

OptiVert Strip-type fuse -switch - disconnectors



OptiVert Strip-type fuse-switch - disconnectors (SDFs of strip-type / vertical) are intended to allow for the load startup and the load tripping, as well as to protect three-phase AC electric circuits from short-circuits and overloads (when applied in conjunction with fuses). SDFs of strip type provide an apparent visual clearance and completely replace the design, consisting mainly of a common disconnector, cables and fuse holders. The application of the specified devices effects significant saving of the operating space of the switchgears, reduces the amount of electrical connections and the useable live parts.

Designation OptiVert 160 A

OptiVert 00 /100 - 3 - MC

① ② ③ ④ ⑤

①	Product range	OptiVert				
②	Fuse dimension	00*				
③	Interphase distance	-SM - 185 mm		/100 - 100 mm		
④	Method of switching operations	1 - single-phase tripping		3 - three-phase tripping		
⑤	Design of branch busbars	without designation- bridge clamp	M - bolt clamp	MC - clamp for Al/Cu cable of 1,5-70 mm ²	V - clamp/V - type clamp	VR - frame clamp

*applicability of 00C dimension

Designation OptiVert 250 A, 400 A, 630 A

OptiVert 1 - 6 - MN

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②

③

④

①	Product range	OptiVert		
②	Fuse dimension	1	2	3
③	Method of switching operations	1 - single-phase tripping		6 - three-phase tripping
④	Design of branch busbars	M - bolt clamp (bolts are press-fit into terminals, nuts included)	V - clamp / V - type clamp	MN - nut bolt clamp (nuts are press-fit into terminals, bolts included)

Designation OptiVert 800-1260 A

OptiVert 2x 2 - 6 - M - Q

①

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①	Product range	OptiVert		
②	Symbol designation of the dual device	2x		
③	Fuse dimension	2	3	
④	Method of switching operations	1 - single-phase tripping		6 - three-phase tripping
⑤	Design of branch busbars	M - bolt clamp		
⑥	Number of cables connected per pole	T - three		Q - four

Batch effectiveness



Applied insulating materials on the basis of polyamide do not support combustion, are halogen - free and safe for humans and the environment.

Contacts are made of high-quality electrotechnical copper and are coated with silver, nickel or tin, depending on the rated current and configuration. Operating temperature range from -40 to +80 °C *.

Possibility to seal the cover. Degree of protection - IP20, IP30.

The profile holes in the case provide for the best heat dissipation.

Standard device mounting directly to the busbars with the bus-to-bus distance of 185 mm, for the design with three-phase commutation for 160 A - 100 mm.

Power supply is carried out either from the upper or from the lower position.

Safe disconnection of short-circuit currents up to 120 kA (when applied in conjunction with fuses). Visible clearance.

Modular compact design with the width of devices no more than 98 mm, allows to organize the maximum number of outgoing lines in minimum dimensions, as well as to simplify low-voltage switchgear in relation to the use of metal structures, the location of supply and connecting cables.

The possibility of tripping under load. Effective arc damping owing to the special design of the case.

Availability of setting a micro-switch for indicating the status of the device.

Possibility of visual control of the fuse status owing to the viewing windows. Convenience of voltage control-voltage measurement is performed from the front panel.

The possibility to carry out installation horizontally and vertically.

* It is necessary to apply a reduction ratio of the nominal operating current at a temperature above +35 ° C (see the graph of the rated current dependence from the ambient temperature on page 252)

References (series)

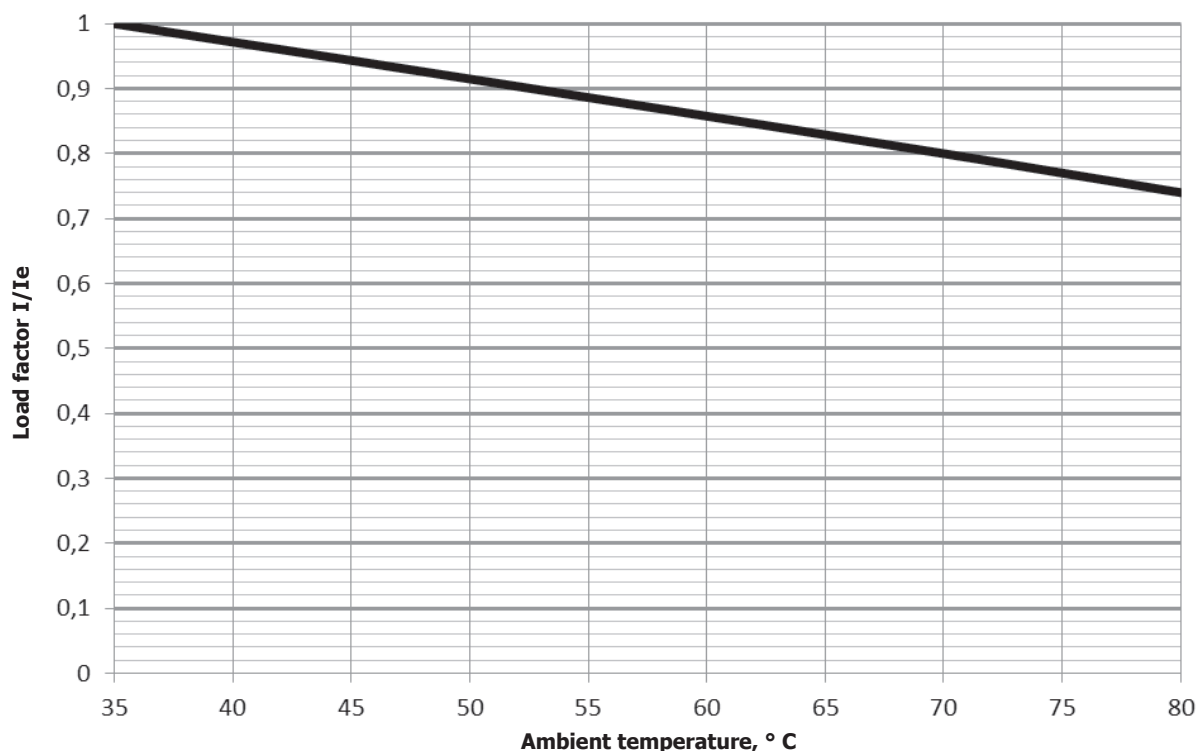
	Rated current In, A	Nomenclature	Reference	Weight, kg
140952 140947 	160	OptiVert 00/100-3	140946	1,12
		OptiVert 00/100-3-M	140947	1,12
		OptiVert 00/100-3-MC	140948	1,12
		OptiVert 00/100-3-V	140949	1,12
		OptiVert 00/100-3-VR	140950	1,30
		OptiVert 00-SM-1	140951	1,90
		OptiVert 00-SM-1-M	140952	1,89
		OptiVert 00-SM-1-MC	140953	1,94
		OptiVert 00-SM-1-V	140954	1,93
140959 140956 	250	OptiVert 1-1-M	140956	4,50
		OptiVert 1-1-MN	140957	4,46
		OptiVert 1-1-V	140958	4,38
		OptiVert 1-6-M	140959	4,67
		OptiVert 1-6-MN	140960	4,63
		OptiVert 1-6-V	140961	4,55
140965 140962 	400	OptiVert 2-1-M	140962	4,60
		OptiVert 2-1-MN	140963	4,52
		OptiVert 2-1-V	140964	4,38
		OptiVert 2-6-M	140965	4,76
		OptiVert 2-6-MN	140966	4,68
		OptiVert 2-6-V	140967	4,54
140971 140968 	630	OptiVert 3-1-M	140968	5,43
		OptiVert 3-1-MN	140969	5,38
		OptiVert 3-1-V	140970	5,21
		OptiVert 3-6-M	140971	5,59
		OptiVert 3-6-MN	140972	5,52
		OptiVert 3-6-V	140973	5,39
225580 	800	OptiVert 2x2-1-M-T	225593	11,6
		OptiVert 2x2-6-M-T	225576	11,9
		OptiVert 2x2-1-M-Q	225577	12,2
		OptiVert 2x2-6-M-Q	225578	12,3
	1260	OptiVert 2x3-1-M-T	225579	13,3
		OptiVert 2x3-6-M-T	225580	13,3
		OptiVert 2x3-1-M-Q	225581	13,8
		OptiVert 2x3-6-M-Q	225582	13,8

