



# PBS

## vertical fuse bases

- touch protection IP 20 with fuse link shrouds
- fibre glass extra strenghtened, self extinguishing thermoplastics





## GENERAL INFORMATION

PBS fuse bases are designed for the distribution of electricity and protection against short circuits and overloads in three phase alternative current circuits with maximum operating voltage of 690 V. They are intended for direct installation on horizontal or vertical bus bar system. Due to their modern and compact design installing is easy and gives much saving of space in substations and distribution boards. Each type is suitable for top cable terminal connection when installed on horizontal bus bar system. Removal of the fuse link provides clearly noticeable, large isolating distance in the circuit. Easy installation of earthing devices is another advantage.

All technical parameters required by standards and requirements of the market have been taken into account in design (conformity with EN 60269-1, HD 60269-2). Several advices and remarks from business partners have been also taken into account.

### PBS PRODUCT RANGE:

article	busbar system	$I_{th}$	width	additional info.
PBS 00/100 mm	100 mm	160 A	50 mm	-
PBS 00/100 mm with adapter 100/ 185	185 mm	160 A	50 mm	-
PBS 00-SM	185 mm	160 A	50 mm	-
PBS 1	185 mm	250 A	100 mm	-
PBS 2	185 mm	400 A	100 mm	-
PBS 3	185 mm	630 A	100 mm	-

Base of PBS fuse bases are made of fibre glass extra strenghtened, self extinguishing thermoplastics. Silver plated contacts provide low power loss. Depending on clamp type, PBS fuse bases enable user to connect circular or sector-shaped cables or cables with lug terminals. PBS fuse bases of size 1-3 could be equipped with additional fuse link shrouds providing protection degree of IP20. Additionally offered adapters enable to install PBS fuse bases of different sizes on common bus bar system. Special versions of PBS fuse bases are available on cutomers request e. g. PBS 2/400 A , PBS 3/630 A with terminals for connection of cables with crosssection of 2x240 mm<sup>2</sup>. All sizes of vertical fuse bases are provided complete with clamps (i. e. screw, S-bridge, V-shaped) and shrouds for cable terminals.

Table 24. TECHNICAL DATA OF PBS FUSE BASES

Parameters		PBS 00/100 mm	PBS 00-SM	PBS 1	PBS 2	PBS 3
Size		00	00	1	2	3
Rated thermal current $I_{th} = I_n$	A	160	160	250	400	630
Rated voltage $U_n$	V	690	690	690	690	690
Rated insulation voltage $U_i$	V	1000	1000	1000	1000	1000
Rated frequency	Hz	50-60	50-60	50-60	50-60	50-60
Rated power dissipation	W	12	12	32	45	60
Rated short-circuit withstand current	kA	100	100	100	100	100
Mechanical durability	Number of cycles	1600	1600	1600	1600	1600
Weight	kg	0,75	2,00	4,00	4,50	5,00
Protection degree IP	IP	00	00	20*	20*	20*
Size of fuse links		00	00	1	2	3

\* with fuse link shrouds

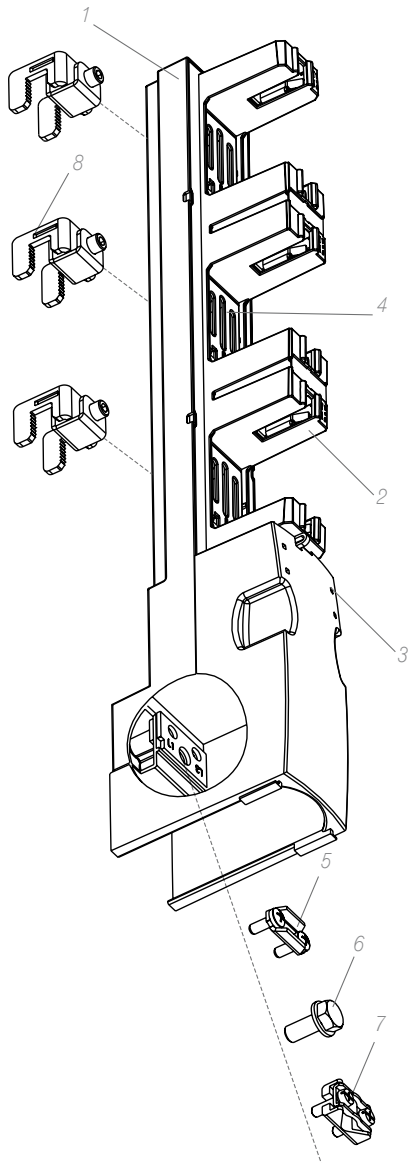
## OPERATING CONDITIONS

- 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 – but in case of use of disconnectors in temperature from +41°C to +45°C current value  $I_{th}$  should be reduced by 5% and within temperature range of +46°C to +55°C current value  $I_{th}$  should be reduced by 10% ,
- relative humidity of the air should not be higher than 50% at temperature of +40°C
- for outdoors installation PBS fuse basess should be mounted in cabinets with protection degree IP34 or higher

