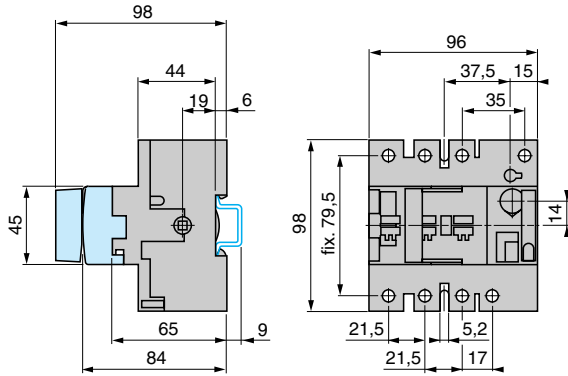
Switch rating	Fuse size	Number of poles	Reference	Weight
A				kg
50	14 x 51 and A1	3 or 4	(1)	–
63	T00C and A2-A3	3 or 4	GS1 AV1	0.010
100...160	22 x 58, T00 and A4	3 or 4	GS1 AV2	0.010
160	T0	3	GS1 AV33	0.050
		4	GS1 AV34	0.050
	B1-B2	3	GS1 AV43	0.150
		4	GS1 AV44	0.180
250	T1	3	GS1 AV53	0.060
		4	GS1 AV54	0.060
	B1...B3	3	GS1 AV63	0.180
		4	GS1 AV64	0.220
400	T2 and B1...B4	3	GS1 AV73	0.180
		4	GS1 AV74	0.220

(1) Fitted as standard on these switch-disconnector-fuses.

(2) For switch-disconnector-fuses fitted with internal or external operators mounted on right-hand side.

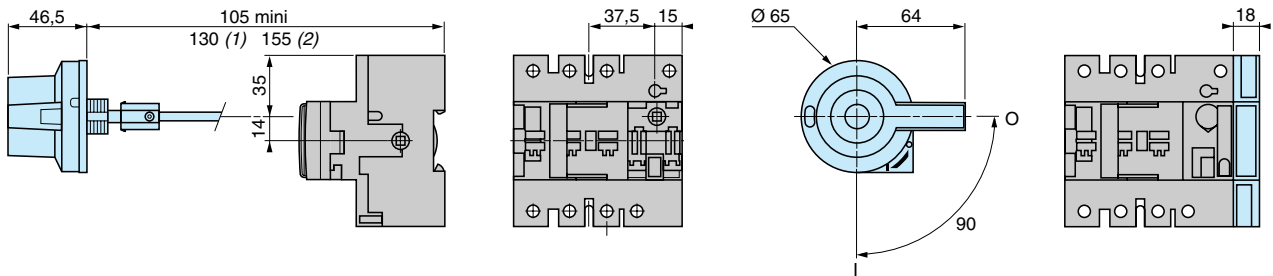
GS1 DD (32 A)

Front-mounted internal operator



GS1 DD (32 A)

