

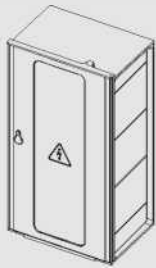
TECHNICAL SERVICE CATALOGUE 2021



DCK
HOLOUBKOV



DCK HOLOUBKOV BOHEMIA, A.S.



■ Facelift of Series N-C Switchboards

In pursuit to move our products a bit further we have prepared several design and structural changes in N-C series switchboards improving their utility properties. First of all, it is a modification of appearance (design side stripes supplementing the switchboard appearance from all sides). We also improved door hinges so that they can open without a limiter up to the angle of 180° and, at the same time, we modernized the door limiter to simplify its use a bit more. Other changes include door modification where the plastic flash in the triangle is modified so that it does not stick out of the door area, and the removal of the cover side strip together with the modification of the bearing surface of the left part of the switchboard.

■ Facelift of Cable Duct Holder

The cable duct holder was completely rounded which also improved the appearance.

■ Air Grating

Air grating improves natural ventilation of the switchboard and contributes to the faster equalization of the temperature inside and outside the switchboard. It consists of a stainless grating and plastic cover. It is designated for the pillar design of the switchboard - for mounting in a pillar base. Air gratings are currently fitted in all the pillar bases (or compact pillars).

■ Fuse Base of 00 Size

We are introducing a new DCK product to the market - one-pole fuse bases of II size with nominal current of the fuse base 160A.

They are designated for knife fuse links of 00 and 000 size. The base is made of a composite of good mechanical strength and heat resistance, the contacts are made of conductive copper with the surface treatment by tinning. The conductor is connected by saddle H-clamp (up to 50 mm²) or by v-clamp (up to 95 mm²) or using their combination. We offer contact covers as optional accessories.

■ Distribution Switchboards with Preparation for Distribution of Optical Cables

A novelty among distribution switchboards is connecting loop (SS) and disconnecting safety switchboards (SR) with preparation for the distribution of optical cables. The switchboards are fitted with interconnecting microtubes of optical cables, including couplings and their holders. On the inner side of the door, the assembly board is mounted with preparation for the assembly of a relevant coupling of optical fibres. These switchboards are made for the power company PRE. Marking of these switchboards is "-OT" at the end of standard marking (e.g., SS102/ KVF4W-OT). The accessories of these switchboards include protective shields to cover the power parts of the switchboard.

■ Compensating Switchboards

We can also manufacture compensating switchboards according to the customer's design and requirements. Compensating switchboards are designated for the automatic regulation of reactive power. Regulation of the required value of a power factor is done by a microprocessor regulator. The regulator controls switching of individual stages by contactors. The type of switchboard accessories depends on the customer's specification. The switchboards are manufactured in type cabinets DCK. These switchboards can be combined mainly with the switchboards of indirect measurement of NR, NS, NP type.

■ Switchboards of Indirect Measurement of HV, VHV (ERNM, USM, SM)

These meter switchboards and pillars of low voltage are designated for indirect measurement of electricity in distribution points for invoicing and in supply terminals connected from distribution networks of HV and VHV. They are ready for placing meter sets (electronic meter), registration and communication devices, or for network monitoring. The switchboards are constructed with a tiltable panel. On the tiltable panel, meters, totalizers, time switches, modems. In the rear part of the switchboard (behind the tiltable sealable panel), fuse isolating switches, interface of output pulses (optical distributors), 230 V AC outlets, circuit breakers, terminal boxes, testing terminal boxes, phone outlets, etc. are placed.

■ Procedures of Switchboards Assembly in Practice

One of the mottoes and basic pillars of our company's success is, beside other things, the priority prevention of defects and problems before eliminating their consequences. Since we have been meeting unprofessionally fitted switchboards in recent years and with regard to the fact that we are aware of the seriousness of the situation, we decided to prepare a manual which will become a good support in the installation of switchboards and will result in the end customer satisfaction. Instruction videos are intended primarily for professional installation companies and serve as a guide to the correct procedure for switchboards assembly. They are available on the presentation DVD or on <http://www.dck.cz/new/podpora/montazni-navody/>. Contact sales employees to get more information.



Code DCK QR

■ Extensive experiment on the DCK premises

Due to weather changes, significant temperature fluctuations and often due to improper installation, especially of plastic compact pillars, moisture can form in these pillars up to condensation of water vapour. From a physical point of view, it is clear that the condensation problem can never be eliminated, but it can be reduced by appropriate modifications. The DCK company is trying to obtain the best information to improve the monitored phenomenon and find the most effective measure by means of a large-scale experiment prepared on the DCK premises.



