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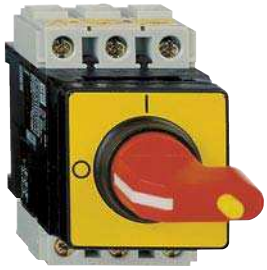
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TeSys protection components
Mini-VARIO and VARIO switch disconnectors

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 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		
From the front	Fixing: 1 x Ø 22.5 hole or 4 x Ø 5.5 screws				
From the back	Clip-on mounting on 7 rail		Clip-on mounting on 7		
Reversible terminal blocks	Yes				
Door mounting, direct operator	Yes				
Mounting at back of enclosure, indirect operator with door interlock	Yes				
Enclosure reference	VpDN 12	VpDN 20	VpD 02 VpF 02	VpD 01 VpF 01	VpD 0 VpF 0
Product reference	VCFN 12GE	VCFN 20GE	VpF 02GE	VpF 01GE	VpF 0GE
Pages	2/4 and 4/8		4/12 and 4/13		

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.

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					
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 7					
Yes					
Yes					
Yes					
VpD 1 VpF 1	VpD 2 VpF 2	VpF 3	VpF 4	VpF 5	VpF 6
VpF 1GE	VpF 2GE	VpF 3GE	VpF 4GE	VpF 5GE	VpF 6GE
2/4, 4/8 and 4/12					

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							
			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/ 400 V/1 s	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	

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	mm^2	4	6	4	6				
	Solid cable	mm^2	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 (Ie/DC-11)	
40		63		80		125	175	–	
40		63		80		125	175	–	
40		63		80		125	175	8 (Ie/DC-11)	
40		63		80		125	175	–	
40		63		80		125	175	–	
35		40		50		60	70	4 (Ie/DC-11)	
40		63		80		125	175	–	
40		63		80		125	175	–	
12		20		25		30	12	2 (Ie/DC-11)	
20		63		80		125	175	–	
40		63		80		125	175	–	
4		6		8		12	15	1 (Ie/DC-11)	
14		25		30		40	50	–	
25		30		40		80	100	–	
2		4		5		3	10	0.8 (Ie/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	

TeSys protection components
Mini-VARIO switch disconnectors for standard applications
Complete units

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



VCDN 20



VCCDN 20



VBDN 20

Main and Emergency stop switch disconnectors for door mounting

Operator			Ith	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

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

Operator			Ith	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

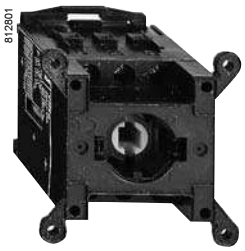
Main switch disconnectors for door mounting

Operator			Ith	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

(1) Switches supplied with a shaft extension VZN 17 and a door interlock plate KZ 32 (see page 4/11)

Characteristics : pages 4/4 to 4/7
Dimensions : pages 4/22 and 4/23
Schemes : page 4/23

TeSys 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

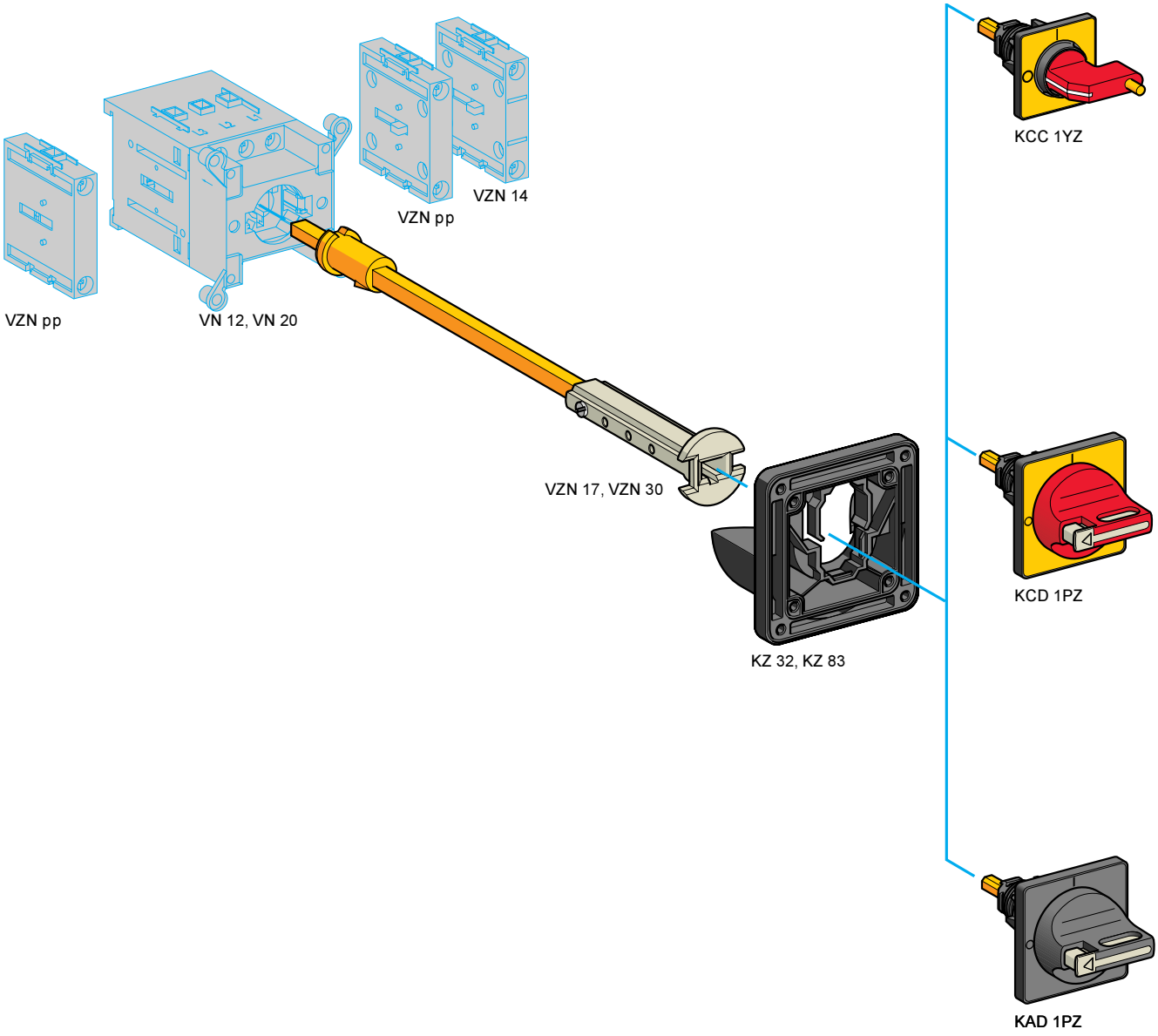
Description	Rating A	Reference	Weight kg
Main pole modules	12	VZN 12	0.020
	20	VZN 20	0.020
Neutral pole module with early make and late break contacts	12 and 20	VZN 11	0.020
Earthing module	12 and 20	VZN 14	0.016
Auxiliary contact block modules	1 N/O late make contact	VZN 05	0.020
	1 N/C early break 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

a switch body

VZN 12 or VZN 20	+	VN 12 or VN 20	+	VZN 12 or VZN 20
				or
or				VZN 11 + VZN 14
				or
VZN 05 or VZN 06				VZN 05 or VZN 06

4

Characteristics : pages 4/4 to 4/7
Dimensions : pages 4/22 and 4/23
Schemes : page 4/23


VZN pp
VN 12, VN 20
VZN pp
VZN 14
VZN 17, VZN 30
KZ 32, KZ 83
KCC 1YZ
KCD 1PZ
KAD 1PZ

TeSys protection components
Mini-VARIO switch disconnectors for standard applications
Operators and accessories

b Degree of protection IP 65.
b Marking on operator .
b Padlockable operating handle (padlocks not supplied).
b 4/17 and 4/19.
b For other accessories and empty enclosures, see pages 4/20, 4/21 and 2/5.

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

addition to a direct operator

Description	Front plate	Distance enclosure back/door	Sold in lots of	Unit reference	Weight
	mm	mm			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

4

TeSys protection components
VARIO switch disconnectors for high performance applications
Complete units



VCF 0



VCF 5



VCCF 0

- b 3-pole rotary switch disconnectors, 12 to 175 A
- b Marking on operator I .
- b Padlockable operating handle (padlocks not supplied).
- b 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 4/20).

Characteristics : pages 4/4 to 4/7
Dimensions : pages 4/24 and 4/25
Schemes : page 4/25

TeSys protection components
VARIO switch disconnectors for high performance applications
Complete units



VBD 0



VBF 4



VVE 1

b 3-pole rotary switch disconnectors, 12 to 175 A
b Marking on operator ○┘.
b Padlockable operating handle (padlocks not supplied).
b 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

Characteristics : pages 4/4 to 4/7
Dimensions : pages 4/24 and 4/25
Schemes : page 4/25

TeSys 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 4/20.
(2) Late make N/O, early break N/C contacts

Characteristics : pages 4/4 to 4/7
Dimensions : pages 4/24 and 4/25
Schemes : page 4/25

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

switch body

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

VZ 7 or VZ 20	+	V0p	+	VZ 7 or VZ 20	VZ 7	+	V5	+ VZ 7
or				or	or			or
VZ 11 or VZ 12	+	V0	+	VZ 11 or VZ 12	VZ 20	+	or	+ VZ 20
or		to		or	or			or
VZ 14 or VZ 15	+		+	VZ 14 or VZ 15	VZ 13	+	V6	+ VZ 13
or		V4		or	or			or
VZ 0p/VZ 0 to VZ 4	+		+	VZ 0p/VZ 0 to VZ 4	VZ 16	+		+ VZ 16

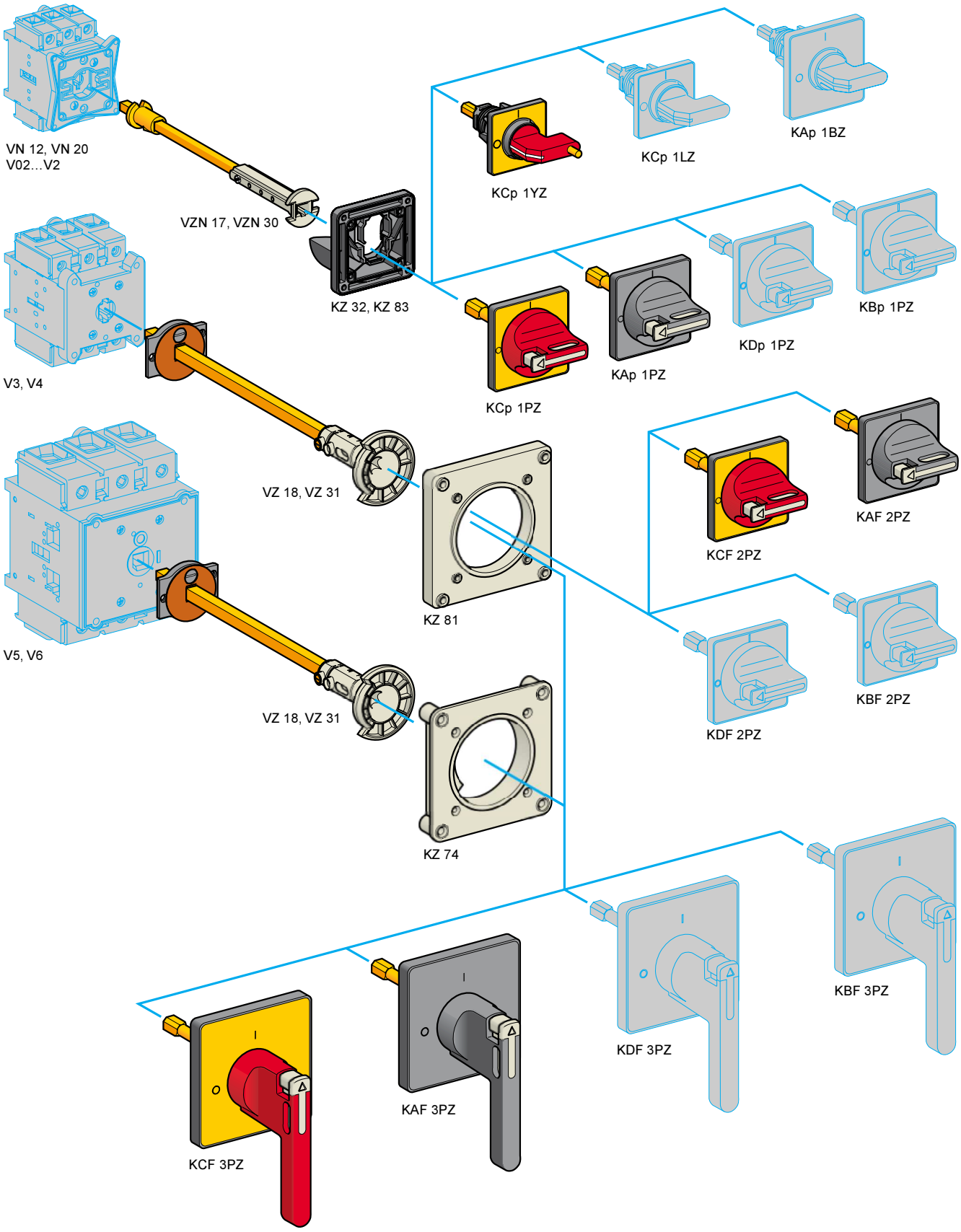
2 add-on modules on each side of the switch body

VZ 0p	+ VZ 0p	+	V0p	+ VZ 0p	+ 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.

4

Characteristics : pages 4/4 to 4/7
Dimensions : pages 4/24 and 4/25
Schemes : page 4/25


VN 12, VN 20
V02…V2
VZN 17, VZN 30
KZ 32, KZ 83
KCp 1YZ
KCp 1LZ
KAp 1BZ
V3, V4
KCp 1PZ
KAp 1PZ
KDp 1PZ
KBp 1PZ
VZ 18, VZ 31
KZ 81
KCF 2PZ
KAF 2PZ
V5, V6
VZ 18, VZ 31
KZ 74
KDF 2PZ
KBF 2PZ
KCF 3PZ
KAF 3PZ
KDF 3PZ
KBF 3PZ

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

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

Handles and front plates for main and Emergency stop switch disconnectors

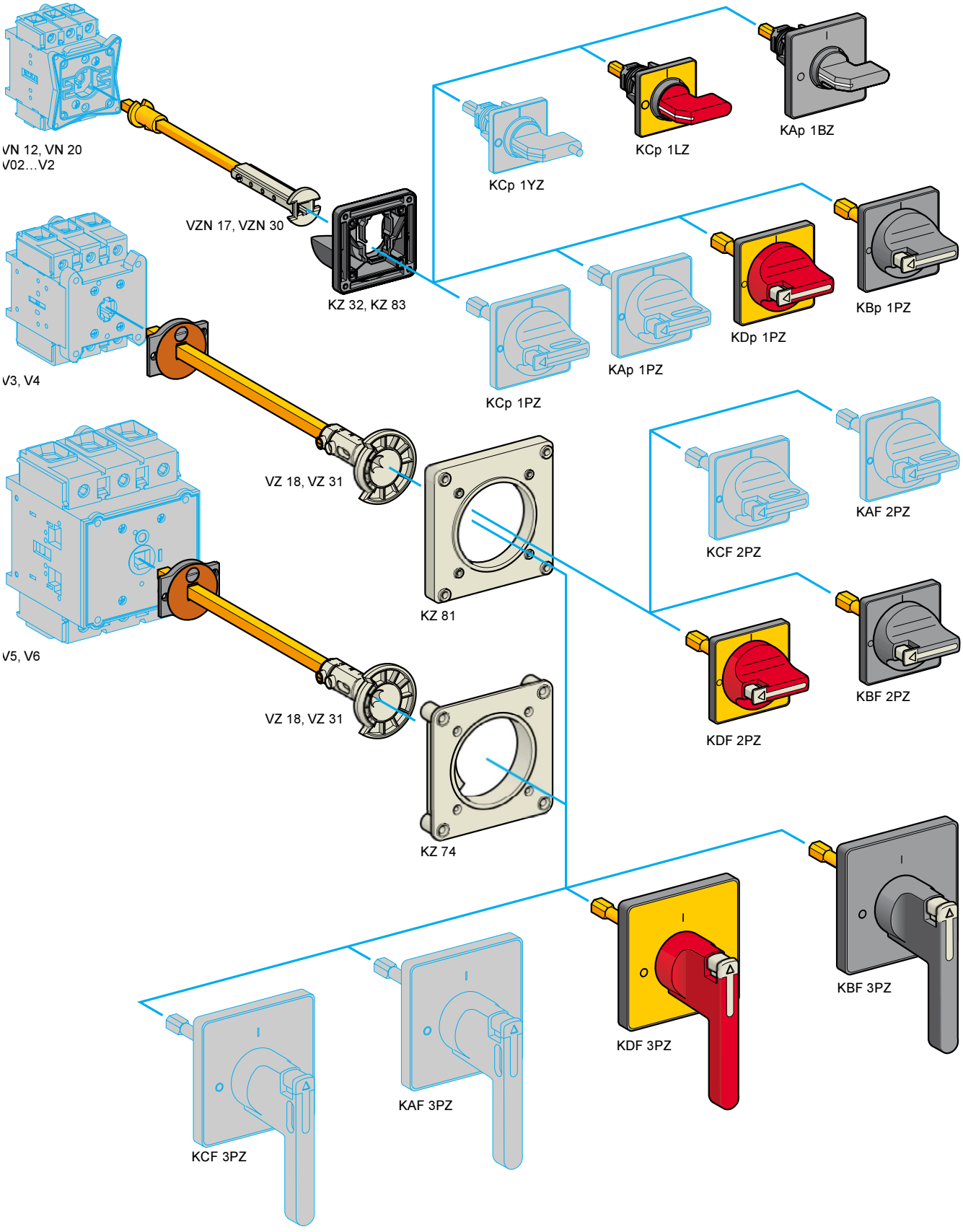
For switch body	Operator			Reference	Weight
	Handle	Front plate			
		Dimensions	Fixing		
		mm			kg
VN 12, VN 20 V02…V2	Red, padlockable with 1 padlock (Ø 4 to Ø 6)	Yellow 45 x 45	Ø 22.5	KCC 1YZ	0.050
			4 screws	KCE 1YZ	0.040
	Red, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 60 x 60	Ø 22.5	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			Reference	Weight
	Handle	Front plate			
		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 4/20).

Characteristics : pages 4/4 to 4/7
Dimensions : pages 4/22 to 4/25
Schemes : pages 4/23 and 4/25


VN 12, VN 20
V02…V2
VZN 17, VZN 30
KZ 32, KZ 83
KCp 1YZ
KCp 1LZ
KAp 1BZ
V3, V4
KCp 1PZ
KAp 1PZ
KDp 1PZ
KBp 1PZ
VZ 18, VZ 31
KZ 81
KCF 2PZ
KAF 2PZ
V5, V6
VZ 18, VZ 31
KZ 74
KDF 2PZ
KBF 2PZ
KCF 3PZ
KAF 3PZ
KDF 3PZ
KBF 3PZ

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

b Marking on operator
b Degree of protection IP 65.

