ProGrid Size 1

250A, 690VAC
160A, 800VAC

IEC FUSE SWITCH DISCONNECTORS

SMART NH FUSE SWITCH DISCONNECTOR

ProGrid NH vertical fuse switch disconnectors are designed for installation to 185mm busbars systems in triple pole arrangements. The installation depth of ProGrid is 150mm.

Thanks to its modular system, the ProGrid solution allows the installation of individual components, it offers the user the possibility of a quick and easy installation as well as a high degree of protection during installation and maintenance with its two-stage opening: in parallel then in rotation, patented by MERSEN.

2 alternative designs are available for a user-friendly installation according to the needs:

- The standard ProGrid fuse switch disconnector to protect the substation from overcurrent and interrupt the electrical circuit's flow

- The smart ProGrid fuse switch disconnector to monitor energy flow in addition to its standard functions; the ProGrid solution can be retrofitted from Standard ProGrid to Smart ProGrid also on customer side.

TECHNICAL DATA OVERVIEW

Voltage Range AC	400 ... 800 VAC
Ampere Range (A)	160 ... 250 A
Size per Standard	1
SCCR	Ue = AC 400 V; Ie = 250 A 120kA Ue = AC 500 V; Ie = 250 A 120kA Ue = AC 690 V; Ie = 250 A 120kA Ue = AC 800 V; Ie = 160 A 10kA
Mounting	bus bar system 185 mm
Switchability	1 x triple pole, 3 x single pole
Number of poles	3

FEATURES & BENEFITS

- Installation on to 185 mm bus bar system
  Standard design with M 10 screws: M = 35 ±3Nm
  Direct installation without drilling with hooked clamps possible
- Symmetrical switch - top/bottom cable terminal connection
- Touch protection IP20C during switching mechanism and when close
- Varieties of cable termination: bolt, insert nut, V-terminal
- Current measurement: 330mV, 1A or 5A CTs
- Safe on load connection/disconnection in accordance with IEC 60947-3
- Current sensors and voltage intakes are designed to be retrofittable on a Stand-alone ProGrid Fuse Switch Disconnector

APPLICATIONS

- Feeder pillars
- Transformer substations
- Switch boards for industrial applications
- Residential and industrial distribution units
- Cable distribution cabinets

STANDARDS

- IEC/EN 60 947-3
  For NH-fuse links size 1 in accordance with IEC/EN 60 269-2, VDE 0636-2

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FLEXIBLE PROGRID OFFERING

ProGrid Fuse Switch Disconnector is developed together with 2 versions of Smart modules:

Top mounting module for easy installation in new panels and substations

Bottom mounting module for easy retrofitting of panels thanks to identical footprint as stand-alone Fuse switch disconnector

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PRODUCT RANGE

PG1-1P-B

ProGrid 250 A size 1 185 mm 3 x single pole switching

Catalog number	Item number	Cable termination components	Design	Package	Weight
PG1-1P-B	Z1212881	3 M10 bolts	-	1 piece	4.5 kg
PG1-1P-N	C1212884	3 M10 flat terminal	-	1 piece	4.3 kg
PG1-1P-V	D1212885	3 V-terminals without V-clamps	-	1 piece	4.3 kg
PG1-1P-VA	E1212886	3 V-terminals with 3 V-clamps - Aluminium	V-clamps - Aluminium (ref: 22SZVK4)	1 piece	4.5 kg
PG1-1P-VD	F1212887	3 V-clamps with 3 V-double frame clamps	double V-clamps - Aluminium (ref: 22SZVK42)	1 piece	5 kg

ProGrid 250 A size 1 185 mm 3 x single pole switching with only Current Transformers

Catalog number	Item number	Cable termination components	Design	Package	Weight
PG1-1P-B-CT1A	A1212882	3 M10 bolts	Current transformer 250/1A, class 1, 5VA	1 piece	4.9 kg
PG1-1P-B-CT33	B1212883	3 M10 bolts	Current transformer 250/333mV, class 1	1 piece	4.9 kg

PG1-3P-B

ProGrid 250 A size 1 185 mm 1 x triple pole switching

Catalog number	Item number	Cable termination components	Design	Package	Weight
PG1-3P-B	H1212889	3 M10 bolts	-	1 piece	4.5 kg
PG1-3P-N	L1212892	3 M10 flat terminal	-	1 piece	4.3 kg
PG1-3P-V	M1212893	3 V-terminals without V-clamps	-	1 piece	4.3 kg
PG1-3P-VA	N1212894	3 V-terminals with 3 V-clamps - Aluminium	V-clamps - Aluminium (ref: 22SZVK4)	1 piece	4.5 kg
PG1-3P-VD	P1212895	3 V-clamps with 3 V-double frame clamps	double V-clamps - Aluminium (ref: 22SZVK42)	1 piece	5 kg