## FUSE BASE PBS 00/100 mm (160 A, 690 V)

100 mm busbar system

PBS 00/100 mm



### DESCRIPTION

1. Main base
2. Protective contact cover
3. Cable terminal shroud
4. Busbar terminals acces covers
5. S-bridge clamp
6. M8 screw
7. V-shaped clamp for sector-shaped conductor
8. Hooked clamp

place of installing insulating barrier

place of installing labelling clip

cable terminal shroud labelling area

PBS 00/100 mm  
PBS 00/100 mm-V



**PBS 00/100 mm (160 A, 690 V)**

Table 25. TECHNICAL DATA

Parameters		PBS 00/100 mm
Size		00
Rated thermal current $I_{th} = I_n$	A	160
Rated voltage $U_n$	V	690
Rated insulation voltage $U_i$	V	1000
Rated frequency	Hz	50-60
Rated power dissipation	W	12
Rated short-circuit withstand current	kA	100
Mechanical durability	Number of cycles	1600
Weight	kg	0,75
Protection degree IP	IP	00
Size of fuse links		00

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PBS 00/100 mm  
PBS 00/100 mm-V



PBS 00/100 mm

Table 26. VERSIONS

Article		Article No.
PBS 00/100 mm	100 mm busbar system, cable terminal: S-bridge terminals (4-70 mm <sup>2</sup> ), screw terminals (M8)	63-811627-011
PBS 00/100 mm-V	100 mm busbar system, cable terminal: V-shaped clamps (1,5-95 mm <sup>2</sup> )	63-811627-031

Table 27. PBS 00/100MM TERMINAL CLAMPS

Clamp	PBS 00/100mm		
	S-bridge clamp (2 x M5 x 25)	M8 screw*	V-shaped clamp (2 x M5 x 25)
Picture of clamp			
Drawing of clamp			
Cross-section of cable conductors	4 - 70 mm <sup>2</sup>	Cable terminal max 185 mm <sup>2</sup>	1) ● 1,5 mm <sup>2</sup> - 2,5 mm <sup>2</sup> 2) ● 4 mm <sup>2</sup> - 70 mm <sup>2</sup> ● 4 mm <sup>2</sup> - 95 mm <sup>2</sup>
Tightening torque	3 Nm**	12 Nm**	3 Nm**

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

\*\*) using of tension wrench is recommended

## FUSE BASE PBS 00-SM (160 A, 690 V)

185 mm busbar system

Table 28. TECHNICAL DATA

Parameters		PBS 00-SM
Size		00
Rated thermal current $I_{th} = I_n$	A	160
Rated voltage $U_n$	V	690
Rated insulation voltage $U_i$	V	1000
Rated frequency	Hz	50-60
Rated power dissipation	W	12
Rated short-circuit withstand current	kA	100
Mechanical durability	Number of cycles	1600
Weight	kg	2,00
Protection degree IP	IP	00
Size of fuse links		00

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PBS 00-SM  
PBS 00-V

Table 29. VERSIONS

Article		Article No.
PBS 00-SM	cable terminal: S-bridge terminals (4-70 mm <sup>2</sup> ), screw terminals (M8)	63-811411-011
PBS 00-V	cable terminal: V-shaped clamps (1,5 -95 mm <sup>2</sup> ), screw terminals (M8)	63-811411-021

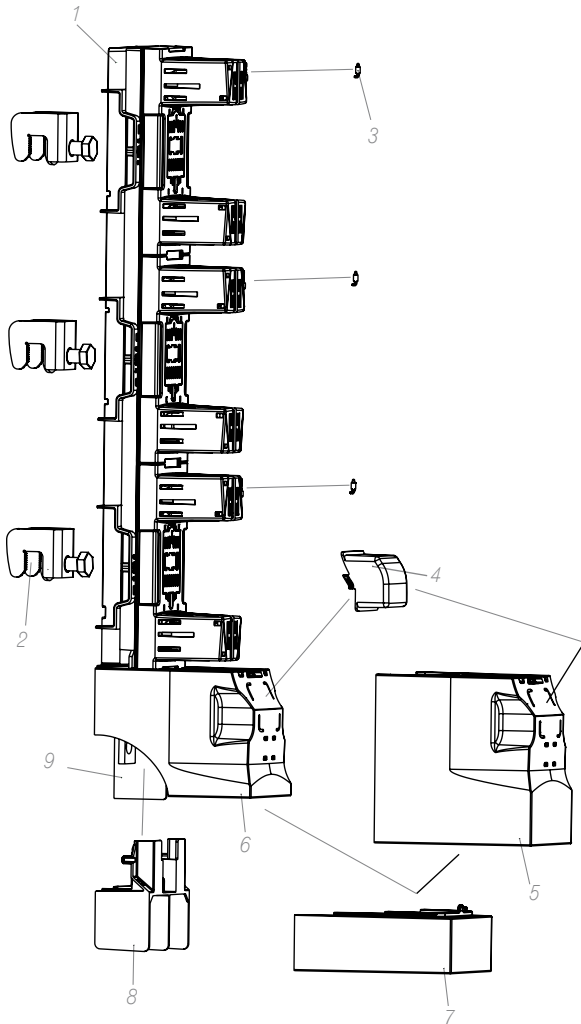
Table 30. PBS 00-SM TERMINAL CLAMPS

	PBS 00-SM		
Clamp	S-bridge clamp (2 x M5 x 25)	M8 screw M8*	V-shaped clamp (2 x M5 x 25)
Picture of clamp			
Drawing of clamp			
Cross – section of cableconductors	4 - 70 mm <sup>2</sup>	Cable terminal max 185 mm <sup>2</sup>	1) ● 1,5 mm <sup>2</sup> - 2,5 mm <sup>2</sup> 2) ● 4 mm <sup>2</sup> - 70 mm <sup>2</sup> ● 4 mm <sup>2</sup> - 95 mm <sup>2</sup>
Tightening torque	3 Nm**	12 Nm**	3 Nm**

