



# smartARS pro

## vertical fuse switch disconnectors

- thermoplastics of VO flammability class
- double clearance between open contacts
- arc chambers with deionization plates over every contact
- fast installation using PPN technology
- remote monitoring
- built-in current transformers
- adapted to existing assembly systems
- reversibility - top/bottom cable terminal connection
- wide range of accessories

## GENERAL INFORMATION

**smartARS pro** vertical fuse switch disconnectors are designed for distribution of electricity and protection against short circuits and overloads in three phase alternative current circuits. They are intended for direct installation on horizontal or vertical busbar systems.

**smartARS pro** fuse switch disconnectors meet technical requirements of polish and european electricity boards and are conformed with EN 60947-1, EN 60947-3, IEC 60947-1, IEC 60947-3 standards. **smartARS pro** fuse switch disconnectors

are dedicated for applications which require reliability and safety like low voltage distribution boards installed in transformer substations, industrial low voltage assemblies and cable cabinets. Design of **smartARS pro** fuse switch disconnectors provides clearly visible, safe gap in the current circuit after the fuse link removal.

**smartARS pro** fuse switch disconnectors are designed to perform the following functions:

- protection,
- energy distribution,
- earthing,
- switching,
- touch protection.

## CONSTRUCTION

**smartARS pro** 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.

**smartARS pro** fuse switch disconnectors are available in following sizes (according to rated current): 00 (160 A); 2 (400 A); 3 (630 A).

**smartARS pro** fuse switch disconnectors are designed for installation on to 185 mm busbar system.

All plastic parts of fuse switch disconnector **smartARS pro** are made of halogen free, fibre glass strengthened, self extinguishing materials. Thanks to the application of flame retardants the highest flammability class – V0 was achieved. Fuse switch disconnectors made from such thermoplastics self-extinguish in specified time after ignition source is removed. Also dripping of flaming parts of plastic does not occur.

Silver plated contacts provide low power loss. Depending on clamp type, **smartARS pro** fuse switch disconnectors enable user to connect circular or sector-shaped conductors with bare ends or conductors with lug terminals. Arc chambers equipped with steel deionization plates are installed over each contact. **smartARS pro** fuse switch disconnector are designed for using current transformers and ammeters. Protection degree of IP30 from the front is provided. In opened position **smartARS pro** provide protection degree IP20. Additionally offered accesories enable to install **smartARS pro** fuse switch disconnectors of different sizes on common busbar systems and facilitate operation. All sizes of **smart ARS pro** fuse switch disconnectors are provided complete with clamps (i. e. screws, V-terminals, 2Vterminals) and shrouds for cable terminals.

Table 1. Main technical data of smartARS pro

Parameter			smartARS 00 pro	smartARS 2 pro	smartARS 3 pro
Rated thermal current $I_{th}=I_n$ with fuse links		A	160	400	630
Rated voltage $U_n$		V	690	690	690
Utilization category	690 V	AC-22B	AC-22B	AC-22B	AC-21B
	500 V				AC-22B
	400 V	AC-23B	AC-23B	AC-23B	AC-23B
Rated switching current $I_e$		A	160	400	630
Rated short-circuit making current	690 V	kA	80	100	80
	500 V		100	120	120
	400 V				
Rated short-circuit withstand current	690 V	kA	80	100	80
	500 V		100	120	120
	400 V				
Rated insulation voltage $U_i$		V	1000	1000	1000
Rated impulse withstand voltage $U_{imp.}$		kV	12	12	12
Rated frequency		Hz	50-60	50-60	50-60
Mechanical durability		Number of cycles	1600	1000	1000
Electrical durability			200	200	200
IP degree of protection		-	30	30	30
Fuse links size		-	00	1,2	3

## 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°.

## FUNCTIONALITY

- making and breaking operations should be done with determined movement,
- parallelly moving, double contact system,
- designed for installation on 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 (smartARS00 pro), 100 mm (smartARS 2,3 pro),
- suitable for top cable terminal connection,
- possible connection of conductors with lug terminals (screw terminals) or circular/sector-shaped conductors with bare ends (V-terminals, 2V-terminals) using V-clamps,
- voltage test is performed through test holes,
- possible installation of earthing device,
- fast installation using PPN technology,
- remote monitoring,
- built-in current transformers,
- adapted to existing assembly systems.