ProGrid 250 A size 1 185 mm 1 x triple pole switching with only Current Transformers

Catalog number	Item number	Cable termination components	Design	Package	Weight
PG1-3P-B-CT1A	J1212890	3 M10 bolts	Current transformer 250/1A, class 1, 5VA	1 piece	4.9 kg
PG1-3P-B-CT33	K1212891	3 M10 bolts	Current transformer 250/333mV, class 1	1 piece	4.9 kg

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TECHNICAL DATA IN ACCORDANCE WITH EN / IEC 60947

	ProGrid 250 A size 1 185 mm 3 x single pole switching	ProGrid 250 A size 1 185 mm 1 x triple pole switching
Number of poles/phases	3	3
Size	1	1
Rated operational current I_e [1]	250 A	250 A
Conventional free air thermal current with NH-fuse links I_{th}	250 A	250 A
Max. power dissipation of fuse links P_n	23 W	23 W
Conventional free air thermal current with solid links I_{th}	400 A	400 A
Max. power dissipation of solid links P_n	3 W	3 W
Rated operational voltage U_e	800 V	800 V
Utilization category to IEC/EN 60947-3 U_e = AC 500 V; I_e = 250 A U_e = AC 500 V; I_e = 250 A U_e = AC 690 V; I_e = 250 A U_e = AC 800 V; I_e = 160 A	AC 23 B AC 22 B AC 21 B AC 22 B	
Rated insulation voltage U_i	1000 V	1000 V
Rated impulse withstand voltage U_{imp}	20 kV	20 kV
Rated frequency	50 ... 60 Hz	50 ... 60 Hz
Degree of protection	IP 20C	IP 20C
Degree of pollution	3	3
Rated duty	uninterrupted duty	uninterrupted duty
Rated short circuit making capacity with solid links I_{cm}	16 kApeak	16 kApeak
Rated short-time withstand current I_{cw}	8.9 kA / 1 s	8.9 kA / 1 s
Power dissipation by I_{th} 400A without solid links	65 W	65 W
Cable terminal connection		
Standard cable terminal	M10	M10
for cable lugs Cu max.	300 mm²	300 mm²
for cable lugs Al max.	300 mm²	300 mm²
for copper bars with max. dimensions	40 x 10 mm	40 x 10 mm
V-shaped lugs for V-terminal clamps	35 - 240 mm²	35 - 240 mm²
Bus bar terminal connection		
Standard bus bar terminal	M12	M12
Hooked clamp for bus bar with thickness	5 ... 10 mm	5 ... 10 mm
Hooked clamp mounting possibility	Yes	Yes
Bus bar system	185 mm	185 mm
Installation mode	bus bar installation	bus bar installation

[1] Please note the load factor according to IEC/EN 61439 and the normal temperature of -25°C to 35°C.
Above 35°C up to 70°C the operating current must be reduced (max. operating temperature for measuring module is 70°C).

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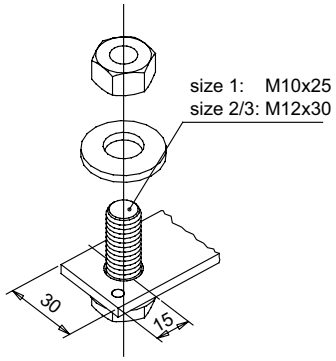
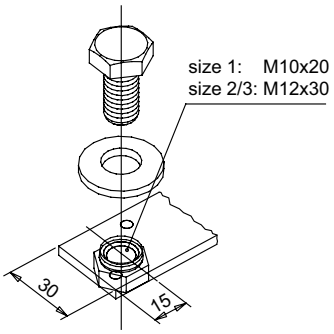
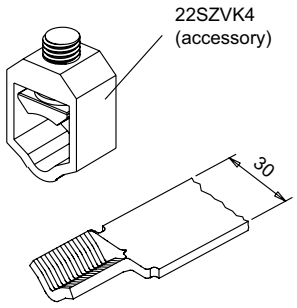
DIMENSIONS