Front-mounted external operator



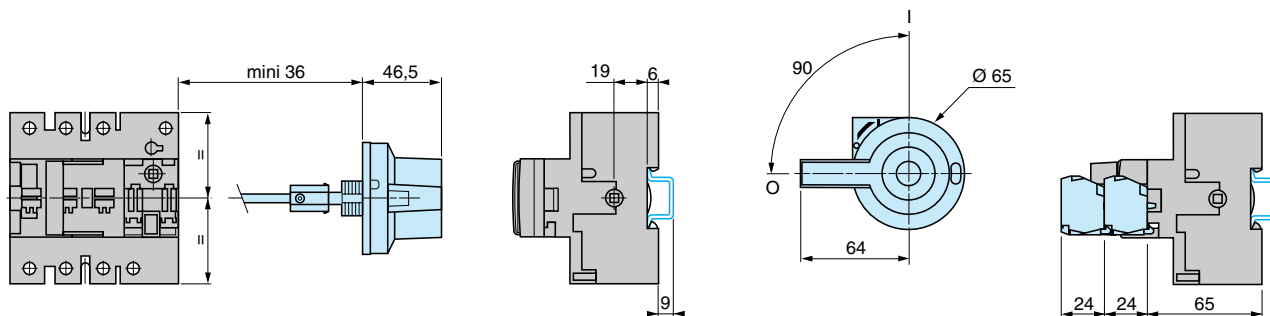
Accessories

GS1 AM11

- (1) With 1 or 2 GS1 AM11
(2) With 3 or 4 GS1 AM11

External RH side-mounted operator

GS1 AM11



Door cut-out

For external front-mounted and LH side-mounted operator

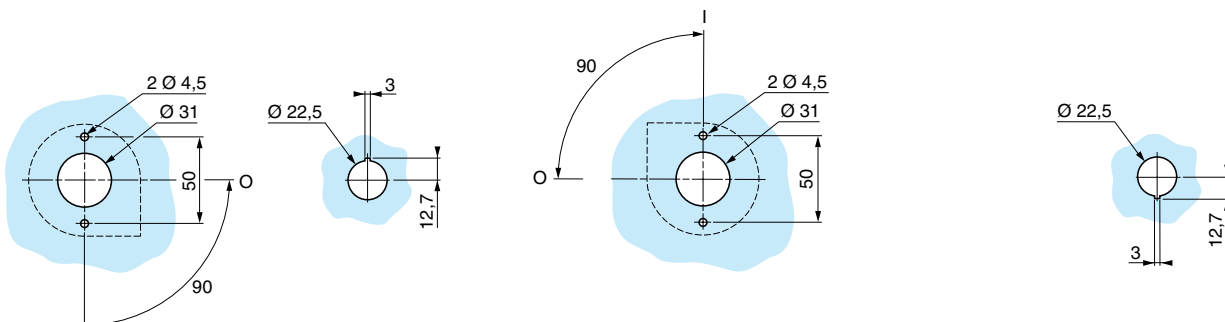
Fixing by 2 Ø 4 screws

Fixing by M22 nut

For external RH side-mounted operator

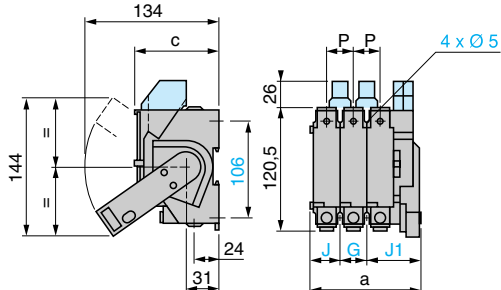
Fixing by 2 Ø 4 screws

Fixing by M22 nut



GS1 F (50 A), G and GB (63 A)

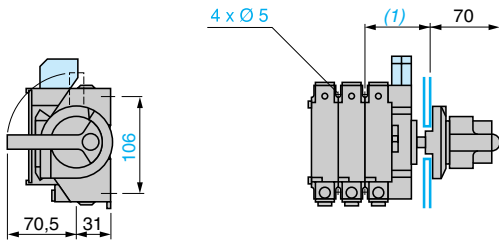
Side-mounted internal operator



		a	c	G	J	J1	P
GS1 F	3P	114	87	27	29	58	27
	4P	141	87	54	29	58	27
GS1 G	3P	129	116.5	32	34	63	32
	4P	161	116.5	64	34	63	32
GS1 GB	3P	129	92.5	32	34	63	32
	4P	161	92.5	64	34	63	32

GS1 F (50 A), G and GB (63 A)

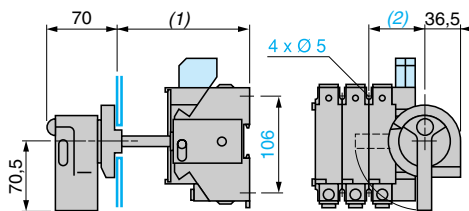
Side-mounted external operator



(1) GS1 F: min 60, max 68. GS1 G and GB: min 65, max 73.
Without shaft extension

GS1 F (50 A), G and GB (63 A)

Front-mounted external operator



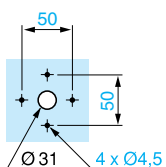
(1) GS1 F: min 94, max 165. GS1 G: min 124, max 165.
GS1 GB: min 100, max 165.

(2) GS1 F: 57.5 ; GS1 G and GB: 62.5.

GS1

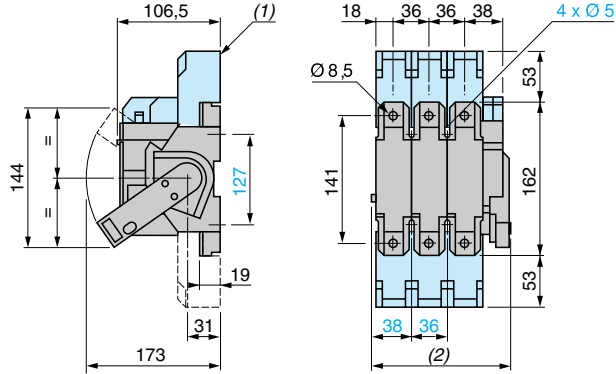
External front and side-mounted operator

Door cut-out



GS1 J or JB (100 A), K (125 A)

Side-mounted internal operator

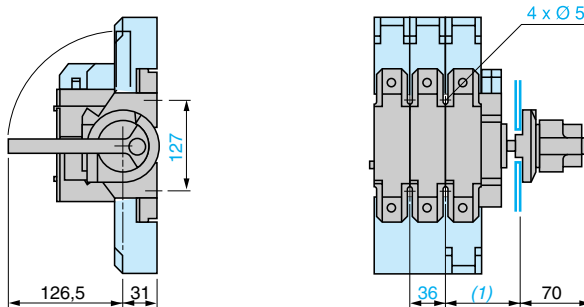


(1) Terminal cover

(2) 3P: 148, 4P: 184

GS1 J or JB (100 A), K (125 A)

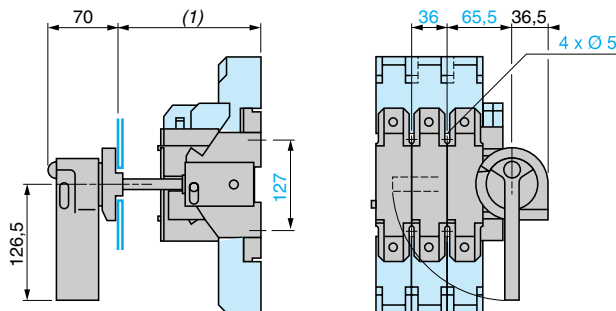
Side-mounted external operator



(1) Min 69, max 77, without shaft extension.