## FUSE SWITCH DISCONNECTOR smartARS 00 pro (160 A, 690 V)

For installation on to 185 mm busbar system

Fuse switch disconnectors width 50 mm

Switching: three poles simultaneously - operation with two hands or single pole switching

Table 2. Technical data

Parameter		smartARS 00 pro	
Rated thermal current $I_{th}=I_n$	A	160	
Rated thermal current $I_{th}=I_n$ with solid links	A	210	
Rated voltage $U_n$	V	690	
Utilization category	-	AC-22B	AC-23B
		690	400
Rated switching voltage $U_e$	V	690	
Rated switching current $I_e$	A	160	
Rated short circuit making current	690 V	kA	80
	500 V		100
Rated short circuit withstand current	690 V	kA	80
	500 V		100
Rated insulation voltage $U_i$	V	1000	
Rated impulse withstand voltage $U_{imp.}$	kV	12	
Rated frequency	Hz	50-60	
Mechanical durability	Number of cycles	1600	
Electrical durability		200	
IP degree of protection	-	30	
Fuse links size	-	00	

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smartARS 00-1 pro





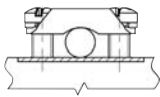

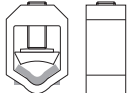

smartARS 00-3 pro

Table 3. Versions

Version		Weight	Article No.
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>			
smartARS 00-1-V pro	cable terminals: V-terminals: V-clamps 25-150SW	2,5 kg	63-001414-001
smartARS 00-1 pro	cable terminals: bridge terminals (S) 4-70mm <sup>2</sup> , M8 screw terminals	2,4 kg	63-001414-002
<b>for installation on 185 mm busbar system, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 00-3-V pro	cable terminals: V-terminals: V-clamps 25-150SW	2,6 kg	63-001415-001
smartARS 00-3 pro	cable terminals: bridge terminals (S) 4-70mm <sup>2</sup> , M8 screw terminals	2,5 kg	63-001415-002
<b>smartARS 00 pro version with adjusted to front line and terminal cover of ARS 2,3 without using adapters</b>			
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>			
smartARS 00-1-V pro	cable terminals: V-terminals: V-clamps 25-150SW	2,6 kg	63-002070-001
smartARS 00-1 pro	cable terminals: bridge terminals (S) 4-70mm <sup>2</sup> , M8 screw terminals	2,5 kg	63-002070-002
<b>for installation on 185 mm busbar system, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 00-3-V pro	cable terminals: V-terminals: V-clamps 25-150SW	2,7 kg	63-002071-001
smartARS 00-3 pro	cable terminals: bridge terminals (S) 4-70mm <sup>2</sup> , M8 screw terminals	2,6 kg	63-002071-002
<b>smartARS 00 pro version with fast installation modules using PPN technology</b>			
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>			
smartARS 00-1-V SM pro	cable terminals: V-terminals: V-clamps 25-150SW	2,7 kg	63-001899-001
smartARS 00-1 SM pro	cable terminals: bridge terminals (S) 4-70mm <sup>2</sup> , M8 screw terminals	2,6 kg	63-001899-002

Version		Weight	Article No.
<b>for installation on 185 mm busbar system, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 00-3-V SM pro	cable terminals: V-terminals: V-clamps 25-150SW	2,9 kg	63-001904-001
smartARS 00-3 SM pro	cable terminals: bridge terminals (S) 4-70mm <sup>2</sup> , M8 screw terminals	2,8 kg	63-001904-002