Cable termination ProGrid 250A

reference	B	N	V	
type of terminal	bolt	flat terminal	V-terminal	
accessory	cable lug max. width 45 mm	cable lug max. width 45 mm	V-clamp (accessory)	
			22SZVK4	22SZVK41
cross section [mm²]	max. 300	max. 300	50 - 240 sectoral solid 50 - 185 sectoral stranded 35 - 70 round stranded 35 - 50 round solid	95 - 300 sectoral solid 70 - 240 sectoral stranded 50 - 185 round stranded 70 - 240 round solid
M [Nm]	35 ±3	35 ±3	25 ±2	25 ±2
				

Dimensions in mm

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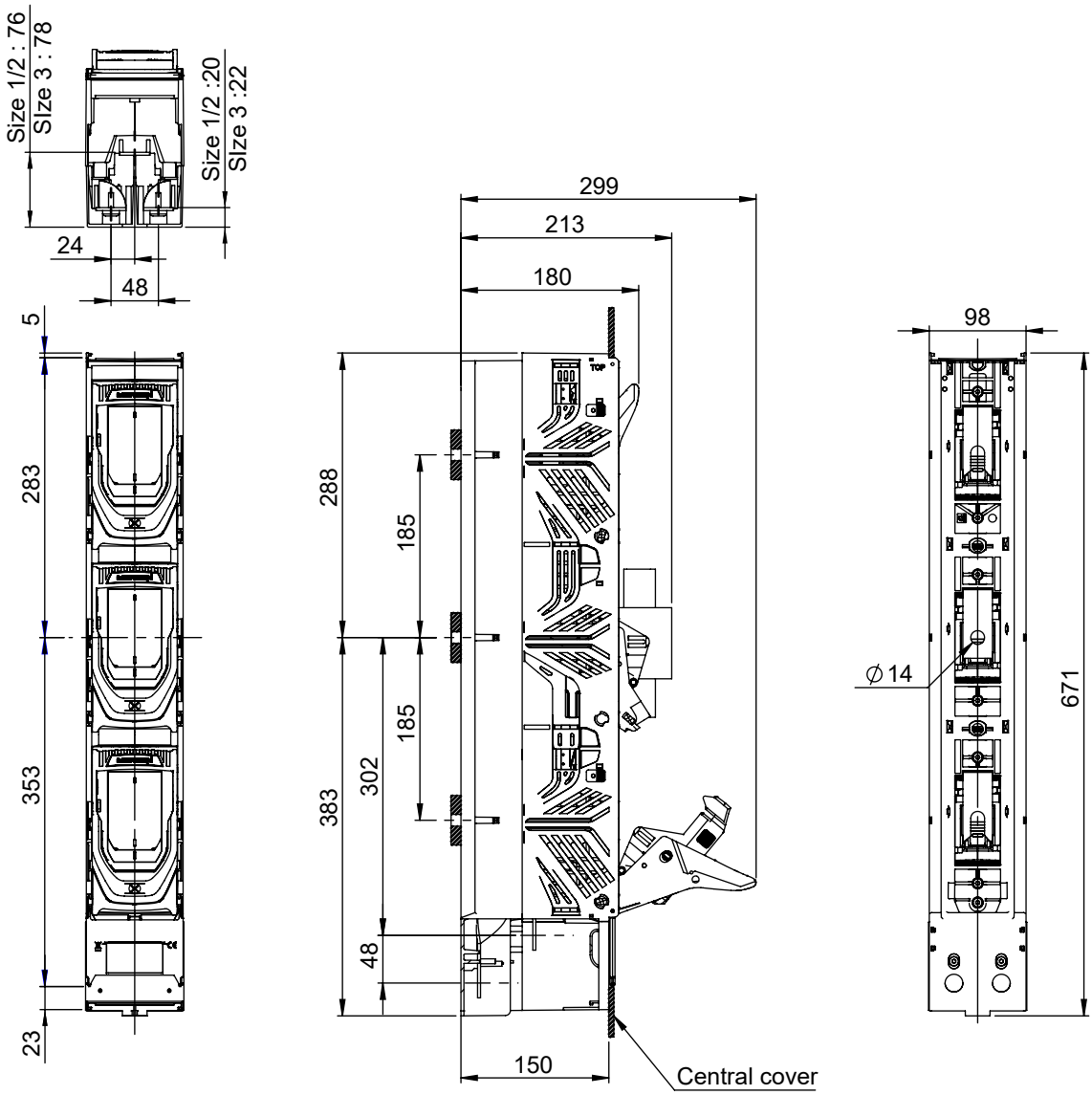
DIMENSIONS