GS1 J or JB (100 A), K (125 A)

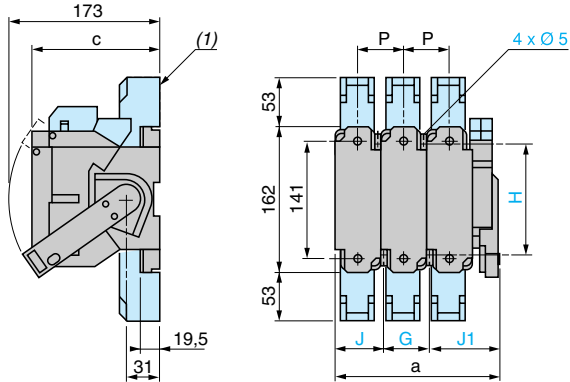
Front-mounted external operator



(1) Min 114, max 165.

GS1 KK (125 A), L, LL, LB and LLB (160 A)

Side-mounted internal operator

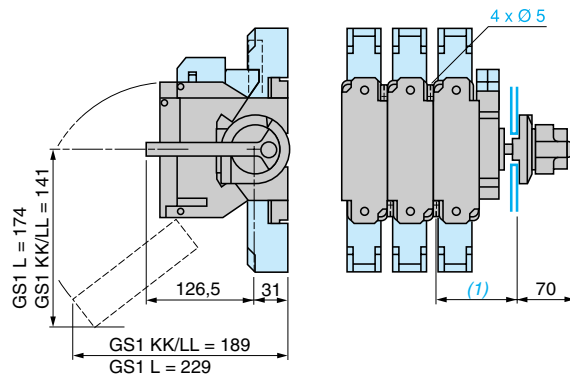


		a	c	G	H	J	J1	P
GS1 L	3P	190	136.5	50	140	50	90	50
	4P	240	136.5	100	140	50	90	50
GS1 KK, LL	3P	148	126.5	36	127	38	74	36
	4P	184	126.5	72	127	38	112	36
GS1 LB, LLB	3P	190	123	50	140	50	90	50
	4P	240	123	100	140	50	90	50

(1) *Terminal cover.*

GS1 KK (125 A), L, LL, LB and LLB (160 A)

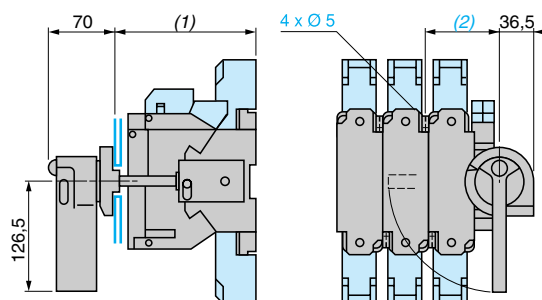
Side-mounted external operator



(1) GS1 KK or LL: min 69, max 77. GS1 L, LB, LLB, MB: min 83, max 91.
Without shaft extension

GS1 KK (125 A), L, LL, LB and LLB (160 A)

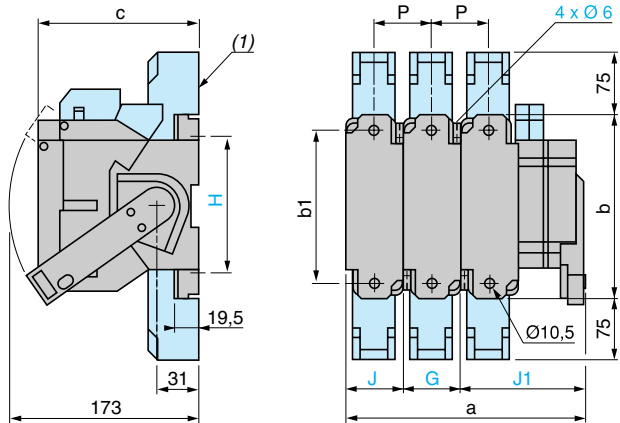
Front-mounted external operator



(1) GS1 KK, LL: min 134, max 165. GS1 L: min 144, max 165.
GS1 LB, LLB: min 130, max 165.

GS1 MMB (200 A), N or NB (250 A), PPB (315 A) and QQ (400 A)

Side-mounted internal operator

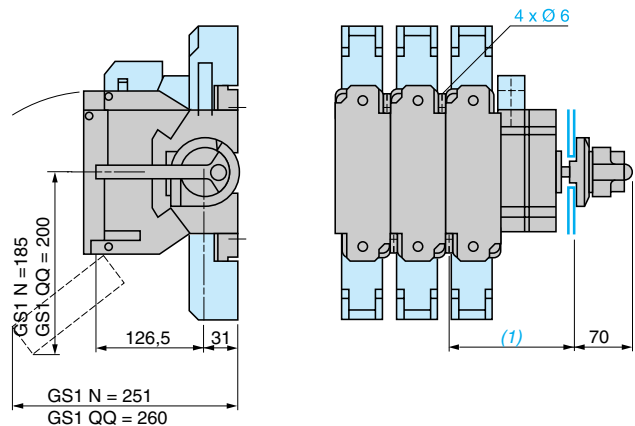


		a	b	b1	c	G	H	J	J1	P
GS1 MMB, N, NB	3P	250	195	166	146	60	162	60	130	60
	4P	310	195	166	146	120	162	60	130	60
GS1 QQ, PPB	3P	271	205	174	149	60	172	66	139	66
	4P	337	205	174	149	132	172	66	139	66

(1) Terminal cover.