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ISO 9001



ISO 14001



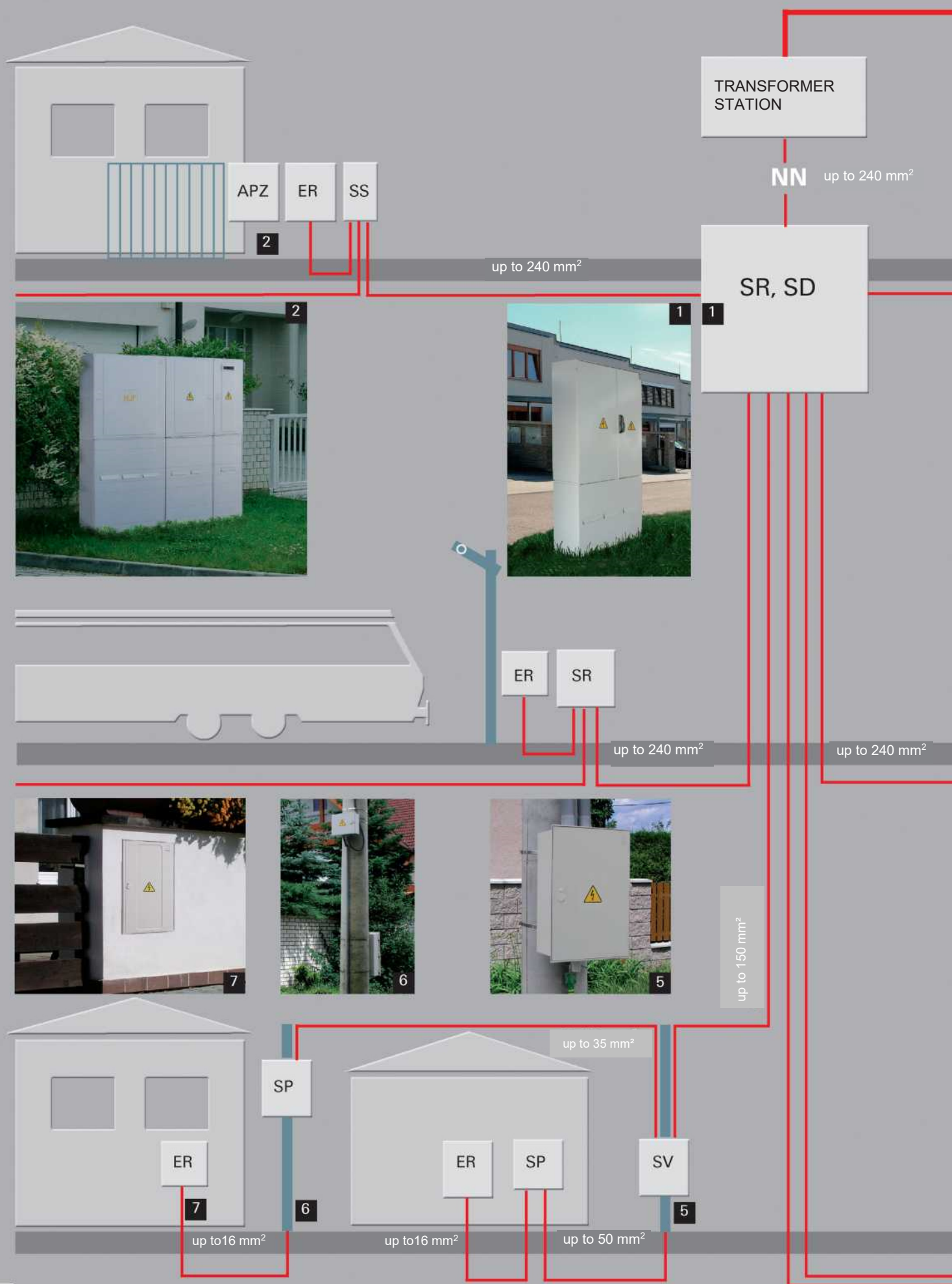
OHSAS 18001

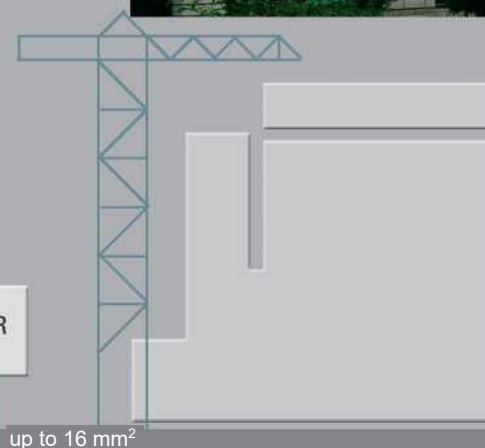
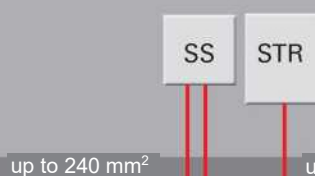
