

ARS vertical fuse switch disconnectors

- fibre glass extra strenghtened, self extinguishing thermoplastics
- double clearance between open contacts
- arc chutes with deionization plates over every contact
- reversibility top/bottom cable terminal connection
- wide range of accesories







CONSTRUCTION

ARS fuse switch disconnectors are manufactured in two versions:

- one pole switching (separately each pole)
- three pole switching (three poles at the same time)

They have manually operated handle therefore making and breaking operations should be done with determined movement.

ARS fuse switch disconnectors are available in following sizes (according to rated current): 00 (ARS 00 and ARS 00/100 mm -160 A) and 2 (ARS 400 A).

ARS fuse switch disconnectors are designed for installation on to 185 mm busbar system.

ARS of size 00 are manufactured in two versions depending on busbar system:

- ARS 00 fuse switch disconnector (160 A) for installation on to 185 mm busbar system
- ARS 00/100 mm fuse switch disconnector (160 A) for installation on to 100 mm busbar system Installation on to 185 mm busbar system is possible by using adapter.

Fuse switch disconnectors ARS are made of fibre glass strengthened, thermoplastic polyamides with halogen free flame retardant added. Added flame retardant provides V2 flammability class. Silver plated contacts provide low power loss. Depending on clamp type, ARS fuse switch disconnectors enable user to connect circular or sector-shaped conductors with bare ends or conductors with lug terminals. Arc chute with deionization plates is installed over each contact. Such design provides efficiency of arc extinction and controlled exhaust of arc plasma. ARS fuse switch disconnectors are adapted for using current transformers and ammeters. Protection degree of IP30 from the front is provided. Additionally offered accesories enable to install ARS fuse switch disconnectors of different sizes on common busbar systems. All sizes of ARS pro fuse switch disconnectors are provided complete with clamps (i. e. screws, V-terminals, 2V-terminals) and shrouds for cable terminals.

FUNCTIONALITY

- making and breaking operations should be done with determined movement,
- parallelly moving, double contact system,
- designed for installation on to 100 mm or 185 mm busbar system,
- two versions: single pole switching (separately each pole) or triple pole switching (three poles at the same time),
- fuse switch disconnectors width: 50 mm, 100 mm, 200 mm,
- suitable for top cable terminal connection,
- possible connection of circular or sector-shaped conductors with bare ends (V-terminals, 2V-terminals or conductors with lug terminals (screw terminals).

Table 27. ARS TECHNICAL DATA

Parameters		ARS 00/100 mm	ARS 00	ARS 400 A
Rated thermal current I _{th} =I _n	А	160	160	400
Rated voltage U _n	V	690	690	690
Utilization category	690 V	AC-22B	AC-22B	AC-22B
Rated switching voltage U _e	V	690	690	690
Rated switching current I _e	А	160	160	400
Rated short-circuit making current	kA	25	22	100
Rated short-circuit withstand current	kA	100	100	100
Rated insulation voltage U _i	V	1000	1000	1000
Rated impulse withstand voltage U _{imp.}	kV	8	12	12
Rated frequency	Hz	50-60	50-60	50-60
Mechanical durability	Number	1600	1600	1000
Electrical durability	of cycles	200	200	200
IP degree of protection	IP	30	20	30
Fuse links size	-	00	00	1, 2

OPERATING CONDITIONS

- to be installed in the room free of any dust, aggressive or explosive gases,
- altitude up to 2000 meters above sea level,
- outdoor in cabinets with protection degree > IP 34,
- ambient temperature from -25 °C to +55 °C,
- relative humidity of the air should not be higher than 50% at temperature of +40°.
- in case of single phase disconnector, device is dedicated to energy distribution systems; connection of primary circuits of three phase devices shouldn't be performed if switching or isolation of specific phases is required.





FUSE SWITCH DISCONNECTOR ARS 00/100 mm (160 A, 690 V)

For installation on to 100 mm busbar system

Fuse switch disconnector's width 50 mm

Three pole switching - all phases simultaneously

Table 28. TECHNICAL DATA

Parameters		ARS 00/100 mm
Rated thermal current I _{th} =I _n	А	160
Rated voltage U _n	V	690
Utilization category	-	AC-22B
Rated switching voltage U _e	V	690
Rated switching current I _e	А	160
Rated short circuit making current	kA	25
Rated short circuit withstand current	kA	100
Rated insulation voltage U _i	V	1000
Rated impulse withstand voltage U _{imp.}	kV	8
Rated frequency	Hz	50-60
Mechanical durability	Number	1600
Electrical durability	of cycles	200
IP degree of protection	IP	30
Fuse links size	-	00
Accesories on page 42		