GS1 MMB (200 A), N or NB (250 A), PPB (315 A) and QQ (400 A)

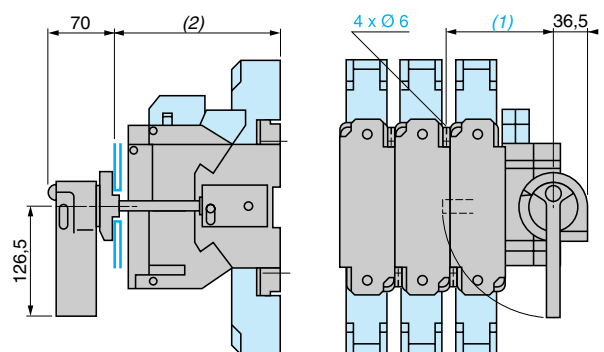
Side-mounted external operator



(1) Min 124, max 132. Without shaft extension.

GS1 MMB (200 A), N or NB (250 A), PPB (315 A) and QQ (400 A)

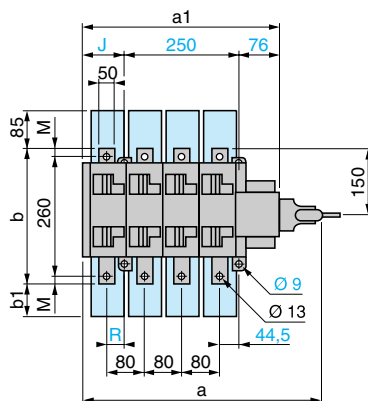
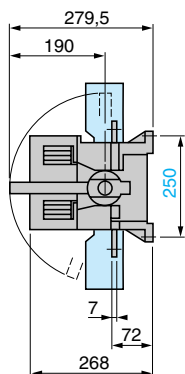
Front-mounted external operator



(1) GS1 MMB, N (3P): 90.5. GS1 MMB, N (4P): 114.5. GS1 PPB, QQ: 121.
(2) Min 154, max 225.

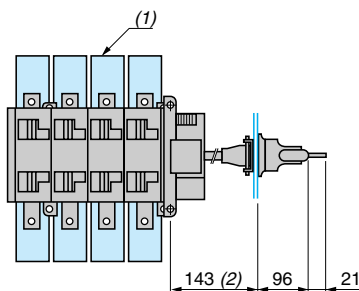
GS1 S (630 A) and GS1 TB (800 A)

Side-mounted internal operator



		a	a1	b	b1	J	M	R
GS1 S	3P	421.5	345.5	300	85	19.5	20	45.5
	4P	501.5	425.5	300	85	99.5	20	34.5
GS1 TB	3P	421.5	345.5	320	65	19.5	30	45.5
	4P	501.5	425.5	320	65	99.5	30	34.5

Side-mounted external operator

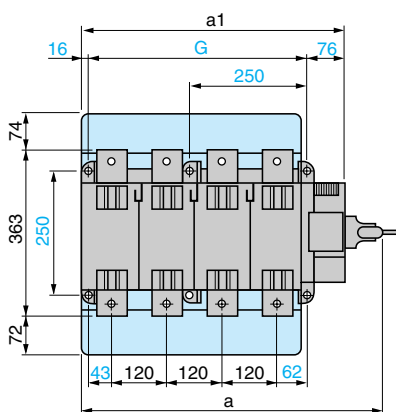
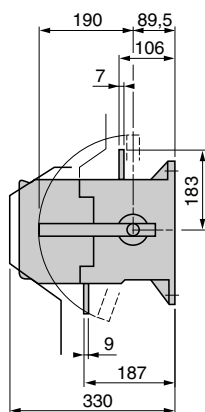


(1) *Terminal cover.*

(2) Without shaft extension. Minimum length with shaft extension $143 + 27$.

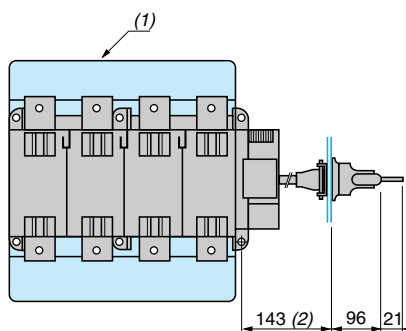
GS1 V (1250 A)

Side-mounted internal operator



		a	a1	G
GS1 V	3P	522	437	345
	4P	641	557	465

Side-mounted external operator



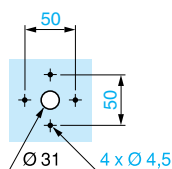
(1) *Protective screen for connector plates.*

(2) Without shaft extension. Minimum length with shaft extension: $143 + 27$.