Table 4. smartARS 00 pro terminal clamps

Description	smartARS 00 pro			
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 <sup>2</sup>	Lug terminal max 185 mm <sup>2</sup>	re ● 16 mm <sup>2</sup> - 95 mm <sup>2</sup>	re ● 10 mm <sup>2</sup> - 70 mm <sup>2</sup>
			se ◆ 25 mm <sup>2</sup> - 150 mm <sup>2</sup>	se ◆ 25 mm <sup>2</sup> - 120 mm <sup>2</sup>
			rm ⊗ 16 mm <sup>2</sup> - 95 mm <sup>2</sup>	rm ⊗ 10 mm <sup>2</sup> - 70 mm <sup>2</sup>
			sm ⊕ 25 mm <sup>2</sup> - 150 mm <sup>2</sup>	sm ⊕ 25 mm <sup>2</sup> - 95 mm <sup>2</sup>
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

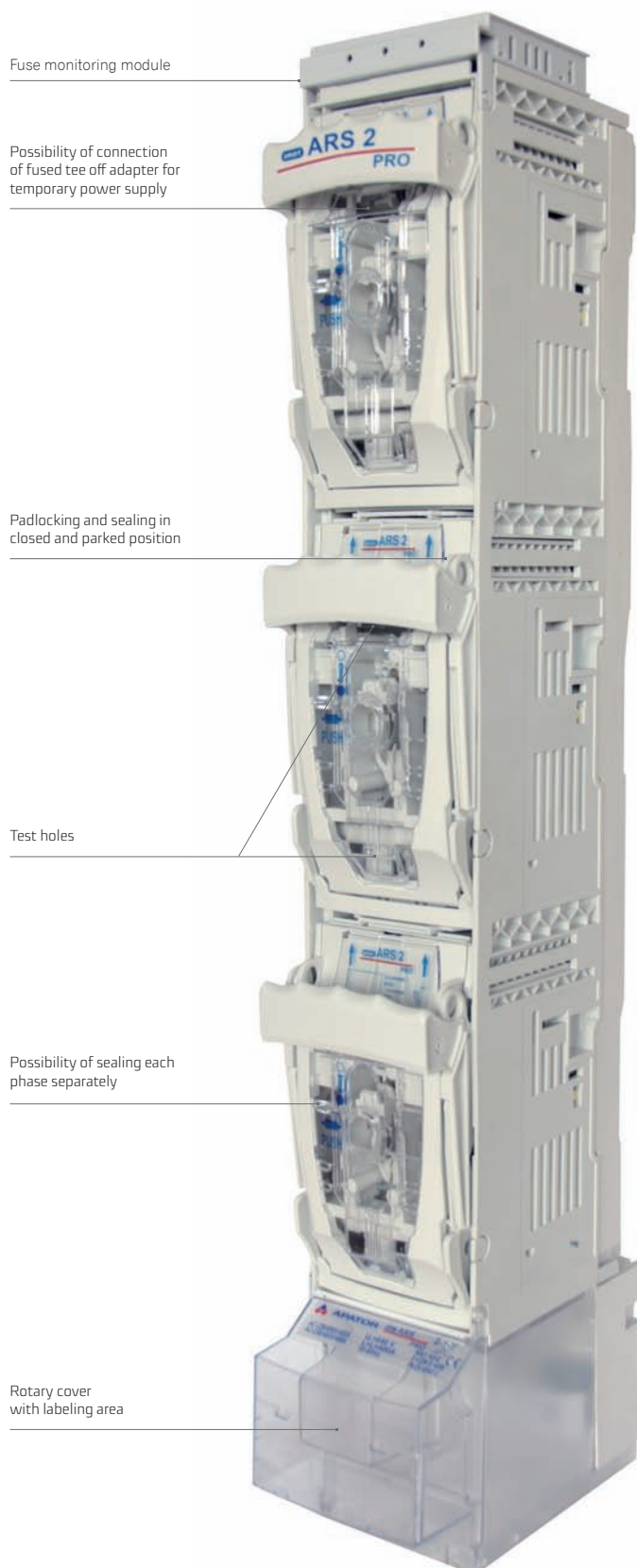
Apator takes responsibility for technical quality of V-terminals manufactured only by the company. Minimum tightening torque (M8 screw) for screws fixing fuse switch disconnector to busbar system – 12 Nm, recommended tightening torque for screws and nuts with property class 8.8 – 21 Nm.