Technical specifications

Characteristics		Configuration	00-SM-1	00/100	1-1	2-1	3-1
					1-6	2-6	3-6
Number of poles			3	3	3	3	3
Fuse dimension			NH00C/00	NH00C/00	NH1	NH2	NH3
Rated current of the fuse-link In, max., A			160	160	250	400	630
Maximum dissipated fuse power Pn, W			12	12	23	34	43
Conventional thermal current with a short-circuit busbar Ith, A			200	250	400	630	800
Maximum dissipated power with a short-circuit busbar Pn, W			1,2	1,2	2,6	9,0	17,5
Application category	Rated operational voltage Ue, V	Operating current Ie, A					
AC 23B	500AC	-	-	250	-	-	
AC 23B	400AC	-	160	250	400	630	
AC 22B	690AC	-	-	250	-	-	
AC 22B	500 AC	-	160	-	400	630	
AC 22B	400 AC	160	-	-	-	-	
AC 21B	690 AC	-	100	-	400	630	
Rated operational voltage Ue, V		690 AC					
Rated insulation voltage Ui, V		1000					
Rated impulse withstand voltage Uimp, kV		4	8				
Rated frequency, Hz		50...60					
Protection degree		IP 20	IP 30				
Pollution degree in compliance with the requirements of the GOST IEC 60947-1-2014		3					
Rated duty		prolonged					
Rated short-circuit making capacity (Icm) with a short-circuit busbar, kA		6,3	4,5	16			
Rated operating voltage Ue, V		Rated short-circuit making capacity (Icm) with fuse links, kA/A:					
400AC		50/160	80/160	120/250	120/400	80/630	
500AC		50/160	80/160	120/250	120/400	80/630	
690AC		-	50/160	120/250	120/315	80/500	
				100/400			
Rated short-time withstand current Icw, kA / 1sec		4,2	4,5	8	8	12,6	
Power loss without a fuse link, W		19	20	24	46	92	
Power loss without a short-circuit busbar, W		48	49	65	126	161	
Connection of outgoing lines							
standard terminals		M8	M8	M10	M12	M12	
for copper busbars with maximum width, mm		20	20	40	40	40	
for the cable with maximum cross-section, mm²		70	70	300	300	300	
V-shaped connection with a V-shaped tip for the cable with cross-section, mm²		35-240					
Busbar connection (power supply)							
Standard terminals		M8	M8	M12	M12	M12	
Busbar conductor terminal (with a holder) with thickness, mm		5-10					
Distance between busbars, mm		100	185				

Characteristics		Configuration	2x2-1, 2x2-6	2x3-1, 2x3-6
Number of poles			2x3	2x3
Fuse dimension			2	3
Rated current of the fuse-link In, max., A			2x400	2x630
Maximum dissipated fuse power Pn, W			2x34	2x43
Conventional thermal current with a short-circuit busbar Ith, A			2x400	2x630
Maximum dissipated power with a short-circuit busbar Pn, W			2x9	2x17,5
Application category		Rated operational voltage Ue, V	Operating current Ie, A	
AC 22B		400 AC	800	1260
AC 21B		690 AC	800	1260
Rated operational voltage Ue, V			500 AC	
Rated insulation voltage Ui, V			1000	
Rated impulse withstand voltage Uimp, kV			8	
Rated frequency, Hz			50-60	
Protection degree			IP20	
Pollution degree in compliance with the requirements of the GOST IEC 60947-1-2014			3	
Rated duty			prolonged	
Rated short-circuit making capacity (Icm) with a short-circuit busbar, kA			16	
Rated short-circuit making capacity (Icm) with fuse links Ue=500 V AC, kA			18	28
Rated short-time withstand current Icw, kA / 1sec			8	12
Power loss without a fuse link, W			2x46	2x92
Power loss without a short-circuit busbar, W			270	340
Connection of cables				
standard terminals			3xM12	
for copper busbars with maximum width, mm			60	
for the cable with maximum cross-section, mm²			300	
Busbar connection				
Standard terminals			M12	
Distance between busbars, mm			185	
Busbar conductor terminal (with a holder) with thickness, mm			5-10	

Dependence of the rated current value on the ambient temperature



Dependence of the rated current value on the number of adjacent devices

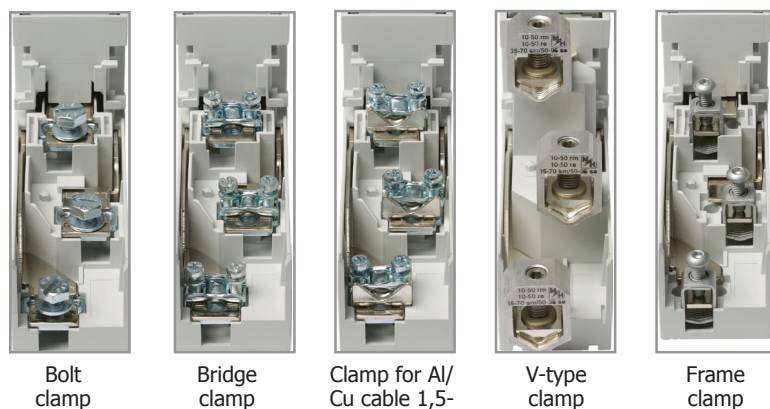
Number of adjacent devices	Allowable ratio
2 и 3	0,8
4 и 5	0,7
from 6 to 9 inclusive	0,6
10 and above	0,5

Example of calculation for three adjacent OptiVert 630 A at the ambient temperature of +50°C:
 Load = $630 \times 0,91 \times 0,8 = 458,64 \text{ A}$

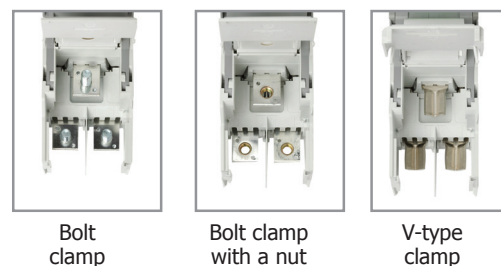
Connection options

Cable connection types:

OptiVert 160 A



OptiVert 250 A, 400 A, 630 A

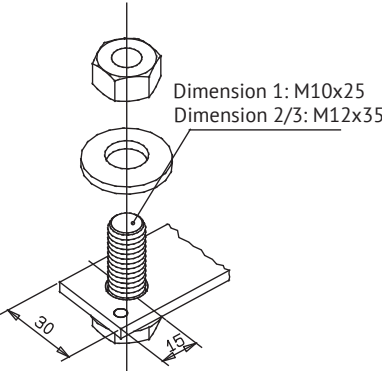
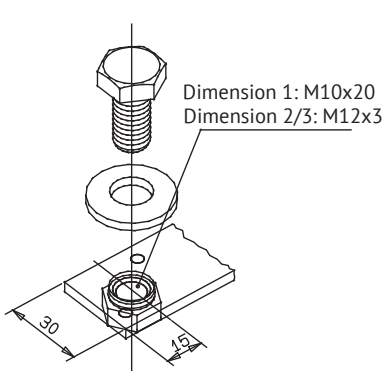
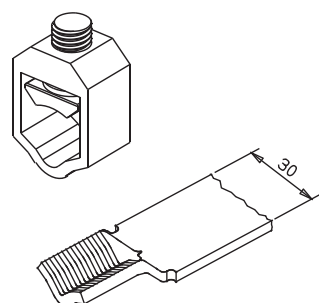