GS1 S (630 A) and GS1 V (1250 A)

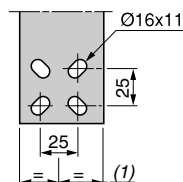
Side-mounted external operator

Door cut-out



GS1 V (1250 A)

Connector plate



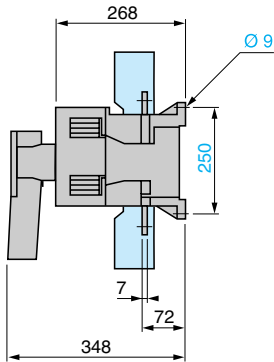
(1) Upstream connector plate: 80,
downstream connector plate: 65.

Protection components

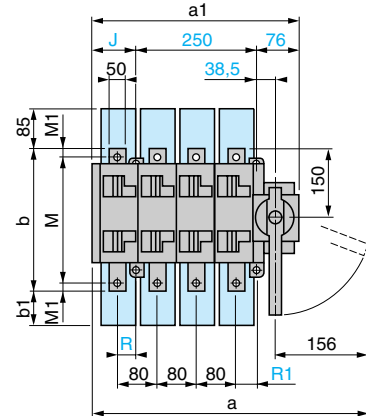
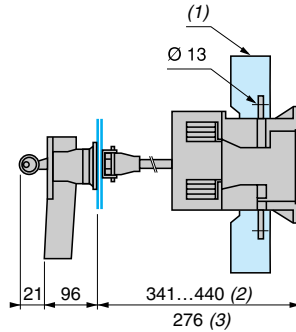
Switch-disconnector-fuses, 32 to 1250 A

GS1 S (630 A) and GS1 TB (800 A)

Front-mounted internal operator



Front-mounted external operator



		a	a1	b	b1	J	M	M1	R	R1
GS1 S	3P	470	345.5	300	85	19.5	260	20	45.5	44.5
	4P	550	425.5	300	85	99.5	260	20	34.5	44.5
GS1 TB	3P	470	345.5	320	65	19.5	267	26.5	—	—
	4P	550	425.5	320	65	99.5	267	26.5	—	—

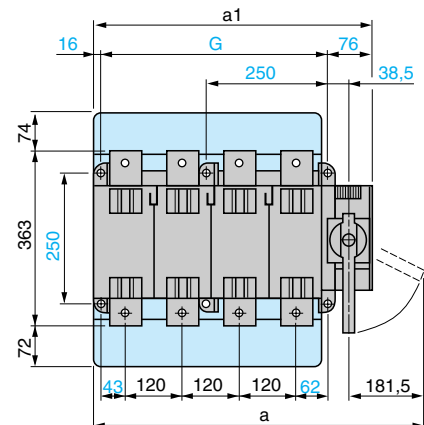
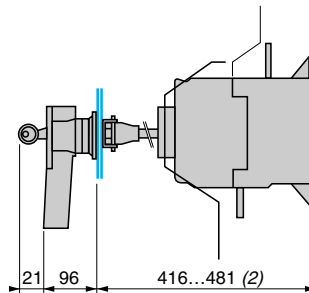
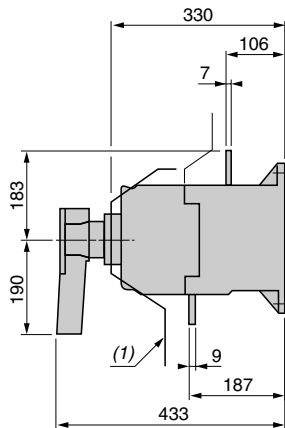
(1) Terminal cover

(2) Without shaft extension. Minimum length with shaft extension: add 27

(3) Shortened shaft

GS1 V (1250 A)

Front-mounted internal operator



		a	a1	G
GS1 V	3P	561	437	345
	4P	681	557	465

(1) Protective screen, front-mounted (fitted as standard)

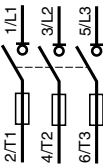
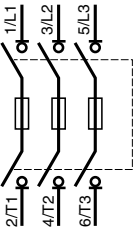
(2) Without shaft extension. Minimum length with shaft extension: add 27.

Note : For switch-disconnector-fuses **GS1 S (630 A)** and **GS1 V (1250 A)** with external operator, see page 23025/5 for the door cut-out and connector plate.

3-pole GS1

32 A

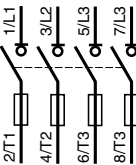
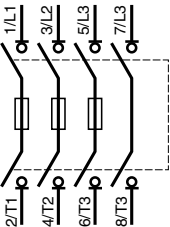
50 to 1250 A



4-pole GS1

32 A

50 to 1250 A



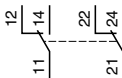
Auxiliary contacts

GS1 AM110

GS1 AM101

GS1 AM111

GS1 AM211



GS1 AF

1 C/O

1 N/C + 1 N/O



Protection components

Switch-disconnector-fuses
for the North American market
conforming to UL and CSA standards, 30 to 800 A



GS1 DDU3

All GS1 switch-disconnector-fuses for the North American market are certified UL98 and CSA 22.2 N° 4.