## FUSE SWITCH DISCONNECTOR smartARS 2 pro (400 A, 690 V) smartARS 3 pro (630 A, 690 V)

For installation on to 185 mm busbar system

Fuse switch disconnecter's width 100 mm

3- pole switching - 3 phases simultaneously or 1-pole switching - each phase separately





## smartARS 2 pro (400 A, 690 V)

Fuse switch disconnecter designed for operation with NH1 and NH2 fuse links



smartARS 2-1-M pro

smartARS 2-6-M pro

Table 5. Technical data

Parameter		smartARS 2 pro	
Rated thermal current $I_{th}$ with fuse links	A	250(NH1), 400(NH2)	
Rated thermal current $I_{th}$ with solid links	A	600	
Rated voltage $U_n$	V	690	
Utilization category	-	AC-22B	AC-23B
Rated switching voltage $U_e$	V	690	400
Rated switching current $I_e$	A	250(NH1), 400(NH2)	
Rated short circuit making current	$U_e=690\text{ V}$	kA	100
	$U_e=500\text{ V}$	kA	120
Rated short circuit withstand current	$U_e=690\text{ V}$	kA	100
	$U_e=500\text{ V}$	kA	120
Rated insulation voltage $U_i$	V	1000	
Rated impulse withstand voltage $U_{imp.}$	kV	12	
Rated frequency	Hz	50-60	
Mechanical durability	Number of cycles	1000	
Electrical durability	Number of cycles	200	
IP degree of protection	-	30	
Fuse links size	-	1,2	

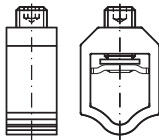
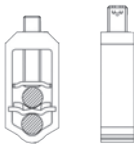
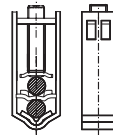













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Table 6. Versions

Version		Weight	Article No.
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>			
smartARS 2-1-V pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	5,8 kg	63-001340-001
smartARS 2-1-M pro	cable terminals: screw terminals: pressed nuts M12	5,7 kg	63-001340-003
smartARS 2-1-2V pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,4 kg	63-001340-005
<b>for installation on 185 mm busbar system, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 2-6-V pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	5,8 kg	63-001341-001
smartARS 2-6-M pro	cable terminals: screw terminals: pressed nuts M12	5,7 kg	63-001341-003
smartARS 2-6-2V pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,4 kg	63-001341-005
<b>smartARS 2 pro version equipped with modules for fast installation using PPN technology</b>			
<b>for installation on 185 mm busbar system, fast installation modules equipped with screws, ONE POLE SWITCHING - each phase independently</b>			
smartARS 2-1-V SM pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,2 kg	63-001340-201
smartARS 2-1-M SM pro	cable terminals: screw terminals: pressed nuts M12	6,1 kg	63-001340-203
smartARS 2-1-2V SM pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,8 kg	63-001340-205
<b>for installation on 185 mm busbar system, fast installation modules equipped with screws, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 2-6-V SM pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,2 kg	63-001341-201
smartARS 2-6-M SM pro	cable terminals: screw terminals: pressed nuts M12	6,1 kg	63-001341-203
smartARS 2-6-2V SM pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,8 kg	63-001341-205

Version	Weight	Article No.
<b>for installation on 185 mm busbar system, fast installation modules equipped with hooked clamps, ONE POLE SWITCHING - each phase independently</b>		
smartARS 2-1-V SMH pro    cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,4 kg	63-001340-401
smartARS 2-1-M SMH pro    cable terminals: screw terminals: pressed nuts M12	6,3 kg	63-001340-403
smartARS 2-1-2V SMH pro    cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,0 kg	63-001340-405
<b>for installation on 185 mm busbar system, fast installation modules equipped with hooked clamps, THREE POLE SWITCHING - all phases simultaneously</b>		
smartARS 2-6-V SMH pro    cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,4 kg	63-001341-401
smartARS 2-6-M SMH pro    cable terminals: screw terminals: pressed nuts M12	6,3 kg	63-001341-403
smartARS 2-6-2V SMH pro    cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,0 kg	63-001341-405