Options for connecting a cable to the OptiVert 160A

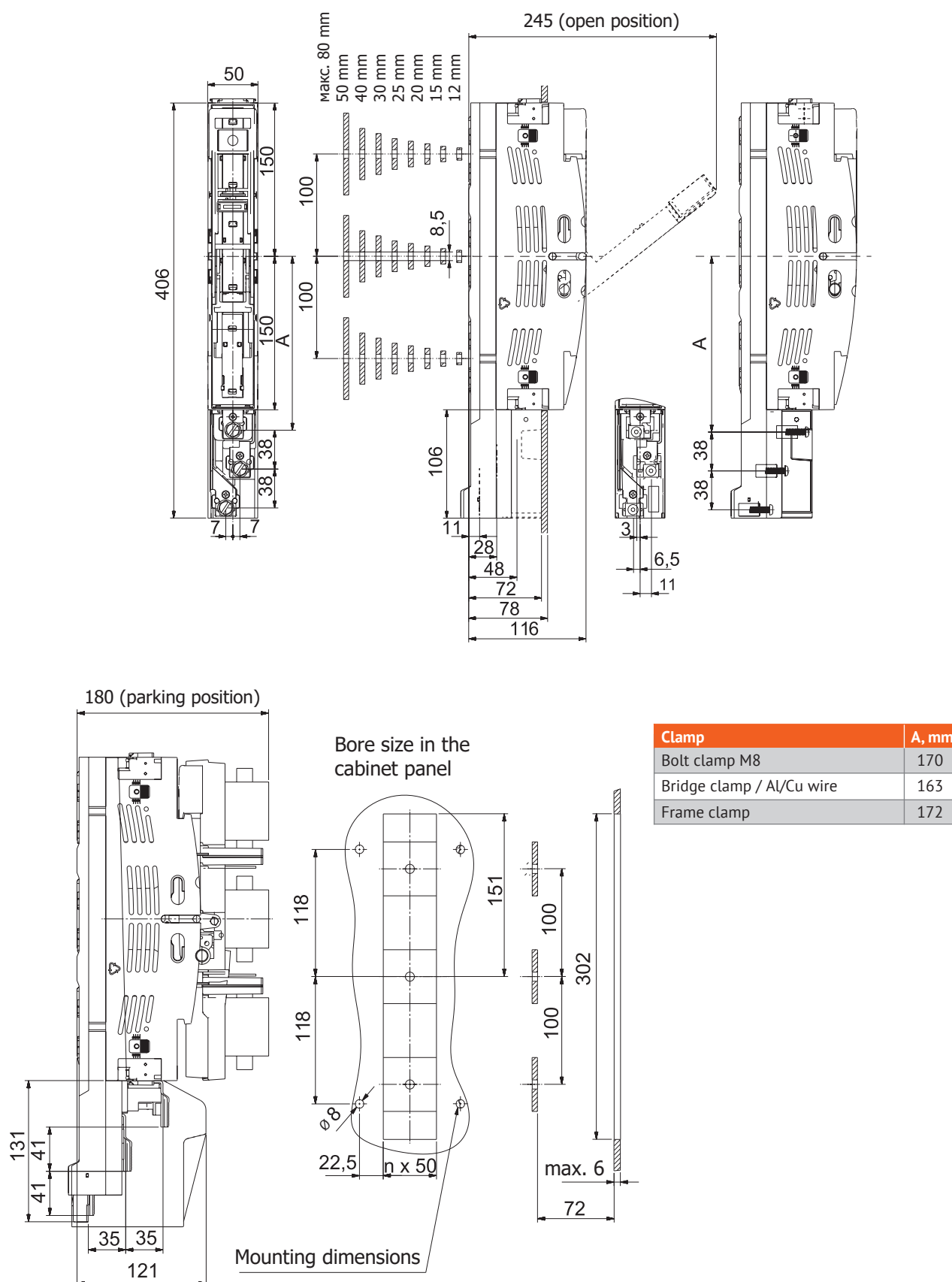
Shorthand notation	M	without designation	C	VR	VR
Reference	141035	141033	141100	141100	*
Connection type	bolt clamp	bridge clamp	clamp for AL / Cu cable	V-type clamp	frame clamp
Cross-section, mm²	Cu 16-70	Cu 4-70	Cu 1,5-70	Cu 10-50	Cu 2,5-70
	Al 16-95		Al 1,5-70/95	Al 35-70/95	
Torque, Nm	15-17	3-4	3-4	5-6	6

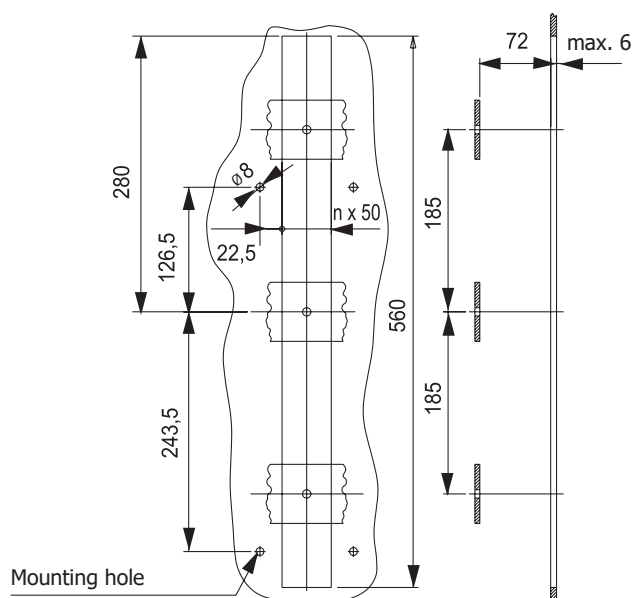
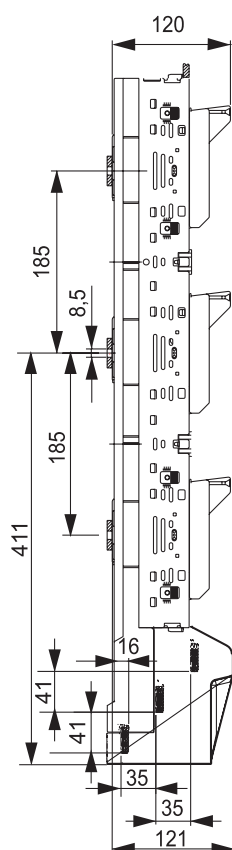
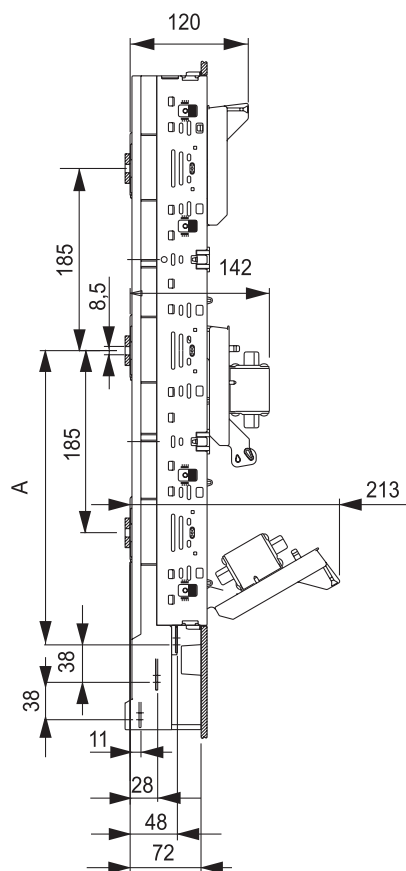
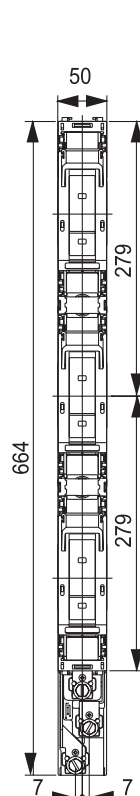
* only available along with OptiVert 00\100.