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

\*\*\*) using of tension wrench is recommended

**FUSE BASE PBS 1 (250 A, 690 V)**  
**PBS 2 (400 A, 690 V)**  
**PBS 3 (630 A, 690 V)**



**DESCRIPTION**

1. Main base
2. Hooked clamp
3. Neon indicator tube
4. Cable terminal shroud for double V-terminal clamps (2x240mm<sup>2</sup>)
5. Cable terminal shroud
6. Cable terminal shroud
7. Bottom adjusting shroud
8. Cable terminal protective cover
9. Protective barrier

option of fuse link state indication  
by neon indicator tube

labelling area on bus bar terminals  
access covers

labelling clip

CABLE terminal shroud  
labelling area



PBS 1

PBS 2

PBS 3

## PBS 1 (250 A, 690 V)

Table 31. TECHNICAL DATA

Parameters		PBS 1
Size		1
Rated thermal current $I_{th} = I_n$	A	250
Rated voltage $U_n$	V	690
Rated insulation voltage $U_i$	V	1000
Rated frequency	Hz	50-60
Rated power dissipation	W	32
Rated short-circuit withstand current	kA	100
Mechanical durability	Number of cycles	1600
Weight	kg	4,00
Protection degree IP	IP	20*
Size of fuse links		1

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\* fuse link shrouds



PBS 1-M

PBS 1-V-O

Table 32. VERSIONS

Article		Article No.
PBS 1-V	cable terminal: V-terminal clamps (35-240 mm <sup>2</sup> )	63-811639-071
PBS 1-V-O	cable terminal: V-terminal clamps (35-240 mm <sup>2</sup> ), fuse-link shrouds	on request*
PBS 1-M	cable terminal: screw terminal (pressed nut M10)	63-811639-081
PBS 1-M-O	cable terminal: screw terminal (pressed nut M10), fuse-link shrouds	on request*

\* on customer's request, time of delivery: 2 weeks EXW Torun, Poland, Incoterms 2000

Table 33. PBS 1 TERMINAL CLAMPS

Clamp	PBS 1-V (250 A)				PBS 1-M (250 A)		
	V-terminal clamp 50-240 SW				M10 screw clamp (pressed nut)		
Drawing of clamp		Crosssection of cable conductors	V-terminal clamp to direct fixing of conductor with bare end with crosssection:			Crosssection of cable conductors	Cable terminal
			35 - 95 mm <sup>2</sup>	35 - 120 mm <sup>2</sup>			up to 150 mm <sup>2</sup>
			50 - 185 mm <sup>2</sup>	50 - 240 mm <sup>2</sup>			
Tightening torque	30 Nm				32 Nm		

busbars 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.

**PBS 2 (400 A, 690 V)**

Table 34. TECHNICAL DATA

Parameters		PBS 2
Size		2
Rated thermal current $I_{th} = I_n$	A	400
Rated voltage $U_n$	V	690
Rated insulation voltage $U_i$	V	1000
Rated frequency	Hz	50-60
Rated power dissipation	W	45
Rated short-circuit withstand current	kA	100
Mechanical durability	Number of cycles	1000
Weight	kg	4,50
Protection degree IP	IP	20*
Size of fuse links		2

Accessories on page 43

\* fuse link shrouds



PBS 2-2V

PBS 2-V-O

Table 35. VERSIONS

Article		Article No.
PBS 2-V	cable terminal: V-terminal clamps (35-240 mm <sup>2</sup> )	63-811639-011
PBS 2-V-O	cable terminal: V-terminal clamps (35-240 mm <sup>2</sup> ), fuse-link shrouds	63-811720-011
PBS 2-M	cable terminal: screw terminal (pressed nut M10)	63-811639-031
PBS 2-M-O	cable terminal: screw terminal (pressed nut M10), fuse-link shrouds	63-811720-031
PBS 2-2V	cable terminal: V-shaped terminal, double V-terminal clamps (2x 35-240 mm <sup>2</sup> )	63-811639-051
PBS 2-2V-O	cable terminal: V-shaped terminal, double V-terminal clamps (2x 35-240 mm <sup>2</sup> ), fuse-link shrouds	on request*

\* on customer's request, time of delivery: 2 weeks EXW Torun, Poland, Incoterms 2000

Table 36. PBS 2 TERMINAL CLAMPS

	PBS 2-V (400 A)		PBS 2-2V (400 A)		PBS 2-M (400 A)	
Clamp	V-terminal clamp 50-240 SW		double V-terminal clamp HS 2/50-240		M10 screw clamp (pressed nut)	
Drawing of clamp	Cross-section of cable conductors		Cross-section of cable conductors			Cable terminal
		V-terminal clamp to direct fixing of conductor with bare end with cross-section:				up to 240 mm <sup>2</sup>
	35 - 95 mm <sup>2</sup>	35 - 120 mm <sup>2</sup>	35 - 150 mm <sup>2</sup>	35 - 185 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>			
Tightening torque	30 Nm		40 Nm		32 Nm	

busbars 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.