ProGrid 250 A size 1 185 mm 3 x single pole switching - 3 M10 bolts



Dimensions in mm

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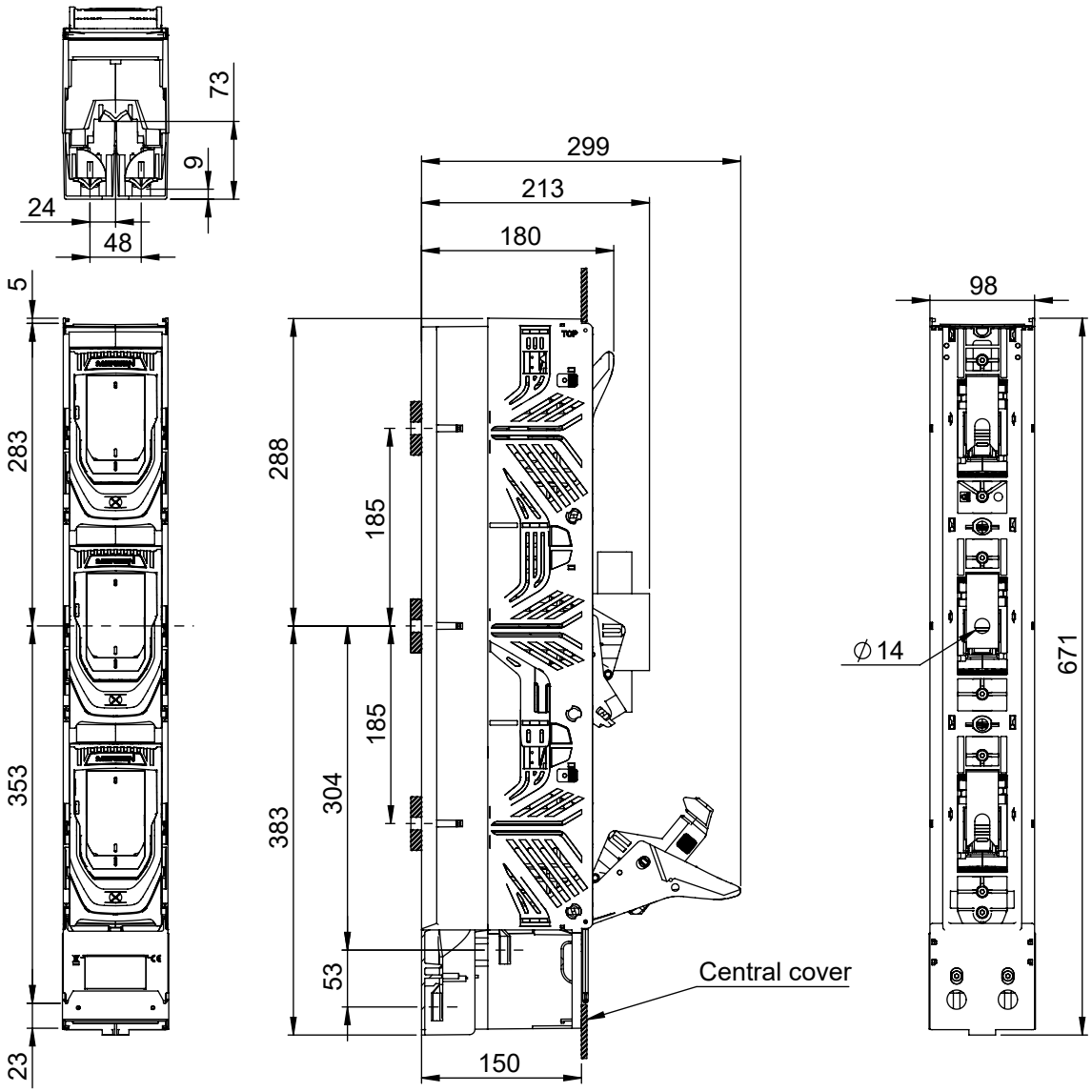
DIMENSIONS

ProGrid 250 A size 1 185 mm 3 x single pole switching - 3V-terminals without V-clamps