Table 7. smartARS 2 pro terminal clamps

Description	smartARS 2-x-V pro		smartARS 2-x-2V pro		smartARS 2-x-2V pro		smartARS 2-x-M pro
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 mm <sup>2</sup> 	35 - 240 mm <sup>2</sup> 	50 - 185 mm <sup>2</sup> 	50 - 240 mm <sup>2</sup> 	50 - 185 mm <sup>2</sup> 	50 - 240 mm <sup>2</sup> 	
	35 - 240 mm <sup>2</sup> 	35 - 300 mm <sup>2</sup> 	50 - 240 mm <sup>2</sup> 	50 - 300 mm <sup>2</sup> 	50 - 240 mm <sup>2</sup> 	50 - 300 mm <sup>2</sup> 	
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  
 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 – 32 Nm, recommended tightening torque for screws and nuts with property class 8.8 – 56 Nm.



## smartARS 3 pro (630 A, 690 V)



smartARS 3-1-M pro    smartARS 3-6-M pro

Table 8. Technical data

Parameter		smartARS 3 pro		
Rated thermal current $I_{th}$ with fuse links	A	630		
Rated thermal current $I_{th}$ with solid links	A	750		
Rated voltage $U_n$	V	690		
Utilization category	-	AC-23B	AC-22B	AC-21B
Rated switching voltage $U_e$	V	400	500	690
Rated switching current $I_e$	A	630		
Rated short circuit making current	690 V	80		
	500 V	120		
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 of cycles	1000		
Electrical durability		200		
IP degree of protection	-	30		
Fuse links size	-	3		

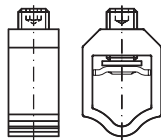
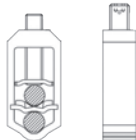
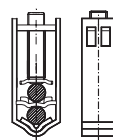













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Table 9. Versions

Version		Weight	Article No.
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>			
smartARS 3-1-V pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,6 kg	63-001340-002
smartARS 3-1-M pro	cable terminals: screw terminals: pressed nuts M12	6,5 kg	63-001340-004
smartARS 3-1-2V pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,2 kg	63-001340-006
<b>for installation on 185 mm busbar system, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 3-6-V pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,6 kg	63-001341-002
smartARS 3-6-M pro	cable terminals: screw terminals: pressed nuts M12	6,5 kg	63-001341-004
smartARS 3-6-2V pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,2 kg	63-001341-006
<b>smartARS 2 pro version equipped with modules for fast installation using PPN technology</b>			
<b>for installation on 185 mm busbar system, fast installation modules equipped with screws, ONE POLE SWITCHING - each phase independently</b>			
smartARS 3-1-V SM pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	7,0 kg	63-001340-202
smartARS 3-1-M SM pro	cable terminals: screw terminals: pressed nuts M12	6,9 kg	63-001340-204
smartARS 3-1-2V SM pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,6 kg	63-001340-206
<b>for installation on 185 mm busbar system, fast installation modules equipped with screws, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 3-6-V SM pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	7,0 kg	63-001341-202
smartARS 3-6-M SM pro	cable terminals: screw terminals: pressed nuts M12	6,9 kg	63-001341-204
smartARS 3-6-2V SM pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,6 kg	63-001341-206
<b>for installation on 185 mm busbar system, fast installation modules equipped with hooked clamps, ONE POLE SWITCHING - each phase independently</b>			
smartARS 3-1-V SMH pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	7,2 kg	63-001340-402
smartARS 3-1-M SMH pro	cable terminals: screw terminals: pressed nuts M12	7,1 kg	63-001340-404
smartARS 3-1-2V SMH pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,8 kg	63-001340-406

Version	Weight	Article No.
<b>for installation on 185 mm busbar system, fast installation modules equipped with hooked clamps, THREE POLE SWITCHING - all phases simultaneously</b>		
smartARS 3-6-V SMH pro cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	7,2 kg	63-001341-402
smartARS 3-6-M SMH pro cable terminals: screw terminals: pressed nuts M12	7,1 kg	63-001341-404
smartARS 3-6-2V SMH pro cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,8 kg	63-001341-406

Table 10. smartARS 3 pro terminal clamps

Description	smartARS 3-x-V pro		smartARS 3-x-2V pro		smartARS 3-x-2V pro		smartARS 3-x-M pro
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 disconnecter 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

Apator takes responsibility for technical quality of V-terminals manufactured only by the company. Minimum tightening torque (M8 screw) for screws fixing fuse switch disconnecter to busbar system – 32 Nm, recommended tightening torque for screws and nuts with property class 8.8 – 56 Nm.