Handles and front plates for Emergency stop switch disconnectors

For switch body	Operator			Reference	Weight
	Handle	Front plate			
		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			Reference	Weight
	Handle	Front plate			
		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).

4


580583

VZ 8


580584

VZ 26

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

addition to a direct operator

Description	For use on	Distance enc. back/door	Sold in lots of	Unit reference	Weight
		mm			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
	V5 and V6	330…350	1	VZ 18	0.170
		430…450	1	VZ 31	0.215
Door interlock plates	VN 12, VN 20 V02…V2	–	5	KZ 32	0.177
	V3…V6	–	5	KZ 74	0.020

Description	For use on	Front plate dimensions	Sold in lots of	Unit reference	Weight
		mm			kg
Plates for door mounting of handles with	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.


580595

KZ 32


580527

KZ 81

Characteristics : pages 4/4 to 4/7
Dimensions : pages 4/22 to 4/25
Schemes : pages 4/23 and 4/25

812783



KZ 15

580528



KZ 67

812785



Z01

Accessories for operators

Description	For use on	Front plate dimensions	Sold in lots of	Unit reference	Weight
		mm			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	–	5	Z01	0.050

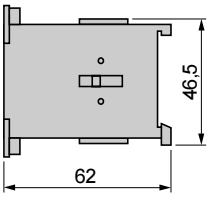
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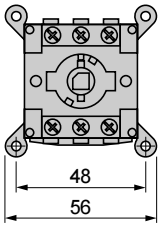
Characteristics : pages 4/4 to 4/7
Dimensions : pages 4/22 to 4/25
Schemes : pages 4/23 and 4/25

Dimensions

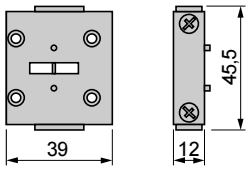
Switch disconnectors

Switch bodies VN 12, VN 20

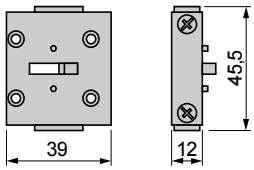




Add-on modules VZN 12, VZN 20



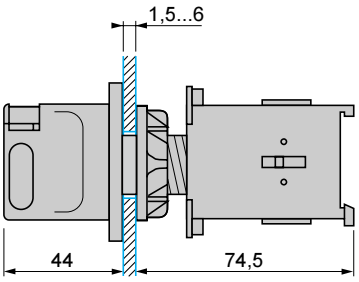
Add-on modules VZN 11, VZN 14 VZN 05 and VZN 06

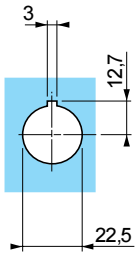


Mounting

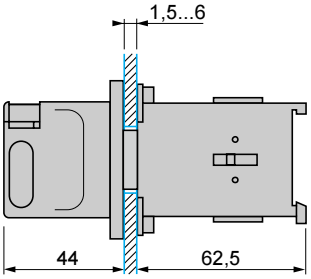
Switch disconnector mounted on enclosure door

VN 12, VN 20

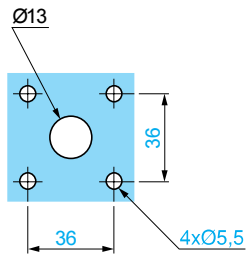




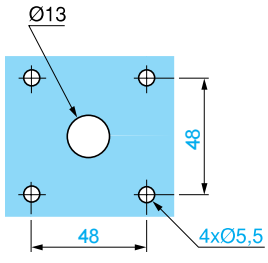
VN 12, VN 20



45 x 45 front plate



60 x 60 front plate

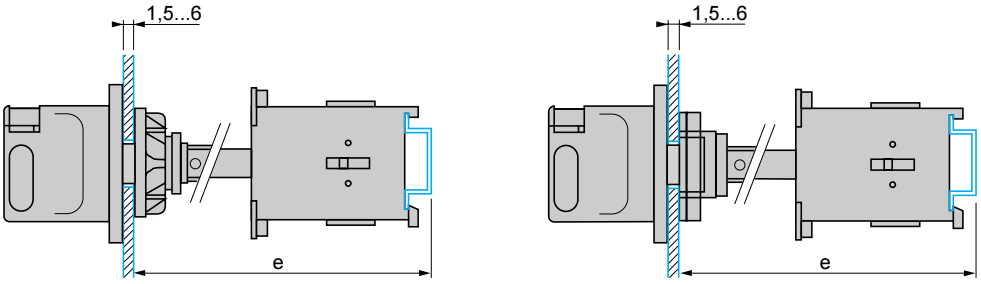


Characteristics : page 4/4
References : page 4/14
Schemes : page 4/23

Mounting (continued)

Switch disconnector mounted at back of enclosure with shaft extension VZN 17 or VZN 30 (clip-on mounting on 6 rail)

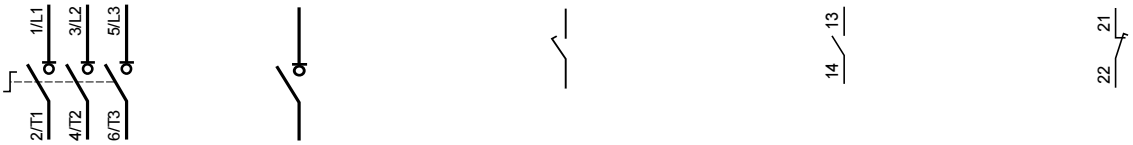
VN 12, VN 20



	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	Auxiliary contact blocks VZN 06

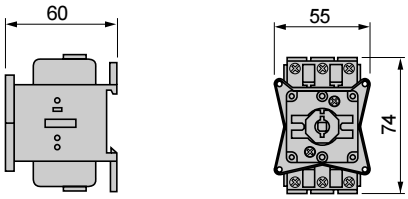


Characteristics : page 4/4
References : page 4/14

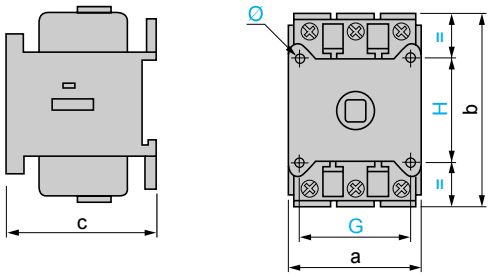
Dimensions

Switch disconnectors

Switch bodies V0p, V0 to V2



Switch bodies V3 to V6



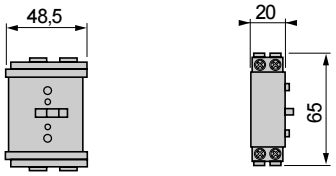
	a	b	c	G	H	Ø
V3, V4	60	83	65	48	48	5.5
V5, V6	90	125	90	68	68	5.5

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

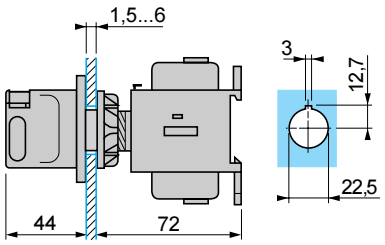
Add-on modules VZ 7, VZ 20



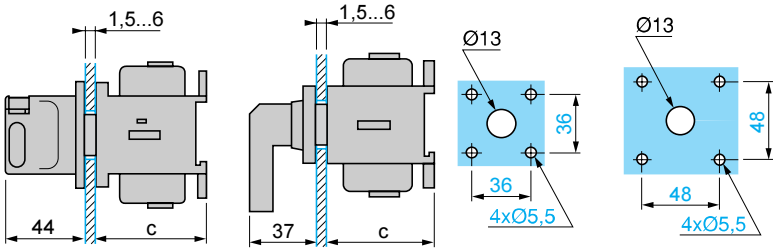
Mounting

Switch disconnector mounted on enclosure door

V0p, V0 to V4

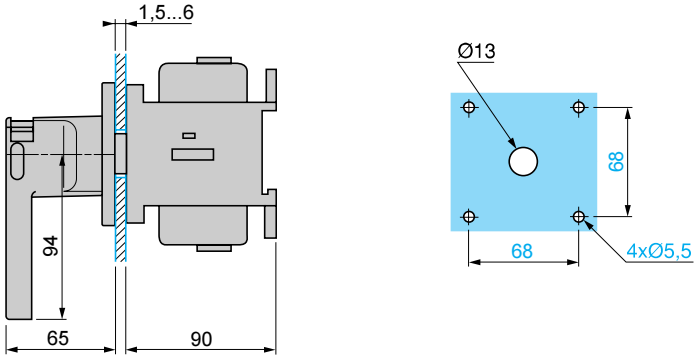


V0p, V0 to V4 | 45 x 45 front plate V0p, V0 to V2 | 60 x 60 front plate V0p, V0 to V4



	c
V0p, V0 to V2	60
V3, V4	65

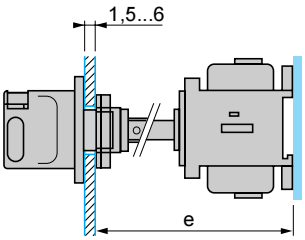
90 x 90 front plate



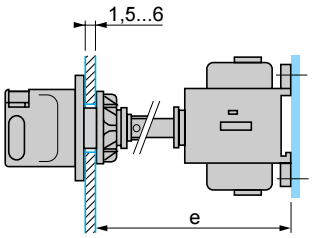
Mounting (continued)

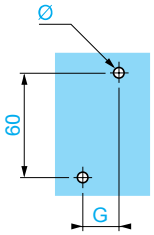
Switch disconnector mounted at back of enclosure

V0p, V0 to V2 with shaft extension VZ 17 or VZ 30 (clip-on mounting on 6 rail possible for V0p to V2)

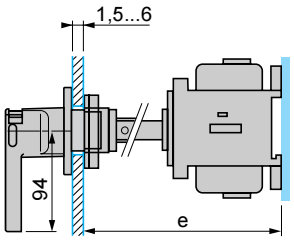


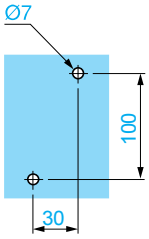
V3 to V4 with shaft extension VZ 18 or VZ 31





V5 and V6 with shaft extension VZ 18 or VZ 31



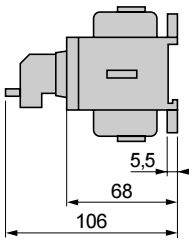


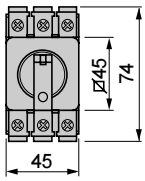
	Shaft extension	Distance (e) enc.back/door	Ø	G
		mm		
V02 and V01 V0 to V2	VZ 17	300...330	2 x 4.2	15
	VZ 30	400...430	2 x 4.2	15
V3 and V4	VZ 18	300...320	2 x 5	20
	VZ 31	400...420	2 x 5	20

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

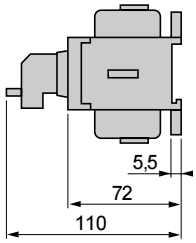
Switch disconnectors for modular distribution boards

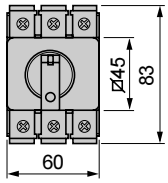
VVp 0 to VVp 2





VVp 3 to VVp 4

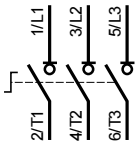




Schemes

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



TeSys protection components
Fuse protection

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	DF
Pages	4/29

Protection of motors	Protection of motors or variable speed drives
	
Yes, only if combined with a contactor	Yes
NF C or DIN	NF C, DIN, BS or UL
1…125 A	1…1250 A
Fuse carriers	Switch-disconnector-fuses
LS1 and GK1	**GS**
4/36	4/42

TeSys protection components
Fuse carriers

Fuse carrier type			DF8		DF10		DF14		DF22	
Environment characteristics										
Conforming to standards			IEC 60947-3, UL 512, CSA 22-2 n° 39							
Protective treatment			"TH"							
Degree of protection	Conforming to IEC 60529		IP 20							
Ambient air temperature	Storage	°C	- 40…+ 80							
	For operation, with derating (1)	°C	- 20…+ 60							
Operating positions	Without derating		± 23° in relation to normal mounting plane							
Flame resistance	Conforming to IEC 60695-2-1	°C	960							
Pole characteristics										
Fuse size		mm	8.5 x 31.5		10 x 38		14 x 51		22 x 58	
Rated insulation voltage (Ui) with tubular links, a.c. supply		V	500		690		690		690	
Rated impulse withstand voltage (Uimp)		kV	6		6		8		8	
Conventional thermal current (Ith) for ambient air temperature y 40 °C (1)										
	With tubular links	A	25		32		50		125	
	With aM cartridge fuses	A	25		32		50		125	
	With gG cartridge fuses	A	25		32		50		100	
Rated conditional short-circuit current Conforming to IEC 60947-3										
	400 V	kA	20		120		120		120	
	500 V	kA	–		120		120		120	
	690 V	kA	–		–		80		80	
Peak withstand current (dynamic stress) Conforming to IEC 60269-1										
	With tubular links	kA	11		15		15		19	
Cabling (number of conductors x c.s.a.)			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
	Solid cable	mm^2	1 x 1.5	1 x 16 2 x 6	1 x 1.5	1 x 16 2 x 6	1 x 2.5	1 x 25 2 x 10	1 x 2.5	1 x 35 2 x 25
	Flexible cable without cable end	mm^2	1 x 1.5	1 x 10 2 x 6	1 x 1.5	1 x 10 2 x 6	1 x 2.5	1 x 25 2 x 10	1 x 2.5	1 x 35 2 x 16
	Flexible cable with cable end	mm^2	1 x 1.5	1 x 10 2 x 6	1 x 1.5	1 x 10 2 x 6	1 x 2.5	1 x 25 2 x 10	1 x 2.5	1 x 35 2 x 16
Tightening torque		Nm	2.2				3.5		4	
Characteristics of early break and signalling contacts DF14 AM and DF22 AM										
Rated insulation voltage (Ui) a.c. supply		V	250							
Conventional thermal current (Ith) for ambient air temperature y 40 °C (1)		A	5							
Rated operational current			24 V		48 V		127 V		240 V	
	Category AC-15	A	4		4		3		2.5	
	Category DC-13	A	3		1		0.2		0.1	
rated characteristics	Conforming to IEC 60947-5-1		B300							
Low load operating characteristics	Minimum voltage	V	10							
	Minimum current	mA	30							
Cabling			Faston connectors							

Maximum temperature	20° C	30° C	40° C	50° C	60° C
Max. relative humidity	95 %	90 %	80 %	50 %	50 %
Current derating	1	0.95	0.9	0.8	0.7

References: pages 4/29 and 4/30 | Substitution: page 4/30 | Dimensions: page 4/31 | Schemes: page 4/31

TeSys protection components
Fuse carriers

106786

DF10 1

106788

DF10 3N

106793

DF14 1

106795

DF14 3NC

106823

DF22 1

106825

DF22 3NC

106791

DF10 1NV

106792

DF10 3V

106834

DF14 1NV

106822

DF14 3VC

106834

DF22 1NV

106835

DF22 3VC

Fuse carriers (1)

Conventional thermal current (Ith)	Size of cartridge fuse or link	Composition	Sold in lots of	Unit reference	Weight
A	mm				kg
25	8.5 x 31.5	1 P	12	DF8 1	0.061
		N	12	DF10 N	0.071
		1 P + N (2)	6	DF8 1N	0.132
		2 P	6	DF8 2	0.122
		3 P	4	DF8 3	0.183
		3 P + N (2)	3	DF8 3N	0.254
32	10 x 38	1 P	12	DF10 1	0.061
		N	12	DF10 N	0.071
		1 P + N (2)	6	DF10 1N	0.132
		2 P	6	DF10 2	0.122
		3 P	4	DF10 3	0.183
		3 P + N (2)	3	DF10 3N	0.254
50	14 x 51	1 P	6	DF14 1	0.140
		N	6	DF14 N	0.150
		1 P + N (2)	3	DF14 1N	0.290
		2 P	3	DF14 2	0.280
		3 P	2	DF14 3C (3)	0.420
		3 P + N (2)	1	DF14 3NC (3)	0.570
125	22 x 58	1 P	6	DF22 1	0.218
		N	6	DF22 N	0.238
		1 P + N (2)	3	DF22 1N	0.456
		2 P	3	DF22 2	0.436
		3 P	2	DF22 3C (3)	0.654
		3 P + N (2)	1	DF22 3NC (3)	0.892

Fuse carriers with “blown fuse” indicators (neon) (1) (4)

Conventional thermal current (Ith)	Size of cartridge fuse or link	Composition	Sold in lots of	Unit reference	Weight
A	mm				kg
25	8.5 x 31.5	1 P	12	DF8 1V	0.064
		1 P + N (2)	6	DF8 1NV	0.135
		2 P	6	DF8 2V	0.125
		3 P	4	DF8 3V	0.186
		3 P + N (2)	3	DF8 3NV	0.257
32	10 x 38	1 P	12	DF10 1V	0.064
		1 P + N (2)	6	DF10 1NV	0.135
		2 P	6	DF10 2V	0.125
		3 P	4	DF10 3V	0.186
		3 P + N (2)	3	DF10 3NV	0.257
50	14 x 51	1 P	6	DF14 1V	0.143
		1 P + N (2)	3	DF14 1NV	0.293
		2 P	3	DF14 2V	0.283
		3 P	2	DF14 3VC (3)	0.423
		3 P + N (2)	1	DF14 3NVC (3)	0.573
125	22 x 58	1 P	6	DF22 1V	0.221
		1 P + N (2)	3	DF22 1NV	0.459
		2 P	3	DF22 2V	0.439
		3 P	2	DF22 3VC (3)	0.657
		3 P + N (2)	1	DF22 3NVC (3)	0.895

(1) Each pole can be marked. A clip-in marker holder is provided for this purpose. Clip-in markers type AB1 Rp or AB1 Gp can also be used.

break, “blown fuse” signalling and “fuse present” signalling contacts.
(4) Operational voltage of the blown fuse indicator: 110 V...690 V.