Dimensions in mm

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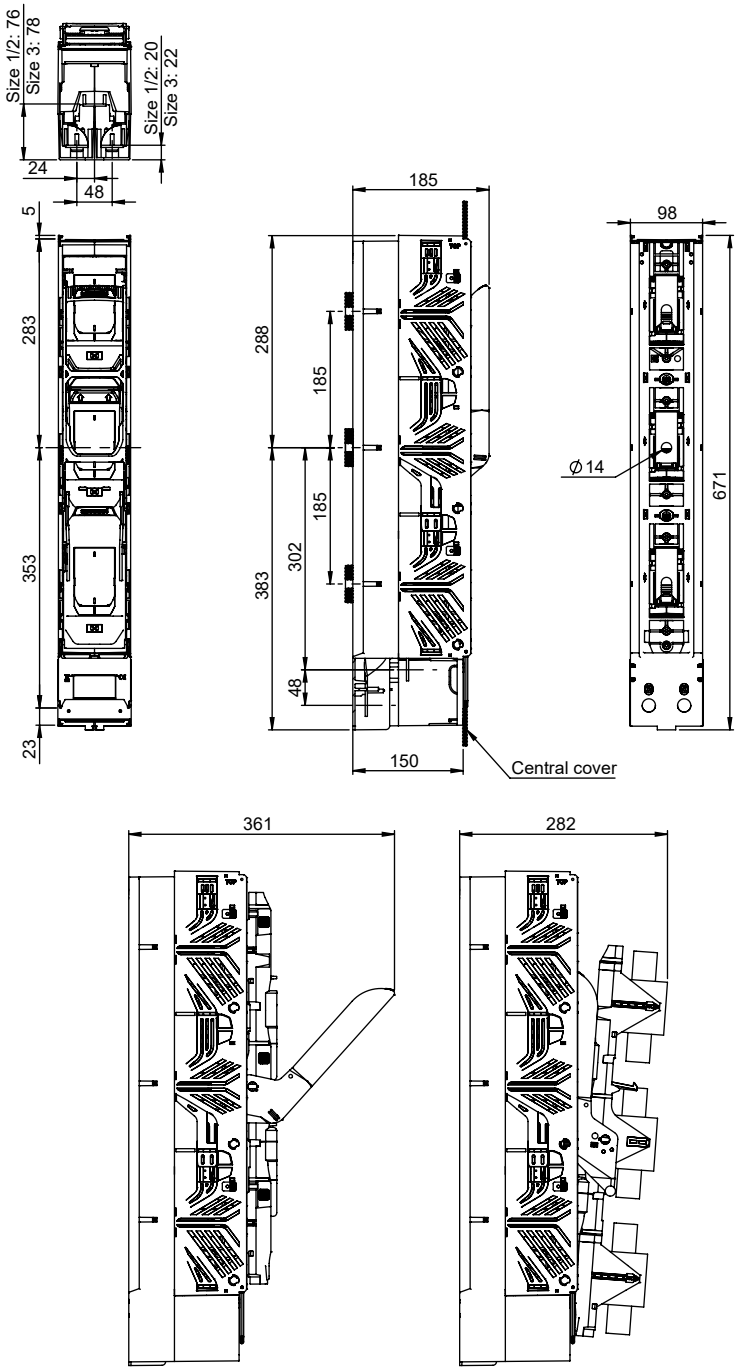
DIMENSIONS