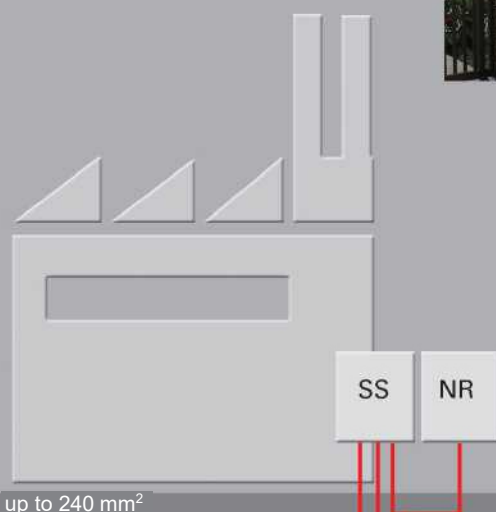
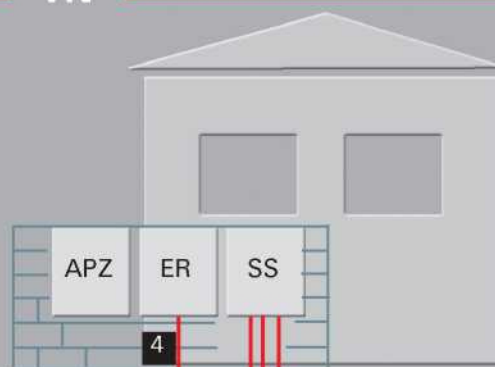
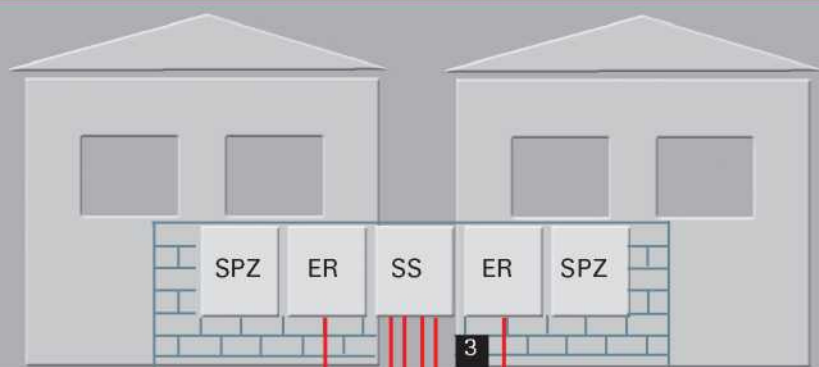


ISO 9001
ISO 14001
OHSAS 18001

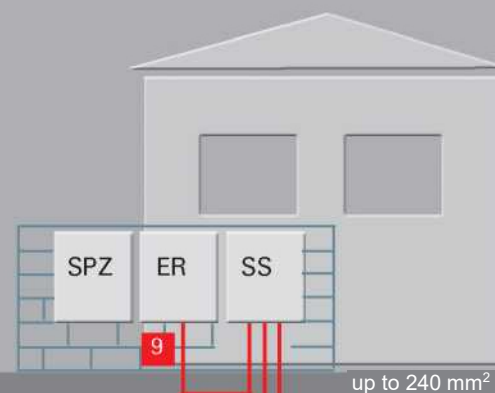
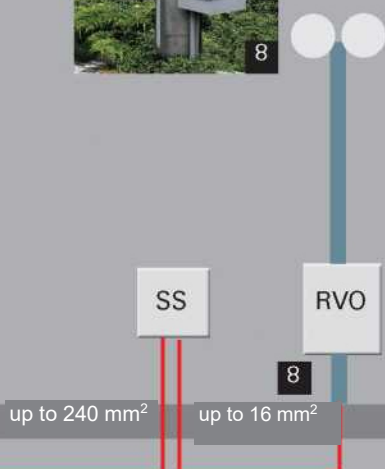