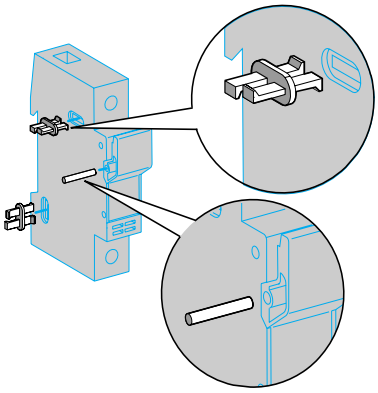
Characteristics: page 4/28 | Substitution: page 4/30 | Dimensions: page 4/31 | Schemes: page 4/31

106836



DF14 AMp

524196



Detail of assembly clip and pin mounting

Accessories

Auxiliary early break and "blown fuse" signalling contacts (1)

Fuse carriers to be equipped	Size of cartridge fuse or link	Number of contacts	Sold in lots of	Unit reference	Weight kg
DF14 (3 P or 3 P + N)	14 x 51	1	1	DF14 AM1	0.025
		2	1	DF14 AM2	0.029
DF22 (3 P or 3 P + N)	22 X 58	1	1	DF22 AM1	0.032
		2	1	DF22 AM2	0.035

Fuse carrier assembly kits (2)

Fuse carriers to be assembled	Size of cartridge fuse or link	Composition	Sold in lots of	Unit reference	Weight kg
DF8	8.5 x 31.5	1 pin, 2 clips	12	DF10 AP	0.001
DF10	10 x 38				
DF14	14 x 51	1 pin, 3 clips	10	DF14 AP	0.003
DF22	22 x 58	1 pin, 3 clips	10	DF22 AP	0.003

Marking accessories

Description	Composition	Marking	Sold in lots of	Unit reference	Weight kg
Clip-in markers	Strip of 10 identical numbers or letters	0…9	25	AB1 Rp (3)	0.002
		A…Z	25	AB1 Gp (3)	0.002

Substitution

Fuse carriers

Old range			New range	
Reference	Size of cartridge fuse or link	Composition	Reference w/o indicator	Reference with indicator
DF6 AB08	8.5 x 31.5	1 P	DF8 1	DF8 1V
DF6 AB10	10 x 38	1 P	DF10 1	DF10 1V
DF6 N10	8.5 x 31.5 or 10 x 38	1 N	DF10 N	–
GK1 CC	8.5 x 31.5	1 P + N	DF8 1N	DF8 1NV
GK1 CD	8.5 x 31.5	2 P	DF8 2	DF8 2V
GK1 CF	8.5 x 31.5	3 P	DF8 3	DF8 3V
GK1 CH	8.5 x 31.5	3 P + N	DF8 3N	DF8 3NV
GK1 DC	10 x 38	1 P + N	DF10 1N	DF10 1NV
GK1 DD	10 x 38	2 P	DF10 2	DF10 2V
GK1 DF	10 x 38	3 P	DF10 3	DF10 3V
GK1 DH	10 x 38	3 P + N	DF10 3N	DF10 3NV
GK1 EB	14 x 51	1 P	DF14 1	DF14 1V
GK1 EN	14 x 51	1 N	DF14 N	–
GK1 EC	14 x 51	1 P + N	DF14 1N	DF14 1NV
GK1 ED	14 x 51	2 P	DF14 2	DF14 2V
GK1 EF	14 x 51	3 P	DF14 3C	DF14 3VC
GK1 EH	14 x 51	3 P + N	DF14 3NC	DF14 3NVC
GK1 FB	22 x 58	1 P	DF22 1	DF22 1V
GK1 FN	22 x 58	1 N	DF22 N	–
GK1 FC	22 x 58	1 P + N	DF22 1N	DF22 1NV
GK1 FD	22 x 58	2 P	DF22 2	DF22 2V
GK1 FF	22 x 58	3 P	DF22 3C	DF22 3CV
GK1 FH	22 x 58	3 P + N	DF22 3NC	DF22 3NVC

Fuse carrier assembly kits

Old range		New range
Reference	Size of cartridge fuse or link	Reference
GK1 AP2	8.5 x 31.5 or 10 x 38	DF10 AP
GK1 AP3	8.5 x 31.5 or 10 x 38	DF10 AP
	14 x 51	DF14 AP
GK1 AP4	8.5 x 31.5 or 10 x 38	DF10 AP
	22 x 58	DF22 AP
GK1 AP5	14 x 51	DF14 AP
GK1 AP6	14 x 51	DF14 AP
	22 x 58	DF22 AP
GK1 AP9	22 x 58	DF22 AP

(1) These auxiliary contacts provide the following functions: early break, "blown fuse" signalling (if

(2) 1 pin and 2 clips are required to assemble two DF8 or DF10 fuse carriers together.
1 pin and 3 clips are required to assemble two DF14 or DF22 fuse carriers together.

(3) When ordering, replace the p in the reference with the number or letter required. Example: AB1 R1 or AB1 GA.

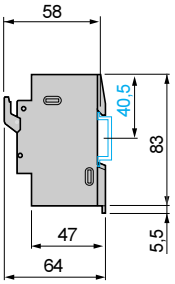
Characteristics: page 4/28
Dimensions: page 4/31
Schemes: page 4/31

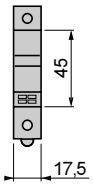
Dimensions

Modular fuse carriers 25 A and 32 A

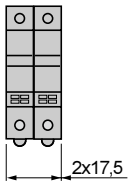
Mounting on 35 mm 5 rail

DF8 1 and DF8 1V
DF10 1 and DF10 1V
DF10 N

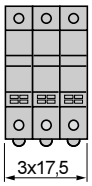




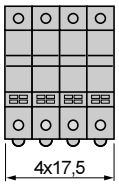
DF8 1N and DF8 1NV
DF8 2 and DF8 2V
DF10 1N and DF10 1NV
DF10 2 and DF10 2V



DF8 3 and DF8 3V
DF10 3 and DF10 3V



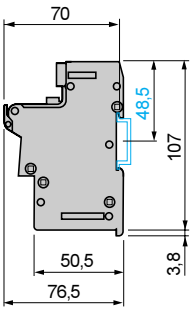
DF8 3N and DF8 3NV
DF10 3N and DF10 3NV

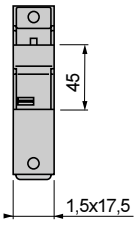


Modular fuse carriers 50 A

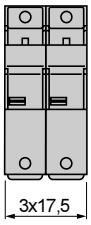
Mounting on 35 mm 5 rail

DF14 1 and DF14 1V
DF14 N

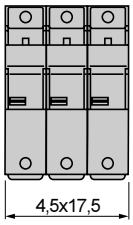




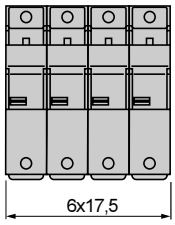
DF14 1N and DF14 1NV
DF14 2 and DF14 2V



DF14 3C and DF14 3VC



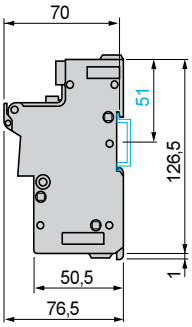
DF14 3NC and DF14 3NVC

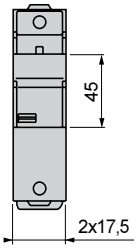


Modular fuse carriers 125 A

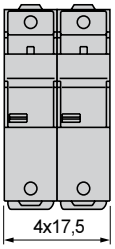
Mounting on 35 mm 5 rail

DF22 1 and DF22 1V
DF22 N

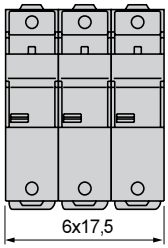




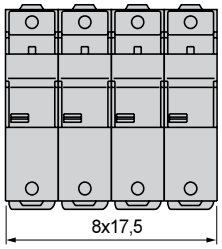
DF22 1N and DF22 1NV
DF22 2 and DF22 2V



DF22 3C and DF22 3VC



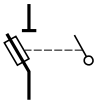
DF22 3NC and DF22 3NVC



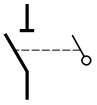
Schemes

Modular fuse carriers

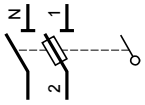
DFp 1P



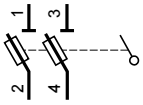
DFp N



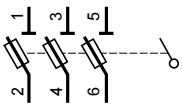
DFp 1P + N



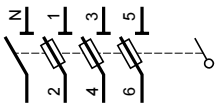
DFp 2P



DFp 3P



DFp 3P + N



Characteristics: page 4/28
References: pages 4/29 and 4/30
Substitution: page 4/30

TeSys protection components
Fuse carriers for the North American market, conforming to standards UL and CSA,

Environment characteristics

Fuse carrier type			DFCC
Conforming to standards			IEC 60947-3, UL 512, CSA 22-2 n° 39
Protective treatment			"TH"
Degree of protection	Conforming to IEC 60529		IP 20
Ambient air temperature	Storage	°C	- 40…+ 80
	For operation, with derating (1)	°C	- 20…+ 60
Operating positions	Without derating		± 23° in relation to normal vertical mounting plane
Flame resistance	Conforming to IEC 60695-2-1	°C	960

Pole characteristics

Fuse carrier type			DFCC	
Fuse size			Class CC	
Rated insulation voltage (Ui) with tubular links, a.c. supply		V	600	
Rated impulse withstand voltage (Uimp)		kV	6	
Conventional thermal current (Ith) for ambient air temperature y 40 °C (1)				
	With tubular links	A	30	
	With aM cartridge fuses	A	30	
	With gG cartridge fuses	A	30	
Short-circuit current withstand With UL 248-4 Class CC fuses				
	Conforming to UL 512 at 600 V	kA	200	
Cabling (number of conductors x c.s.a.)			Min.	Max.
	Solid cable	mm^2	1 x 1.5	1 x 16 2 x 6
	Flexible cable without cable end	mm^2	1 x 1.5	1 x 10 2 x 6
	Flexible cable with cable end	mm^2	1 x 1.5	1 x 10 2 x 6
Tightening torque		Nm	2.2	

(1) :

Maximum temperature	20° C	30° C	40° C	50° C	60° C
Max. relative humidity	95 %	90 %	80 %	50 %	50 %
	1	0.95	0.9	0.8	0.7

References : page 4/33
Dimensions : page 4/33
Schemes : page 4/33

TeSys protection components
Fuse carriers for the North American market, conforming to standards UL and CSA,

References

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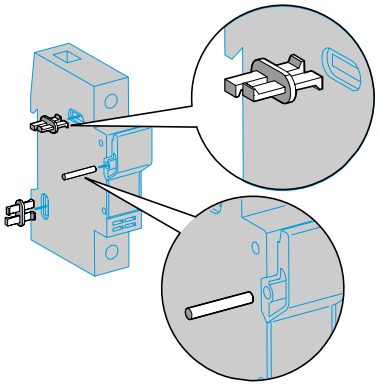
DFCC 1

106792



DFCC 3V

524196



Detail of assembly clip and pin mounting

Fuse carriers (1)

Conventional thermal current (Ith)	Size of cartridge fuse or link	Composition	Sold in lots of	Unit reference	Weight
A					kg
30	Class CC	1 P	12	DFCC 1	0.061
		2 P	12	DFCC 2	0.122
		3 P	6	DFCC 3	0.183

Fuse carriers with "blown fuse" indicators (neon) (1), (2)

Conventional thermal current (Ith)	Size of cartridge fuse or link	Composition	Sold in lots of	Unit reference	Weight
A					kg
30	Class CC	1 P	12	DFCC 1V	0.064
		2 P	6	DFCC 2V	0.125
		3 P	6	DFCC 3V	0.186

Fuse carrier assembly kits (3)

Fuse carriers to be assembled	Size of cartridge fuse or link	Composition	Sold in lots of	Unit reference	Weight kg
DFCC	Class CC	1 pin, 2 clips	12	DF10 AP	0.001

Marking accessories

Description	Composition	Marking	Sold in lots of	Unit reference	Weight kg
Clip-in markers	Strip of 10 identical numbers or letter	0...9	25	AB1 Rp (4)	0.002
		A...Z	25	AB1 Gp (4)	0.002

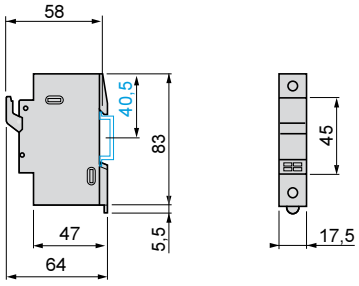
(1) Each pole can be marked. A clip-in marker holder is provided for this purpose. Clip-in markers type AB1 Rp or AB1 Gp can also be used.
(2) Operational voltage of the blown fuse indicator: 110 V...690 V.
(3) 1 pin and 2 clips are required to assemble two DFCC fuse carriers together.
(4) When ordering, replace the p in the reference with the number or letter required. Example: AB1 R1 or AB1 GA.

Dimensions

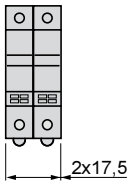
Modular fuse carriers 30 A

Mounting on 35 mm 5 rail

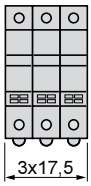
DFCC 1 and DFCC 1V



DFCC 2 and DFCC 2V



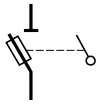
DFCC 3 and DFCC 3V



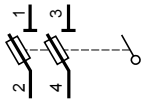
Schemes

Modular fuse carriers

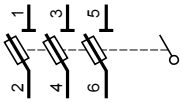
DFCC 1P



DFCC 2P



DFCC 3P



Characteristics :
page 4/32

TeSys protection components
Fuse carriers

Operation: safety

The fuse carrier performs two basic functions:
b it isolates the downstream circuit by means of a visible break and wide opening contacts,
b 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	b Motor protection. b Transformer protection.
Solution	b 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	b Lighting circuit protection. b Supply line protection. b Furnace protection.
Solution	b 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:
b the nominal current of the circuit to be protected,
b the operational voltage.

Fuse carrier selection

Application	Isolation of a circuit for safety reasons only.
Solution	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: b the type of cartridge fuse required, b 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.

Characteristics : page 4/35
References : pages 4/36 and 4/37
Dimensions : page 4/40
Schemes : page 4/41

TeSys protection components
Fuse carriers

Fuse carrier type			LS1 D32	LS1 D323	GK1 Ep	GK1 Fp
Environment						
Conforming to standards	NF EN 60947-3		p		p	p
	IEC 60947-3		p		p	p
			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 y 40 °C (1) (Min. cable Ø/Ie)						
	With tubular links	mm^2/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	mm^2/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	mm^2/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	a 250. c 60	a 250. c 60	a 500. c 440	a 500. c 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 a 400 V	A	32 (2)	25	50	125
	a 500 V	A	20	20	40	80
	a 660 V	A	–	–	25	50
	Type gG a 400 V	A	25 (2)	25	40	100
	a 500 V	A	25	25	40	80
	a 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	mm^2	2 x 1	2 x 6	–	–	1 x 2.5	1 x 25	1 x 16	1 x 70
	Flexible cable without cable end	mm^2	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	mm^2	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	mm^2	–	–	2 x 1 (3)	2 x 4	–	–	–	–
	Flexible cable without cable end	mm^2	–	–	2 x 1.5 (3)	2 x 4	–	–	–	–

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 p54. 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 mm^2, the use of an LA9 D99 cable end reducer is recommended.

Selection : page 4/34 | References : pages 4/36 and 4/37 | Dimensions : page 4/40 | Schemes : page 4/41

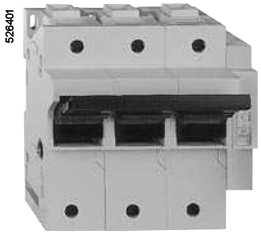
TeSys protection components
Fuse carriers



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

Rating	Cartridge fuse size	Number of early break contacts (1)	Single-phase protection device (2)	Reference (3)	Weight kg
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

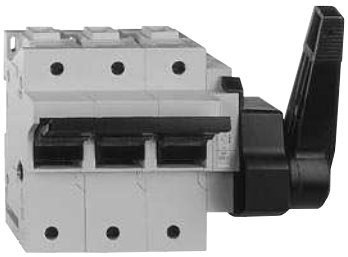
25 and 30 A basic blocks:

(1) With 1 or 2 early break contacts to be inserted in the contactor control circuit.

(3) LS1 D: clips directly onto a 35 mm 5
GK1: clips directly onto a 35 mm 5 rail or Telequick mounting plate.
(4) Addition of add-on contact block, see page 4/37.
(5) Can be mounted on left-hand or right-hand side of the basic block.

Selection : page 4/34 | Characteristics : page 4/35 | Dimensions : page 4/40 | Schemes : page 4/41

TeSys protection components
Fuse carriers
Operators and accessories


526402

GK1 FK + GK1 AP07

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

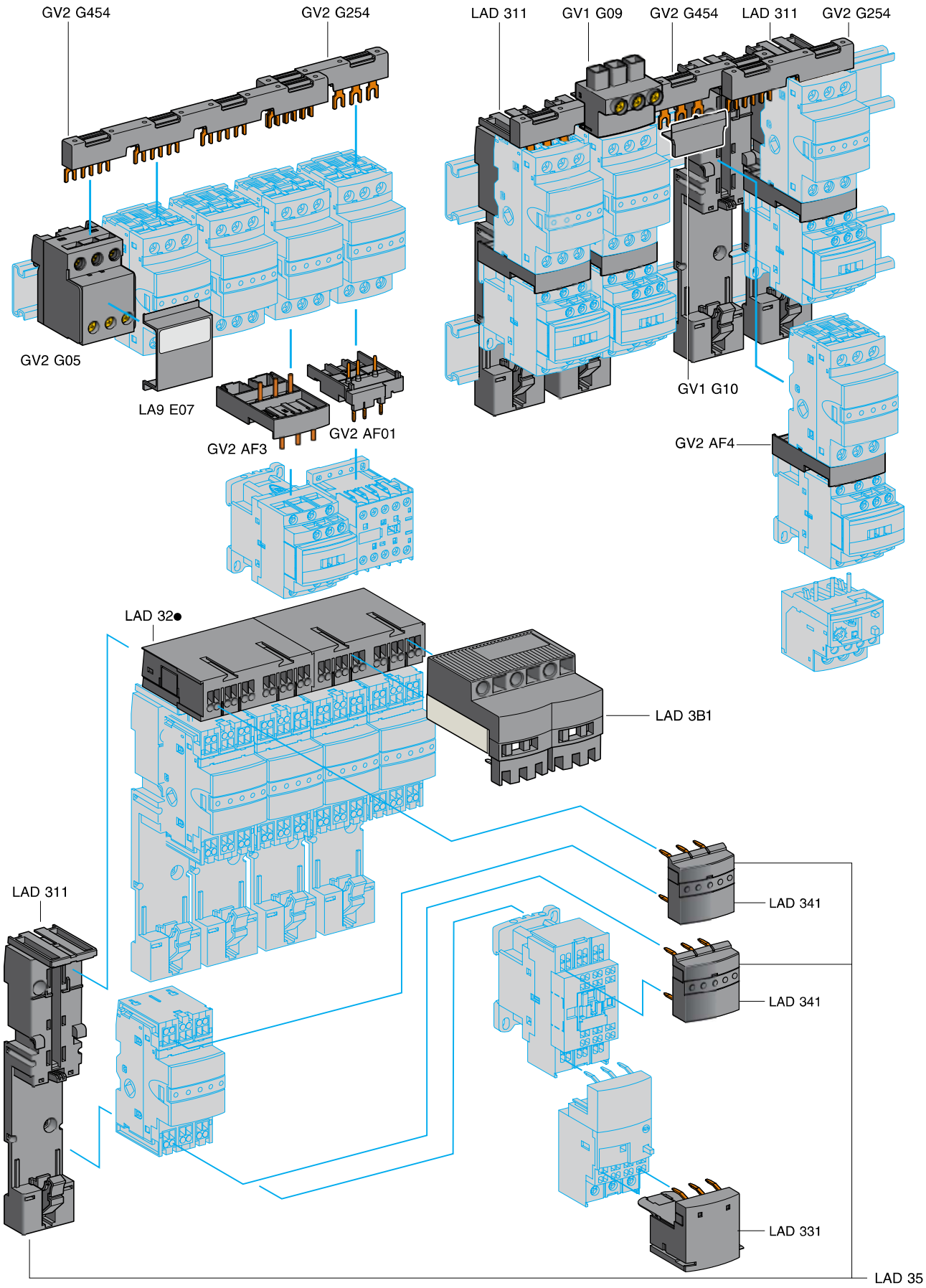
Links

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).