Table 29. VERSIONS

Version	Weight	Article No.	
for installation on	to 100 mm busbar system ,three pole switching - all phases simultaneously		
ARS 00/100mm	cable terminals: bridge terminals with bridge clamps (S) 4-70 mm ² , screw terminals with M8 screws	1,3 kg	63-811628-011
ARS 00/100mm-V	cable terminals: V-terminals with V-clamps 25-120SW	1,5 kg	63-811628-021
ARS 00/100mm-V	cable terminals: V-terminals, without V-clamps	1,3 kg	63-811628-081

Table 30. ARS 00/100mm TERMINAL CLAMPS

Description	ARS 00/100 mm						
Clamp	S-bridge clamp 2 x M5 x 25	M8 screw*	V- clamp 25-120 SW	HM 10-120			
Picture of clamp				***			
Drawing of clamp							
Cross –section of conductors	4 - 70 mm²	Conductor with lug terminal max 185 mm ²	re ● 16 mm² - 95 mm² se ◆ 25 mm² - 120 mm² rm ※ 16 mm² - 95 mm² sm ◆ 25 mm² - 120 mm²	re			
Tightening torque	3 Nm**	12 Nm**	20 Nm**	15 Nm**			

For stranded conductors using cable ferrules is recommended

Apator 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

^{*)} 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

FUSE SWITCH DISCONNECTOR ARS 00 (160 A, 690 V)

For installation on to 185 mm busbar system

Three pole switching - all phases simultaneously

- two-hand operation or one pole switching - each phase independently Fuse switch disconnector's width 50 mm

Table 31. TECHNICAL DATA

Parameters	ARS 00	
Rated thermal current I _{th} =I _n	А	160
Rated voltage U _n	V	690
Utilization category	-	AC-22B
Rated switching voltage U _e	V	690
Rated switching current I _e	А	160
Rated short circuit making current	kA	22
Rated short circuit withstand current	kA	100
Rated insulation voltage U _i	V	1000
Rated impulse withstand voltage U _{imp.}	kV	12
Rated frequency	Hz	50-60
Mechanical durability	Number	1600
Electrical durability	of cycles	200
IP degree of protection	IP	20
Fuse links size	-	00
Accesories on page 42	<u> </u>	1



ARS 00-1

ARS 00-3

Table 32. VERSIONS

Version	Weight	Article No.				
for installation on to	for installation on to 185 mm busbar system, one pole switching - each phase independently					
ARS 00-1	cable terminals: bridge terminals with bridge clamps (S) 4-70 mm ² , screw terminals with M8 screws	2,6 kg	63-811410-011			
ARS 00-1-V	cable terminals: V-terminals with V-clamps 25-120SW	2,7 kg	63-811410-021			
ARS 00-1-V	2,6 kg	63-811410-051				
for installation on to	185 mm busbar system, three pole switching - all phases simultaneously	,				
ARS 00-3	cable terminals: bridge terminals with bridge clamps (S) 4-70 mm ² , screw terminals with M8 screws	2,7 kg	63-811806-011			
ARS 00-3-V	cable terminals: V-terminals with V-clamps 25-120SW	2,8 kg	63-811806-021			
ARS 00-3-V	cable terminals: V-terminals, without V-clamps	2,7 kg	63-811806-051			



Table 33. ARS 00 TERMINAL CLAMPS

Description	ARS 00						
Clamp	S-bridge clamp 2 x M5 x 25	M8 screw*	V- clamp 25-120 SW	HM 10-120			
Picture of clamp				***			
Drawing of clamp							
Cross –section of conductors	4 - 70 mm ²	Conductor with lug terminal max 185 mm ²	re	re			
Tightening torque	3 Nm**	12 Nm**	20 Nm**	15 Nm**			

For stranded conductors using cable ferrules is recommended

Apator 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

^{*)} 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

FUSE SWITCH DISCONNECTOR ARS 400 A (400 A, 690 V)

For installation on to 185 mm busbar system

Three pole switching - all phases simultaneously or one pole switching

- each phase independently

Fuse switch disconnector's width 100 mm

Designed for operation with NH1 and NH2 fuse links

Table 34. TECHNICAL DATA

Parameters		ARS 400 A
Rated thermal current I _{th} =I _n	А	400
Rated voltage U _n	V	690
Utilization category	-	AC-22B
Rated switching voltage U _e	V	690
Rated switching current I _e	А	400
Rated short circuit making current	kA	100
Rated short circuit withstand current	kA	100
Rated insulation voltage U _i	V	1000
Rated impulse withstand voltage U _{imp.}	kV	12
Rated frequency	Hz	50-60
Mechanical durability	Number	1000
Electrical durability	of cycles	200
IP degree of protection	IP	30
Fuse links size	-	1, 2
Accesories on page 43		



