



smartARS pro-PV

NH fuse switch disconnectors



smartARS 00
pro-PV



smartARS 2
pro-PV



smartARS 3
pro-PV

New smartARS pro-PV AC 800 V

A safe step into the future with Apator

The new switch fuse disconnecter smartARS in the AC 800 V product line is a device which has been developed to meet the needs and requirements of the future.

Solar power systems and a new generation of inverters are assembled on AC 800 V correctly and safely under load.

In the future AC 800 V will be extended by the smartARS family; moreover, it can be modified to facilitate the digitization of the energy transition.

High-quality materials and years of experience of Apator Group in the NH disconnectors sector ensure excellent cost-benefit ratio.

Table 1. Technical data

Parameter			smartARS 00 pro-PV	smartARS 2 pro-PV	smartARS 3 pro-PV
For NH fuse-links acc. to DIN VDE 0636-2	Size		00	1, 2	3
Rated operational voltage	U_e	V	AC800	AC800	AC800
Rated operational current	I_e	A	80	200	400
Conv. free air thermal current with fuse-links	I_{th}	A	80	200	400
Rated frequency	f	Hz	50 - 60	50 - 60	50 - 60
Rated insulation voltage	U_i	V	AC1000	AC1000	AC1000
Rated impulse withstand voltage	U_{imp}	kA	8	12	12
Utilization category			AC21B 80A/ 800V	AC21B 200A/800V	AC21B 400A/ 800V
Fuse protected short circuit withstand		kA	100 ¹⁾	120 ¹⁾	120 ¹⁾
Fuse protected short circuit making		kA	100 ¹⁾	120 ¹⁾	120 ¹⁾
Max. permis. power loss per fuse-link	P_a	W	11	21	41
Pollution degree			3	3	3
IP degree of protection		IP	30		
Ambient temperature		°C	-25 °C to + 55 °C		
Attitude		m	up to 2000 meters above sea level		
Busbar system		mm	for installation on 185 mm busbar system		
Actuation		-	manual		
Rated operating mode		-	continuous operation		

¹⁾ with WTNH gG fuse links (500 V)

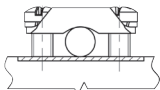
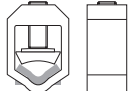
Table 2. Versions

Version		Weight	Article No.
for installation on to 185 mm busbar system, three pole switching - all phases simultaneously			
smartARS 00-3 pro-PV	cable terminals: bridge terminals with bridge clamps (S) 4-70mm ² , screw terminals with M8 screws	2,5 kg	63-073821-001
smartARS 00-3-V pro-PV	cable terminals: V-terminals with V-clamps 25-150 SW	2,6 kg	63-073821-002
smartARS 2-6-V pro-PV	cable terminals: V-terminals with V-clamps 240 mm ²	5,8 kg	63-073822-001
smartARS 3-6-V pro-PV	cable terminals: V-terminals with V-clamps 240 mm ²	6,6 kg	63-073822-002
smartARS 2-6-M pro-PV	cable terminals: screw terminals with pressed nuts M12	5,7 kg	63-073822-003
smartARS 3-6-M pro-PV	cable terminals: screw terminals with pressed nuts M12	6,5 kg	63-073822-004
smartARS 2-6-2V pro-PV	cable terminals: 2V-terminals with double V-clamps 240 mm ²	6,4 kg	63-073822-005
smartARS 3-6-2V pro-PV	cable terminals: 2V-terminals with double V-clamps 240 mm ²	7,2 kg	63-073822-006

Table 3. Accessories

Description	Picture	Tightening torque	Article No.
Hooked clamps for installation on to busbar system without drilled holes (set - 3 pcs.)		25 Nm	53-001462-002
Thickness of busbars 5 to 10 mm			

Table 4. smartARS 00 pro-PV terminal clamps

Description	smartARS 00 pro-PV			
Clamp	S-bridge clamp 2 x M5 x 25	M8 screw*	V-clamp 25-150 SW	HM 10-120
Picture of clamp				
Drawing of clamp				
Cross –section of conductors	4 - 70 mm ²	Lug terminal max 185 mm ²	re ● 16 mm ² - 95 mm ²	re ● 10 mm ² - 70 mm ²
			se ◆ 25 mm ² - 150 mm ²	se ◆ 25 mm ² - 120 mm ²
			rm ☼ 16 mm ² - 95 mm ²	rm ☼ 10 mm ² - 70 mm ²
			sm ☼ 25 mm ² - 150 mm ²	sm ☼ 25 mm ² - 95 mm ²
Tightening torque	3 Nm**	12 Nm**	20 Nm**	15 Nm**