ProGrid 250 A size 1 185 mm 1 x triple pole switching - 3 M10 bolts



Dimensions in mm

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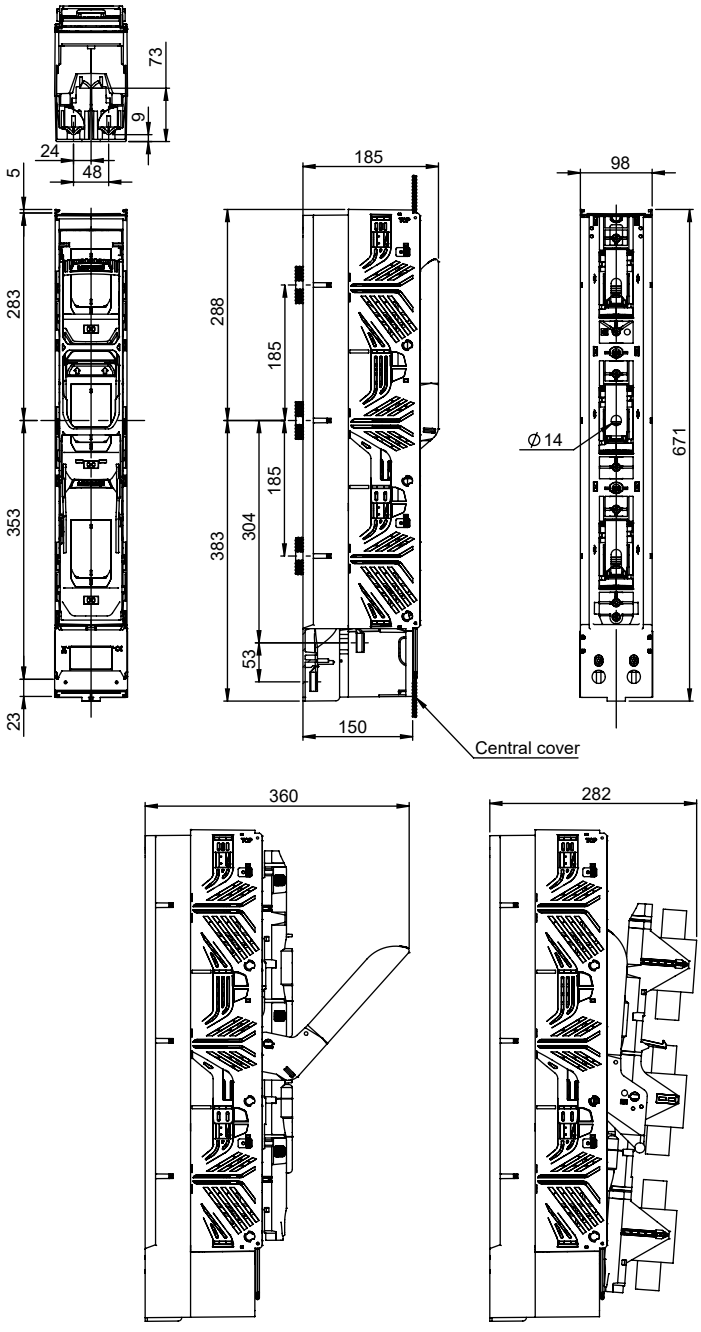
DIMENSIONS

ProGrid 250 A size 1 185 mm 1 x triple pole switching - 3V-terminals without V-clamps



Dimensions in mm

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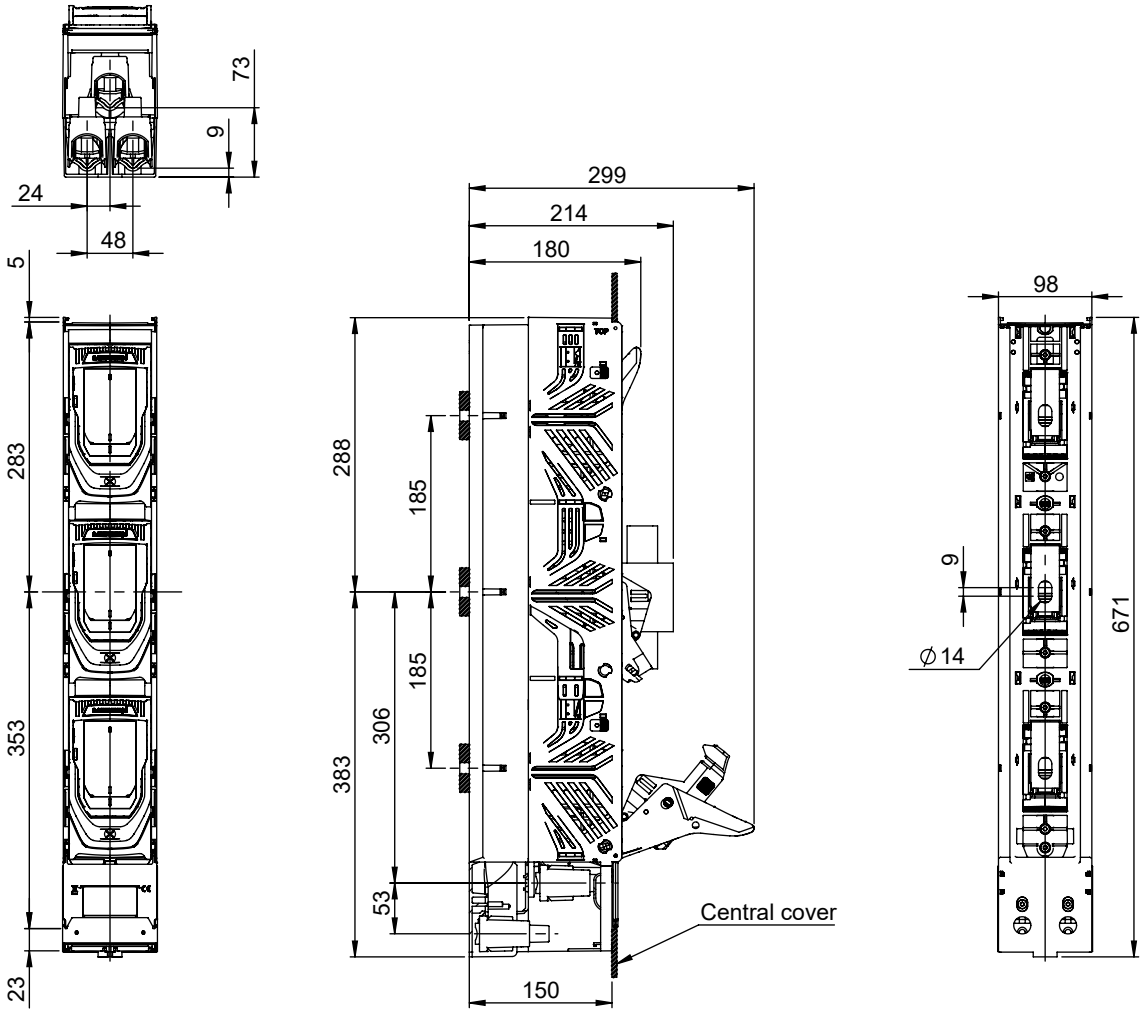
DIMENSIONS