ARS 2-1-V ARS 2-6-V

Table 35. VERSIONS

Version		Weight	Article No.			
for installation on to 185 mm busbar system, one pole switching - each phase independently						
ARS 2-1-V	cable terminals: V-terminals with V-clamps 240 mm ²	5,0 kg	63-811825-011			
ARS 2-1-M	cable terminals: screw terminals with pressed nuts M10	4,8 kg	63-811825-031			
ARS 2-1-2V	cable terminals: 2V-terminals with double V-clamps 240 mm ²	5,7 kg	63-811825-051			
ARS 2-1-V	cable terminals: V-terminals without V-clamps	4,7 kg	63-811825-091			
ARS 2-1-2V	5,2 kg	63-811825-121				
for installation on to	185 mm busbar system, three pole switching - all phases simultaneous	sly				
ARS 2-6-V	cable terminals: V-terminals with V-clamps 240 mm ²	5,0 kg	63-811826-011			
ARS 2-6-M	cable terminals: screw terminals with pressed nuts M10	4,8 kg	63-811826-031			
ARS 2-6-2V	cable terminals: 2-Vterminals with double V-clamps 240 mm ²	5,7 kg	63-811826-051			
ARS 2-6-V	cable terminals: V-terminals without V-clamps	4,7 kg	63-811826-091			
ARS 2-6-2V	cable terminals: 2-Vterminals without double V-clamps	5,2 kg	63-811826-121			

Table 36. ARS 400 A TERMINAL CLAMPS

Description	ARS 2-x-V (400 A)			ARS 2-x-2V (400 A)		ARS 2-x-M (400 A)		4)	
Clamp	amp V-clamp 35-300SW-B V-clamp HS 2/35-240-C		V-clamp 35-300SW-B		V-clamp HS 2/35-240-			screw ed nut)	
Drawing of clamp	Cross -section of conductors		direct fixing of conduct	Cross - section of conductors	conduct		#	osssection of conductors	terminal
	35 - 185 m		35 - 240 mm ²	35 - 185 m		35 - 240 mm ²	-	Cross	Lug
	35 - 240 m	ım² 🐠	35 - 300 mm²	35 - 240 m	nm² 🐠	35 - 300 mm²]		
Tightening torque		30	Nm		40	Nm	32	Nm	

For stranded conductors using cable ferrules is recommended

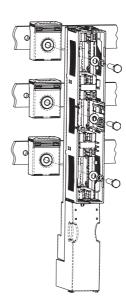
^{*)} Bars of maximum width of 40 mm and maximum thickness of 8 mm can be fixed to M type screw terminals when protective barrier between phases is installed. Apator takes responsibility for technical quality of V-terminals manufactured only by the company. Minimum tightening torque (M12 screw) for screws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





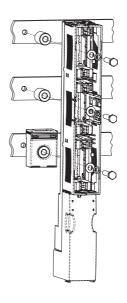
THREE PHASE CURRENT MEASUREMENT WITH FUSE SWITCH DISCONNECTOR ARS





ONE PHASE CURRENT MEASUREMENT WITH FUSE SWITCH DISCONNECTOR ARS





Fuse switch disconnectors ARS 400 A, ARS 2 pro, ARS 3 pro

CURRENT TRANSFORMER APA-W12 Technical parameters in the catalogue: "Low voltage current transformers".

ratios:

125 A/5 A 150 A/5 A 200 A/5 A 300 A/5 A 400 A/5 A dimensions:

a=60~mm,~~b=30~mm,~~c=81~mm Accuracy class*=1; 0,5; 0,5s; 0,2; 0,2s *-depending on the version

DISTANCE SLEEVE

Length 36 mm

 \emptyset Inner diameter = 12,5 mm, \emptyset outer diameter = 22,5 mm

Fuse switch disconnectors ARS 00/160 mm, ARS 00/160 mm pro, ARS 00, ARS 00 pro

CURRENT TRANSFORMER APA-W10 Technical parameters in the catalogue: "Low voltage current transformers".

ratios:

125 A/5 A 150 A/5 A dimensions: a = 43.5 mm, b = 30 mm, c= 65 mm Accuracy class*=1; 0,5 *-depending on the version

DISTANCE SLEEVE

Length 36 mm

 \emptyset Inner diameter = 12,5 mm \emptyset outer diameter = 22,5 mm

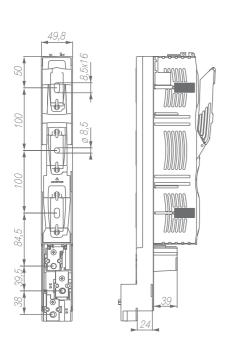


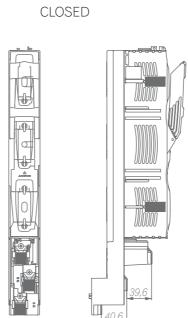
Distance sleeve

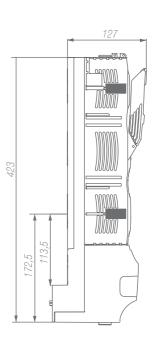


Current transformer

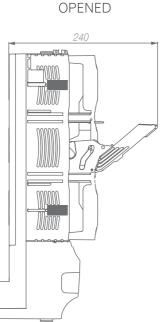
ARS 00/100 mm , ARS 00-1, ARS 00-3, ARS 00/100 mm pro, ARS 00-1 pro, ARS 00-3 pro

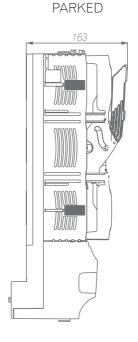






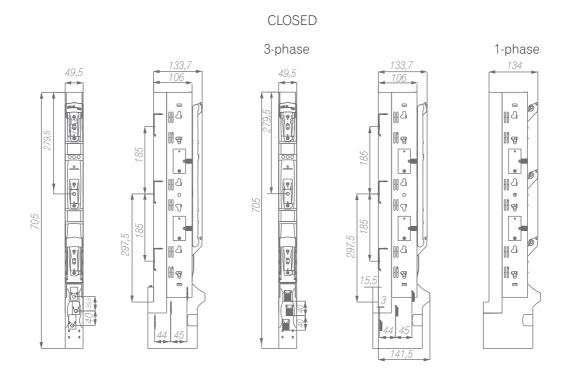
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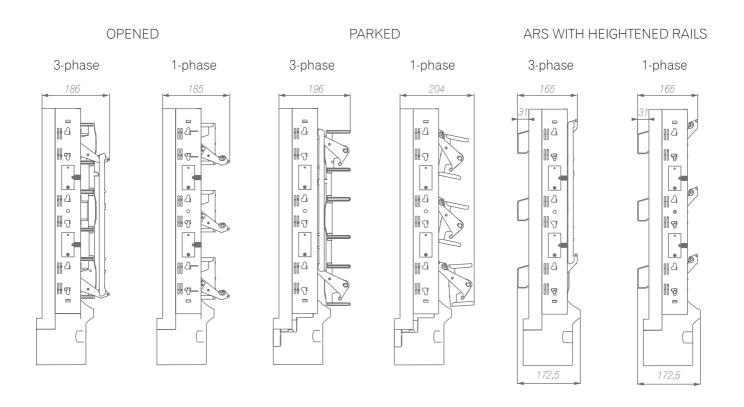