Options for connecting a cable to the OptiVert 250 A, 400 A, 630 A, 800 A, 1260 A

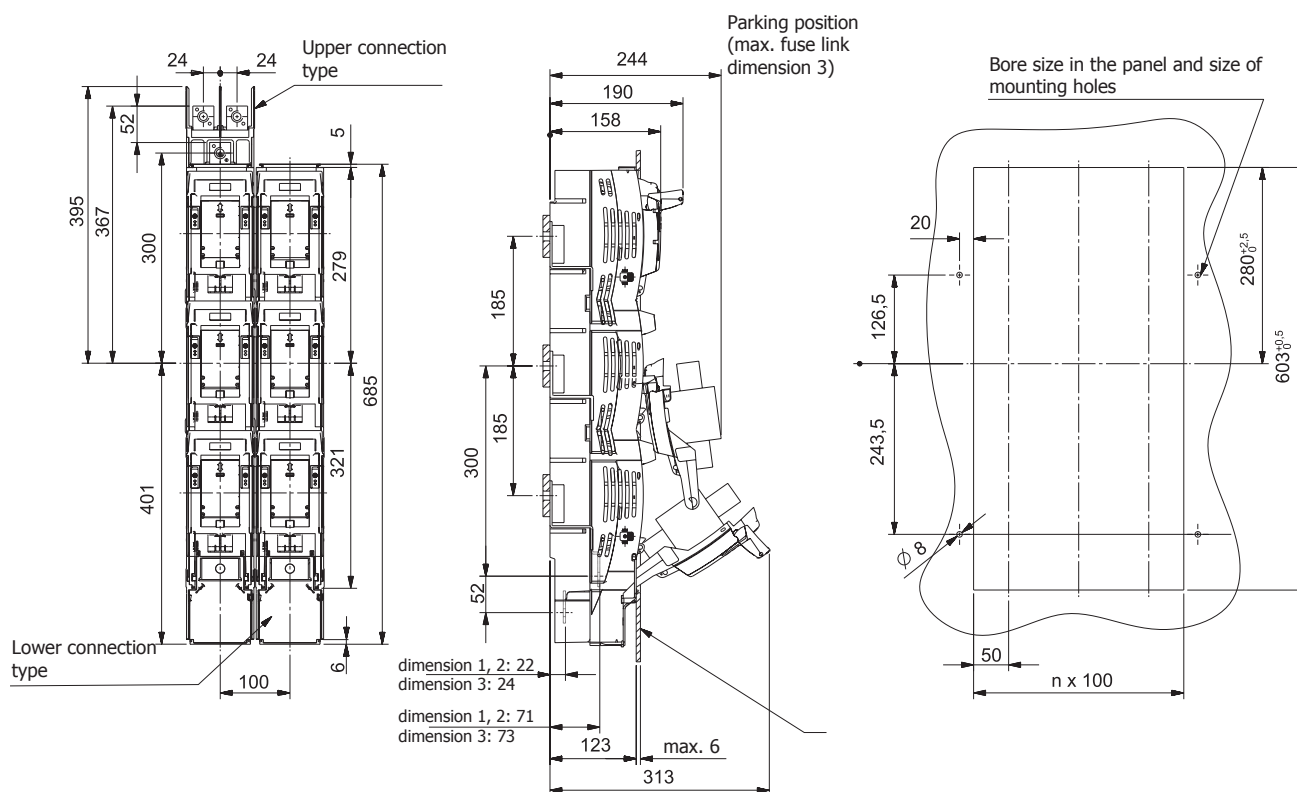
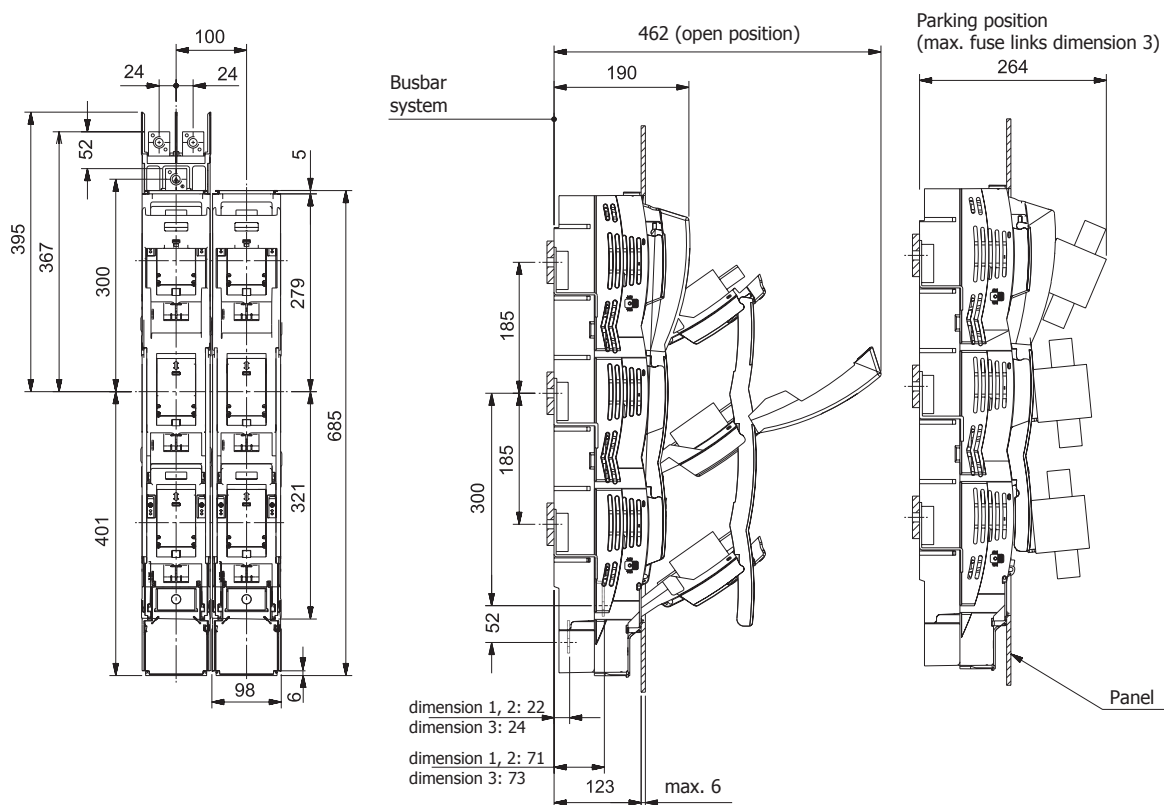
Shorthand notation	M	MN	V	
Connection type	bolt clamp	clamp for AL / Cu cable	V - type clamp	
Accessories	cable lugs with the width of not more than 45 mm	cable lugs with the width of not more than 45 mm	V - type clamp	
			141120	141121
Cross-section, mm ²	max. 300	max. 300	50-240 sector single - core 50-185 sector multicore 35-70 round multicore 35-50 round single - core	95-300 sector single - core 70-240 sector multicore 50-185 round multicore 70-240 round single - core
Torque, Nm	35±3	35±3	25±2	25±2
  				