## PBS 3 (630 A, 690 V)

Table 37. TECHNICAL DATA

Parameters		PBS 3
Size		3
Rated thermal current $I_{th} = I_n$	A	630
Rated voltage $U_n$	V	690
Rated insulation voltage $U_i$	V	1000
Rated frequency	Hz	50-60
Rated power dissipation	W	60
Rated short-circuit withstand current	kA	100
Mechanical durability	Number of cycles	1000
Weight	kg	5,00
Protection degree IP	IP	20*
Size of fuse links		3

Accessories on page 43

\* fuse link shrouds



PBS 3-2V

PBS 3-M-O

Table 38. VERSIONS

Article		Article No.
PBS 3-V	cable terminal: V-terminal clamps (70-300 SW)	63-811639-021
PBS 3-V-O	cable terminal: V-terminal clamps (70-300 SW), fuse-link shrouds	63-811720-021
PBS 3-M	cable terminal: screw terminal (pressed nut M12)	63-811639-041
PBS 3-M-O	cable terminal: screw terminal (pressed nut M12), fuse-link shrouds	63-811720-041
PBS 3-2V	cable terminal: V-shaped terminal, double V-terminal clamps (2x 35-240 mm <sup>2</sup> )	63-811639-061
PBS 3-2V-O	cable terminal: V-shaped terminal, double V-terminal clamps (2x 35-240 mm <sup>2</sup> ), fuse-link shrouds	on request*

\* on customer's request, time of delivery: 2 weeks EXW Torun, Poland, Incoterms 2000

Table 39. PBS 3 TERMINAL CLAMPS

	PBS 3-V (630 A)		PBS 3-2V (630 A)		PBS 3-M (630 A)			
Clamp	V-terminal clamp 70-300 SW		double V-terminal clamp HS 2/50-240		M10 screw clamp (pressed nut)			
Drawing of clamp	Cross-section of cable conductors		Cross-section of cable conductors			Cable terminal		
		V-terminal clamp to direct fixing of conductor with bare end with cross-section:				up to 300 mm <sup>2</sup>		
		50 - 120 mm <sup>2</sup>		70 - 150 mm <sup>2</sup>			35 - 150 mm <sup>2</sup>	35 - 185 mm <sup>2</sup>
	70 - 240 mm <sup>2</sup>	95 - 300 mm <sup>2</sup>	50 - 185 mm <sup>2</sup>	50 - 240 mm <sup>2</sup>				
Tightening torque	30 Nm		40 Nm		56 Nm			

busbars 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.

## PBS FUSE BASE WITH LATERAL BUS BAR TERMINAL

(separation, coupling of bus bar systems)

Table 40. TECHNICAL DATA

Parameters		PBS 1	PBS 2	PBS 3
Size		1	2	3
Rated thermal current $I_{th} = I_n$	A	250	400	630
Rated voltage $U_n$	V	690	690	690
Rated insulation voltage $U_i$	V	1000	1000	1000
Rated frequency	Hz	50-60	50-60	50-60
Rated power dissipation	W	32	45	60
Rated short-circuit withstand current	kA	100	100	100
Mechanical durability	Number of cycles	1000	1000	1000
Weight	kg	4,00	4,50	5,00
Protection degree IP	IP	20*	20*	20*
Size of fuse links		1	2	3

Accessories on page 43

\* fuse link shrouds



PBS 2-NR

PBS 3-NL

Table 41. VERSIONS

Article		Article No.
PBS 1-NL	lateral bus bar terminal - left side, screw terminal (M12)	63-811673-051
PBS 1-NL-O	lateral bus bar terminal - left side, screw terminal (M12), fuse-link shrouds	on request*
PBS 1-NR	lateral bus bar terminal - right side, screw terminal (M12)	63-811673-061
PBS 1-NR-O	lateral bus bar terminal - right side, screw terminal (M12), fuse-link shrouds	on request*
PBS 2-NL	lateral bus bar terminal - left side, screw terminal (M12)	63-811673-011
PBS 2-NL-O	lateral bus bar terminal - left side, screw terminal (M12), fuse-link shrouds	on request*
PBS 2-NR	lateral bus bar terminal - right side, screw terminal (M12)	63-811673-031
PBS 2-NR-O	lateral bus bar terminal - right side, screw terminal (M12), fuse-link shrouds	on request*
PBS 3-NL	lateral bus bar terminal - left side, screw terminal (M12)	63-811673-021
PBS 3-NL-O	lateral bus bar terminal - left side, screw terminal (M12), fuse-link shrouds	on request*
PBS 3-NR	lateral bus bar terminal - right side, screw terminal (M12)	63-811673-041
PBS 3-NR-O	lateral bus bar terminal - right side, screw terminal (M12), fuse-link shrouds	on request*

\* on customer's request, time of delivery: 2 weeks EXW Torun, Poland, Incoterms 2000