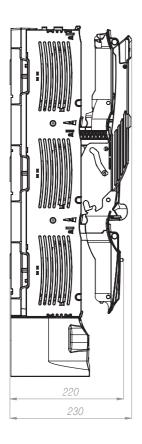


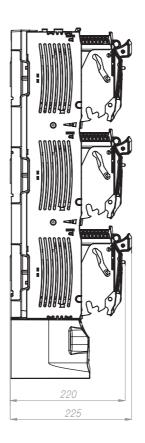


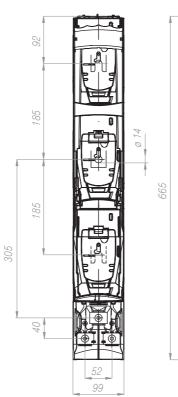


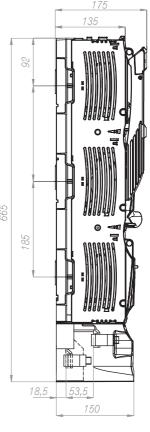


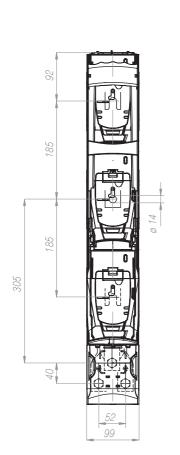


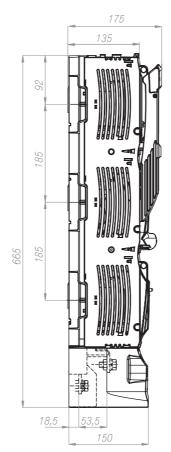


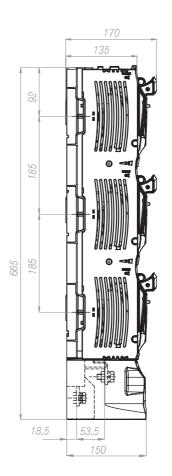






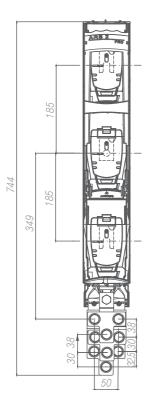


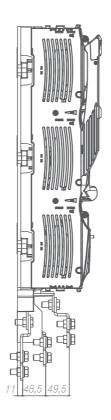




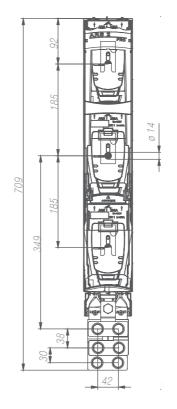


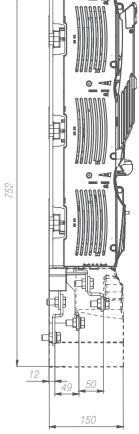
TERMINALS 3x120 mm²

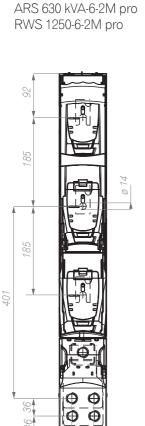




TERMINALS 2x240 mm²

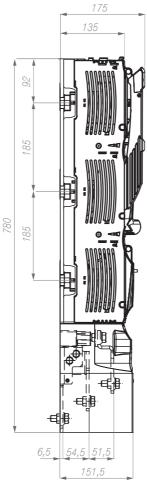


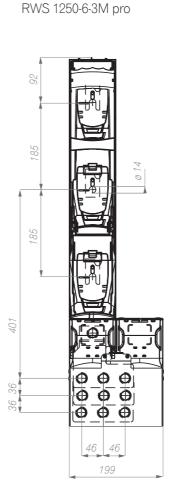




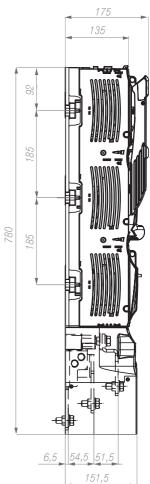
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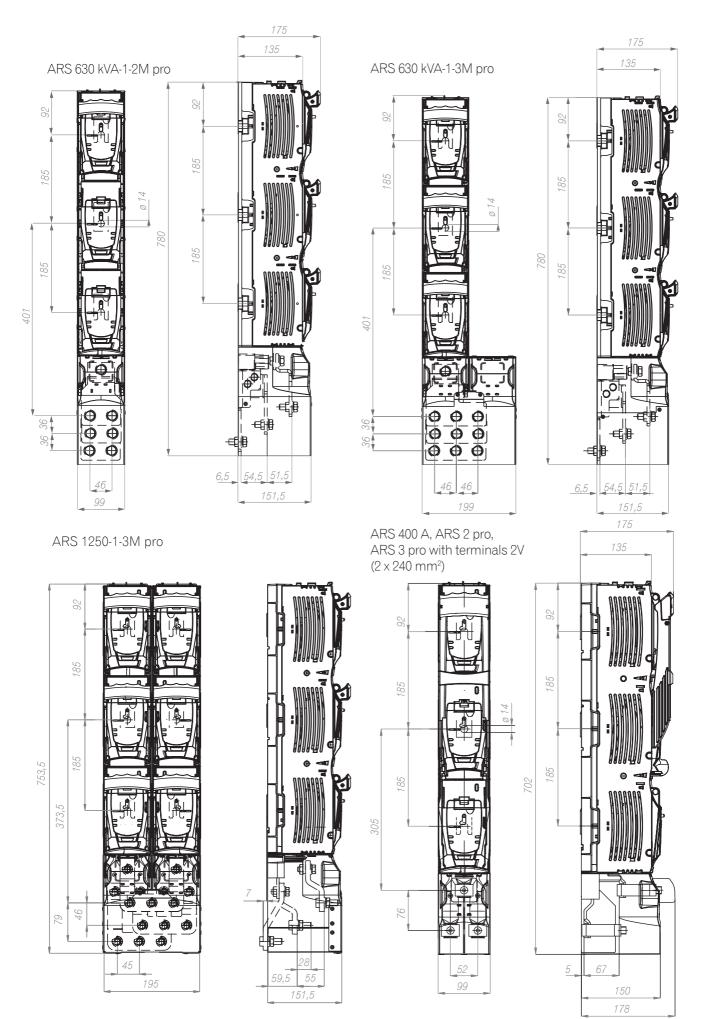
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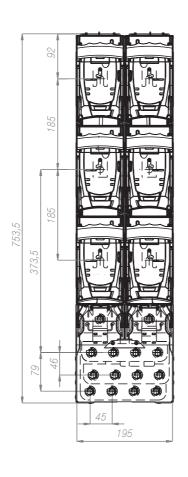