Compact switch-disconnector-fuse bodies				
Switch rating	Fuse size	Number of poles	Reference	Weight
A				kg
For front-mounted external operators				
30	CC	3	GS1 DDU3	0.510
	J	3	GS1 DU3	0.610

Handles for front-mounted external operators, padlockable, IP 65				
Switch rating	Colour of handle/front plate		Reference	Weight
A				kg
30	Black/Black	(1)	GS1 AH101	0.160
	Red/Yellow	(1)	GS1 AH102	0.160
	Black/Black	(2)	GS1 AH110	0.320
	Red/Yellow	(2)	GS1 AH120	0.320

Handles for front-mounted external operators, padlockable, with TEST facility, IP 65				
Switch rating	Colour of handle/front plate		Reference	Weight
A				kg
30	Black/Black	(2)	GS1 AHT110	0.320
	Red/Yellow	(2)	GS1 AHT120	0.320

Shaft extensions for front-mounted external operators				
Switch rating	Length	Shaft cross section	Reference	Weight
A	mm	mm		kg
30	320	5 x 5	GS1 AE7	0.170
	400	5 x 5	GS1 AE71	0.240
	320	5 x 5	GS1 AE8	0.170
	400	5 x 5	GS1 AE81	0.240

(1) For use in conjunction with shaft extension **GS1 AE7** or **GS1 AE71**, to be ordered separately.
(2) For use in conjunction with shaft extension **GS1 AE8** or **GS1 AE81**, to be ordered separately.

Protection components

Switch-disconnector-fuses

for the North American market

conforming to UL and CSA standards, 30 to 800 A

Switch-disconnector-fuse bodies

Switch rating	Fuse size	Number of poles	Reference	Weight
A				kg
For front-mounted external operators				
30	CC	3	GS1 EEU3	1.200
	J	3	GS1 EU3	2.000
60	J	3	GS1 GU3	1.400
100	J	3	GS1 JU3	2.000
200	J	3	GS1 MU3	3.800
400	J	3	GS1 QU3	4.500
For front-mounted internal and external operators				
600	J	3	GS1 SU3	16.000
800	L	3	GS1 TU3	16.000

Handles for front-mounted external operators, padlockable, IP 65

Switch rating	Colour of handle/front plate	Reference	Weight
A			kg
30...60	Black/Black	GS1 AH110	0.320
	Red/Yellow	GS1 AH120	0.320
100...400	Black/Black	GS1 AH130	0.350
	Red/Yellow	GS1 AH140	0.350
600 and 800	Black/Black	GS1 AH150	0.700
	Red/Yellow	GS1 AH160	0.700

Handles for front-mounted external operators, padlockable, with TEST facility, IP 65

Switch rating	Colour of handle/front plate	Reference	Weight
A			kg
30...60	Black/Black	GS1 AHT110	0.320
	Red/Yellow	GS1 AHT120	0.320
100...400	Black/Black	GS1 AHT130	0.350
	Red/Yellow	GS1 AHT140	0.350
600 and 800	Black/Black	GS1 AHT150	0.700
	Red/Yellow	GS1 AHT160	0.700

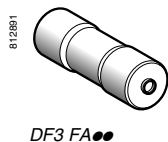
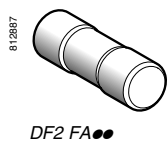
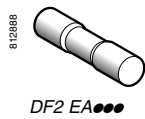
Shaft extensions for front-mounted external operators

Switch rating	Length	Shaft cross section	Reference	Weight
A	mm	mm		kg
30...400	320	10 x 10	GS1 AE2	0.200
	400	10 x 10	GS1 AE21	0.250
600 and 800	200	15 x 15	GS1 AE6	0.450
	400	15 x 15	GS1 AE61	0.900

Protection components

Cartridge fuses type aM

For protection of equipment with current peaks

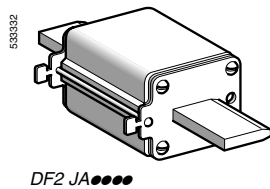
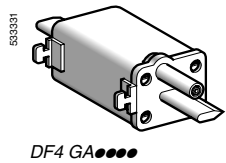
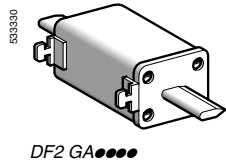