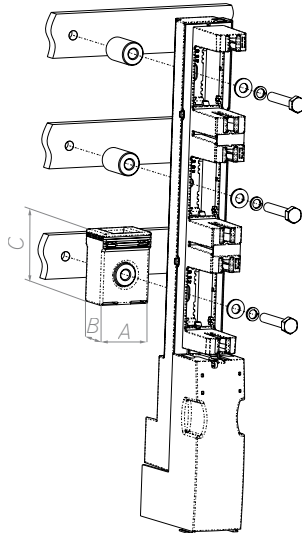
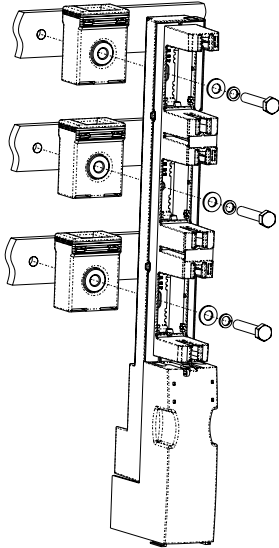
Table 42. PBS 2 AND PBS 3 (WITH LATERAL BUSBAR TERMINAL) TERMINAL CLAMPS

	Drawing of clamp	PBS 2-NL (400 A)	PBS 2-NR (400 A)	PBS 3-NL (630 A)	PBS 3-NR (630 A)
Clamp		M12 screw	M12 screw	M12 screw	M12 screw
Cable terminal		Left side	Right side	Left side	Right side
Tightening torque		56 Nm	56 Nm	56 Nm	56 Nm



### THREE PHASE CURRENT MEASUREMENT PBS FUSE SWITCH DISCONNECTOR

### SINGLE PHASE CURRENT MEASUREMENT PBS FUSE SWITCH DISCONNECTOR



PBS 00/160 A  
ASR21.3 CURRENT TRANSFORMER

ratios:  
100 A/5 A  
150 A/5 A  
dimensions:  
a = 48,5 mm, b = 35 mm, c = 65 mm