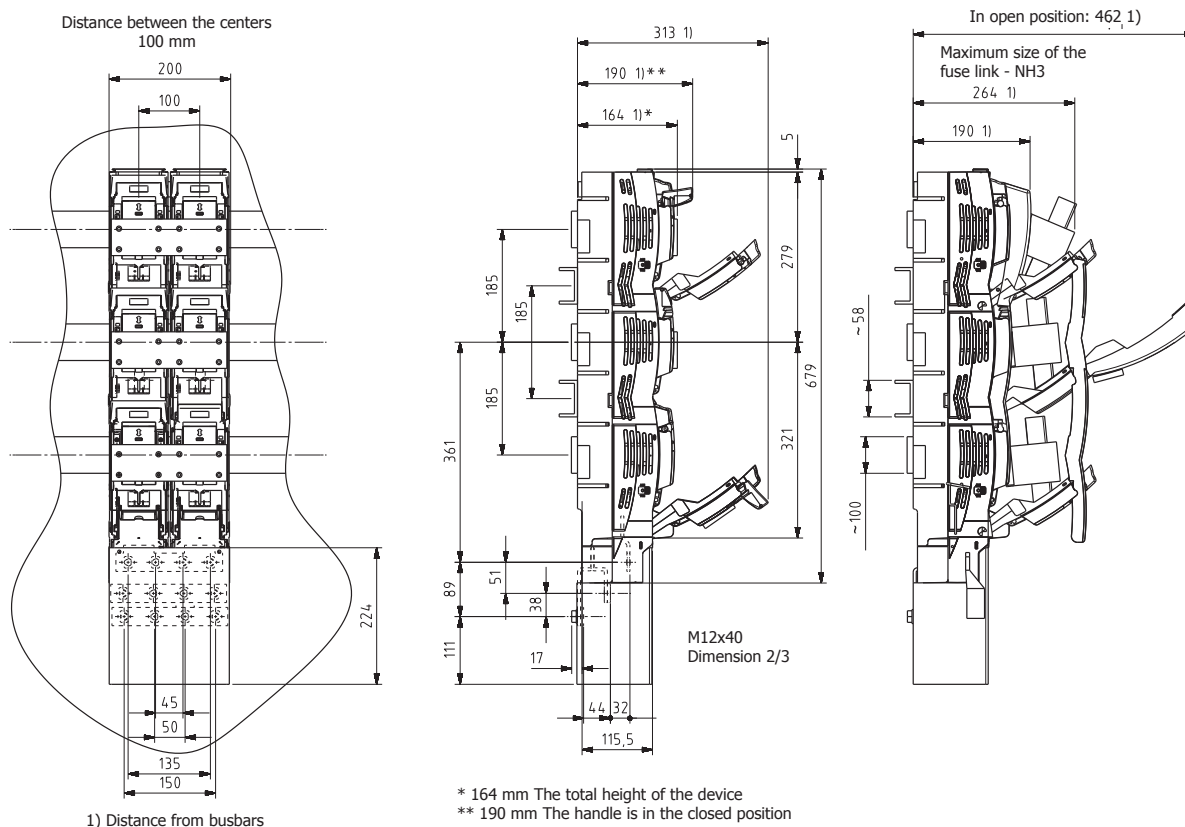
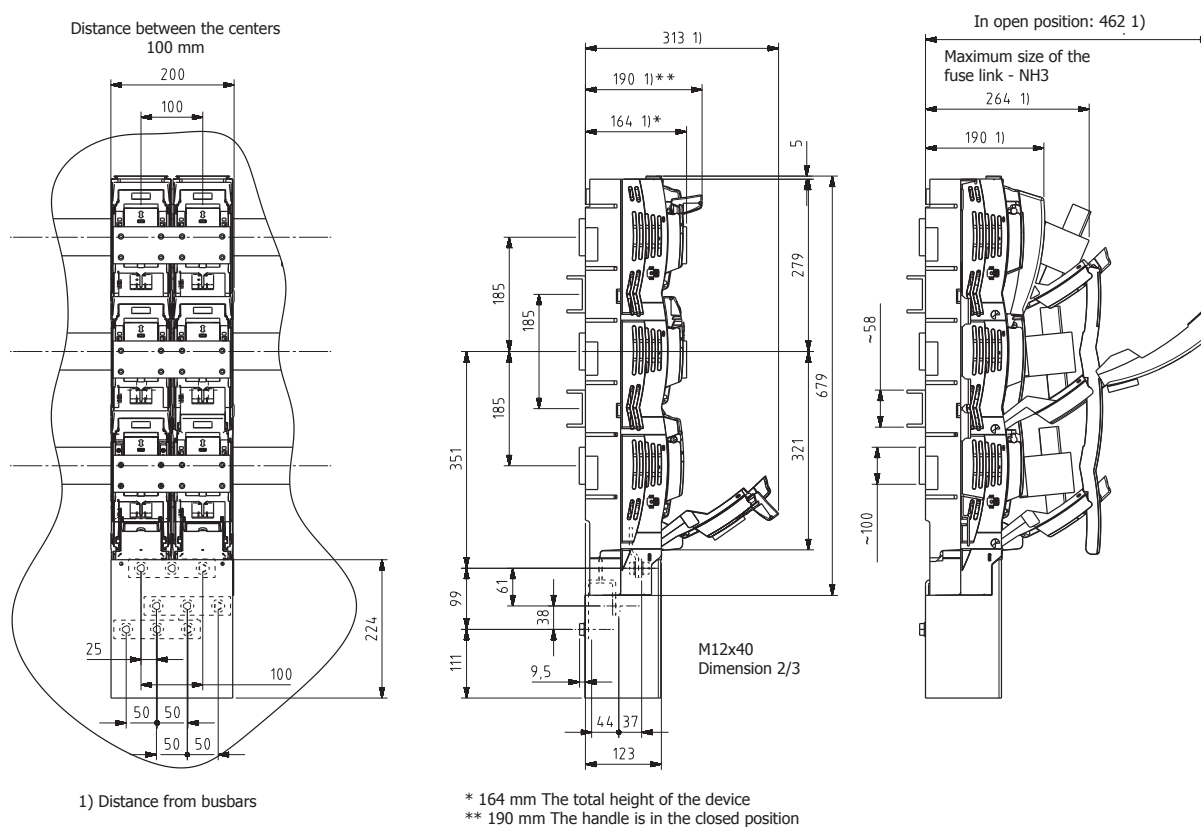
OptiVert dimension 00/100-3