Selection : page 4/34 | Characteristics : page 4/35 | Dimensions : page 4/40 | Schemes : page 4/41


GV2 G454
GV2 G254
GV2 G05
LA9 E07
GV2 AF3
GV2 AF01
LAD 311
GV1 G09
GV2 G454
LAD 311
GV2 G254
GV1 G10
GV2 AF4
LAD 32●
LAD 3B1
LAD 311
LAD 341
LAD 341
LAD 331
LAD 35

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 block Connection from the top	For supply to one or more GV2 G busbar sets	1	GV1 G09	0.040
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

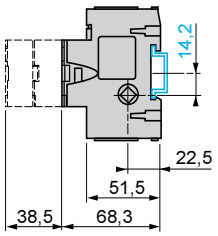
Description	Extension by	Number of starters	Reference	Weight kg
Power splitter box, 63 A	LAD 32p	2	LAD 322	0.120
		3	LAD 323	0.180
		4	LAD 324	0.240

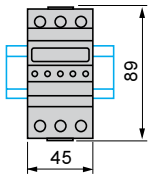
Description	Kit contents	Reference	Weight kg
Assembly and power connection kit for LS1 D323 and LC1 D093...D323	1 LAD 311 plate for mounting LS1 D323 2 LAD 341 power connection modules - between LS1 D323 and power splitter box - between LS1 D323 and contactor	LAD 352	0.078

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	–

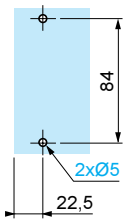
LS1 D32

Mounting on rail AM1 DP200



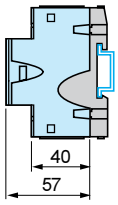


Panel mounting



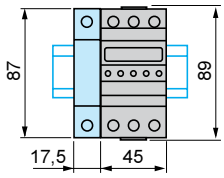
LS1 D32 + LA8 D324

Mounting on rail AM1 DP200

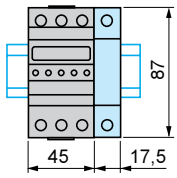


Mounting of 4th pole

On left-hand side

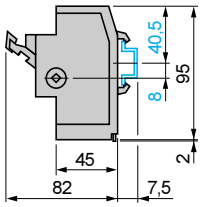


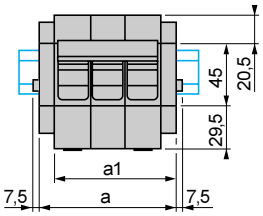
On right-hand side



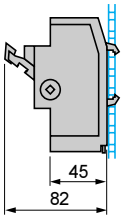
GK1 EK, EM, ES, ET, EV, EW, EX, EY

Mounting on rail AM1 DP200





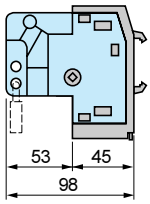
Mounting on pre-slotted plate AM 1P

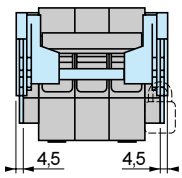


a: with single-phase protection device.
a1: without single-phase protection device.

GK1	a		a1	
	3 P	4 P	3 P	4 P
EK	–	–	88	–
EM	–	–	–	114
ES	–	–	97	–
ET	–	–	–	123
EV	106	–	–	–
EW	115	–	–	–
EX	–	141	–	–
EY	–	132	–	–

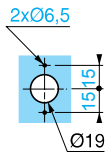
GK1 E + GK1 AV (padlocking device)

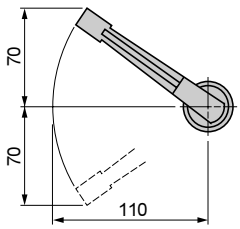


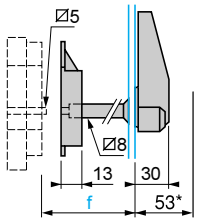


External operator GK1 AP05 right-hand, GK1 AP06 left-hand

Panel cut-out



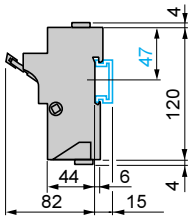


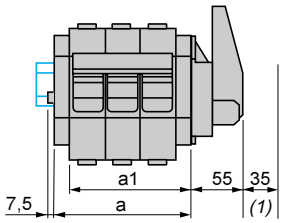


External operator, RH or LH side	f
GK1 EK, EM, ES, ET	29…114
GK1 EV, EW, EX, EY	29…114

GK1 Fp + GK1 AP07 (internal right-hand control)

Mounting on rail AM1 DE or ED

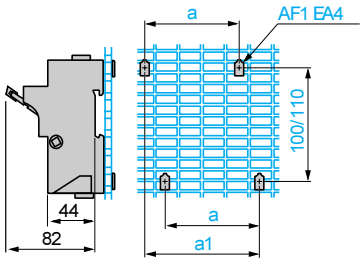




(1) Padlocking device (up to 3 padlocks)

GK1	a		a1	
	3 P	4 P	3 P	4 P
FK	–	–	121	–
FM	–	–	–	156
FS	–	–	136	–
FT	–	–	–	171
FV	136	–	–	–
FW	151	–	–	–
FX	–	186	–	–
FY	–	171	–	–

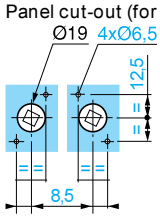
Mounting on pre-slotted plate AM1PA

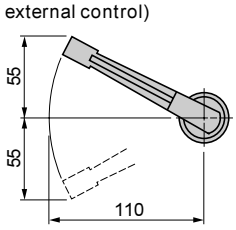


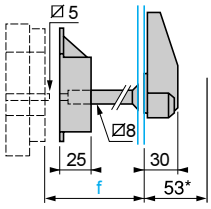
GK1	a		a1	
	3 P	4 P	3 P	4 P
Fp	70	105	96	131

Internal or external control GK1 AP07 RH, AP08LH

Panel cut-out (for external control)







External operator, RH or LH side	f
GK1 FK, FM, FS, FT	35…114
GK1 FV, FW, FX, FY	35…114

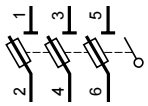
Selection : page 4/34
Characteristics : page 4/35
References : pages 4/36 and 4/37
Schemes : page 4/41

TeSys protection components
Fuse carriers

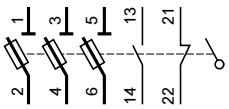
Fuse carriers without single-phase protection device

3-pole

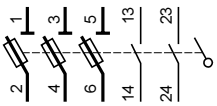
LS1 D32, D323



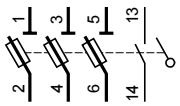
LS1 D32, D323 + GV AE11p



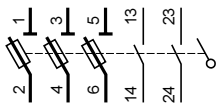
LS1 D32, D323 + GV AE20p



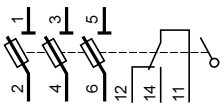
GK1 EK



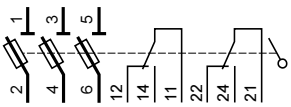
GK1 ES



GK1 FK

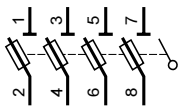


GK1 FS



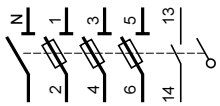
4-pole

LS1 D32 + LA8 D324

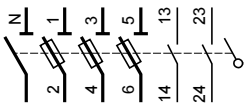


3-pole + Neutral

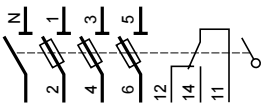
GK1 EM



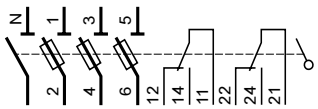
GK1 ET



GK1 FM



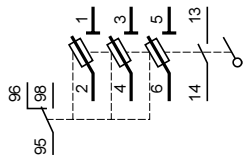
GK1 FT



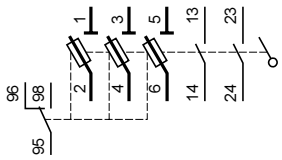
Fuse carriers with single-phase protection device

3-pole

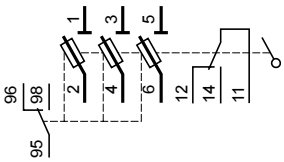
GK1 EV



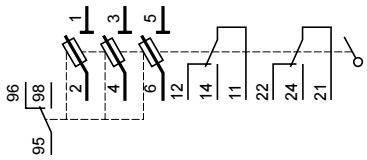
GK1 EW



GK1 FV

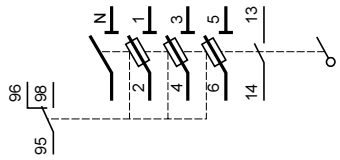


GK1 FW

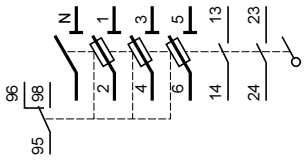


3-pole + Neutral

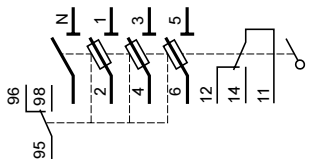
GK1 EY



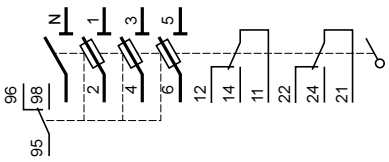
GK1 EX



GK1 FY



GK1 FX



4

TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A

Applications	TeSys GS switch-disconnector-fuses provide on-load breaking and making, safe isolation and They are used, in particular, on the incoming supply to control panels, for protecting and switching They provide simultaneous disconnection, together with all the other associated functions such as





Fuse type	NF C or DIN									
Rated thermal current (Ith)	32 A	50 A	63 A	100 A	125 A	160 A	250 A	400 A	630 A	1250 A
Number of poles	3 or 3 + Nc	3 or 4								
Fuse size	10 x 38	14 x 51	T00C	22 x 58	22 x 58 T00	T0 T00	T1	T2	T3	T4
External operator, padlockable and lockable	Front and RH side LH side									
Direct operator, padlockable	Front	RH side							Front	
Rated operational voltage (Ue)	690 V									
Rated operational current (Ie) at 400 V, AC-23 A	32 A	50 A	63 A	100 A	125 A	160 A	250 A	400 A	630 A	1000 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	10 000 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	8000 A
Rated 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	50 kA	100 kA	100 kA
Switch-disconnector-fuse type references	GS1 DD	GSp F	GSp G	GSp J	GSp K or KK	GSp L or LL	GSp N	GSp QQ	GS2 S	GS2 V
Pages	4/53									

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







BS											
32 A	32 A	63 A	100 A	160 A	200 A	250 A	315 A	400 A	630 A	800 A	1250 A
3 or 3 + Nc	3 or 4										
A1	A1	A2-A3	A4 Ø y 31 mm	A4 B1-B2	B1-B2	B1…B3	B1…B3	B1…B4	C1-C2	C1…C3	D1
Front and RH side											
Front	–								Front		
690 V											
32 A	32 A	63 A	100 A	160 A	200 A	250 A	315 A	400 A	630 A	800 A	1000 A
320 A	320 A	630 A	1000 A	1600 A	2000 A	2500 A	3150 A	4000 A	6300 A	8000 A	10 000 A
256 A	256 A	500 A	800 A	1280 A	1600 A	2000 A	2520 A	3200 A	5040 A	6400 A	8000 A
80 kA	80 kA	80 kA	80 kA	80 kA	80 kA	80 kA	80 kA	80 kA	80 kA	80 kA	80 kA
GS1 DDB	GS2 DB	GS2 GB	GS2 JB	GS2 LB or LLB	GS2 MMB	GS2 NB	GS2 PPB	GS2 QQB	GS2 SB	GS2 TB	GS2 VB
4/55											

TeSys protection components
Switch-disconnector-fuses
32 to 1250 A, TeSys GS



GS1 DD3



GS2 N3
+ handle GS2 AH540



GS2 S3
+ handle GS2 AH550

Presentation

TeSys GS switch-disconnector-fuses provide on-load breaking or making, safe isolation and overcurrent protection of all low voltage electrical circuits.

They are used, in particular, on the incoming supply to control panels, for protecting and switching off main circuits (including Emergency stop).

equipment to provide the same disconnect and protection functions on the incoming supply of equipment, generators or motor starters.

Conforming to standard IEC 60947-3, TeSys GS switch-disconnector-fuses are available for use with:
b NFC or DIN fuses,
b BS fuses.

meeting the requirements of standards UL98 and CSA 22.2 Nr.4, is also available.

The TeSys GS range includes sturdy and compact handles. These handles are easy to install and operate and are available in the following options:
b Direct operator.
b External front and RH side-mounted operator.
b External LH side-mounted operator.
b Padlockable with up to 3 padlocks. The door is locked when the handle is padlocked.
b Locking by means of a key-operated lock (option).
b With door interlock in the “closed” position. When in the “Closed” position, the door can be opened by means of a tool to be used only by authorised personnel. Locking is automatically re-established when the door is closed.
b Black/Grey or Yellow/Red for the Emergency stop function.
b IP 65 or IP 55.

This range is completed by auxiliary contacts:
b
and common to all ratings.
b Auxiliary contacts GS1 AN, which are suitable for isolation.
Reversibility of these contacts to convert an N/C contact into an N/O contact and vice versa.
b Control circuit test facility, off-load, with auxiliary contacts GS1 AM110, GS1 AM101 or GS1 ANT, used in conjunction with handles GS2 AHT.
b Auxiliary “blown fuse” signalling contacts.

Functions

Breaking

b Quick break and quick tripping mechanism, independent of the fuses.
C Opening and closing independent of operator speed.
C On-load making and breaking of resistive, inductive or mixed resistive and inductive circuits.
C Quality and durability of mechanical and electrical lives.

b Utilisation categories AC-23/690 V and DC-23/440 V.
C Durable performance in severe duty applications.
C Direct control of motors.

Characteristics: pages 4/46 to 4/51
References: pages 4/52 to 4/57
Dimensions: pages 4/62 to 4/66
Schemes: page 4/67

TeSys protection components
Switch-disconnector-fuses
32 to 1250 A, TeSys GS

Functions (continued)

Isolation

b Upstream and downstream breaking of fuses for all ratings
C Double break isolation of the power circuit and safe replacement of fuses.
C Total isolation of power and control circuits to ensure safety of persons and equipment.

b GS1 AN auxiliary contacts.
C Control circuit isolation.

b Contacts forced open in the event of welding.
C Fully visible break. “Open” position cannot be indicated unless all contacts are actually open.
C Safe opening and clear indication of “Open” state of switch-disconnector.

b Visible isolation distance between the open contacts.
C Visible break (630 to 1250 A ratings).

Protection

b Addition of gG (gl) fuses.
b C Overload and short-circuit protection of distribution circuits and power switching

b Addition of aM fuses (associated with thermal overload relays).
C Type 2 coordination (Iq > 50 kA) for motor starters consisting of fuses, contactors, relays.
C Short-circuit protection of motors and equipment.

b Addition of quick-blow fuses.
C Protection of electronic variable speed controllers and soft starters.

b “Blown fuse” detection device.
C Protection against single-phasing.

b Conditional short-circuit withstand voltage of 100 kA for all ratings.
C Equivalence between the breaking capacity of the fuses and the ability of the switch-disconnector-fuse to withstand this maximum capacity.
C Use in installations where very high short-circuit currents can develop.

b Handles with padlocking facility, with door interlock.
b Handle locking by means of a key-operated lock (option).
b Door interlock in “Closed” position.
b Operator shafts padlockable with door open.
b
C Protection against accidental contact.
C Protection of persons.

b IP 20 protection with terminal shrouds

Information and testing

b Up to 12 auxiliary contacts.
C Early break, “Open” and “Closed” position signalling, and “blown fuse” signalling.
C Use in automation systems.

b Control circuit test facility, off-load, by using auxiliary contacts GS1 AM110, GS1 AM101 or GS1 ANT in conjunction with handles GS2 AHT.
In the “Test” position, the enclosure door can be opened.

TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A, for use with NF C or DIN fuses

Type				GS1 DD	GSp F	GSp G	GSp J
Switch-disconnector-fuse characteristics							
Environment							
Conforming to standards	Switch-disconnector-fuses			IEC 60947-3			
	Circuit-breakers			IEC 60269-1 and 2			
				ASEFA/LOVAG, LROS (pending)			
Degree of protection conforming to IEC 60529	With terminal covers			IP 20			
Ambient air temperature around the device	Storage		°C	- 40…+ 80			
	Operation		°C	- 20…+ 70			
Flame resistance conforming to IEC 60695-2-1	Body		°C	960	960		
	Fuse cover		°C	–	850		
Pole characteristics							
Conventional thermal current (Ith) for ambient temperature y 40 °C			A	32	50	63	100
Fuse size				10 x 38	14 x 51	T00C	22 x 58
Rated insulation voltage (Ui)			V	800	750	750	750
Rated impulse withstand voltage (Uimp)			kV	8	8	8	8
Rated operational current (Ie)	Cat. AC-23A/B (1)	a 400 V	A	32	50	63	100
		a 500 V	A	32	50	63	100
		a 690 V	A	32	50	63	100 (3)
	Cat. DC-23A/B (1)	c 440 V (2)	A	20	40	40	100
Rated operational power	Cat. AC-23A/B (1)	a 400 V	kW	15	25	30	51
		a 500 V	kW	18.5	33	40	63
		a 690 V	kW	25	45	55	90
Rated conditional short-circuit current	I rms at a 400 V with protection by gG (gl) fuses		kA	100	100	100	100
	Rating of associated fuses		A	32	50	63	100
Peak value of permissible current (dynamic short-circuit withstand)	Conforming to IEC 60269-1	a 400 V	kA	5.5	7.6	10.6	20
Rated making capacity	I rms at 400 V Cat. AC-23B		A	320	500	630	1000
Rated breaking capacity	I rms at 400 V Cat. AC-23B		A	256	400	500	800
Mechanical durability	Number of operating cycles			20 000	10 000	10 000	10 000
Electrical durability	Number of operating cycles cat. AC/DC-23A/B (1)			1500/300	1500/300	1500/300	1500/300
Cabling	Cable (c.s.a. min/max)		mm^2	2.5/16	6/25	10/25	25/95
	Bars (max width)		mm	–	–	–	20
Tightening torque			N.m	3	3.2	3.2	12

(1) Category “A”: frequent operating cycles, category “B”: infrequent operating cycles
(2) 2 poles in series per phase.
(3) With terminal covers.
(4) Poles not juxtaposed.