**DISTANCE SLEEVE**  
Length 36 mm  
Inner diameter = 12,5 mm  
outer diameter = 22,5 mm  
Accuracy class = 1



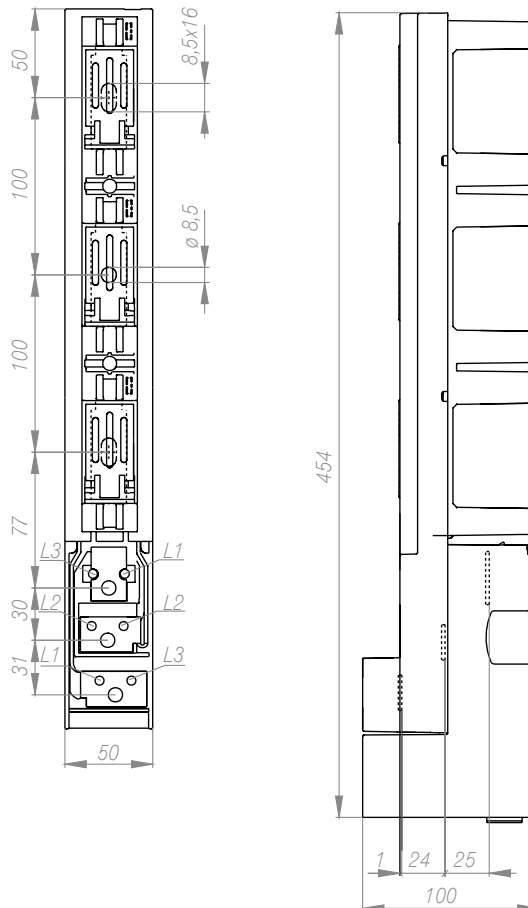
distance sleeve



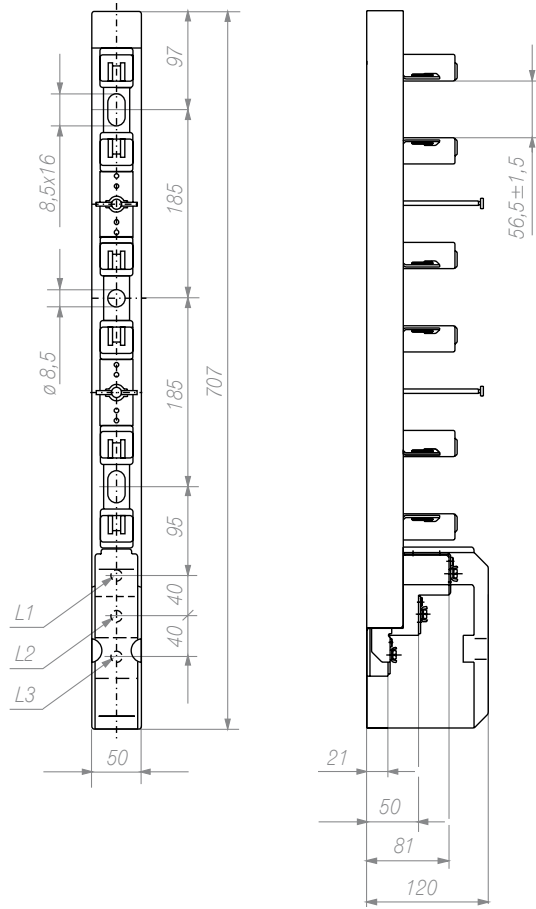
current transformer

THREE PHASE CURRENT MEASUREMENT

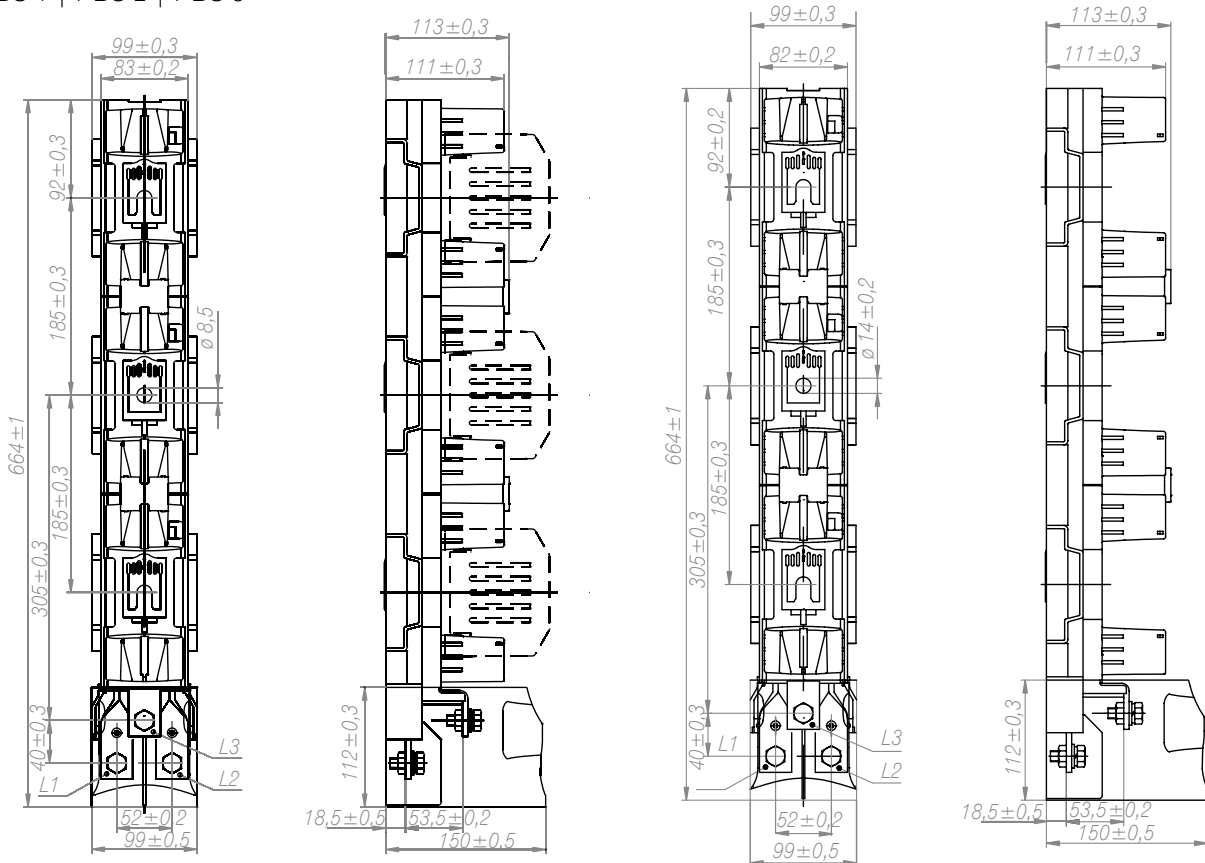
PBS 00/100mm



PBS 00-SM

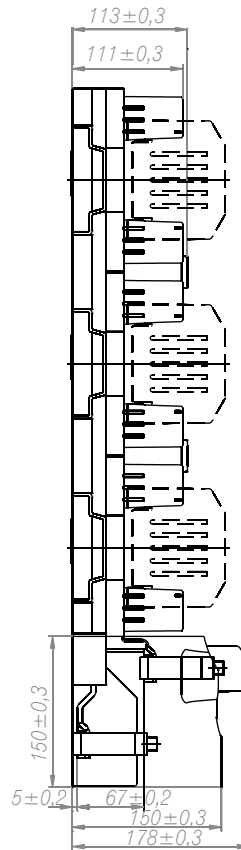
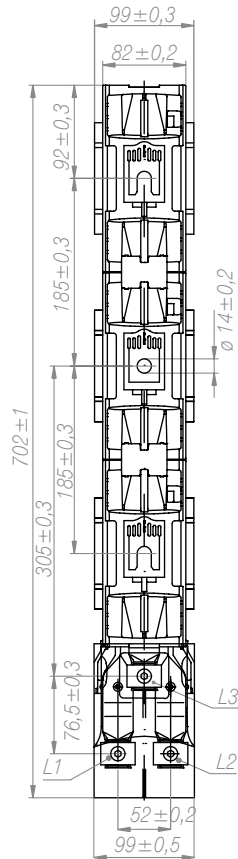
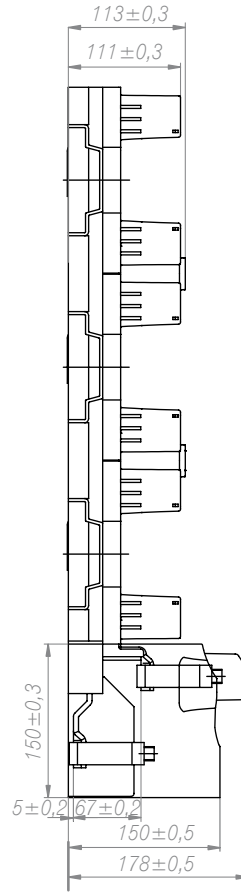
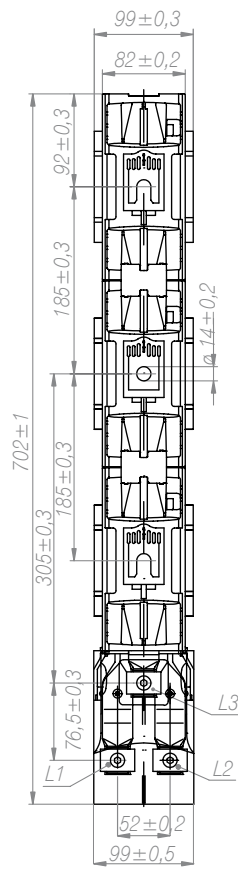