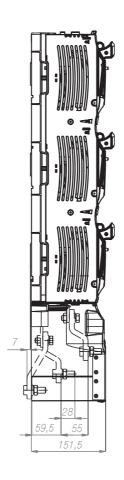
ARS 630 kVA-6-3M pro



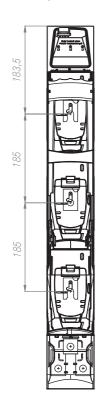


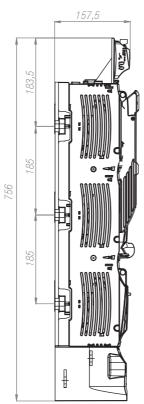


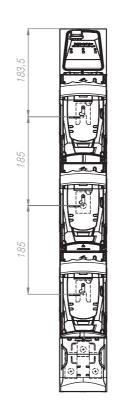


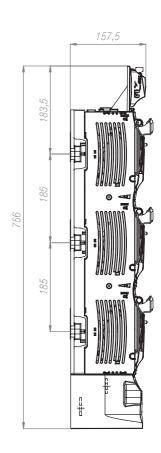


ARS 2-X pro ARS 3-X pro

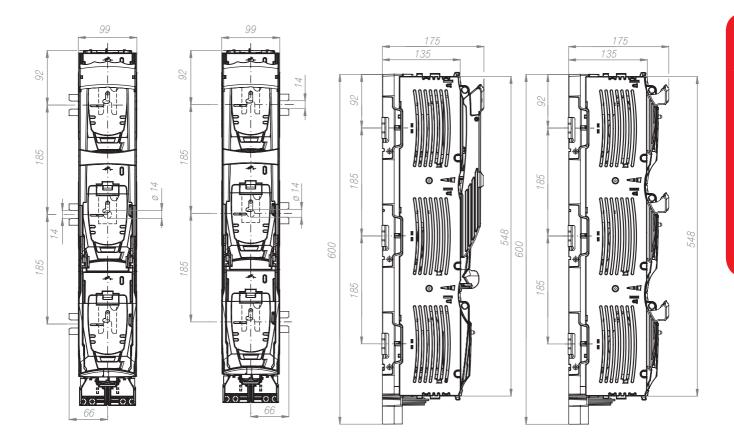




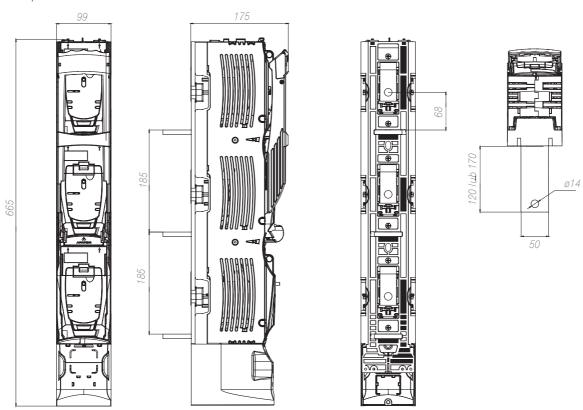




ARS 2 pro, ARS 3 pro with lateral busbar terminal

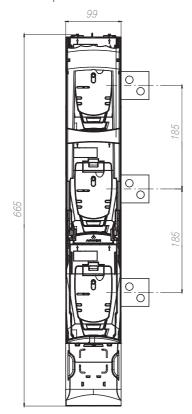


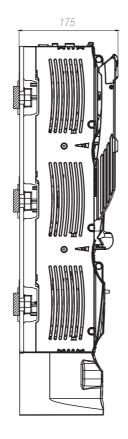
RWS 1250 NT pro

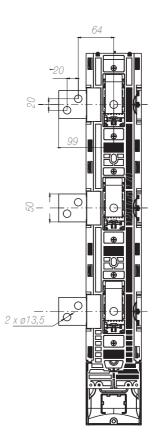




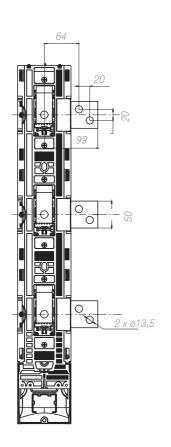
RWS 1250 NR pro

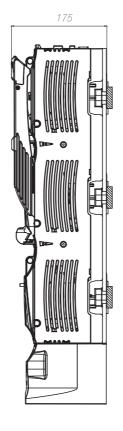


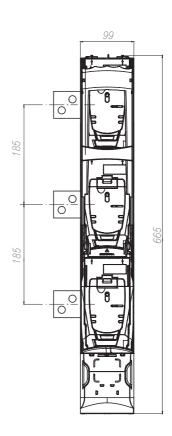




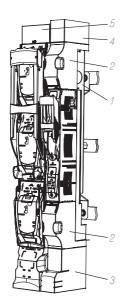
RWS 1250 NL pro







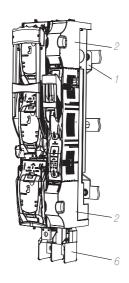
Adjusting ARS 00/100 mm, ARS 00/100 mm pro to ARS 400 A, ARS 2 pro, ARS 3 pro, ARS 630 kVA pro, RWS 1250 A pro, ARS 1250 pro



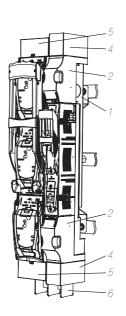




Adjusting dimensions of ARS 00/100 mm to length and depth of ARS 1, 2, 3 with terminal shroud.







Adjusting dimensions of ARS 00/100 mm to length and depth of ARS 1,2,3 without terminal shroud. Installation of extended shroud on the top and bottom of ARS 00/100 mm and label holder on the top and bottom of ARS 1,2,3 enables easy installation under distribution board's panel and Prisma enclosures.

DESCRIPTION

- 1. 63-930547-011 Single Adapter 100/185 or 63-930549-011 Double adapter 100/185
- 2. 53-945924-011 terminal shroud
- 3. 51-823244-011 Extended terminal shroud
- 4. 51-945857-011 Extended terminal shroud
- 5. 53-945826-011 Label holder
- 6. 51-930272-011 Cable terminal protective cover





	00, ARS 00 /100 mm		00/100 mm		
W - 00	M8 terminal screw, for connection of conductors with lug terminal (set - 3 pcs.)	53-945333-011	Labelling area		
1361400006T	Busbar shroud (polycarbonate) for busbar system 185 mm, Width 50 mm, length 562 mm, thickness 3 mm		Terminal shroud/adjusting shroud.		
1361400001T	Isolating pin for fixing the 50 mm busbar shroud, M8 (set – 2 pcs.)	53-945924-011	When fixed on top and bottom of ARS 00/100 mm it adjusts it's length and height to length and height of ARS 1, 2, 3 enclosure		