Fuse type	Maximum rated voltage	Rating	Sold in lots of	Fuses without striker		Fuses with striker	
				Unit reference	Weight	Unit reference	Weight
	V	A			kg		kg
Cylindrical 8.5 x 31.5	~ 400	1	10	DF2 BA0100	0.010	—	—
		2	10	DF2 BA0200	0.010	—	—
		4	10	DF2 BA0400	0.010	—	—
		6	10	DF2 BA0600	0.010	—	—
		8	10	DF2 BA0800	0.010	—	—
		10	10	DF2 BA1000	0.010	—	—
Cylindrical 10 x 38	~ 500	0.16	10	DF2 CA001	0.010	—	—
		0.25	10	DF2 CA002	0.010	—	—
		0.50	10	DF2 CA005	0.010	—	—
		1	10	DF2 CA01	0.010	—	—
		2	10	DF2 CA02	0.010	—	—
		4	10	DF2 CA04	0.010	—	—
		6	10	DF2 CA06	0.010	—	—
		8	10	DF2 CA08	0.010	—	—
		10	10	DF2 CA10	0.010	—	—
		12	10	DF2 CA12	0.010	—	—
		16	10	DF2 CA16	0.010	—	—
	~ 400	20	10	DF2 CA20	0.010	—	—
		25	10	DF2 CA25	0.010	—	—
		32	10	DF2 CA32	0.010	—	—
Cylindrical 14 x 51	~ 690	0.25	10	DF2 EA002	0.020	—	—
		0.50	10	DF2 EA005	0.020	—	—
	~ 500	1	10	DF2 EA01	0.020	—	—
		2	10	DF2 EA02	0.020	DF3 EA02	0.020
		4	10	DF2 EA04	0.020	DF3 EA04	0.020
		6	10	DF2 EA06	0.020	DF3 EA06	0.020
		8	10	DF2 EA08	0.020	DF3 EA08	0.020
		10	10	DF2 EA10	0.020	DF3 EA10	0.020
		12	10	DF2 EA12	0.020	DF3 EA12	0.020
		16	10	DF2 EA16	0.020	DF3 EA16	0.020
		20	10	DF2 EA20	0.020	DF3 EA20	0.020
		25	10	DF2 EA25	0.020	DF3 EA25	0.020
		32	10	DF2 EA32	0.020	DF3 EA32	0.020
		40	10	DF2 EA40	0.020	DF3 EA40	0.020
	~ 400	50	10	DF2 EA50	0.020	DF3 EA50	0.020
Cylindrical 22 x 58	~ 690	4	10	DF2 FA04	0.045	DF3 FA04	0.045
		6	10	DF2 FA06	0.045	DF3 FA06	0.045
		8	10	DF2 FA08	0.045	DF3 FA08	0.045
		10	10	DF2 FA10	0.045	DF3 FA10	0.045
		16	10	DF2 FA16	0.045	DF3 FA16	0.045
		20	10	DF2 FA20	0.045	DF3 FA20	0.045
		25	10	DF2 FA25	0.045	DF3 FA25	0.045
		32	10	DF2 FA32	0.045	DF3 FA32	0.045
		40	10	DF2 FA40	0.045	DF3 FA40	0.045
		50	10	DF2 FA50	0.045	DF3 FA50	0.045
	~ 500	63	10	DF2 FA63	0.045	DF3 FA63	0.045
		80	10	DF2 FA80	0.045	DF3 FA80	0.045
		100	10	DF2 FA100	0.045	DF3 FA100	0.045
	~ 400	125	10	DF2 FA125	0.045	DF3 FA125	0.045

Protection components

Cartridge fuses type aM

For protection of equipment with current peaks

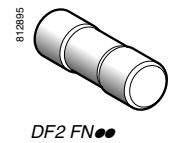
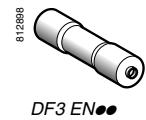
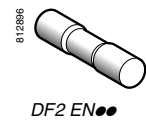


Fuse type	Maximum rated voltage	Rating	Sold in lots of	Fuses without striker		Fuses with striker	
				Unit reference	Weight	Unit reference	Weight
	V	A			kg		kg
Blade size 00	~ 500	16	3	DF2 FGA16	0.160	—	—
		20	3	DF2 FGA20	0.160	—	—
		25	3	DF2 FGA25	0.160	—	—
		32	3	DF2 FGA32	0.160	—	—
		40	3	DF2 FGA40	0.160	—	—
		50	3	DF2 FGA50	0.160	—	—
		63	3	DF2 FGA63	0.160	—	—
		80	3	DF2 FGA80	0.160	—	—
		100	3	DF2 FGA100	0.160	—	—
		~ 400	3	DF2 FGA125	0.160	—	—
Blade size 0	~ 500	50	3	DF2 GA1051	0.230	—	—
		63	3	DF2 GA1061	0.230	—	—
		80	3	DF2 GA1081	0.230	—	—
		100	3	DF2 GA1101	0.230	—	—
		125	3	DF2 GA1121	0.230	DF4 GA1121	0.230
		160	3	DF2 GA1161	0.230	DF4 GA1161	0.230
		200	3	DF2 GA1201	0.230	DF4 GA1201	0.230
Blade size 1	~ 500	160	3	DF2 HA1161	0.400	—	—
		200	3	DF2 HA1201	0.400	DF4 HA1201	0.400
		250	3	DF2 HA1251	0.400	DF4 HA1251	0.400
		315	3	DF2 HA1311	0.400	DF4 HA1311	0.400
Blade size 2	~ 500	250	3	DF2 JA1251	0.560	—	—
		315	3	DF2 JA1311	0.560	DF4 JA1311	0.560
		400	3	DF2 JA1401	0.560	DF4 JA1401	0.560
		500	3	DF2 JA1501	0.560	DF4 JA1501	0.560
Blade size 3	~ 500	400	3	DF2 KA1401	0.850	—	—
		500	3	DF2 KA1501	0.850	DF4 KA1501	0.850
		630	3	DF2 KA1631	0.850	DF4 KA1631	0.850
Blade size 4	~ 500	630	1	DF2 LA1631	1.900	DF4 LA1631	1.900
		800	1	DF2 LA1801	1.900	DF4 LA1801	1.900
		1000	1	DF2 LA1101	1.900	DF4 LA1101	1.900
	~ 400	1250	1	DF2 LA1251	1.900	DF4 LA1251	1.900

Protection components

Cartridge fuses type gG

For protection of circuits without significant current peaks

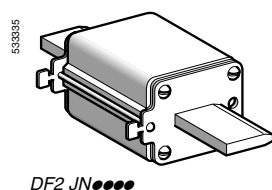
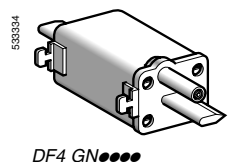
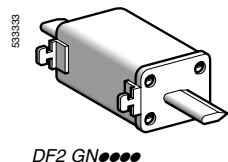