## FUSE SWITCH DISCONNECTOR smartARS pro with lateral busbar terminals

(separation, coupling of busbar systems)



smartARS 2-1-NR pro

Table 11. Technical data


Parameter			smartARS 2 pro	smartARS 3 pro	
Rated thermal current I <sub>th</sub> with fuse links			A	400	630
Rated voltage U <sub>n</sub>			V	690	690
Utilization category	690 V	-	AC-22B	AC-21B	
	500 V			AC-22B	
	400 V		AC-23B	-	
Rated switching current I <sub>e</sub>			A	400	630
Rated short circuit making current	600 V	kA	100	80	
	500 V		120	120	
	400 V				
Rated short circuit withstand current	600 V	kA	100	80	
	500 V		120	120	
	400 V				
Rated insulation voltage U <sub>i</sub>			V	1000	1000
Rated impulse withstand voltage U <sub>imp</sub>			kV	12	12
Rated frequency			Hz	50-60	50-60
Mechanical durability			Number of cycles	1000	1000
Electrical durability				200	200
IP degree of protection			-	30	30
Fuse links size			-	1,2	3

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Table 12. Versions with lateral busbar terminals

Version		Weight	Article No.
<b>Fuse switch disconnectors smartARS 2 pro - 400A</b>			
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>			
smartARS 2-1 NL pro	cable terminals: screw terminals : pressed nuts M12; lateral busbar terminals - left side	5,1 kg	63-002045-001
smartARS 2-1 NR pro	cable terminals: screw terminals : pressed nuts M12; lateral busbar terminals - right side	5,1 kg	63-002045-003
<b>for installation on 185 mm busbar system, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 2-6 NL pro	cable terminals: screw terminals : pressed nuts M12; lateral busbar terminals - left side	5,1 kg	63-002046-001
smartARS 2-6 NR pro	cable terminals: screw terminals : pressed nuts M12; lateral busbar terminals - right side	5,1 kg	63-002046-003
<b>Fuse switch disconnectors smartARS 3 pro - 630 A</b>			
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>			
smartARS 3-1 NL pro	cable terminals: screw terminals : pressed nuts M12; lateral busbar terminals - left side	5,9 kg	63-002045-002
smartARS 3-1 NR pro	cable terminals: screw terminals : pressed nuts M12; lateral busbar terminals - right side	5,9 kg	63-002045-004
<b>for installation on 185 mm busbar system, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 3-6 NL pro	cable terminals: screw terminals : pressed nuts M12; lateral busbar terminals - left side	5,9 kg	63-002046-002
smartARS 3-6 NR pro	cable terminals: screw terminals : pressed nuts M12; lateral busbar terminals - right side	5,9 kg	63-002046-004

Table 13. smartARS 2,3 pro with lateral busbar terminals - terminal clamps

Description	smartARS 2-x-NL pro	smartARS 2-x-NR pro	smartARS 3-x-NL pro	smartARS 3-x-NR pro
Clamp	screw M12	screw M12	screw M12	screw M12
Picture of clamp				
Lateral busbar terminals	Left side	Right side	Left side	Right side
Tightening torque	56 Nm	56 Nm	56 Nm	56 Nm

## Fuse monitoring module

The fuse switch disconnecter can be equipped with device that allows indication of the current state of the fuse links. Information about fuse link burnout, correct operation or power failure are indicated by diode light signal or can be transferred to any automation protection system, through the relay contacts.