1115718002T	Current transformer APA-W10 Accuracy class 1; 0,5 Ratios: 125/5 A, 150/5 A Technical parameters in the catalogue: "Low voltage current transformers".	51-823244-011	Extended terminal shroud/adjusting shroud. Together with two shrouds 53-945924-011 it adjusts the length and height of ARS 00/100 mm to that		
1115718010T	Distance sleeve for current transformer APA-W10 (Length 36 mm, outer diameter = 22,5 mm, inner diameter = 12,5 mm)	<u> </u>	of ARS 1, 2, 3 with terminal shroud Extended terminal shroud/adjusting		
S-00	S-Bridge clamp – fixed with 2 x M5 screw - for connection of conductors with cross-section 4 mm² up to 70 mm² (set – 3 pcs.)	51-945857-011	shroud. When fixed to shroud 53-945924-011it adjusts the length and height of ARS 00/100 mm to that of ARS 1, 2, 3 with label holder 53-945826-011. It allows installation of ARS 00/100 mm in Prisma		
00-SV 1115281034	V-shape clamp – S-bridge clamp + V-shape saddle - for connection of sector-shaped conductors with cross-section 1,5 up to 70 mm² (stranded) or 95 mm² (solid) (set - 3 pcs.)	1115281021T	enclosures Single adapter 100/185 enabling to install ARS 00/100 mm on busbar system 185 mm		
1115281041T	Universal earthing device for ARS 00, 1, 2, 3	1115281022T	Double adapter 100/185 enabling to install two ARS 00/100 mm units		
25-120 SW 1119510008T	V- clamp 25-120 SW. For connection of conductor with cross-section:	1115	on busbar system 185 mm		
25-12 11195	16 - 95 mm ² • 16 - 95 mm ² •	ARS 0	0 0		
1119510077T	25 - 120 mm ² ◆ 25 - 120 mm ² ◆ V- clamp HM-10-120. For connection of conductor with cross-section: 10 - 70 mm ² ◆ 10 - 70 mm ² �	51-945160-011 (Nr dot. 1 szt.)	Single distance adapter 185/185. It adjusts front line of ARS 00 to that of ARS 1,2,3 (set – 3 pcs.)	7 7 7	
-	25 - 120 mm² • 25 - 95 mm² •				
53-945361-011	Hooked clamps for installation of ARS on to busbar system without drilled holes. (set - 3 pcs.)	52-945158-011 (Nr dot. 1 szt.)	Double distance adapter 185/185. Designed for two ARS 00 units. It adjusts front line of ARS 00 to that of ARS 1,2,3 (set – 3 pcs.)		
ARS (00/100 mm				
1115296049	Micro switch for fuse link cover position monitoring (0-1) of ARS 00/100mm	51-823342-011	Terminal shroud	₩ P	
1115281081T	support angle for installation of Busbar shroud	53-945361-041	Hooked clamps for installation of ARS pro with heightened rails on to busbar system without drilled holes. (set - 3 pcs.)	77	