ProGrid 250 A size 1 185 mm 3 x single pole switching - Steel-frame clamp Eon type



Dimensions in mm

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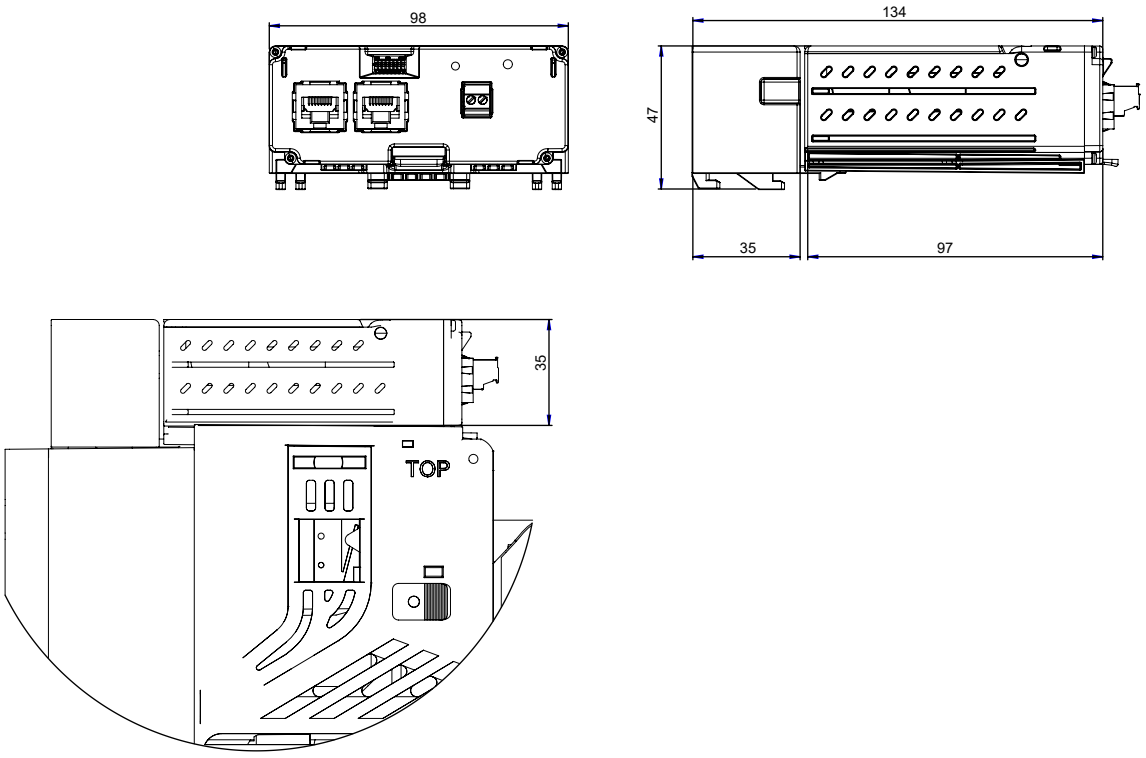
DIMENSIONS