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- luxury design of **EXCLUSIVE** product series of the switchboards with stainless steel doors



Marking

MARKING OF DISTRIBUTION SWITCHBOARDS

In connection to the appendix PNE 35 7040 ed.3: The aid for orientation in the system of type marking of cable cabinets

1	2	3	4	5	6	7	8	9	10	
S	R	4	02	/	K	V	W	4		
Type of LW Switchboard	Purpose of Distribution Switchboard	Number of Securing Sets	Securing Element		Material Design	Design of Switchboards for Fitting	Method of Cable (Conductors) Connection	Door Closing	Variable Symbol	Manufacturer's Specification
S Distribution switchboard (cable distribution cabinet)	P - Connecting box for the connection of conductor with cross section of up to 50 mm ²	1	according to table 1		P - All-plastic design from thermoplastic N	V - For mounting in the wall niche (in a brick pillar), material design of the class of reaction to fire A1 according to ČSN EN 13501-1+A1	according to table 2	according to table 3	A - Number of not secured supplies in the disconnecting securing box 1 -	- C - All-plastic monolithic design of the box - M - Concrete version of the set arranged next to each other - M - Concrete version of the set arranged under each other - L - Boxes of SP type with the removable strip - G - System closing - OT preparation of optical cables - MV monitor of output
	S - Loop connecting box for the connection of conductor with cross section of up to 240 mm ²	2			- All-plastic design from thermal set - thermoset	F - For mounting in the wall niche (in a brick pillar), in cases of material lining of the box or its base with a construction product different from the class of reaction to fire A1 ČSN EN 13501-1+A1			2 - B - Method of connecting the conductors of outputs of the connecting boxes	
	R -Disconnecting securing box	3			B - Concrete frame + door made of sheet steel	N - For mounting in the wall niche, material design of the class of reaction to fire A1 according to ČSN EN 13501-1+A1			P - according to table no. 2	
	D - Disconnecting securing box with a split busbar	4			K - Concrete frame + door made of plastic	E - For mounting on the wall, in cases of material design of the wall (box base) different from the class of reaction to fire A1 according to ČSN EN 13501-1+A1			V -	
	E - Disconnecting securing box with a saplit busbar-- level layout	5			O - Sheet-steel version	P - For mounting on the pillar itself (plinth)			W - X - Number of vacant	
	V - Disconnecting seuring box for outside lines	6				S - For mounting on the supporting spot of outside lines				
	B - Connecting box with diverters of lighting current	7				K - Compact unit /complete version of the box, pillar and foundation part)				
		8								
		9								
		10 - ten and more (11)								
		(12)								

Table 1

Code	Securing element for the fuse links	Code	Securing element for the fuse links
27 -	Fuse bases of thread size D II (E27)	30 -	In-line fuse isolating switch, vertical, size 00
33 -	Fuse bases of thread size D II (E33)	31 -	In-line fuse isolating switch, vertical, size 1
00 -	Fuse bases of different size 00	32 -	In-line fuse isolating switch, vertical, size 2
01 -	Fuse bases of different size	41 to 49 -	Combination of fuse boards - 22 + (1x20 to 9x20)
02 -	Fuse bases of different size 2	51 to 59 -	Combination of fuse boards - 32 + (1x30 to 9x30)
03 -	Fuse bases of different size 3	60 -	Combination of fuse boards and isolating switches of 00 in size
07 -	Combination of fuse bases of 00 to 1	61 -	Combination of fuse boards and isolating switches of 1 in size
08 -	Combination of fuse bases of 00 to 2 in size	62 -	Combination of fuse boards and isolating switches of 2 in size
09 -	Combination of fuse bases of 1 and 2 in size	71 -	Fuse bases of different size 10 x38
10 -	Fuse isolating switch of 00 or 000 in size	72 -	Fuse bases of cylindrical size 14 x 38
11 -	Fuse isolating switch of 1 in size	73 -	Fuse bases of different size 22 x 58
12 -	Fuse isolating switch of 2 in size	81 -	Fuse isolating switches of cylindrical size 10 x38
20 -	Fuse boards, vertical size 00	82 -	Fuse isolating switches of cylindrical size 14 x51
21 -	Fuse boards, vertical size	83 -	Fuse isolating switches of cylindrical size 22 x 58
22 -	Fuse boards, vertical size 2	99 -	Combination of fuse bases according to the agreement with the manufacturer