ARS 4	00 A, ARS 2 pro, ARS 3 pro, ARS 630 kVA pro, ARS 1250 pro	ARS 4	400 A, ARS 2 pro, ARS 3 pro, ARS 630 k	VA pro, ARS 1250 pro
Σ	M10 terminal screw: for ARS 1 and ARS 2 M12 terminal screw: for ARS 3; for connection of conductors with lug terminal (set- 3pcs)	1361400007T	Busbar shroud (polycarbonate) for busbar system 185 mm, Width 100 mm, length 562 mm, thickness 3 mm	
35-300 SW-B 1119510081T	V- clamp. For connection of conductor with cross-section: 35 - 120 mm² 35 - 240 mm² 35 - 300 mm² 35 - 3	1 361400002T	Isolating pin for fixing the 50 mm busbar shroud, M12 (set – 2 pcs.)	
HS 35-300-C 1119510084T	V- clamp. For connection of conductor with cross-section: 35 - 185 mm ² 35 - 240 mm ²		Extended terminal shroud.	
2/35-300SW-B 1119510082T	35 - 240 mm² ◆ 35 - 300 mm² ◆ Double V-clamp. For connection of two conductors with cross-section:	51-930313-011	For use with terminal shroud 51-930271-021	
	35 - 185 mm² ※ 35 - 240 mm² ● 35 - 240 mm² ● V-clamp HS (steel)	l 51-930272-011	Terminal protective cover	
HS 2/35-240-C 1119510085T	for connection of two conductors with cross-section 35 - 185 mm ² 35 - 240 mm ² 35 - 300 mm ²			lear)
	Cable terminal 2x240 mm ² Cable terminal for connection	51-930271-021	Terminal shroud	
53-931200-001	of two cables with lug terminals and cross-section of 240 mm² to each phase Set contains two M12 screws per terminal and cable terminal shroud. For use with ARS 2 pro, ARS 3 pro, ARS 400 with M terminals	1115718006T	Current transformer APA-W12 ratios: 125/5 A 150/5 A 200/5 A 300/5 A 400/5 A dimensions: a = 60 mm, b = 30 mm, c = 81 mm Accuracy class*=1; 0,5; 0,5s; 0,2; 0,2s*-depending on the version Technical parameters in the catalogue: "Low voltage current transformers".	
53-931201-001	Cable terminal 3x120 mm² Cable terminal for connection of three cables with lug terminals and cross-section of 120 mm² to each phase Set contains three M12 screws	115718010T	Distance sleeve for current transformer APA-W12 Length 36 mm, outer diameter = 22,5 mm, inner diameter = 12,5 mm	
53-93	per terminal and cable terminal shroud. For use with ARS 2 pro, ARS 3 pro, ARS 400 with M terminals	 1115281041T	Universal earthing device for ARS 00, 1, 2, 3	
1115281037T	Hooked clamps for installation of ARS 1, 2, 3 on to busbar system without drilled holes (set - 3 pcs.)	53-945826-01	Label holder	