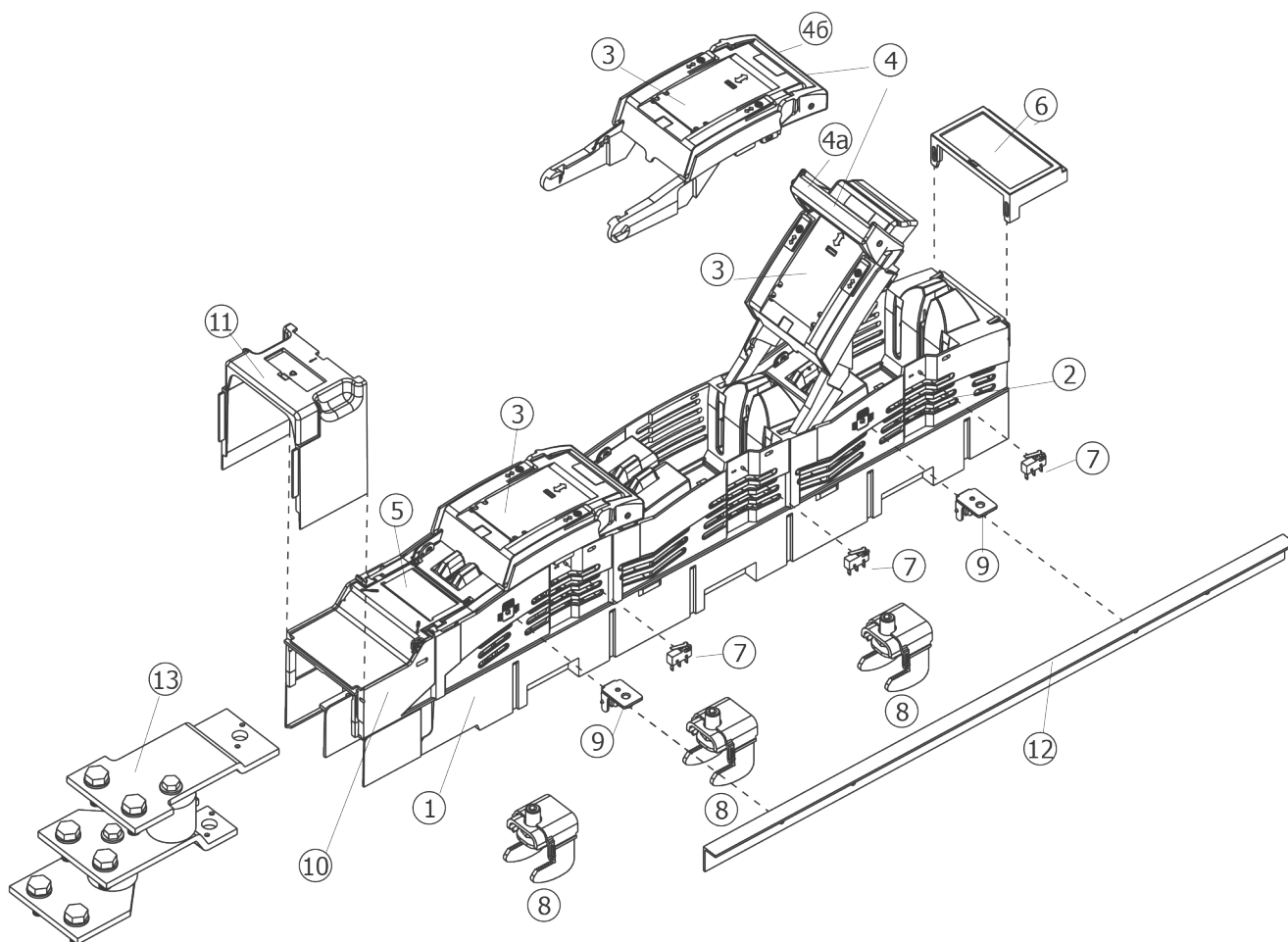


Clamp	A, mm
Bolt clamp M8	299
Bridge clamp / Al/Cu wire	292

OptiVert dimension 1-1, 2-1, 3-1

OptiVert dimension 1-6, 2-6, 3-6


OptiVert dimension 2x2-6-M-Q, 2x2-1-M-Q, 2x3-6-M-Q, 2x3-1-M-Q

OptiVert dimension 2x2-6-M-T, 2x2-1-M-T, 2x3-6-M-T, 2x3-1-M-T


Auxiliary devices and accessories

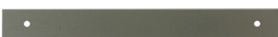
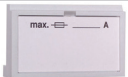
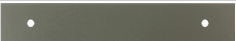


- 1. Base*
- 2. Case (removable)*
- 3. Protective cover*
- 4. The position of the handle
- 4a. The handle is in the open position
- 4b. The handle is in the closed position
- 5. Label for marks*
- 6. Additional (spare) label holder

- 7. Microswitch
- 8. Busbar conductor terminal (with a holder)
- 9. Supporting angle-bars
- 10. Integrated protective cover for cables
- 11. Additional protective cover
- 12. Side protective cover 605 mm
- 13. Extender outputs