Table 2

Code	Method of cable connection (conductors) - size of cross-section of connected conductors (cables)
S -	Flat bolted clamp provided with a nut, screw and washers designated for the end and loop connection of the conductor with cable lugs (cross section of conductors depends on the size of cable lugs and the size of the cable connection clamp)
M -	Flat bolted clamp provided with a press in nut provided with a screw and washers designated for the end and loop connection of the conductor with cable lugs (cross section of conductors depends on the size of cable lugs and the size of the cable connection clamp)
P -	Structural clamp designated for the end and loop connection of the full conductor with the liner (6-50 mm ² , 2 x 6 - 50 mm ²)
V -	V-shaped fuse element flag designed for the end connection of a conductor with s single strap (10 - 95 mm ²)
W -	Fuse element flag 1 or 2 of V-shape designed for the end connection of a conductor with s single strap (10 - 240 mm ²)
C -	Auxiliary transitional flag of V-shape designed for the end connection of a conductor with s single strap to the securing element of 00 size (10 - 95 mm ²)
D -	Auxiliary transitional flag of V-shape element flag designed for the end connection of a conductor with s single strap to the securing element of 1 or 2 size (10 - 240 mm ²)
E -	Auxiliary transitional connecting flag of V-shape element flag designed for the loop connection of conductors with two single straps to the securing element of 00 size (2x10 - 240 mm ²)
F -	Auxiliary transitional connecting flag of V-shape designed for the loop connection of conductors with two single straps to the securing element of 00 or 2 size (2x10 - 240 mm ²)

Note: Flag + strap create a connecting V-clamp. Auxiliary transitional flags can be used for connecting the conductors not only to the securing element (e.g. for connecting PEN conductors to the busbar).

Table no. 3 In connection with PN - DCK 01-2006 ed. 2

Code	Door Closing	Code	Door Closing
1 -	Simple closure of distribution equipment for the field of power industry according to ČSN 35 9754 - Appendix 1	5 -	Three-point closure for the cylinder lock
2 -	Three-point closure on the insert of the closure of distribution equipment for the power industry according to ČSN 35 9751 - Appendix 1	6 -	Simple closure for the cylinder lock
3 -	Sealable screw M6	9 -	Special closure according to the customer's request
4 -	Dual closure (power closure according to ČSN 35 9754 - Appendix 1 + closure of other fields according to ČSN 35 9754 - Appendix 2)		

MARKING OF ELECTRICITY METER SWITCHBOARDS

1	2	3	4	5	6	7	8	9	10	11	12	13		
E	S	1	1	2	+	1	00	/	N	V	E	8	P	
Type Switchboard	Switchboard Layout	Measuring Set Layout	Number of Electricity Meters	Placement of Measuring Set Devices		Number of Securing Sets	Securing Element Used		Material Design	Structural Design	Method of Cable (Conductors) Connection of Supply	Door Closing	Method of Cable (Conductors) Connection of Outlet	Manufacturer's Specification
E - N -	R - S - P -	1 - 2 - 3 - 4 - 5 -	1 - 2 - 3 - 4 - and	1 - 2 - 3 - 4 -		1 - 2 - 3 - 4 -	00 1 2 99		P - N - B - K -	V - F - N - E - P - S - K - R - U - C -	S - M - P - V - W - C - D - E - F -	7 - 8 -	P - D -	- C
Electricity Meter Switchboards						Distribution Switchboards			In connection with the appendix PNE 35 7040 ed.3					