PBS 1 | PBS 2 | PBS 3

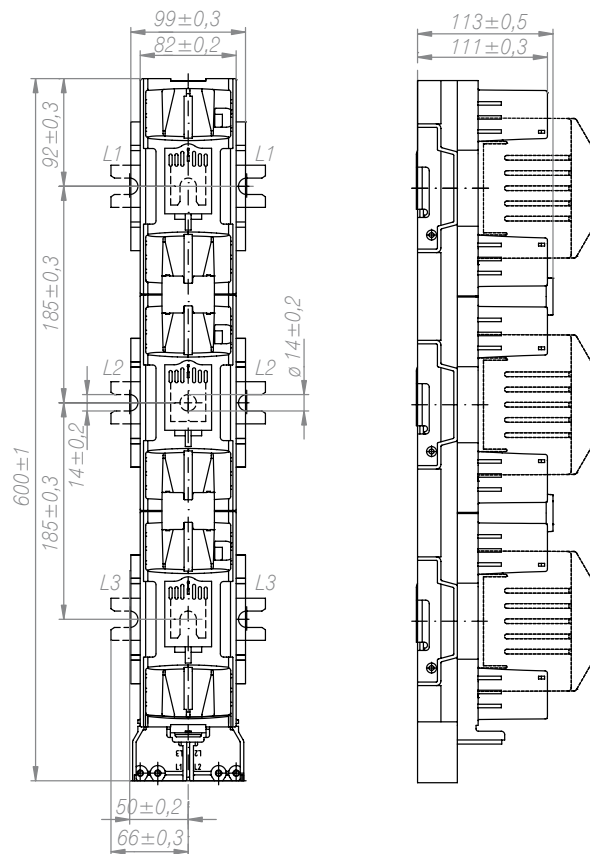
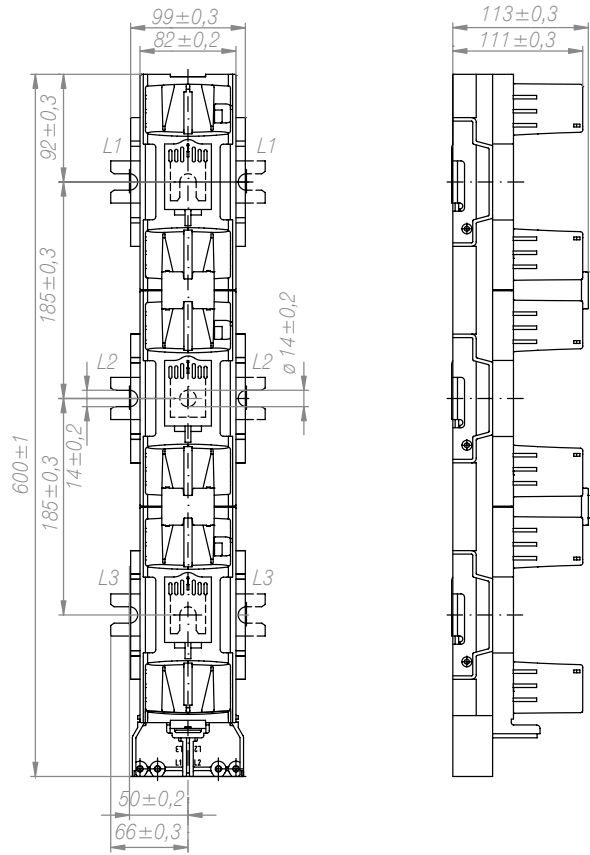













PBS 2 | PBS 3 double V-terminal clamps (2x 240 mm<sup>2</sup>)











