* Standard delivery set

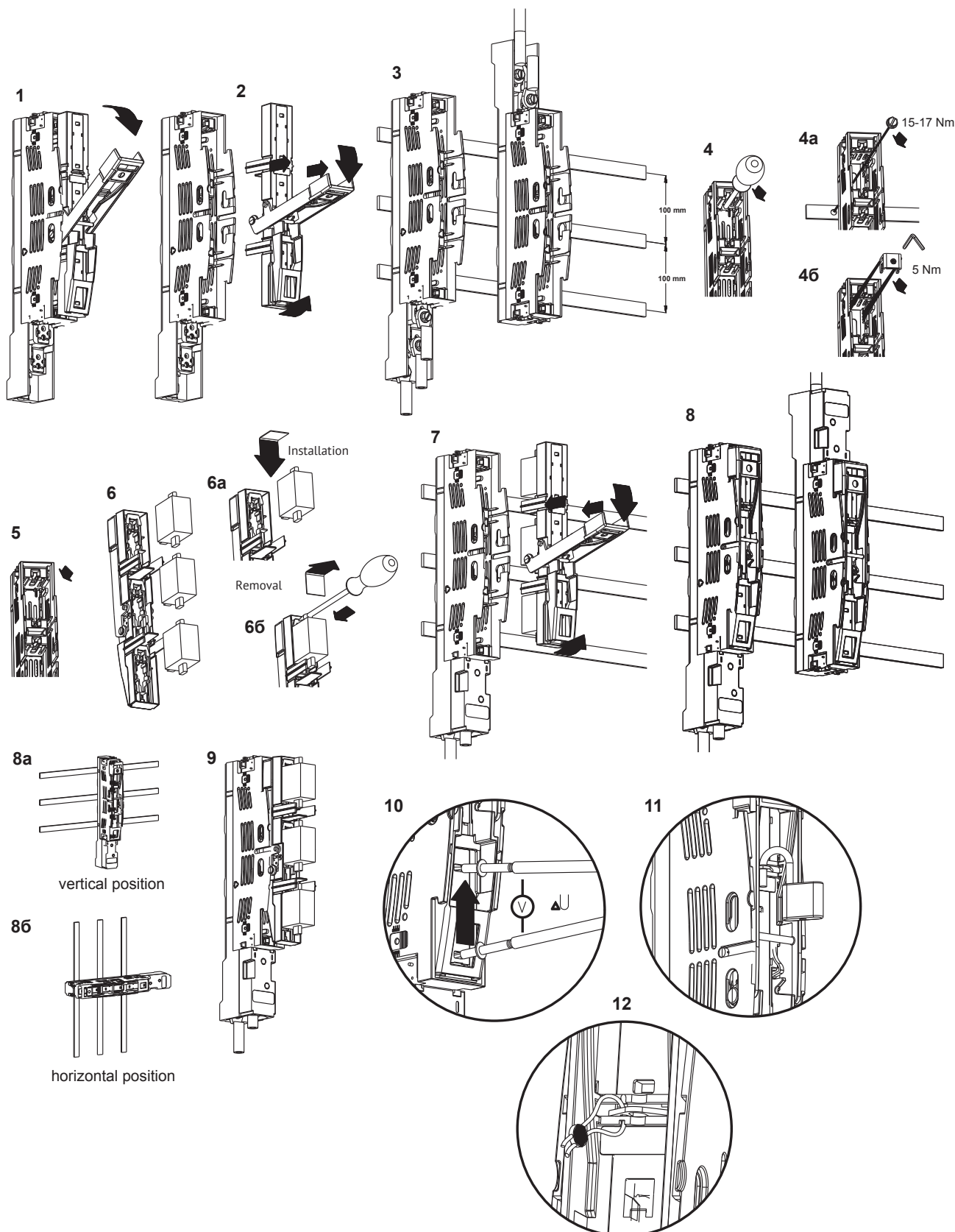
Accessories

For OptiVert	Title	Reference	Weight, kg
160A			
	Label holder OptiVert 00	141075	0,01
	Additional covers OptiVert 00/100	141086	0,05
	Additional covers OptiVert 00-SM	141087	0,06
	Adjustment bars OptiVert 00/100 2pcs	141089	0,1
	Adjustment bar for upper cable connection OptiVert 00-SM	141090	0,01
	Housing extension OptiVert 00	141091	0,02
	Cover housing 106 mm OptiVert 00	141092	0,04
	Rear cover V-terminal OptiVert 00	141093	0,01
	Housing cover V-terminal OptiVert 00	141094	0,05
	Cover housing 156 mm OptiVert 00	141095	0,06
	Insulating cover for V-clamp OptiVert 00	141101	0,01
250 A, 400 A, 630 A			
	Additional (spare) protection of the central cover 50 mm OptiVert (1-2-3)	141088	0,01
	Label holder OptiVert (1-2-3)	141103	0,30
	Housing lower cover 70 mm OptiVert (1-2-3)	141105	0,03
	Mounting pack on OptiVert (1-2-3) mounting rail	141108	0,02
	Additional (spare) covers OptiVert (1-2-3)	141111	0,56
	Additional (spare) protection of the central cover 100 mm OptiVert (1-2-3)	141112	0,50

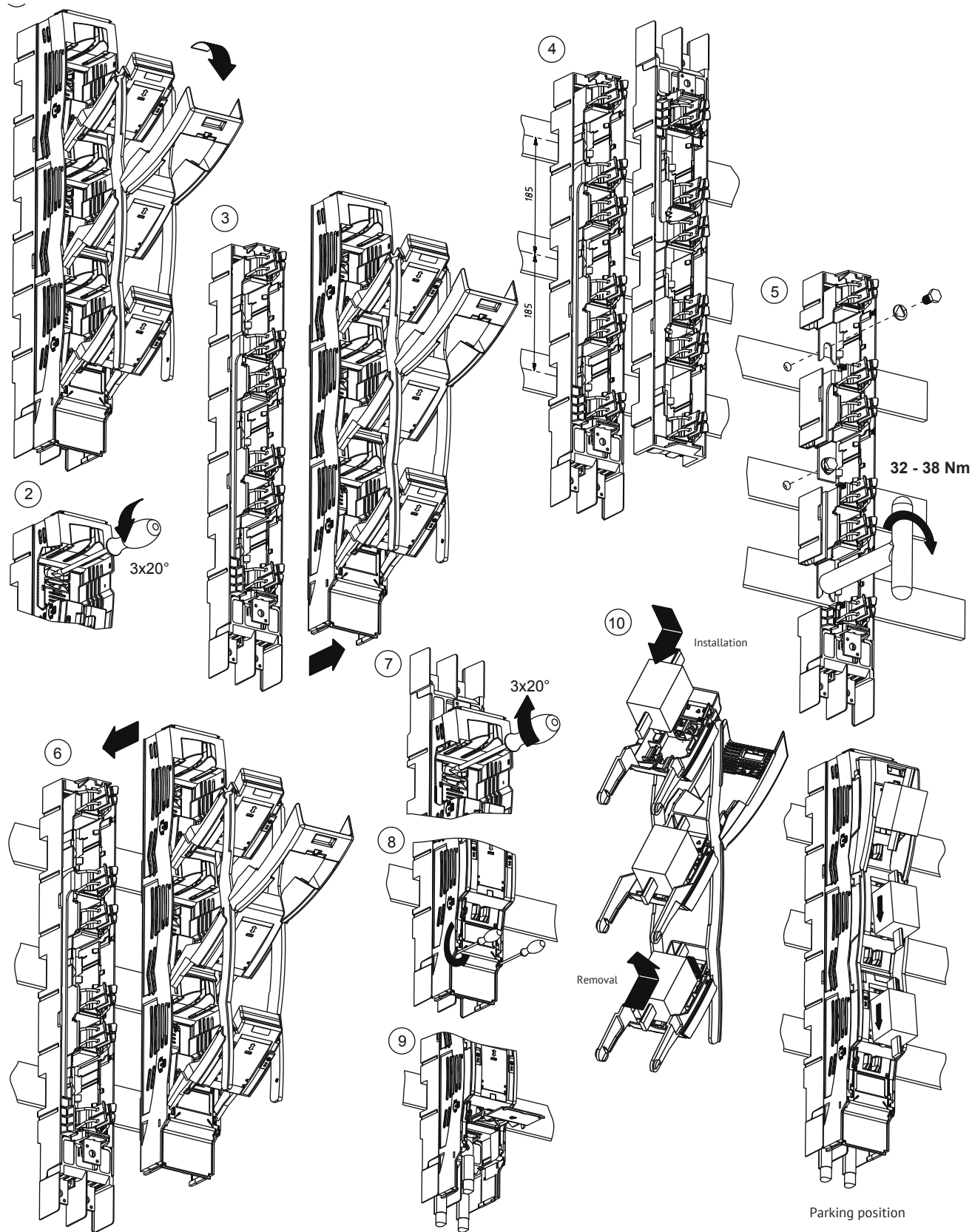
	Housing cover for lower cable connection 205,5 mm OptiVert (1-2-3)	141113	0,29
	Protective housing top-terminal, 138,5 mm OptiVert (1-2-3)	141114	0,19
	Protective housing, housing for upper cable connection 138,5 mm OptiVert (1-2-3)	141115	0,10
	Protective housing, housing for upper cable connection 190 mm OptiVert (1-2-3)	141116	0,12
	Protective housing housing for upper cable connection 257 mm OptiVert (1-2-3)	141117	0,38
	Protective housing housing for upper cable connection 145 mm OptiVert (1-2-3)	141118	0,19
	Insulating cover for V-clamp 240 mm ² /300 mm ²	141123	0,01
Общие			
	Supporting angle - bars OptiVert-(00-1-2-3) 4pcs	141076	0,03
	Protective cover 605 mm OptiVert-(00-1-2-3)A	141077	0,08
	OptiBlock (00-1-2-3)/OptiVert (00-1-2-3) door position indicator	141030	0,06

Mounting and installation

OptiVert for the rated value 160 A



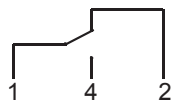
OptiVert for the rated values 250 A, 400 A, 630 A, 800 A, 1260 A