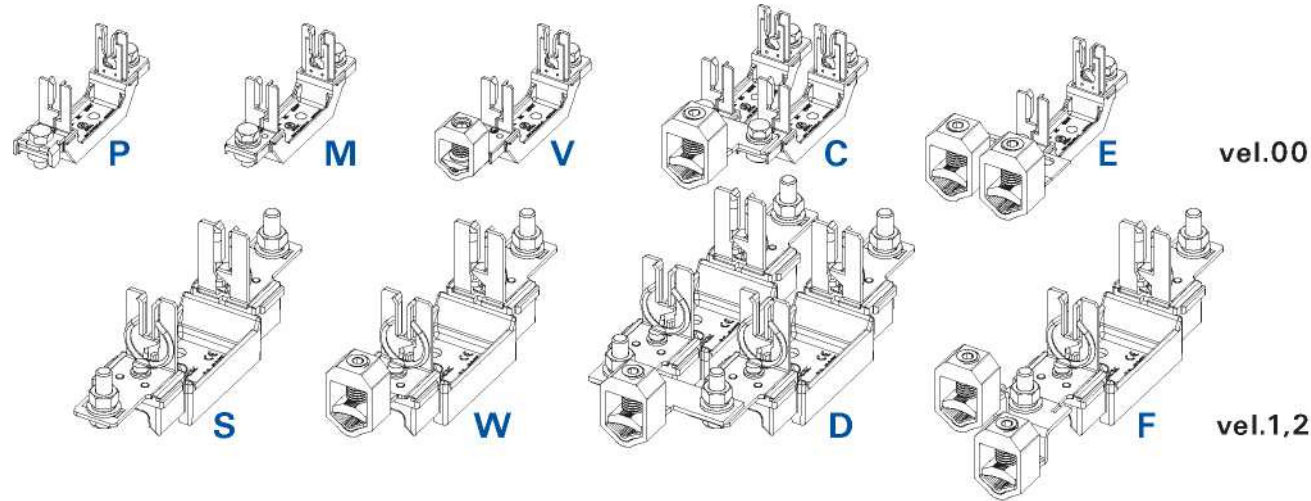
Column	Code	Code description
	E	Electricity meter switchboard for direct measurement up to 40 A (50, 63, 80, 100 A)
	N	Electricity meter switchboard for indirect measurement up to 1,000 A
2	R	Individual module for placing the measuring set (column 6 and 7 will not be used)
	S	The complete module of the measuring set (R) and the connecting box module in horizontal layout (next to each other)
	P	The complete module of the measuring set (R) and the connecting box module in vertical layout (levels)
3	1	Space for fitting of the one-rate three-phase electricity meter
	2	Space for fitting of the two-rate three-phase electricity meter, including the space for fitting of the rate switching element
	3	Space for fitting of the one-rate one-phase electricity meter
	4	Space for fitting of the two-rate one-phase electricity meter, including the space for fitting of the rate switching element
	5	Space for fitting of the two-rate electricity meter with the rate switching element
4	1	Number of Electricity Meters
	2	
and more		
5	2	Devices on the electricity meter board with the sealable cover of circuit-breakers, layout for ČEZ, E.ON
	3	Devices on the electricity meter board with the sealable cover of circuit-breakers, layout for PRE
6 -12		Marking is used in connection with PNE 35 7040 (column 3-9)
11	7	Switchboards closure with thorned key 6 x 6 mm according to ČSN 35 9756 (electricity meter switchboard)
	8	Switchboards closure with thorned key 6 x 6 mm according to ČSN 35 9756 (electricity meter switchboard) + simple closure of distribution equipment for the field of power industry according to ČSN 35 9754 - Appendix 1 (connecting box)
13	- C	C - All-plastic monolithic design of the box

*Marked in connection with PN - DCK 01-2006 ed. 2

MARKING OF OTHER SWITCHBOARDS

XXX	...	/	XXXXX
RVO, STR, ZS, RPO, SB, RP	type		marked in connection with DCK 357040 ed. 2

GRAPHICAL ILLUSTRATION OF METHODS OF CABLE (CONDUCTOR) CONNECTION



MATERIAL DESIGN

All-plastic distributors made of polyester (SMC)

marking /N



n All-plastic distributors made of polycarbonate (PC)