PBS 1 | PBS 2 | PBS 3 fuse base with lateral bus bar terminal















PBS 00   PBS 00/100 mm		
00 - M	M8 terminal screw, for connection of conductors with lug terminal (set - 3 pieces)	
1361400006T	Spare place cover (polycarbonate) for busbar system 185 mm , Width 50 mm, length 562 mm, thickness 3 mm	
1361400001T	Isolating pin for fixing the 50 mm bus bar shroud, M8/Ertalon	
1115718002T	Current transformer - 100A/5A; 1VA; Accuracy class 1 -(for ARS 00)	
1115718010T	Distance sleeve for current transformer ASR 21.3 , ASR 22.3 (Length 36 mm, outer diameter =22,5 mm, inner diameter = 12,5 mm)	
00 - S	S-Bridge clamp for connection of conductors with cross-section 4 mm <sup>2</sup> up to 70 mm <sup>2</sup> (set - 3 pieces)	
1115281034T	V-shape clamp 1,5-70 mm <sup>2</sup> (95 mm <sup>2</sup> ) (3 pcs.)	
1115281041T	Universal earthing device for PBS 00, 1, 2, 3	
PBS 00/100 mm		
51-823166-011	Top adjusting shroud for ARS 00/100 mm	

PBS 00/100 mm		
53-945361-011	Hooked clamps (set - 3 pcs.) for PBS 00/100 mm	
63-930547-011	Single adapter 100/185 enabling to install PBS 00/100 mm on bus bar system 185 mm	
63-930549-011	Double adapter 100/185 enabling to install two PBS 00/100 mm units on bus bar system 185 mm	
51-930474-011	Insulating barrier for PBS 00/100 mm	
PBS 00		
51-945160-011 (Nr dot. 1 szt.)	Single distance adapter 185/185. It adjusts front line of PBS 00 to that of PBS 1,2,3 (set - 3 pcs.)	
52-945158-011 (Nr dot. 1 szt.)	Double distance adapter 185/185. Designed for two PBS 00 units. It adjusts front line of PBS 00 to that of PBS 1,2,3 (set - 3 pcs.)	
PBS 00		
51-837437-011	Cable terminal shroud	

PBS 1   PBS 2   PBS 3		
M	M10 terminal screw: for PBS 1 and PBS 2 M12 terminal screw: for PBS 3 for connection of cables with lug terminal (set- 3pieces)	
50-240SW 1119510001T	V-terminal clamp. For connection of conductor with cross-section:	
	35 - 95 mm <sup>2</sup>  35 - 120 mm <sup>2</sup> 	
	50 - 185 mm <sup>2</sup>  50 - 240 mm <sup>2</sup> 	
70-300SW 1119510013T	V-terminal clamp. For connection of conductor with cross-section:	
	50 - 120 mm <sup>2</sup>  70 - 150 mm <sup>2</sup> 	
	70 - 240 mm <sup>2</sup>  95 - 300 mm <sup>2</sup> 	
2/50-240SW 1119510007T	Double V-terminal clamp. For connection of two conductors with cross-section:	
	35 - 120 mm <sup>2</sup>  35 - 150 mm <sup>2</sup> 	
	50 - 185 mm <sup>2</sup>  50 - 240 mm <sup>2</sup> 	
2/70-300SW 1119510014T	Double V-terminal clamp. For connection of two conductors with cross-section:	
	50 - 120 mm <sup>2</sup>  70 - 150 mm <sup>2</sup> 	
	70 - 240 mm <sup>2</sup>  95 - 300 mm <sup>2</sup> 	
VL240/ 1119510002T	V-shaped terminal lug for V-clamp 35-240 mm <sup>2</sup>	
VA 35-240	V-terminal clamp (steel). For connection of conductor with cross-section:	
	35-185 mm <sup>2</sup>  35-240 mm <sup>2</sup> 	
	50-240 mm <sup>2</sup>  50-240 mm <sup>2</sup> 	
HS 2/50-240	Double V-terminal clamp (steel). For connection of two conductors with cross-section:	
	35-150 mm <sup>2</sup>  35-185 mm <sup>2</sup> 	
	50-185 mm <sup>2</sup>  50-240 mm <sup>2</sup> 	
on request	Hooked clamps (set - 3 pcs.) for PBS 1, 2, 3	

PBS 1   PBS 2   PBS 3		
1361400006T	Spare place cover (polycarbonate) for busbar system 185 mm , Width 50 mm, length 562 mm, thickness 3 mm	
1361400001T	Isolating pin for fixing the 50 mm bus bar shroud, M8/Ertalon	
1361400007T	Spare place cover (polycarbonate) for busbar system 185 mm, width - 100 mm, length - 562 mm, thickness - 3 mm	
1361400002T	Isolating pin for fixing the 100 mm bus bar shroud, M12/Ertalon	
51-930313-01	Extended cable terminal shroud. For use with cable terminal shroud 51-930271-021	
51-930272-011	Cable terminal protective cover	
1115718006T	Current transformer - 100A/5A; 1,5VA Accuracy class 1-(for ARS 1,2,3)	
1115718010T	Distance sleeve for current transformer ASR 21.3 , ASR 22.3 (Length 36 mm, outer diameter =22,5 mm, inner diameter =12,5 mm)	
51-930271-021	Cable terminal shroud	
51-836288-011	Fuse-link shroud for PBS 1, PBS 2, PBS-3	
1115281041T	Universal earthing device for ARS 00, 1, 2, 3	