Presentation: pages 4/44 and 4/45
References: pages 4/52 to 4/57
Dimensions: pages 4/62 to 4/66
Schemes: page 4/67

GSp K	GSp KK	GSp LL	GSp L	GSp N	GSp QQ	GS2 S	GS2 V
IEC 60947-3							
IEC 60269-1 and 2							
ASEFA/LOVAG, LROS (pending)							
IP 20							
- 40…+ 80							
- 20…+ 70							
960							
850							
125	125	160	160	250	400	630	1250
22 x 58	T00	T00	T0	T1	T2	T3	T4
750	750	750	750	750	800	1000	1000
8	8	8	8	8	8	12	12
125	125	160	160	250	400	630	1000
125	125	160	160	250	315	500	800
100 (3)	100 (3)	125 (3)	125 (3)	250 (3)	250/315	315/400	630
100	100	125	125	200	200/315 (4)	400/630 (4)	1000
63	63	80	80	132	220	355	560
90	90	110	110	160	220	355	560
80	80	110	110	220	220/295	295/400	400/475
100	100	100 (50)	100	100	50	100	100
125	125	125 (160)	160	250	400	630	1250
20	20	22.7	20	32.5	40	70	90
1250	1250	1600	1600	2500	4000	6300	10 000
1000	1000	1280	1280	2000	3200	5040	8000
10 000	10 000	10 000	10 000	10 000	10 000	8000	5000
1000/200	1000/200	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
20	20	20	20	32	45	63	80
12	12	12	12	25	25	44	44

Presentation: pages 4/44 and 4/45
References: pages 4/52 to 4/57
Dimensions: pages 4/62 to 4/66
Schemes: page 4/67

TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A, for use with BS fuses

Type				GS1 DDB	GS2 DB	GS2 GB	GS2 JB
Switch-disconnector-fuse characteristics							
Environment							
Conforming to standards	Switch-disconnector-fuses			IEC 60947-3			
	Circuit-breakers			IEC 60269-1 and 2			
				ASEFA/LOVAG, LROS (pending)			
Degree of protection conforming to IEC 60529	With terminal covers			IP 20			
Ambient air temperature around the device	Storage		°C	- 40…+ 80			
	Operation		°C	- 20…+ 70			
Flame resistance conforming to IEC 60695-2-1	Body		°C	960			
	Fuse cover		°C	–		850	
Pole characteristics							
Conventional thermal current (Ith) for ambient temperature y 40 °C			A	32	32	63	100
Fuse size				A1	A1	A2-A3	A4 Ø y 31 mm
Rated insulation voltage (Ui)			V	800	750	750	750
Rated impulse withstand voltage (Uimp)			kV	8	8	8	8
Rated operational current (Ie)	Cat. AC-23A/B (1)	a 400 V	A	32	32	63	100
		a 500 V	A	32	32	63	100
		a 690 V	A	32	32	63	100 (4)
	Cat. DC-23A/B (1)	c 440 V (2)	A	20	20	40	100
Rated operational power	Cat. AC-23A/B (1)	a 400 V	kW	15	15	30	51
		a 500 V	kW	18.5	18.5	40	63
		a 690 V	kW	25	25	55	90
Rated conditional short-circuit current	I rms at a 400 V with protection by gG (gl) fuses		kA	80	80	80	80
	Rating of associated fuses		A	32	32	63	100
Peak value of permissible current (dynamic short-circuit withstand)	Conforming to IEC 60269-1	a 400 V	kA	5.5	9	10.6	20
Rated making capacity	I rms at 400 V Cat. AC-23B		A	320	320	630	1000
Rated breaking capacity	I rms at 400 V Cat. AC-23B		A	256	256	500	800
Mechanical durability	Number of operating cycles			20 000	10 000	10 000	10 000
Electrical durability	Number of operating cycles cat. AC/DC-23A/B (1)			1500/300	1500/300	1500/300	1500/300
Cabling	Cable (c.s.a. min/max)		mm^2	2.5/16	6/25	10/25	25/95
	Bars (max width)		mm	–	–	–	20
Tightening torque			N.m	3	3.2	3.2	12

(1) Category “A”: frequent operating cycles, category “B”: infrequent operating cycles
(2) 2 poles in series per phase.
(3) Fit switch-disconnector-fuses GS2 LB with B1 or B2 fuses and GS2 LLB with A4 fuses.
(4) With terminal covers.
(5) Poles not juxtaposed.

Presentation: pages 4/44 and 4/45
References: pages 4/52 to 4/57
Dimensions: pages 4/62 to 4/66
Schemes: page 4/67

GS2 LB or LLB (3)	GS2 MMB	GS2 NB	GS2 PPB	GS2 QQB	GS2 SB	GS2 TB	GS2 VB
IEC 60947-3							
IEC 60269-1 and 2							
ASEFA/LOVAG, LROS (pending)							
IP 20							
- 40…+ 80							
- 20…+ 70							
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	800	800	1000	1000	1000
8	8	8	8	8	12	12	12
160	200	250	315	400	630	800	1000
160	200	250	315	315	500	630	800
125 (4)	200/160 (4)	250 (4)	250/315 (4)	250/315	315/400	630	630
125	200	200	200	200/315 (5)	400/630 (5)	800	1000
80	100	132	150	220	355	450	560
110	140	160	220	220	355	450	560
110	150/185	220	220/295	220/295	295/400	400	400/475
80	80	80	80	80	80	80	80
160	200	250	315	400	630	800	1250
22.7	32.5	32.5	40	40	70	80	90
1600	2000	2500	3150	4000	6300	8000	10 000
1280	1600	2000	2520	3200	5040	6400	8000
10 000	10 000	10 000	10 000	10 000	8000	8000	5000
1000/200	1000/200	1000/200	1000/200	1000/200	1000/200	500/100	500/100
50/95	95/240	95/240	185/240	185/240	2 x 150 / 2 x 300	2 x 185 / 2 x 300	– / 4 x 185
20	32	32	45	45	63	63	80
12	25	25	25	25	44	44	44

TeSys protection components
Auxiliary contacts for TeSys GS switch-disconnector-fuses, 32 to 1250 A, for use with NF C or DIN fuses

GS1 AMp11, GS1 AM1 and GS1 AM2 early break and signalling contact characteristics

Conventional thermal current (Ith) for ambient temperature y 40 °C		A	16
Rated operational current (Ie)	Cat. AC-15	A	
	Cat. DC-13	A	
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

Conventional thermal current (Ith) for ambient temperature y 40 °C		A	20
Rated operational current (Ie)	Cat. AC-15	A	
	Cat. DC-13	A	
Durability	Number of operating cycles		Mechanical: 30 000 Electrical: cat. AC-15: 30 000
Fuse protection	gG	A	16 max
Cabling	Cable (c.s.a. min/max)	mm^2	

GS1 AM110 and GS1 AM101 early break and signalling contact characteristics

Conventional thermal current (Ith) for ambient temperature y 40 °C		A	10
Rated operational current (Ie)	Cat. AC-15	A	
	Cat. DC-13	A	
Durability	Number of operating cycles		Mechanical: 5 000 000 Electrical: cat. AC-15: 1 000 000
Cabling	Cable (c.s.a. min/max)	mm^2	

GSp AF "blown fuse" signalling contact characteristics

Conventional thermal current (Ith) for ambient temperature y 40 °C		A	16
Rated operational current (Ie)	Cat. AC-15	A	
	Cat. DC-13	A	
Durability	Number of operating cycles		Mechanical: 30 000 Electrical: cat. AC-15: 30 000
Cabling		mm	Faston connectors: 1 x 6.35

TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A, for use with BS fuses

GS1 AMp11, GS1 AM1 and GS1 AM2 early break and signalling contact characteristics

Conventional thermal current (Ith) for ambient temperature y 40 °C		A	16
Rated operational current (Ie)	Cat. AC-15	A	
	Cat. DC-13	A	
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

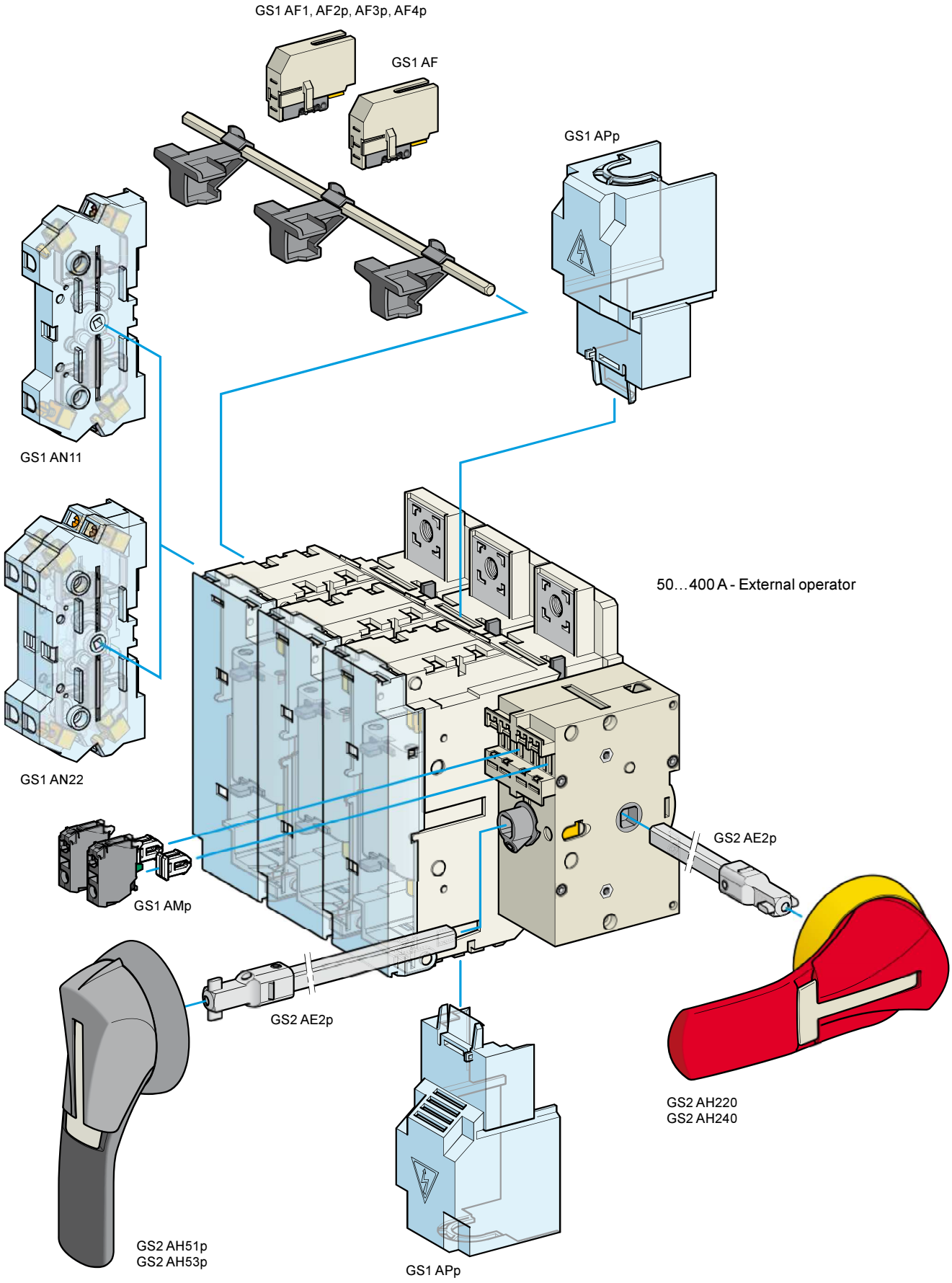
Conventional thermal current (Ith) for ambient temperature y 40 °C		A	20
Rated operational current (Ie)	Cat. AC-15	A	
	Cat. DC-13	A	
Durability	Number of operating cycles		Mechanical: 30 000 Electrical: cat. AC-15: 30 000
Fuse protection	gG	A	16 max
Cabling	Cable (c.s.a. min/max)	mm^2	

GS1 AM110 and GS1 AM101 early break and signalling contact characteristics

Conventional thermal current (Ith) for ambient temperature y 40 °C		A	10
Rated operational current (Ie)	Cat. AC-15	A	
	Cat. DC-13	A	
Durability	Number of operating cycles		Mechanical: 5 000 000 Electrical: cat. AC-15: 1 000 000
Cabling	Cable (c.s.a. min/max)	mm^2	

GSp AF "blown fuse" signalling contact characteristics

Conventional thermal current (Ith) for ambient temperature y 40 °C		A	16
Rated operational current (Ie)	Cat. AC-15	A	
	Cat. DC-13	A	
Durability	Number of operating cycles		Mechanical: 30 000 Electrical: cat. AC-15: 30 000
Cabling		mm	Faston connectors: 1 x 6.35


GS1 AF1, AF2p, AF3p, AF4p
GS1 AF
GS1 APp
GS1 AN11
GS1 AN22
50…400 A - External operator
GS1 AMp
GS2 AE2p
GS2 AE2p
GS2 AH220
GS2 AH240
GS2 AH51p
GS2 AH53p
GS1 APp

TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A, for use with NF C or DIN fuses



GS1 DD3



GS2 F3



GS2 N3



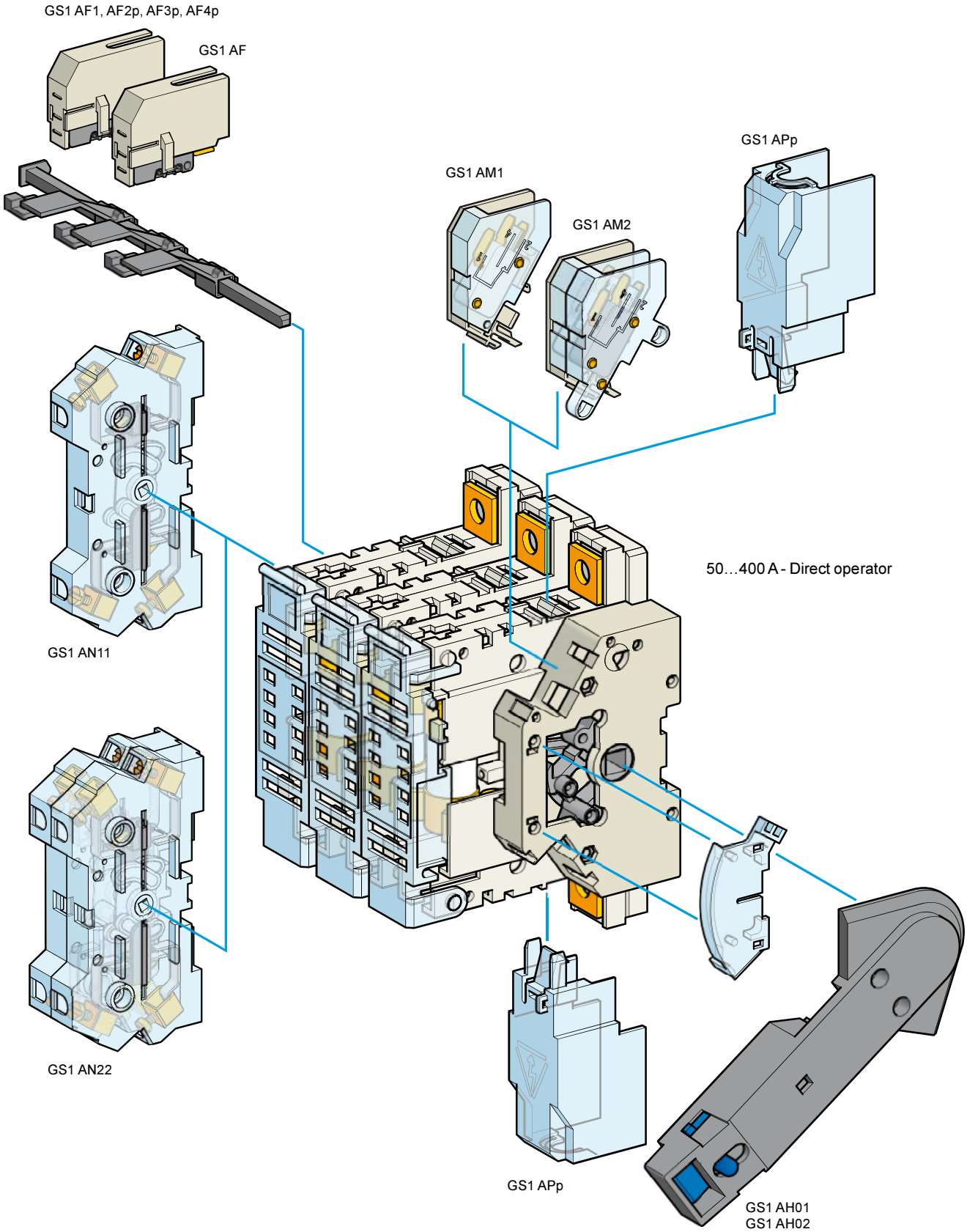
GS2 L4

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 front-mounted and RH side-mounted operators				
32	10 x 38	3	GS1 DD3	0.460
		3 + Nc (1)	GS1 DD4	0.500
50	14 x 51	3	GS2 F3	0.800
		4	GS2 F4	1.000
63	Size 00C (2)	3	GS2 G3	1.000
		4	GS2 G4	1.300
100	22 x 58	3	GS2 J3	1.500
		4	GS2 J4	2.000
125	22 x 58	3	GS2 K3	1.500
		4	GS2 K4	2.000
	Size 00	3	GS2 KK3	1.500
		4	GS2 KK4	2.000
160	Size 00	3	GS2 LL3	1.800
		4	GS2 LL4	2.300
	Size 0	3	GS2 L3	1.800
		4	GS2 L4	2.300
250	Size 1	3	GS2 N3	3.200
		4	GS2 N4	4.500
400	Size 2	3	GS2 QQ3	4.800
		4	GS2 QQ4	6.100
630	Size 3	3	GS2 S3	16.000
		4	GS2 S4	20.000
1250	Size 4	3	GS2 V3	25.000
		4	GS2 V4	30.000
For external LH side-mounted operators				
32	10 x 38	3	GS1 DD3	0.460
		3 + Nc (1)	GS1 DD4	0.500
50	14 x 51	3	GS2 FG3	0.800
		4	GS2 FG4	1.000
63	Size 00C (2)	3	GS2 GG3	1.000
		4	GS2 GG4	1.300
100	22 x 58	3	GS2 JG3	1.500
		4	GS2 JG4	2.000
125	22 x 58	3	GS2 KG3	1.500
		4	GS2 KG4	2.000
	Size 00	3	GS2 KKG3	1.500
		4	GS2 KKG4	2.000
160	Size 00	3	GS2 LLG3	1.800
		4	GS2 LLG4	2.300
	Size 0	3	GS2 LG3	1.800
		4	GS2 LG4	2.300
250	Size 1	3	GS2 NG3	3.200
		4	GS2 NG4	4.500
400	Size 2	3	GS2 QQG3	4.800
		4	GS2 QQG4	6.100
630	Size 3	3	GS2 SG3	16.000
		4	GS2 SG4	20.000
1250	Size 4	3	GS2 VG3	25.000
		4	GS2 VG4	30.000

1) Nc = Switched neutral.
2) Compact fuses for German market.