For stranded conductors using cable ferrules is recommended

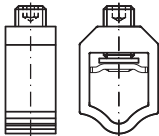
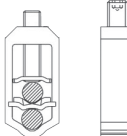
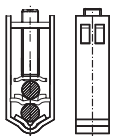
*) bars of maximum width of 20 mm and maximum thickness of 5 mm can be fixed to M type screw terminals

**) using tension wrench is recommended

**) fuse switch disconnectors with V-terminals are equipped with steel V-clamp HM 10-120 on request

Aparator takes responsibility for technical quality of V-terminals manufactured only by the company. Minimum tightening torque (M8 screw) for screws fixing fuse switch disconnector to busbar system – 12 Nm, recommended tightening torque for screws and nuts with property class 8.8 – 21 Nm.

Table 5. smartARS 2,3 pro-PV terminal clamps

Description	smartARS 2,3-x-V pro-PV		smartARS 2,3-x-2V pro-PV		smartARS 2,3-x-2V pro-PV		smartARS 2,3-x-M pro-PV
Clamp	V-clamp 35-300SW-B		V-clamp 2/50-300SW-B		V-clamp HS 2/50-240-C*		M-screw M12*
Picture of clamp							
Cross – section of conductors	V-clamp for direct fixing of conductor with bare end with crosssection of						Lug terminal
	35 - 185 mm² 	35 - 240 mm² 	50 - 185 mm² 	50 - 240 mm² 	50 - 185 mm² 	50 - 240 mm² 	
	35 - 240 mm² 	35 - 300 mm² 	50 - 240 mm² 	50 - 300 mm² 	50 - 240 mm² 	50 - 300 mm² 	
Tightening torque	30 Nm		30 Nm		40 Nm		56 Nm

For stranded conductors using cable ferrules is recommended

*) if the fuse switch disconnector with a 2V-type clamp is to be equipped with a steel V-clamp HS 2/50-240-C, it should be included in the order

**) bars of maximum width of 40 mm and maximum thickness of 8 mm can be fixed to M type screw terminals when protective barrier between phases is installed
Aparator takes responsibility for technical quality of V-terminals manufactured only by the company. Minimum tightening torque (M12 screw) for screws fixing fuse switch disconnector to busbar system – 32 Nm, recommended tightening torque for screws and nuts with property class 8.8 – 56 Nm.

smartARS fuse switch disconnectors are designed for installation on to 185 mm busbar system. They are intended for direct installation on vertical busbar systems.

Width x Thickness [mm]	Crossection [mm ²]	Weight ²⁾ [kg/m]	Continuous current in A			
			AC up to 60Hz			
			Painted Number of busbars		Blank Number of busbars	
			I	II	I	II
12x2	23,5	0,209	123	202	108	182
15x2	29,5	0,262	148	2400	128	212
15x3	44,5	0,396	187	316	162	282
20x2	39,5	0,351	189	302	162	264
20x3	59,5	0,529	237	394	204	348
20x5	99,1	0,882	319	560	274	500
20x10	199	1,77	497	924	427	825
25x3	74,5	0,663	287	470	345	412
25x5	124	1,11	384	662	327	586
30x3	89,5	0,796	337	544	285	476
30x5	149	1,33	447	760	379	672
30x10	299	2,66	676	1200	573	1060
40x3	119	1,06	435	692	366	600
40x5	199	1,77	573	952	482	836
40x10	399	3,55	850	1470	715	1290
50x5	249	2,22	697	1140	583	994
50x10	499	4,44	1020	1720	852	1510
60x5	299	2,66	826	1330	688	1150
60x10	599	5,33	1180	1960	985	1720
80x5	399	3,55	1070	1680	885	1450
80x10	799	7,11	1500	2410	1240	2110
100x5	499	4,44	1300	2010	1080	1730
100x10	999	8,89	1810	2850	1490	2480
120x10	1200	10,7	2110	3280	1740	2860
160x10	1600	14,2	2700	4130	2220	3590
200x10	2000	17,8	3290	4970	2690	4310

²⁾ Weight calculated with a density of 8,9kg/dm³

Technical information

In case of mounting of several units in low voltage switchgear-combinations, please consider rated diversity factors acc. to DIN EN 61439.