### Description of operation of the fuse monitoring module

- diode is green - correct operation, fuse link works correctly
- diode is red - failure, fuse link operated
- diode is red; blinking - phase shift (another phase voltage was detected at the fuse link outgoing contact)
- diodes off - module switched off / no power supply

### Nominal parameters

- Voltage value for cable test
- Minimum operating voltage
- Maximum operating voltage
- $U_{imp}$  impulse withstand voltage with operated fuse link
- $U_{imp}$  between phases
- $U_{imp}$  between main circuit / relay contacts
- Temperature range
- Rated insulation voltage  $U_i$

2,5 kV DC

200 V

690 V

4 kV

4 kV

3,5 kV

-40...+85°C

1000 V



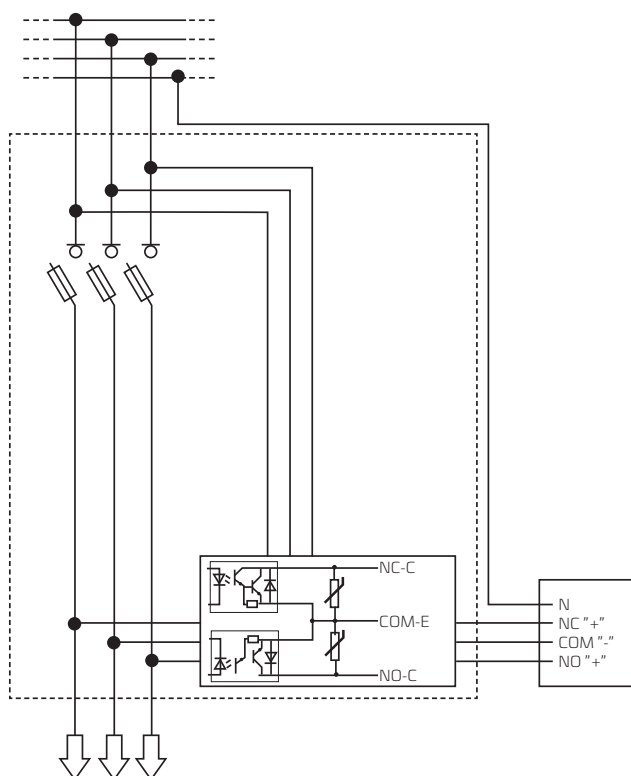
smartARS 2-1-M-X pro smartARS 00-1-V-X-E pro

### Module outputs:

- Rated current
- Maximum switching voltage

100 mA

50 V DC



Fuse links state (resultant)	output NO	output NC	diode colour
correct operation	„0“ (0V)	„1“ (24V)	green
failure	„1“ (24V)	„0“ (0V)	red

The transport outputs can be supplied with a DC voltage of up to 50 V with current limitation to max. 100mA

Minus should be connected directly to the common terminal, outputs should be connected through the load to the plus.

Table 14. Versions with electronic fuse monitoring module

Version	Weight	Article No.
<b>Fuse switch disconnectors smartARS 00 pro - 160A</b>		
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>		
smartARS 00-1-V-X-E pro cable terminals: V-terminals: V-clamps 25-150SW + hooked clamps	3,1 kg	63-001606-201
<b>Fuse switch disconnectors smartARS 2 pro - 400A</b>		
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>		
smartARS 2-1-V-X pro cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	5,9 kg	63-001340-601
smartARS 2-1-M-X pro cable terminals: screw terminals: pressed nuts M12	5,8 kg	63-001340-603
smartARS 2-1-2V-X pro cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,5 kg	63-001340-605
smartARS 2-1-V-X-E pro cable terminals: V-terminals + M12 screws for fixing to busbar system	6,0 kg	63-811830-201
<b>for installation on 185 mm busbar system, THREE POLE SWITCHING - all phases simultaneously</b>		
smartARS 2-6-V-X pro cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	5,9 kg	63-001341-601
smartARS 2-6-M-X pro cable terminals: screw terminals: pressed nuts M12	5,8 kg	63-001341-603
smartARS 2-6-2V-X pro cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,5 kg	63-001341-605
<b>smartARS 2 pro version equipped with modules for fast installation using PPN technology</b>		
<b>for installation on 185 mm busbar system, fast installation modules equipped with screws, ONE POLE SWITCHING - each phase independently</b>		
smartARS 2-1-V SM-X pro cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,3 kg	63-001340-701
smartARS 2-1-M SM-X pro cable terminals: screw terminals: pressed nuts M12	6,2 kg	63-001340-703
smartARS 2-1-2V SM-X pro cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,9 kg	63-001340-705
<b>for installation on 185 mm busbar system, fast installation modules equipped with screws, THREE POLE SWITCHING - all phases simultaneously</b>		
smartARS 2-6-V SM-X pro cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,5 kg	63-001341-701
smartARS 2-6-M SM-X pro cable terminals: screw terminals: pressed nuts M12	6,4 kg	63-001341-703
smartARS 2-6-2V SM-X pro cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,9 kg	63-001341-705
<b>for installation on 185 mm busbar system, fast installation modules equipped with hooked clamps, ONE POLE SWITCHING - each phase independently</b>		
smartARS 2-1-V SMH-X pro cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,5 kg	63-001340-801
smartARS 2-1-M SMH-X pro cable terminals: screw terminals: pressed nuts M12	6,4 kg	63-001340-803
smartARS 2-1-2V SMH-X pro cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,9 kg	63-001340-805
<b>for installation on 185 mm busbar system, fast installation modules equipped with hooked clamps, THREE POLE SWITCHING - all phases simultaneously</b>		
smartARS 2-6-V SMH-X pro cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,5 kg	63-001341-801
smartARS 2-6-M SMH-X pro cable terminals: screw terminals: pressed nuts M12	6,4 kg	63-001341-803
smartARS 2-6-2V SMH-X pro cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	6,9 kg	63-001341-805