Presentation : pages 4/44 and 4/45
Characteristics : pages 4/46 to 4/49
Dimensions : pages 4/62 to 4/66
Schemes : page 4/67


GS1 AF1, AF2p, AF3p, AF4p
GS1 AF
GS1 AM1
GS1 AM2
GS1 APp
GS1 AN11
50…400 A - Direct operator
GS1 AN22
GS1 APp
GS1 AH01
GS1 AH02

TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A, for use with NF C or DIN fuses

568667



GS1 JD3

510761



GS2 S3
with handle
GS2 AHp50 or
GS2 AHp60

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

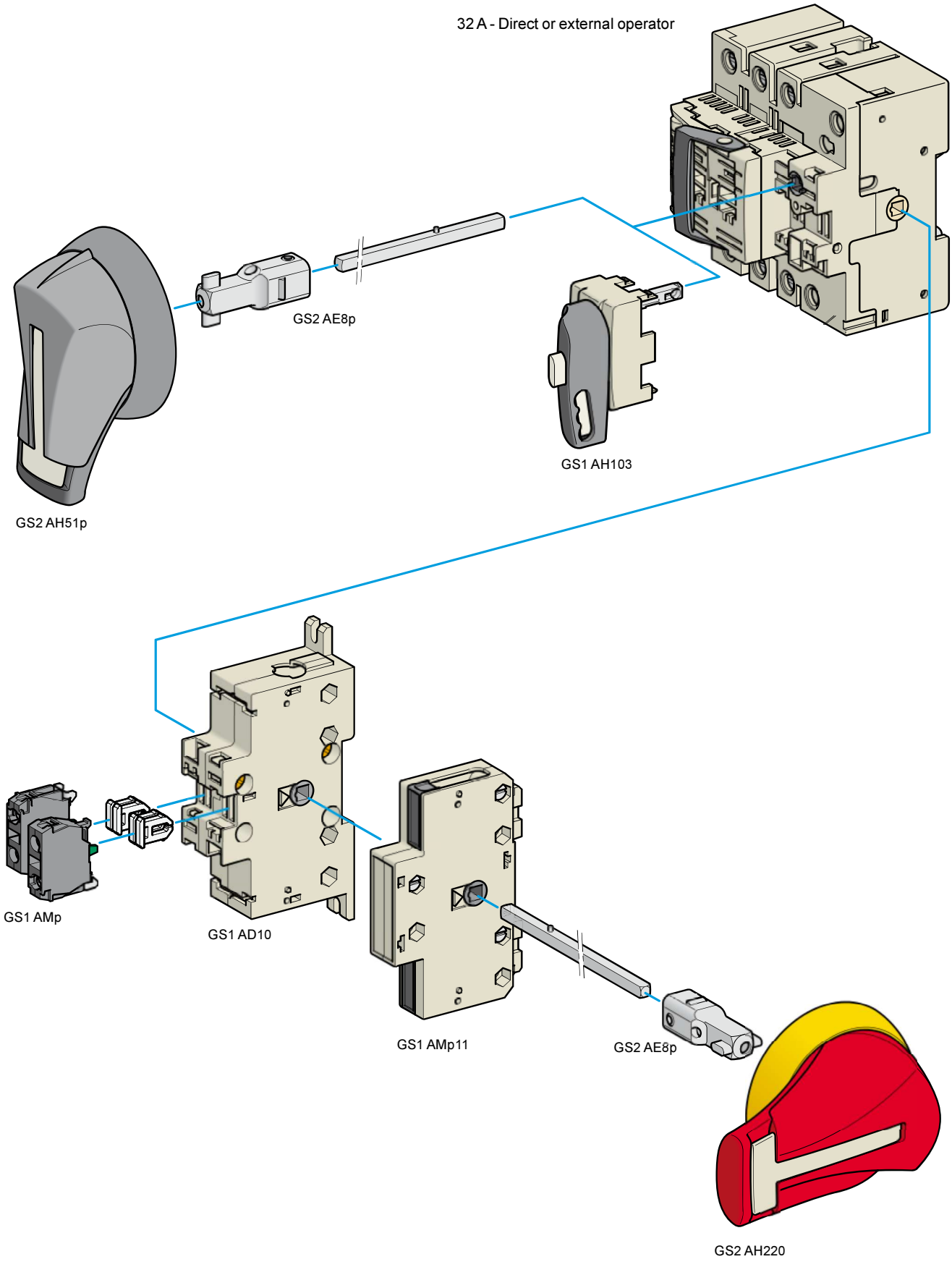
Switch rating	Fuse size	Type of operator	Number of poles	Reference	Weight
A					kg
For direct operator					
32	10 x 38	Front	3	GS1 DD3	0.460
			3 + Nc (1)	GS1 DD4	0.500
50	14 x 51	RH side	3	GS1 FD3	0.800
			4	GS1 FD4	1.000
63	Size 00C (2)	RH side	3	GS1 GD3	1.000
			4	GS1 GD4	1.300
100	22 x 58	RH side	3	GS1 JD3	1.500
			4	GS1 JD4	2.000
125	22 x 58	RH side	3	GS1 KD3	1.500
			4	GS1 KD4	2.000
	Size 00	RH side	3	GS1 KKD3	1.500
			4	GS1 KKD4	2.000
160	Size 00	RH side	3	GS1 LLD3	1.800
			4	GS1 LLD4	2.300
	Size 0	RH side	3	GS1 LD3	1.800
			4	GS1 LD4	2.300
250	Size 1	RH side	3	GS1 ND3	3.200
			4	GS1 ND4	4.500
400	Size 2	RH side	3	GS1 QQD3	4.800
			4	GS1 QQD4	6.100
630	Size 3	Front	3	GS2 S3	16.000
			4	GS2 S4	20.000
1250	Size 4	Front	3	GS2 V3	25.000
			4	GS2 V4	30.000

1) Nc = Switched neutral.
2) Compact fuses for German market.

4

Presentation : pages 4/44 and 4/45
Characteristics : pages 4/46 to 4/49
Dimensions : pages 4/62 to 4/66
Schemes : page 4/67

32 A - Direct or external operator



TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A, for use with BS fuses

510961



GS1 DDB3

510967



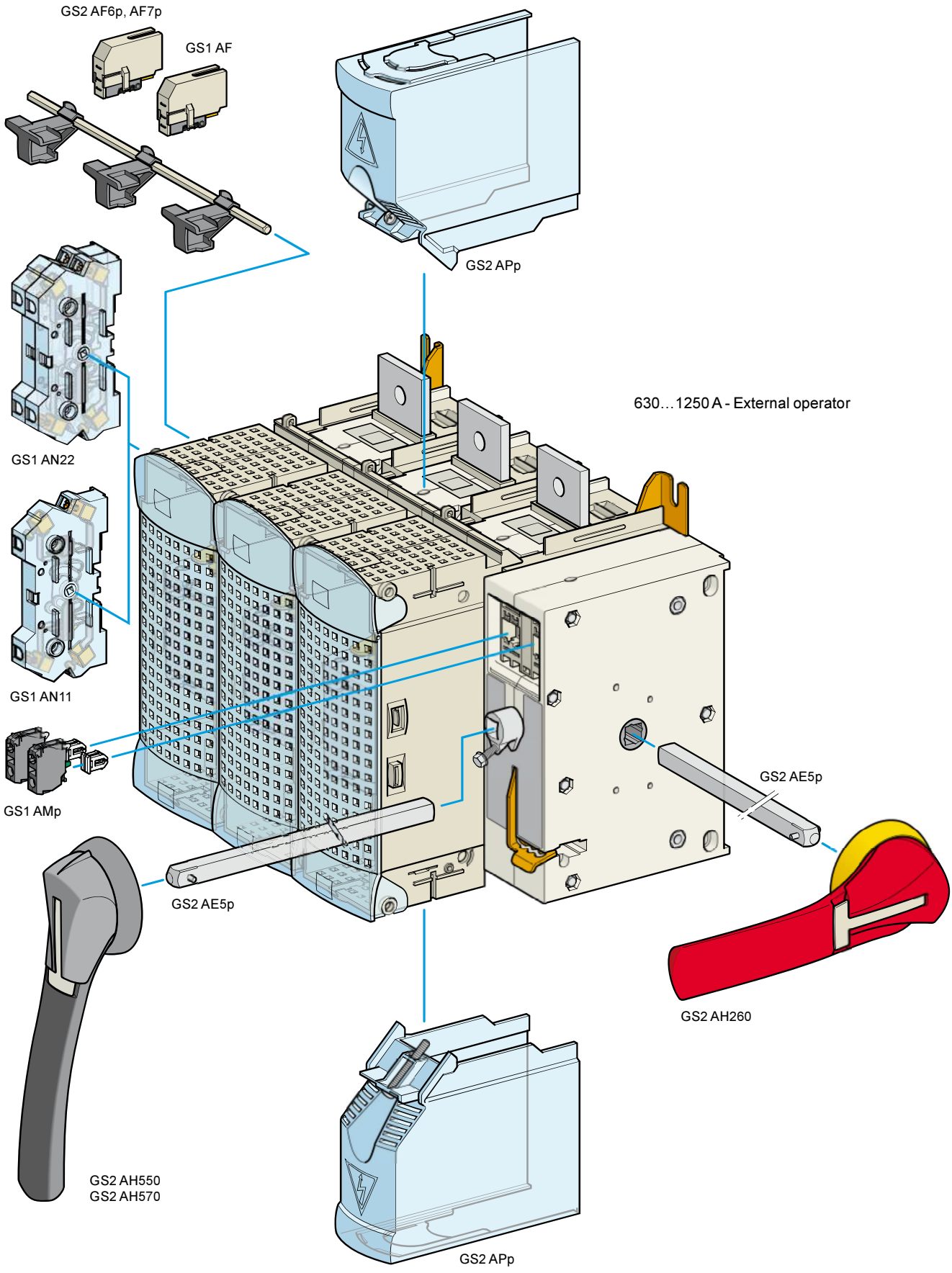
GS2 GB3

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

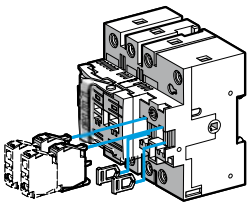
Switch rating	Fuse size	Number of poles	Reference	Weight
A				kg
For external front-mounted and RH or LH side-mounted operator				
For direct front-mounted operator				
32	A1	3	GS1 DDB3	0.500
		3 + Nc (1)	GS1 DDB4	0.540
For external front-mounted and RH side-mounted operators (2)				
32	A1	3	GS2 DB3	0.800
		4	GS2 DB4	1.000
63	A2-A3	3	GS2 GB3	1.000
		4	GS2 GB4	1.300
100	A4 Ø y 31 mm	3	GS2 JB3	1.500
		4	GS2 JB4	2.000
160	A4	3	GS2 LLB3	1.800
		4	GS2 LLB4	2.300
	B1-B2	3	GS2 LB3	1.800
		4	GS2 LB4	2.300
200	B1-B2	3	GS2 MMB3	3.200
		4	GS2 MMB4	4.500
250	B1…B3	3	GS2 NB3	3.200
		4	GS2 NB4	4.500
315	B1…B3	3	GS2 PPB3	4.800
		4	GS2 PPB4	6.100
400	B1…B4	3	GS2 QQB3	4.800
		4	GS2 QQB4	6.100
630	C 1-C2	3	GS2 SB3 (2)	16.000
		4	GS2 SB4 (2)	20.000
800	C 1…C3	3	GS2 TB3 (2)	17.000
		4	GS2 TB4 (2)	21.500
1250	D1	3	GS2 VB3 (2)	25.000
		4	GS2 VB4 (2)	30.000

(1) Nc: switched neutral.

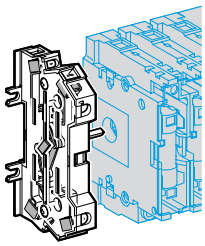
Presentation : pages 4/44 and 4/45
Characteristics : pages 4/46 to 4/49
Dimensions : pages 4/62 to 4/66
Schemes : page 4/67


GS2 AF6p, AF7p
GS1 AF
GS2 APp
GS1 AN22
630…1250 A - External operator
GS1 AN11
GS1 AMp
GS2 AE5p
GS2 AE5p
GS2 AH260
GS2 AH550
GS2 AH570
GS2 APp

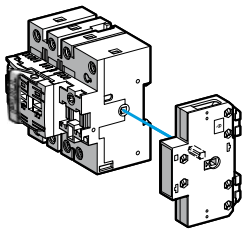
TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A
Auxiliary contacts



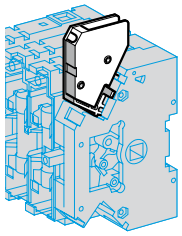
GS1 AM1pp



GS1 ANppp



GS1 AMp11



GS1 AMp

Auxiliary early break and/or O, I and Test position signalling contacts (1) (2) (3)

Switch rating	Contact type	Type of operator	Reference	Weight
A				kg
32…1250	1 N/O	External, front or side-mounted (4)	GS1 AM110	0.200
	1 N/C	External, front or side-mounted (4)	GS1 AM101	0.200

Auxiliary O, I and Test position signalling contacts (3) (5)

Switch rating	Contact type	Type of operator	Reference	Weight
A				kg
Auxiliary O and I position signalling contacts				
50…1250	1 N/C + 1 N/O	External, front or RH side-mounted Direct	GS1 AN11	0.132
		External, LH side	GS1 AN11G	0.131
	2 N/C + 2 N/O	External, front or RH side-mounted Direct	GS1 AN22	0.238
		External, LH side	GS1 AN22G	0.252
Auxiliary O, I and Test position signalling contacts (3)				
50…400	1 N/C + 1 N/O	External, front side-mounted	GS1 ANT11	0.153
	2 N/C + 2 N/O	External, front side-mounted	GS1 ANT22	0.258

Auxiliary early break and O and I position signalling contacts

Switch rating	Contact type	Type of operator	Reference	Weight
A				kg
32	1 C/O	–	GS1 AM111	0.080
	2 C/O	–	GS1 AM211	0.080
50…400	1 C/O	Direct, RH side	GS1 AM1	0.023
	2 C/O	Direct, RH side	GS1 AM2	0.035

Auxiliary “blown fuse” signalling contacts for use with NF C and DIN fuses (6)

Contact type	Switch rating	Fuse size	Number of poles	Reference	Weight
	A				kg
1st C/O	50	14 x 51	3 or 4	GS1 AF1	0.025
	100 and 125	22 x 58	3	GS1 AF23	0.033
			4	GS1 AF24	0.037
	160	Size 0	3	GS1 AF33	0.036
			4	GS1 AF34	0.030
	250 and 400	Size 1 and Size 2	3	GS1 AF43	0.038
			4	GS1 AF44	0.032
	630	Size 3	3	GS2 AF63	0.046
			4	GS2 AF64	0.100
	1250	Size 4	3	GS2 AF73	0.080
			4	GS2 AF74	0.045
2nd C/O	50…1250	–	3 or 4	GS1 AF	0.015

(1) For 32 A switch-disconnector-fuses, these auxiliary contacts allow:
- early break and O and I position signalling,
- O, I and Test position signalling,

For 50 to 400 A switch-disconnector-fuses, they allow:
- early break,
- O, I and Test position signalling,

For 630 and 1250 A switch-disconnector-fuses, they allow:
- early break and O and I position signalling,
- O and I position signalling,
- Test position signalling.

- O and I position signalling,
- Test position signalling.

(2) Maximum number of auxiliary contacts:

Switch rating A	Standard	With additional bracket	Reference of additional bracket
32	4	4 + 4	GS1 AD10
50…160	4	4 + 4	GS2 AD20
200…400	8	8 + 4	GS2 AD20
630…1250	8	8	–

(3) The Test position allows testing of the control circuits off-load. Auxiliary contacts GS1 AM110, GS1 AM101 and GS1 ANTpp only allow the text function with external handles GS2 AHTppp.

mounted operator.
(5) Reversible add-on attachments for converting an N/C contact to an N/O contact and vice versa.
(6) For striker fuses (BS fuses are not available with striker).

TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A
Handles for external operators

538656

GS2 AHp10
GS2 AHp20

538655

GS2 AHp30
GS2 AHp40

538654

GS2 AHp50
GS2 AHp60

538653

GS2 AHp70
GS2 AHp80

Handles for external operator

Switch rating A	Handle colour	Degree of protection	Reference	Weight kg
Handles for front-mounted external operators, padlockable and lockable in position O (1) Door interlock in I position (2)				
32…63	Black/Grey	IP 65	GS2 AH510	0.200
		IP 55	GS2 AH515	0.200
	Red/Yellow	IP 65	GS2 AH520	0.200
100…400	Black/Grey	IP 65	GS2 AH530	0.240
		IP 55	GS2 AH535	0.240
	Red/Yellow	IP 65	GS2 AH540	0.240
630 and 800	Black/Grey	IP 65	GS2 AH550	0.280
	Red/Yellow	IP 65	GS2 AH560	0.280
1250	Black/Grey	IP 65	GS2 AH570	0.390
	Red/Yellow	IP 65	GS2 AH580	0.390
Handles for front-mounted external operators with test facility (3), padlockable and lockable in "O" position (1). Door interlock in " I" position (2)				
32…63	Black/Grey	IP 65	GS2 AHT510	0.200
	Red/Yellow	IP 65	GS2 AHT520	0.200
100…400	Black/Grey	IP 65	GS2 AHT530	0.240
	Red/Yellow	IP 65	GS2 AHT540	0.240
Handles for external RH side-mounted operators, padockable and lockable in "O" position (1)				
32…63	Black/Grey	IP 65	GS2 AH210	0.200
		IP 55	GS2 AH215	0.200
	Red/Yellow	IP 65	GS2 AH220	0.200
100…400	Black/Grey	IP 65	GS2 AH230	0.240
		IP 55	GS2 AH235	0.240
	Red/Yellow	IP 65	GS2 AH240	0.240
630…1250	Black/Grey	IP 65	GS2 AH250	0.280
	Red/Yellow	IP 65	GS2 AH260	0.280
Handles for external LH side-mounted operators, padockable and lockable in "O" position (1)				
32…63	Black/Grey	IP 65	GS2 AH310	0.200
	Red/Yellow	IP 65	GS2 AH320	0.200
100…400	Black/Grey	IP 65	GS2 AH330	0.240
	Red/Yellow	IP 65	GS2 AH340	0.240
630…1250	Black/Grey	IP 65	GS2 AH350	0.280
	Red/Yellow	IP 65	GS2 AH360	0.280

Shafts for external operators

Switch rating A	Shaft length mm	Shaft cross section mm	Reference	Weight kg
32	200	5 x 5	GS2 AE82	0.100
	320	5 x 5	GS2 AE8	0.125
	400	5 x 5	GS2 AE81	0.150
50…400	200	10 x 10	GS2 AE22	0.160
	320	10 x 10	GS2 AE2	0.280
	400	10 x 10	GS2 AE21	0.320
630…1250	200	12 x 12	GS2 AE52	0.240
	320	12 x 12	GS2 AE5	0.380
	400	12 x 12	GS2 AE51	0.420

(1) Lockable with device GS2 AX1, to be ordered separately.
(2) Door interlock override by means of a tool.
(3) The Test facility allows testing of the control circuits off-load, by using auxiliary contacts GS1 AM110, GS1 AM101 or GS1 ANTpp. In the "Test" position, the enclosure door can be opened.