Recommended rated diversity factor in according with DIN/EN 61439

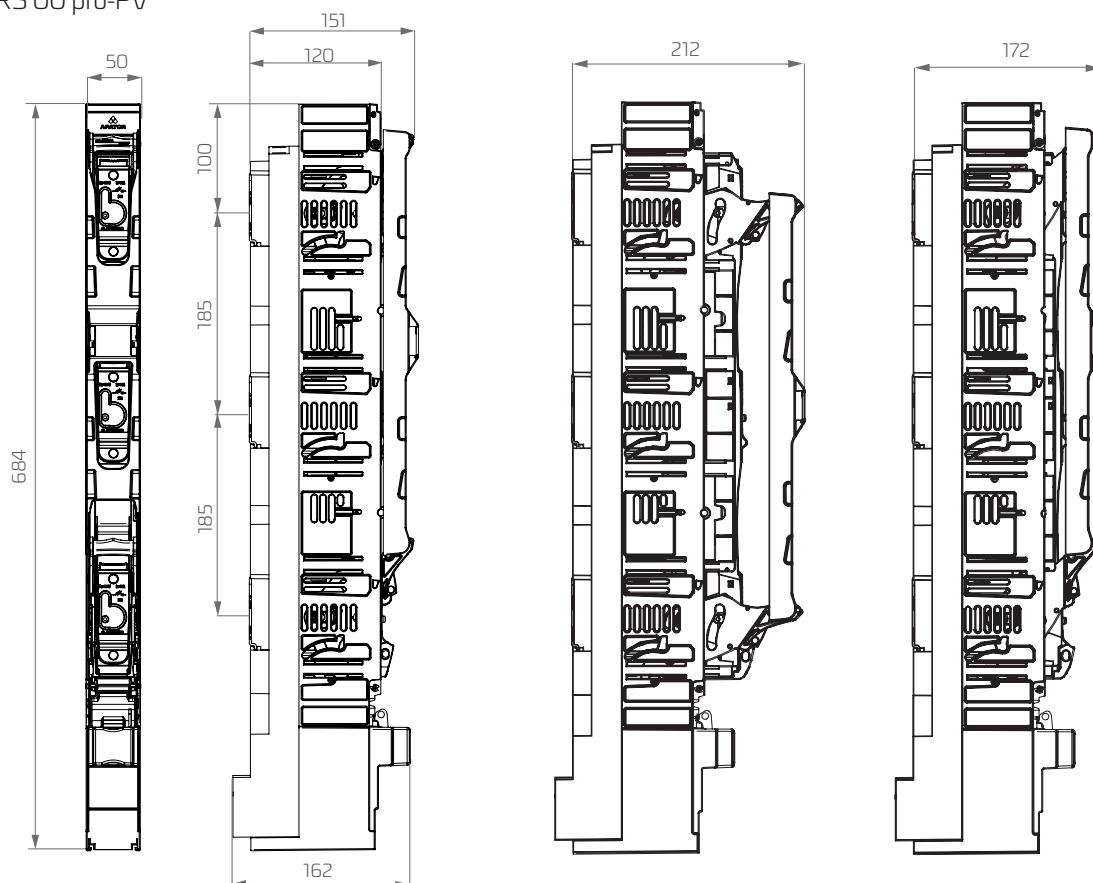
No. of main circuits	Rated diversity factor
2 and 3	0,9
4 and 5	0,8
6 and 9	0,7
10 and more	0,6