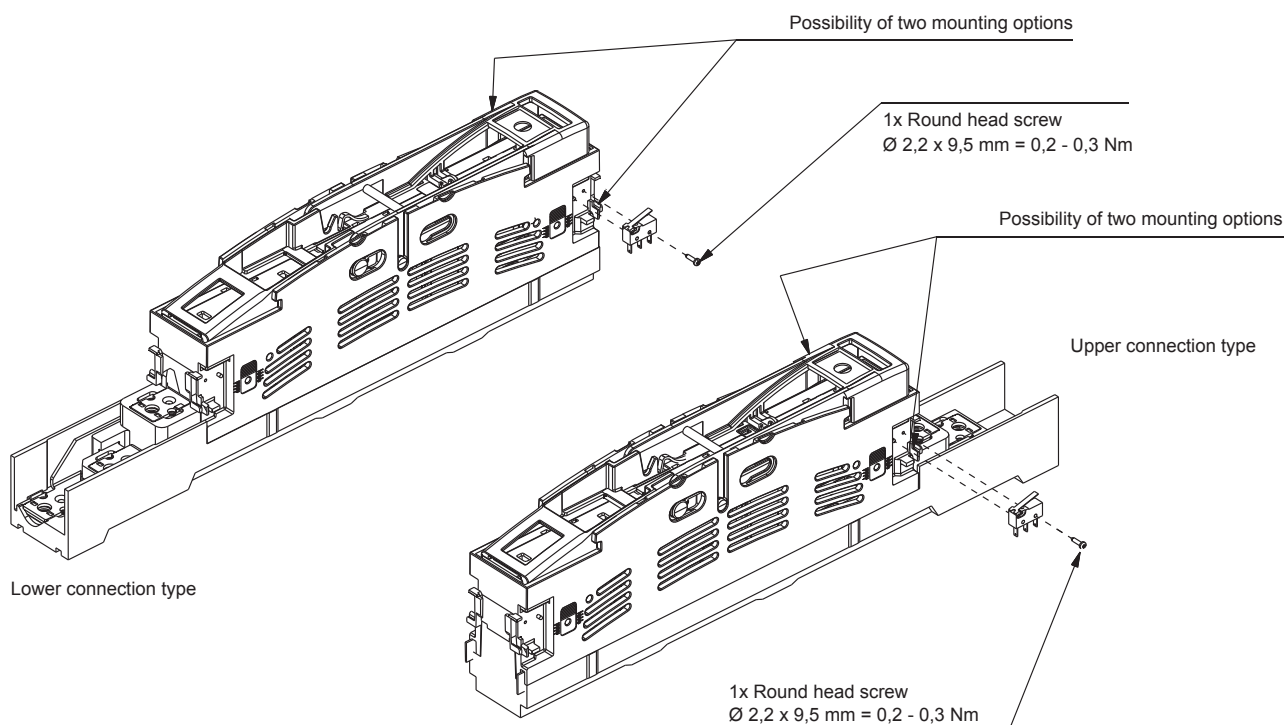
Door position indicator

Technical data of the door position indicator (reference 141030)

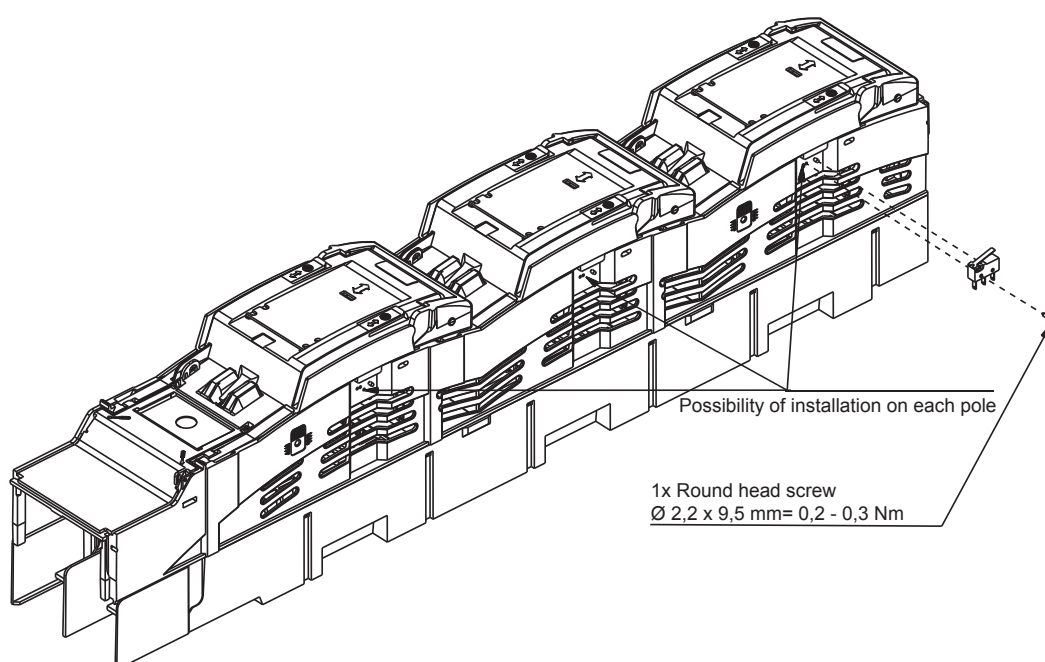
1 Switch 250 V AC, 6A
12 V DC, 6A



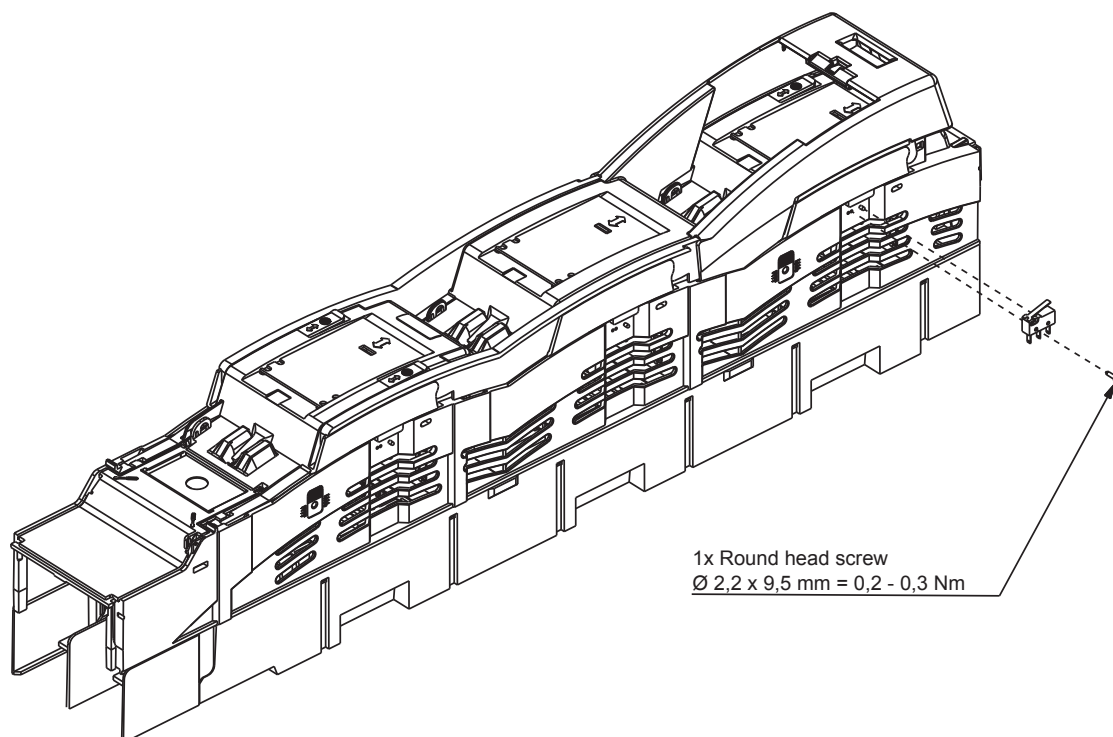
OptiVert 160 A/100 mm (60 mm) - vertical fuse-switch disconnecter dimension 00



OptiVert 250 A, 400 A, 630 A - vertical fuse-switch disconnecters of dimension 1, 2, 3 pole-by-pole operation



OptiVert 250 A, 400 A, 630 A NH - vertical fuse-switch disconnectors of dimension 1, 2, 3 three-pole tripping



Protective cover 605 mm (ref. 141077)