TeSys protection components
TeSys GS switch-disconnector-fuses, 32 to 1250 A
Handles for external operators
Accessories



GS1 AH01



GS1 AH02

Handles for external operators

Switch rating A	Type of operator	Handle colour	Reference	Weight kg
Handles for direct operators, padlockable				
32	Front	Black	GS1 AH103	0.060
50 and 63	RH side	Black	GS1 AH01	0.060
100…400	RH side	Black	GS1 AH02	0.100
630 and 800	Front	Black	GS2 AH104	0.480
1250	Front	Black	GS2 AH105	0.600

Terminal protection shrouds for upstream or downstream connector plates

Switch rating A	Number of poles	Reference	Weight kg
50 and 63	3 or 4	(1)	–
100…160	3	GS1 AP33	0.073
	4	GS1 AP34	0.180
200…400	3	GS1 AP43	0.240
	4	GS1 AP44	0.280
630…800	3	GS2 AP63	0.520
	4	GS2 AP64	0.780
1250	3	GS2 AP83	0.680
	4	GS2 AP84	0.840

Devices for locking fuse covers in "I" position (2)

Switch rating A	Fuse size	Number of poles	Reference	Weight kg
50	14 x 51	3 or 4	(3)	–
63	Size 00C	3 or 4	GS1 AV1	0.012
100…160	22 x 58, Size 00	3 or 4	GS1 AV2	0.040
160	Size 0	3	GS1 AV33	0.026
		4	GS1 AV34	0.010
250	Size 1	3	GS1 AV53	0.026
		4	GS1 AV54	0.010
400	Size 2	3	GS1 AV73	0.027
		4	GS1 AV74	0.033

Cage terminals for connection of bare cables (without lug)

Switch rating A	Number of poles	Reference	Weight kg
50 and 63	3 or 4	(4)	–
100…160	3	GS1 AW33	0.179
	4	GS1 AW34	0.357
200…250	3	GS1 AW43	0.236
	4	GS1 AW44	0.480

External handle locking device

Switch rating A	Description	Reference	Weight kg
32…1250	Device for RONIS EL11AP key lock (lock to be ordered separately).	GS2 AX1	0.200

Height compensation plate for external handles

Switch rating A	Description	Degree of protection	Reference	Weight kg
32…1250	Allows a new GS2pp handle	IP 65	GS2 AH001	0.020

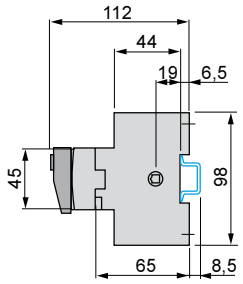
Flat mounting kit

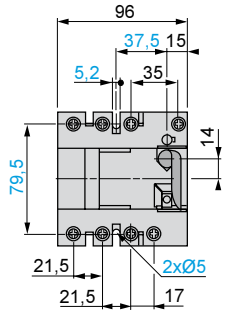
Switch rating A	Description	Reference	Weight kg
50…400	The kit, for use with a front-mounted external handle, includes: b a 200 mm shaft, cross section 10 x 10 mm, b an adapter plate	GS2 ADL2	0.300

GS1 DD (32 A)

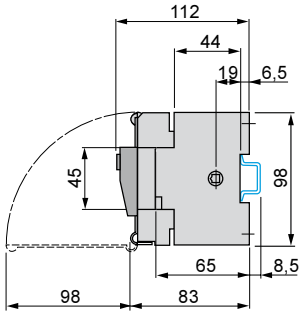
Direct front-mounted operator

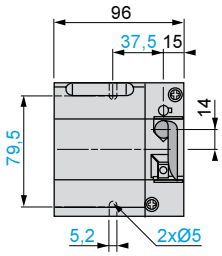
GS1 DD





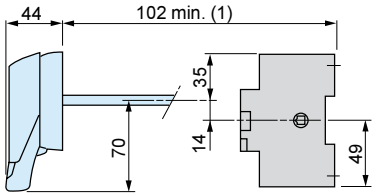
GS1 DDB

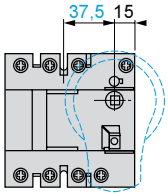




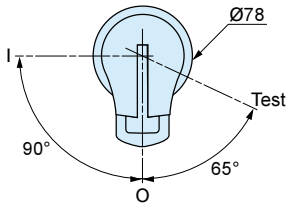
External front-mounted operator

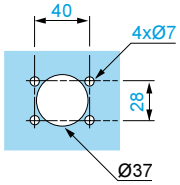
GS1 DD



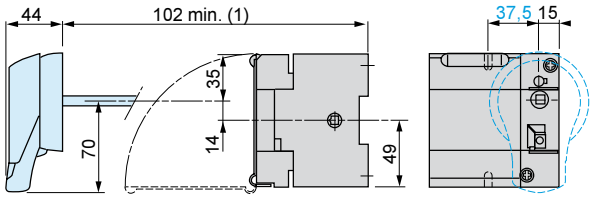


Door cut-out

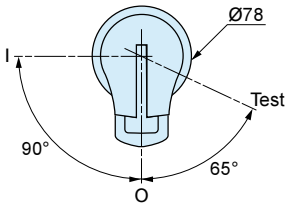


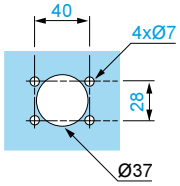


GS1 DDB



Door cut-out

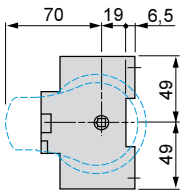


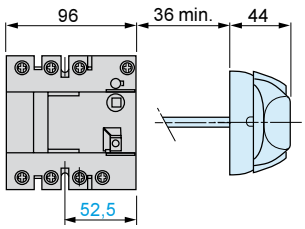


(1) With 1 or 2 auxiliary contacts GS1 AM1pp: 130 mm.
(2) With 3 or 4 auxiliary contacts GS1 AM1pp: 155 mm.

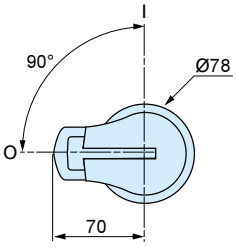
External RH side-mounted operator

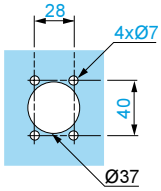
GS1 DD



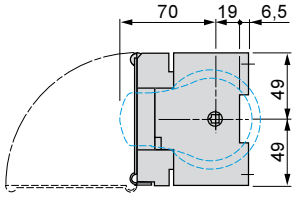


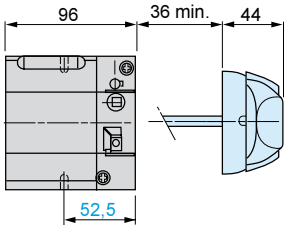
Door cut-out



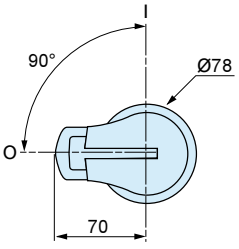


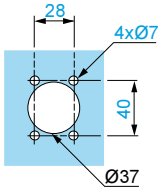
GS1 DDB





Door cut-out





Presentation:
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Characteristics:
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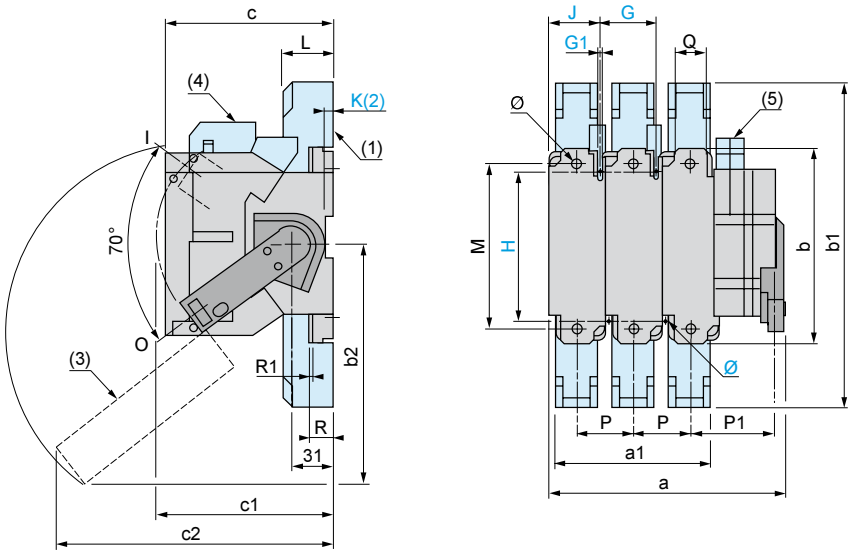
References:
pages 4/52 to 4/57

Schemes:
page 4/67

GS1 pp (50…400 A)

Direct RH side-mounted operator

GS1 FD (50 A), GD (63 A), JD (100 A), KD, KKD (125 A), LD, LLD (160 A), ND (250 A) and QQD (400 A)



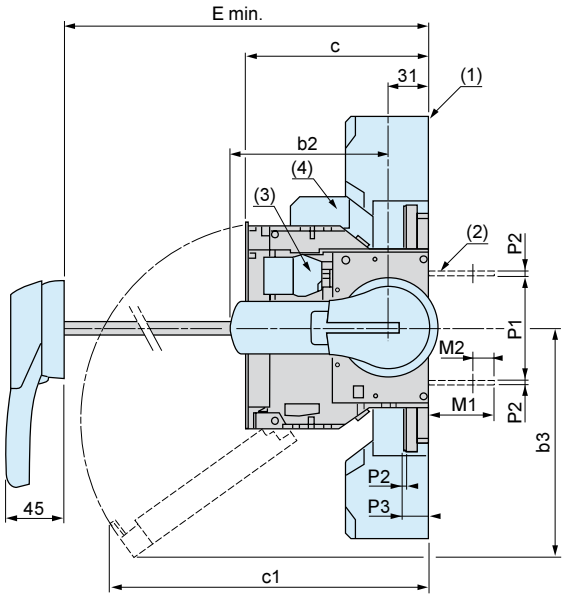
GS1		a	a1	b	b1	b2	c	c1	c2	G	G1	H	J	K	Ø	L	M	P	P1	Q	R	R1	Ø
FD	3P	118	–	118	–	–	87	134	–	27	5.4	106	31	6.5	5	–	–	27	33.5	–	–	–	–
	4P	145	–	118	–	–	87	134	–	27	5.4	106	31	6.5	5	–	–	27	33.5	–	–	–	–
GD	3P	133	–	118	–	159	116.5	134	145	32	5.4	106	36	6.5	5	–	–	32	36	–	–	–	–
	4P	165	–	118	–	159	116.5	134	145	32	5.4	106	36	6.5	5	–	–	32	36	–	–	–	–
JD, KD	3P	150	108	162	268	–	116	173	–	36	5.4	127	40	–	5	44	141	36	38	20	19.5	2.5	8.5
	4P	186	144	162	268	–	116	173	–	36	5.4	127	40	–	5	44	141	36	38	20	19.5	2.5	8.5
KKD, LLD	3P	150	108	162	268	141	126.5	173	193	36	5.4	127	40	–	5	44	141	36	38	20	19.5	2.5	8.5
	4P	186	144	162	268	141	126.5	173	193	36	5.4	127	40	–	5	44	141	36	38	20	19.5	2.5	8.5
LD	3P	192	136	162	268	174	136.5	173	229	50	5.4	140	54	–	5	44	141	50	45	20	19.5	2.5	8.5
	4P	242	172	162	268	174	136.5	173	229	50	5.4	140	54	–	5	44	141	50	45	20	19.5	2.5	8.5
ND	3P	253	180	195	345	185	146	173	251	60	6.4	162	64	–	6	65	166	60	81	32	19.5	2.5	11
	4P	313	240	195	345	185	146	173	251	60	6.4	162	64	–	6	65	166	60	81	32	19.5	2.5	11
QQD	3P	271	192	205	355	200	149	173	260	66	6.4	172	70	–	6	65	175	66	86	50	20	3	11
	4P	337	258	205	355	200	149	173	260	66	6.4	172	70	–	6	65	175	66	86	50	20	3	11

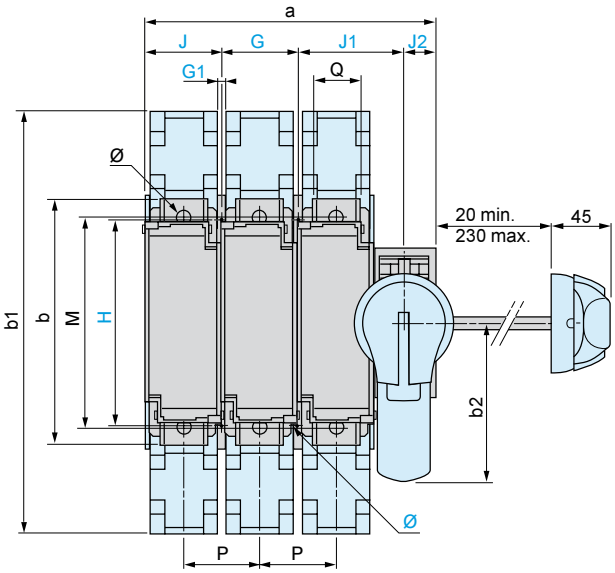
(1) Terminal cover.
(2) Mounting on 5 rail only for GS1 FD and GS1 GD (50 and 63 A).
(3) Protective screen, lockable in I position.
(4) 1 or 2 auxiliary contacts GS1 AFpp.
(5) 1 or 2 auxiliary contacts GS1 AMp.

GS2 pp (50…400 A)

External front and RH side-mounted operator

GS2 DB (32 A), F (50 A), G, GB, JB (63 A), J (100 A), K, KK (125 A), L, LL, LB, LLB (160 A), MMB (200 A), N, NB (250 A), PPB (315 A), QQ and QQB (400 A)



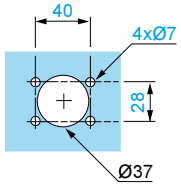


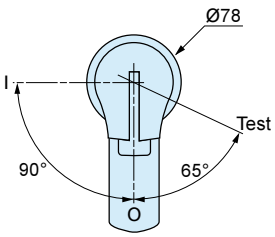
GS2		a	b	b1	b2	b3	c	c1	E min.	G	G1	H	J	J1	J2	Ø	M	M1	M2	P	P1	P2	P3	Q	Ø
F, DB	3P	121	118	–	70	85	87 (5)	153	100 (5)	27	5.4	106	31	45	18	5	–	15	6	27	59	2	–	12	–
	4P	148	118	–	70	85	87 (5)	153	100 (5)	27	5.4	106	31	45	18	5	–	15	6	27	59	2	–	12	–
G, GB	3P	136	118	–	70	159	116.5 (6)	145	125	32	5.4	106	36	50	18	5	–	15	6	32	59	2	–	12	–
	4P	168	118	–	70	159	116.5 (6)	145	125	32	5.4	106	36	50	18	5	–	15	6	32	59	2	–	12	–
J, JB, K	3P	148	162	268	125	141	116 (6)	187	135	36	5.4	127	40	54	18	5	141	41	8	36	62	2.5	19.5	20	8.5
	4P	184	162	268	125	141	116 (6)	187	135	36	5.4	127	40	54	18	5	141	41	8	36	62	2.5	19.5	20	8.5
KK, LL	3P	148	162	268	125	141	126.5 (6)	193	135	36	5.4	127	40	54	18	5	141	41	8	36	62	2.5	19.5	20	8.5
	4P	184	162	268	125	141	126.5 (6)	193	135	36	5.4	127	40	54	18	5	141	41	8	36	62	2.5	19.5	20	8.5
L, LB, LLB	3P	190	162	268	125	174	136.5	229	145	50	5.4	140	54	64	18	5	141	41	8	50	62	2.5	19.5	20	8.5
	4P	240	162	268	125	174	136.5	229	145	50	5.4	140	54	64	18	5	141	41	8	50	62	2.5	19.5	20	8.5
MMB, NB, N	3P	234	195	345	125	185	146	251	154	60	6.4	162	64	86	25	6	166	52	17	60	84	2.5	19.5	32	11
	4P	294	195	345	125	185	146	251	154	60	6.4	162	64	86	25	6	166	52	17	60	84	2.5	19.5	32	11
PPB, QQB, QQ	3P	252	205	355	125	200	149	260	157	66	6.4	172	70	91	25	6	175	54	14.5	66	84	3	20	50	11
	4P	318	205	355	125	200	149	260	157	66	6.4	172	70	91	25	6	175	54	14.5	66	84	3	20	50	11

(1) Terminal cover.
(2) Rear access connector plates (option).
(3) 1 to 8 auxiliary contacts GS1 AM1pp.
(4) 1 or 2 auxiliary contacts GS1 AFpp.
(5) 1 auxiliary contact GS1 AM1pp: + 23.5 mm, 2 auxiliary contacts GS1 AM1pp: + 47 mm.
(6) 132 mm with 2 auxiliary contacts GS1 AM1pp.

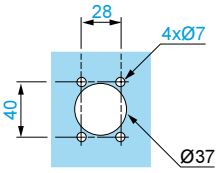
Door cut-out

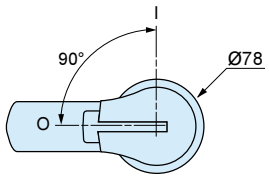
For external front-mounted operator





For external RH side-mounted operator



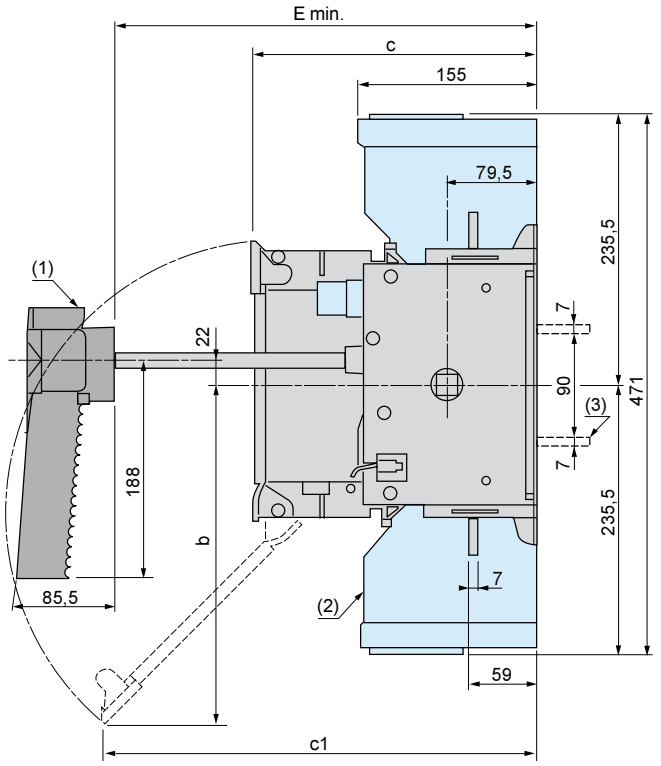


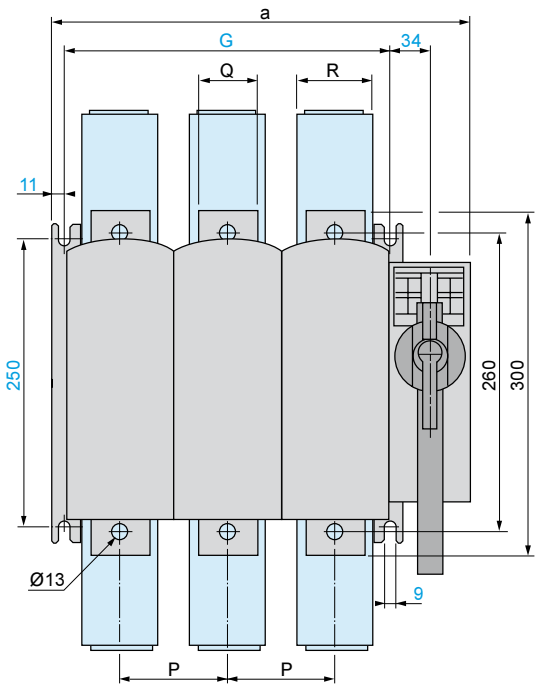
Presentation: pages 4/44 and 4/45
Characteristics: pages 4/46 to 4/51
References: pages 4/52 to 4/57
Schemes: page 4/67

GS2 pp (630…1250 A)

Direct front-mounted operator

GS2 S, SB (630 A), TB (800 A), V and VB (1250 A)

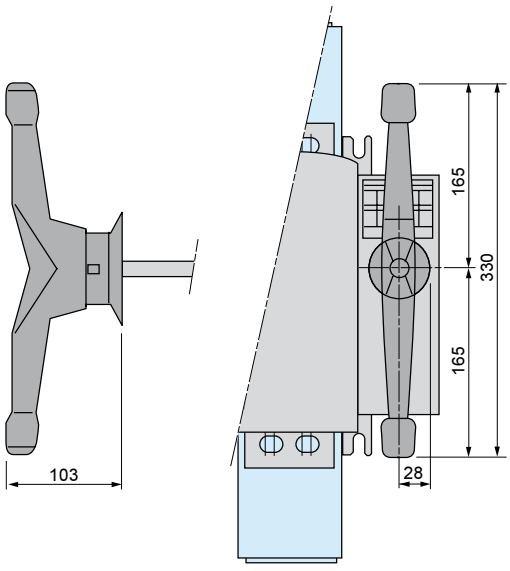




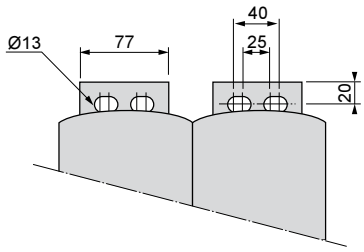
GS2		a	b	c	c1	E min.	G	P	Q	R
S, SB, TB	3P	364	300	250	380	265	284	94	51	65
	4P	458	300	250	380	265	378	94	51	65
V, VB	3P	442	355	289	295	304	362	120	77	88
	4P	562	355	289	295	304	482	120	77	88

(1) Handle GS2 AH104 for GS2S, GS2 SB and GS2 TB.
(2) Terminal cover.
(3) Rear access connector plates (GS2 V and GS2 VB).