Current carrying capacity copper busbars

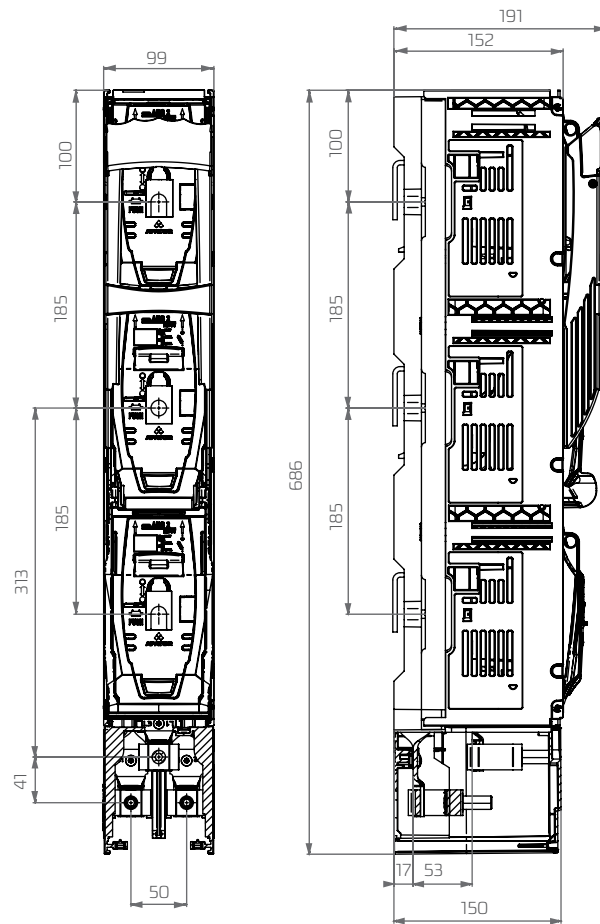
Continuous currents in accordance with DIN 43 670 for rectangular E-Cu busbars used in indoor systems at 35°C air temperature and 65°C busbar temperature.

DIMENSIONS

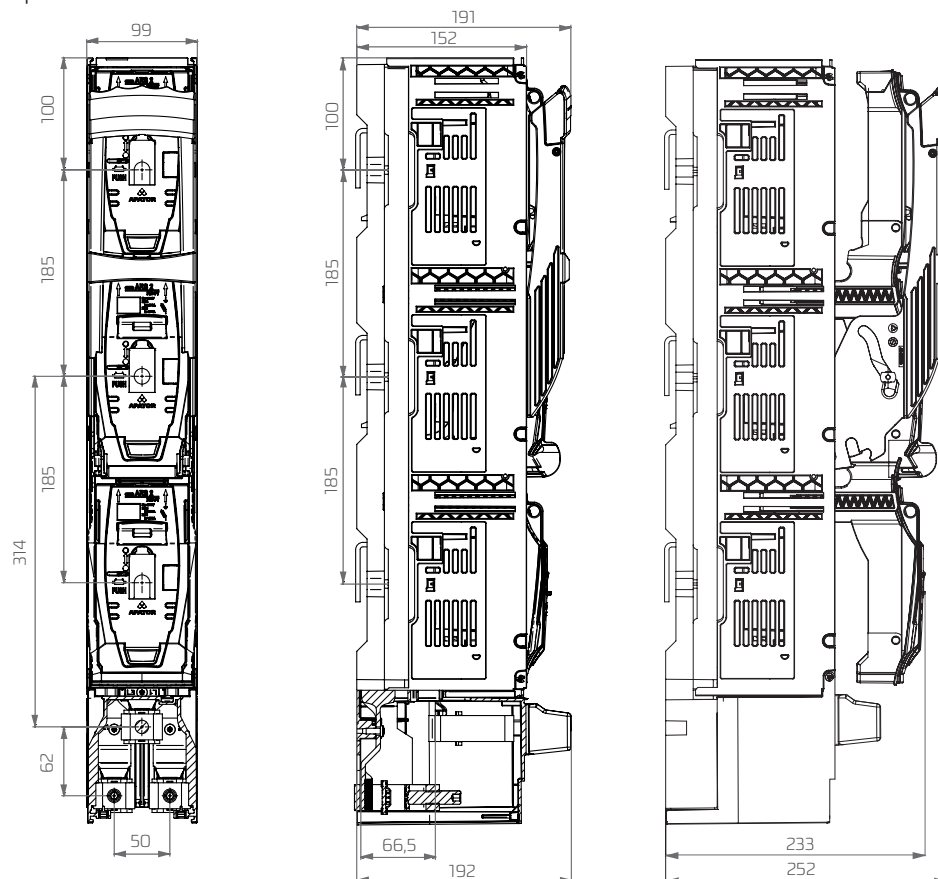
smartARS 00 pro-PV



smartARS 2,3 -M,-V pro-PV



smartARS 2,3 -2V pro-PV



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