ProGrid 250 A size 1 185 mm 3 x single pole switching with TOP Smart Module - 3 M10 bolts



Dimensions in mm

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ACCESSORIES

MZAW

Covers/level & system adjustment covers

Catalog number	Item number	Design	Package	Weight
MZAW	D218687	support angle for support of cover plate 1 set = 4 pieces	1 set	27 g

1.002.648

Installation devices/bus bar installation

Catalog number	Item number	Design	Package	Weight
1.002.648	T1023448	M12 insert nut, size 2 and 3 1 set = 30 pieces	1 set	0.28 kg

1.000.852

Indication facilities

Catalog number	Item number	Design	Package	Weight
1.000.852	Q1002285	indicator for switch door position micro switch, 1 change-over contact 5 A, 250 V	1 piece	90 g

1.005.090

Current transformers

Catalog number	Item number	Application	Design	Package	Weight
1.005.087	Y1200184	Progrid Size 1/2/3, Multivert i-Xtensio Size 2/3	Set of 3 Current transformers 250/5A, 5VA, class 1	1 set	0.4 kg
1.005.088	Z1200185	Progrid Size 1/2/3, Multivert i-Xtensio Size 2/3	Set of 3 Current transformers 400/5A, 5VA, class 1	1 set	0.4 kg
1.005.089	A1200186	Progrid Size 1/2/3, Multivert i-Xtensio Size 2/3	Set of 3 Current transformers 600/5A, 5VA, class 1	1 set	0.4 kg
1.005.090	B1200187	Progrid Size 1/2/3, Multivert i-Xtensio Size 2/3	Set of 3 Current transformers 400/1A, 5VA, class 1	1 set	0.4 kg
1.005.091	C1200188	Progrid Size 1/2/3, Multivert i-Xtensio Size 2/3	Set of 3 Current transformers 600/1A, 5VA, class 1	1 set	0.4 kg
1.005.095	D1200189	Progrid Size 1/2/3, Multivert i-Xtensio Size 2/3	Set of 3 Current transformers 300/5A, 2,5VA, class 0,5s	1 set	0.4 kg
1.005.096	E1200190	Progrid Size 1/2/3, Multivert i-Xtensio Size 2/3	Set of 3 Current transformers 400/5A, 2,5VA, class 0,5s	1 set	0.4 kg
1.005.097	F1200191	Progrid Size 1/2/3, Multivert i-Xtensio Size 2/3	Set of 3 Current transformers 600/5A, 5VA, class 0,5s	1 set	0.4 kg

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ACCESSORIES

1.000.099

1.002.255

1.002.909

1.002.910

1.003.377

22SZVK42

Varieties of cable termination

Catalog number	Item number	Design	Package	Weight
1.000.099	E1023436	insulation cap for V-terminal clamp size 1,2,3 for Aluminium V-clamps	1 piece	0.1 g
1.002.255	B1024582	supplementary set for multiple termination, bottom terminal 2 cable lugs Cu/Al: up to max. 300 mm² round stranded, sectoral stranded 3 cable lugs Cu: up to max. 150 mm² round stranded, sectoral stranded M = 32-38 Nm	1 set	1.68 kg
1.002.909	K1024613	V-terminal clamp size 1,2,3, 10-300 mm² single solid, 10-300 mm² single stranded, 10-300 mm² round stranded, 10-300 mm² round solid, Opening width: 26.5 mm M = 23 -27 Nm 1 set = 3 pieces	1 set	0.24 kg
1.002.910	L1024614	V-terminal clamp size 1,2,3, 95-300 mm² single solid, 70-240 mm² single stranded, 50-185 mm² round stranded, 70-240 mm² round solid, Opening width: 26.5 mm M = 23 -27 Nm 1 set = 3 pieces	1 set	0.26 kg
1.003.377	Y1024579	supplementary set for multiple termination, top terminal 2 cable lugs Cu/Al: up to max. 300 mm² round stranded, sectoral stranded, 3 cable lugs Cu: up to max. 150 mm² round stranded, sectoral stranded, M = 32-38 Nm	1 set	1.74 kg
22SZVK42	Q1024618	V-terminal clamp size 1,2,3 for 2 conductors 50–240 mm²single solid, 50-185 mm² single stranded, 50-185 mm² round stranded, 70-240 mm² round solid M = 23–27 Nm	1 piece	6.8 g

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