<b>Fuse switch disconnectors smartARS 3 pro - 630A</b>			
<b>for installation on 185 mm busbar system, ONE POLE SWITCHING - each phase independently</b>			
smartARS 3-1-V-X pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,7 kg	63-001340-602
smartARS 3-1-M-X pro	cable terminals: screw terminals: pressed nuts M12	6,6 kg	63-001340-604
smartARS 3-1-2V-X pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,3 kg	63-001340-606
<b>for installation on 185 mm busbar system, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 3-6-V-X pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	6,7 kg	63-001341-602
smartARS 3-6-M-X pro	cable terminals: screw terminals: pressed nuts M12	6,6 kg	63-001341-604
smartARS 3-6-2V-X pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,3 kg	63-001341-606
<b>smartARS 3 pro version equipped with modules for fast installation using PPN technology</b>			
<b>for installation on 185 mm busbar system, fast installation modules equipped with screws, ONE POLE SWITCHING - each phase independently</b>			
smartARS 3-1-V SM-X pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	7,1 kg	63-001340-702
smartARS 3-1-M SM-X pro	cable terminals: screw terminals: pressed nuts M12	7,0 kg	63-001340-704
smartARS 3-1-2V SM-X pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,7 kg	63-001340-706
<b>for installation on 185 mm busbar system, fast installation modules equipped with screws, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 3-6-V SM-X pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	7,1 kg	63-001341-702
smartARS 3-6-M SM-X pro	cable terminals: screw terminals: pressed nuts M12	7,0 kg	63-001341-704
smartARS 3-6-2V SM-X pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,7 kg	63-001341-706
<b>for installation on 185 mm busbar system, fast installation modules equipped with hooked clamps, ONE POLE SWITCHING - each phase independently</b>			
smartARS 3-1-V SMH-X pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	7,3 kg	63-001340-802
smartARS 3-1-M SMH-X pro	cable terminals: screw terminals: pressed nuts M12	7,2 kg	63-001340-804
smartARS 3-1-2V SMH-X pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,9 kg	63-001340-806
<b>for installation on 185 mm busbar system, fast installation modules equipped with hooked clamps, THREE POLE SWITCHING - all phases simultaneously</b>			
smartARS 3-6-V SMH-X pro	cable terminals: V-terminals: V-clamps 240 mm <sup>2</sup>	7,3 kg	63-001341-802
smartARS 3-6-M SMH-X pro	cable terminals: screw terminals: pressed nuts M12	7,2 kg	63-001341-804
smartARS 3-6-2V SMH-X pro	cable terminals: 2V-terminals: double V-clamps 240 mm <sup>2</sup>	7,9 kg	63-001341-806