Fuse type	Maximum rated voltage	Rating	Sold in lots of	Fuses without striker		Fuses with striker	
				Unit reference	Weight	Unit reference	Weight
	V	A			kg		kg
Cylindrical 8.5 x 31.5	~ 400	1	10	DF2 BN0100	0.010	—	—
		2	10	DF2 BN0200	0.010	—	—
		4	10	DF2 BN0400	0.010	—	—
		6	10	DF2 BN0600	0.010	—	—
		8	10	DF2 BN0800	0.010	—	—
		10	10	DF2 BN1000	0.010	—	—
		12	10	DF2 BN1200	0.010	—	—
		16	10	DF2 BN1600	0.010	—	—
		20	10	DF2 BN2000	0.010	—	—
Cylindrical 10 x 38	~ 500	2	10	DF2 CN02	0.010	—	—
		4	10	DF2 CN04	0.010	—	—
		6	10	DF2 CN06	0.010	—	—
		8	10	DF2 CN08	0.010	—	—
		10	10	DF2 CN10	0.010	—	—
		12	10	DF2 CN12	0.010	—	—
		16	10	DF2 CN16	0.010	—	—
		20	10	DF2 CN20	0.010	—	—
	~ 400	25	10	DF2 CN25	0.010	—	—
		32	10	DF2 CN32	0.010	—	—
Cylindrical 14 x 51	~ 500	4	10	DF2 EN04	0.020	DF3 EN04	0.020
		6	10	DF2 EN06	0.020	DF3 EN06	0.020
		10	10	DF2 EN10	0.020	DF3 EN10	0.020
		16	10	DF2 EN16	0.020	DF3 EN16	0.020
		20	10	DF2 EN20	0.020	DF3 EN20	0.020
		25	10	DF2 EN25	0.020	DF3 EN25	0.020
		32	10	DF2 EN32	0.020	DF3 EN32	0.020
		40	10	DF2 EN40	0.020	DF3 EN40	0.020
		50	10	DF2 EN50	0.020	—	—
Cylindrical 22 x 58	~ 690	10	10	DF2 FN10	0.045	DF3 FN10	0.045
		20	10	DF2 FN20	0.045	DF3 FN20	0.045
		25	10	DF2 FN25	0.045	DF3 FN25	0.045
		32	10	DF2 FN32	0.045	DF3 FN32	0.045
		40	10	DF2 FN40	0.045	DF3 FN40	0.045
		50	10	DF2 FN50	0.045	DF3 FN50	0.045
	~ 500	63	10	DF2 FN63	0.045	DF3 FN63	0.045
		80	10	DF2 FN80	0.045	DF3 FN80	0.045
		100	10	DF2 FN100	0.045	DF3 FN100	0.045

Protection components

Cartridge fuses type gG

For protection of circuits without significant current peaks



Fuse type	Maximum rated voltage	Rating	Sold in lots of	Fuses without striker		Fuses with striker	
				Unit reference	Weight	Unit reference	Weight
	V	A			kg		kg
Blade size 00	~ 500	10	10	DF2 FGN10	0.160	—	—
		16	10	DF2 FGN16	0.160	—	—
		20	10	DF2 FGN20	0.160	—	—
		25	10	DF2 FGN25	0.160	—	—
		32	10	DF2 FGN32	0.160	—	—
		40	10	DF2 FGN40	0.160	—	—
		50	10	DF2 FGN50	0.160	—	—
		63	10	DF2 FGN63	0.160	—	—
		80	10	DF2 FGN80	0.160	—	—
		100	10	DF2 FGN100	0.160	—	—
		125	10	DF2 FGN125	0.160	—	—
		160	10	DF2 FGN160	0.160	—	—
Blade size 0	~ 500	50	3	DF2 GN1051	0.230	—	—
		63	3	DF2 GN1061	0.230	—	—
		80	3	DF2 GN1081	0.230	—	—
		100	3	DF2 GN1101	0.230	—	—
		125	3	DF2 GN1121	0.230	DF4 GN1121	0.230
		160	3	DF2 GN1161	0.230	DF4 GN1161	0.230
Blade size 1	~ 500	160	3	DF2 HN1161	0.400	—	—
		200	3	DF2 HN1201	0.400	DF4 HN1201	0.400
		250	3	DF2 HN1251	0.400	DF4 HN1251	0.400
Blade size 2	~ 500	250	3	DF2 JN1251	0.560	—	—
		315	3	DF2 JN1311	0.560	DF4 JN1311	0.560
		400	3	DF2 JN1401	0.560	DF4 JN1401	0.560
Blade size 3	~ 500	500	3	DF2 KN1501	0.850	DF4 KN1501	0.850
		630	3	DF2 KN1631	0.850	DF4 KN1631	0.850
Blade size 4	~ 500	800	1	DF2 LN1801	1.900	DF4 LN1801	1.900
		1000	1	DF2 LN1101	1.900	DF4 LN1101	1.900
		1250	1	DF2 LN1251	1.900	DF4 LN1251	1.900