Handle GS2 AH105 for GS2 V and GS2 VB (direct front-mounted operator)



Connector plates for GS2 V and GS2 VB



Presentation:
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Characteristics:
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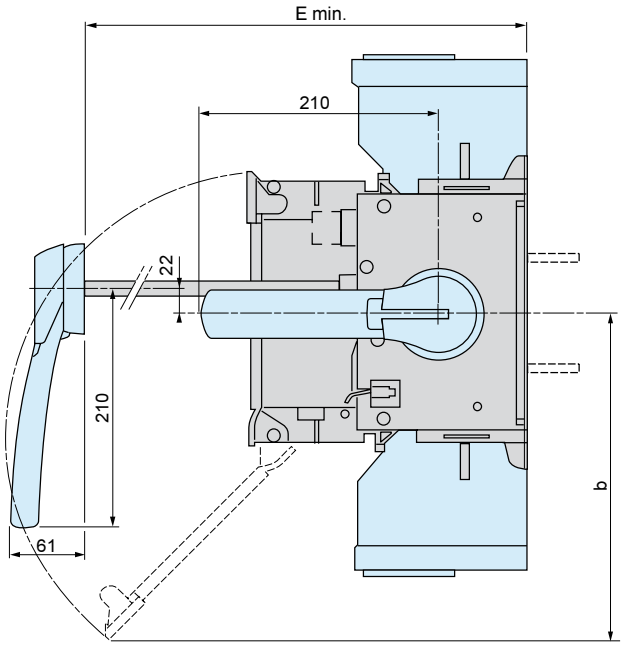
References:
pages 4/52 to 4/57

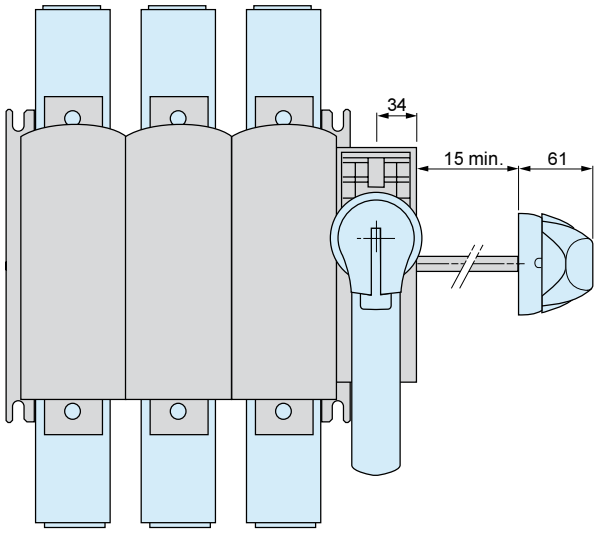
Schemes:
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GS2 pp (630…1250 A) (continued)

External front and RH side-mounted operator

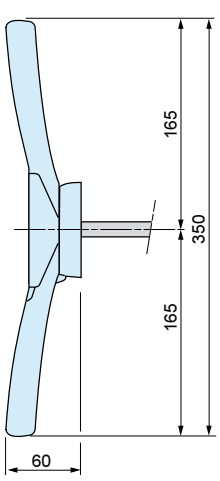
GS2 S, SB (630 A), TB (800 A), V and VB (1250 A)

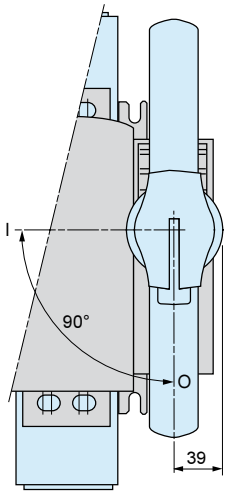




GS2		b	E min.
S, SB, TB	3P	297	265
	4P	297	265
V, VB	3P	350	304
	4P	350	304

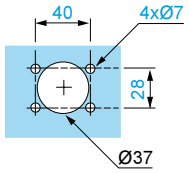
Handle GS2 AH570 or GS2 AH580 for GS2 V and GS2 VB (external front-mounted operator)

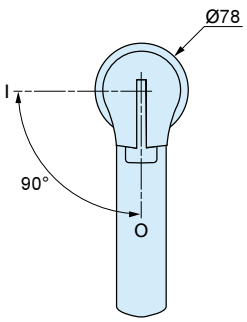




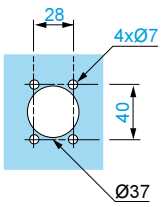
Door cut-out

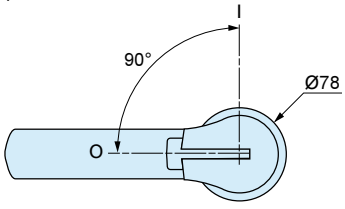
For external front-mounted operator





For external RH side-mounted operator





Presentation:
pages 4/44 and 4/45

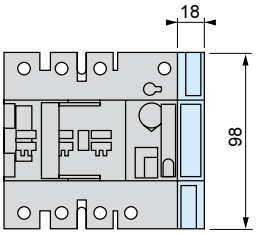
Characteristics:
pages 4/46 to 4/51

References:
pages 4/52 to 4/57

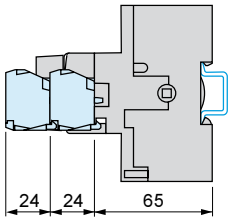
Schemes:
page 4/67

Dimensions with auxiliary contacts

GS1 AM111, GS1 AM211



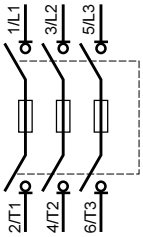
GS1 AM110, GS1 AM101



Schemes

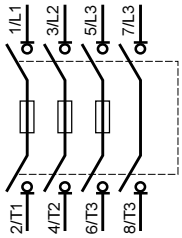
3-pole GS

32 to 1250 A

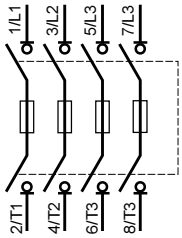


4-pole GS

32 A



50 to 1250 A



Auxiliary contacts

GS1 AM110

1 N/O



GS1 AM101

1 N/C



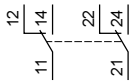
GS1 AM111 and GS1 AM1

1 C/O



GS1 AM211 and GS1 AM2

2 C/O

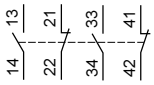


GS1 ANpp

1 N/C + 1 N/O



2 N/C + 2 N/O

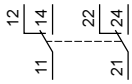


GS1 AFp

1 C/O



2 C/O



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

538735



GS1 DU3

Compact switch-disconnector-fuse switch bodies for use with UL fuses

Switch rating	Fuse size	Number of poles	Reference	Weight
A				kg
For front-mounted external operators				
For front-mounted direct operators				
30	CC	3	GS1 DDU3	0.600
	J	3	GS1 DU3	0.672

510979



GS2 MU3

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

Switch rating	Fuse size	Number of poles	Reference	Weight
A				kg
For front-mounted external operators (1)				
30	CC	3	GS2 EEU3	1.400
	J	3	GS2 EU3	2.100
60	J	3	GS2 GU3	2.217
100	J	3	GS2 JU3	2.761
200	J	3	GS2 MU3	4.166
400	J	3	GS2 QU3	5.400
600	J	3	GS2 SU3	29.000
800	L	3	GS2 TU3	20.860

510959



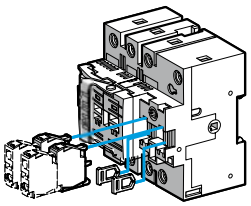
GS1 EERU30

Switch-disconnector-fuse switch bodies for use with UL fuses, with handle for direct operator

Switch rating	Fuse size	Number of poles	Type of operator	Reference	Weight
A					kg
For direct operator					
30	CC	2	RH side-mounted GS1 AH01	GS1 EERU20	0.991
	CC	3	RH side-mounted GS1 AH01	GS1 EERU30	1.218

TeSys protection components
Switch-disconnector-fuses for the North American market, conforming to UL and CSA standards, 30 to 800 A, TeSys GS. Auxiliary contacts

568473

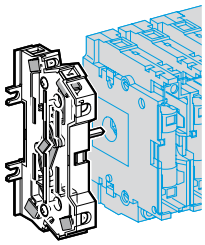


GS1 AM1pp

Auxiliary early break and/or O, I and Test position signalling contacts (1), (2), (3)

Switch rating	Contact type	Type of operator	Reference	Weight
A				kg
30 Compact	1 N/O	External, front or side-mounted	GS1 AM110	0.200
	1N/C	External, front or side-mounted	GS1 AM101	0.200
30…800	1 N/O	External, front or side-mounted (4)	GS1 AM110	0.200
	1 N/C	External, front or side-mounted (4)	GS1 AM101	0.200

568476



GS1 ANppp

Auxiliary O, I and Test position signalling contacts (3), (5)

Switch rating	Contact type	Type of operator	Reference	Weight
A				kg
Auxiliary O and I position signalling contacts				
30…800	1 N/C + 1 N/O	External, front or RH side-mounted Direct	GS1 AN11	0.132
	2 N/C + 2 N/O	External, front or RH side-mounted Direct	GS1 AN22	0.238
Auxiliary O, I and Test position signalling contacts (3)				
30…400	1 N/C + 1 N/O	External, front-mounted	GS1 ANT11	0.153
	2 N/C + 2 N/O	External, front-mounted	GS1 ANT22	0.258

(1) For 30 A switch-disconnector-fuses, these auxiliary contacts allow:
- early break and O and I position signalling,
- O, I and Test position signalling,

For 30 to 400 A switch-disconnector-fuses, they allow:
- early break,
- O, I and Test position signalling,

For 600 and 800 A switch-disconnector-fuses, they allow:
- early break and O and I position signalling,
- O and I position signalling,
- Test position signalling.

- O and I position signalling,
- Test position signalling.

(2) Maximum number of auxiliary contacts:

Switch rating A		Standard	With additional bracket	Reference of additional bracket
30 Compact	CC	4	4 + 4	GS1 AD10
	J	2	2 + 4	GS1 AD10
30…100		4	4 + 4	GS2 AD20
200 and 400		8	8 + 4	GS2 AD20
600 and 800		8	8	–

(3) The Test position allows testing of the control circuits off-load. Auxiliary contacts GS1 AM110, GS1 AM101 and GS1 ANTpp only allow the test function with external handles GS2 AHTppp.

operator.

TeSys protection components
Switch-disconnector-fuses for the North American market, conforming to UL and CSA standards, 30 to 800 A, TeSys GS. Handles, accessories



GS2 AHp10
GS2 AHp20



GS2 AHp30
GS2 AHp40



GS2 AHp50
GS2 AHp60

Handles for external operators

Switch rating	Protection index Nema	Handle colour	Reference	Weight
A				kg
Handles for front-mounted external operators, padlockable				
Door interlock in "I" position (1)				
30 Compact	1, 3R, 12	Black/Grey	GS2 AH110	0.200
		Red/Yellow	GS2 AH120	0.200
	1, 3R, 12	Black/Grey	GS2 AH410	0.200
		Red/Yellow	GS2 AH420	0.200
30…400	1, 3R, 12	Black/Grey	GS2 AH130	0.240
		Red/Yellow	GS2 AH140	0.240
	1, 3R, 4, 4X, 12	Black/Grey	GS2 AH430	0.240
		Red/Yellow	GS2 AH440	0.240
600 and 800	1, 3R, 12	Black/Grey	GS2 AH150	0.280
		Red/Yellow	GS2 AH160	0.280
Handles for front-mounted external operators with Test facility (2), padlockable				
Door interlock in "I" position (1)				
30 Compact	1, 3R, 12	Black/Grey	GS2 AHT110	0.200
		Red/Yellow	GS2 AHT120	0.200
	1, 3R, 4, 4X, 12	Black/Grey	GS2 AHT410	0.200
		Red/Yellow	GS2 AHT420	0.240
30…400	1, 3R, 12	Noir/Gris	GS2 AHT130	0.240
		Red/Yellow	GS2 AHT140	0.240
	1, 3R, 4, 4X, 12	Black/Grey	GS2 AHT430	0.240
		Red/Yellow	GS2 AHT440	0.240

Shafts for external operators

Switch rating	Shaft length	Shaft cross section	Reference	Weight
A	mm	mm		kg
30 Compact	200	5 x 5	GS2 AE82	0.100
	320	5 x 5	GS2 AE8	0.125
	400	5 x 5	GS2 AE81	0.150
30…400	200	10 x 10	GS2 AE22	0.160
	320	10 x 10	GS2 AE2	0.280
	400	10 x 10	GS2 AE21	0.320
600 and 800	200	12 x 12	GS2 AE52	0.240
	320	12 x 12	GS2 AE5	0.380
	400	12 x 12	GS2 AE51	0.420

(1) Door interlock override by means of a tool.
(2) The Test position allows testing of the control circuits off-load, by using auxiliary contacts GS1 AM110. GS1 AM101 or GS1 ANTpp. In the "Test" position, the enclosure door can be opened.

TeSys protection components
Switch-disconnector-fuses for the North American market, conforming to UL and CSA standards, 30 to 800 A, TeSys GS. Handles, accessories



GS1 AH01



GS1 AH02

Handles for direct operators

Switch rating	Type of operator	Handle colour	Reference	Weight
A				kg
Handles for direct operators, padlockable				
30 Compact	Front-mounted	Black	GS2 AH106	0.040
600 and 800	Front-mounted	Black	GS2 AH107	0.480

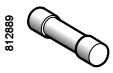
Terminal protection shrouds for upstream or downstream connector plates

Switch rating	Number of poles	Reference	Weight
A			kg
30 Compact	3	(1)	–
30…60	3	(1)	–
100	3	GS1 AP33	0.073
200	3	GS1 AP43	0.240
400	3	GS1 APU53	0.060
600 and 800	3	GS2 AP63	0.520

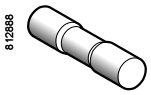
Height compensation plate for external handles

Switch rating	Description	Reference	Weight
A			kg
30 Compact 30…400	Allows a new GS2pp	GS2 AH001	0.020

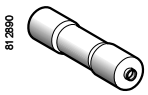
TeSys protection components
Cartridge fuses type aM
For protection of equipment with current peaks



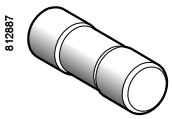
DF2 CAppp



DF2 EAppp



DF3 EApp



DF2 FApp

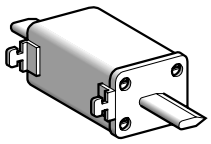


DF3 FApp

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	a 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	a 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	–	–
	a 400	20	10	DF2 CA20	0.010	–	–
		25	10	DF2 CA25	0.010	–	–
		32	10	DF2 CA32	0.010	–	–
Cylindrical 14 x 51	a 690	0.25	10	DF2 EA002	0.020	–	–
		0.50	10	DF2 EA005	0.020	–	–
	a 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
	a 400	50	10	DF2 EA50	0.020	DF3 EA50	0.020
Cylindrical 22 x 58	a 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
	a 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
	a 400	125	10	DF2 FA125	0.045	DF3 FA125	0.045

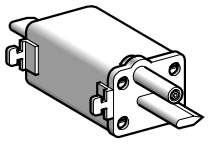
TeSys protection components
Cartridge fuses type aM
For protection of equipment with current peaks

533330



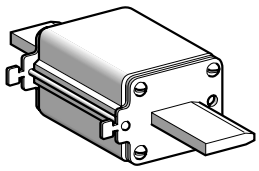
DF2 GApppp

533331



DF4 GApppp

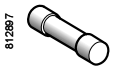
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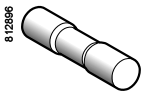
DF2 JApppp

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	a 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	–	–
	a 400	125	3	DF2 FGA125	0.160	–	–
Blade size 0	a 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	a 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	a 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	a 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	a 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
	a 400	1250	1	DF2 LA1251	1.900	DF4 LA1251	1.900

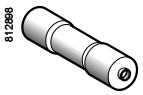
TeSys protection components
Cartridge fuses type gG



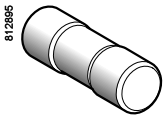
DF2 CNpp



DF2 ENpp



DF3 ENpp



DF2 FNpp



DF3 FNpp

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	a 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	a 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	–	–
	a 400	25	10	DF2 CN25	0.010	–	–
		32	10	DF2 CN32	0.010	–	–
Cylindrical 14 x 51	a 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
	a 400	50	10	DF2 EN50	0.020	–	–
Cylindrical 22 x 58	a 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
	a 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

533333

DF2 GNpppp

533334

DF4 GNpppp

533335

DF2 JNpppp

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	a 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	a 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	a 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	a 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	a 500	500	3	DF2 KN1501	0.850	DF4 KN1501	0.850
		630	3	DF2 KN1631	0.850	DF4 KN1631	0.850
Blade size 4	a 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