marking /P



Concrete switchboards with plastic doors

Marking /K



Concrete switchboards with stainless doors - EXCLUSIVE

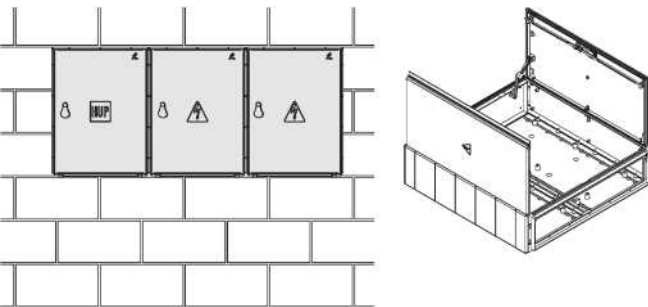
marking /B



STRUCTURAL DESIGN

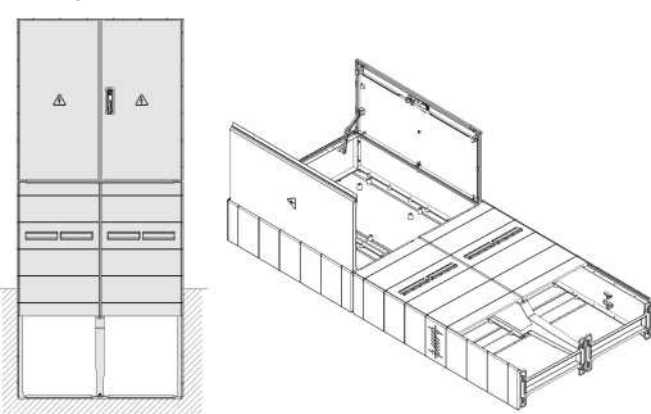
Switchboards designated for fitting into the wall niche or brick pillar

marking /V



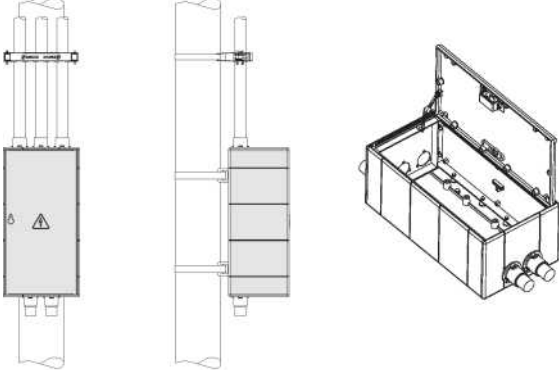
Compact pillars (switchboard designated for fitting in the free space in landscape)

marking /K



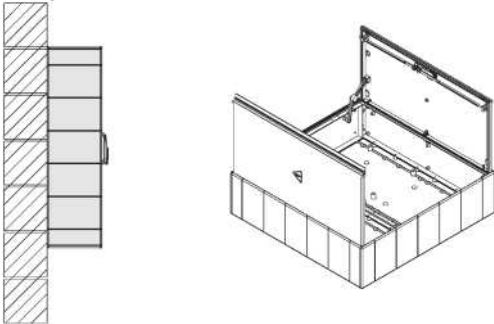
Switchboards designated for fastening on the supporting spot of outer lines (on the pole)

marking /S



Switchboards designated for fitting on the wall

marking /N



PARAMETERS OF SWITCHBOARDS AND PILLARS MATERIALS

n Material used for NN switchboards production:

REAKTOPLAST / TERMOSET - polyester composite material SMC (all-plastic switchboards, pillared bases)

TERMOPLAST	- polycarbonate PC (All-plastic switchboards, doors with the frame for concrete switchboards, pillared bases)
CONCRETE	- thin-walled concrete reinforced with glass fibre and steel rebars (Switchboards and pillars with plastic or sheet metal doors)
COLOURED DESIGN OF PLASTICS - RAL 7035	

Both plastic materials (thermoplastic and reactoplastic/thermoset) are resistant to static and dynamic stress; they comply with the flammability level of HB40 in horizontal position, V-0 in vertical position according to ČSN EN 60695-11-10), material self-extinguishing according to UL 94-VO, with increased stability against weather conditions and UV radiation.

Both plastics are harmless, PC materials are fully recyclable.

The products comply with the test by 960°C hot loop according to ČSN EN 60695-2-11, are resistant to short-term thermal stress with the temperature of 140°C according to ISO 306 or to permanent thermal stress of 115°C according to IEC 216.

The materials also comply with low temperatures where their properties were tested at the temperature of -35°C.

Technical specification	SMC	PC
Specific weight [g/cm ³]	1.75 - 1.8 ₁₃	1.21 ₁₆
Electric resistance [ohm]	10	10
Dielectric strength [kV/mm]	25	34

Concrete switchboards are made of thin-wall concrete of strength class C 25/30 which is reinforced with glass fibre and steel rebars. Use in the outside environment with frost without negative effect of chemical and defrosting substances and aggressive water. Compression strength of concrete ≥ 30 N/mm² according to ČSN EN 12390-3, frost resistance T=25, coefficient of frost resistance ≥ 0.75 according to ČSN 73 1322. Mass activity index $I < 1$, mass activity Ra 226 < 150 Bq /kg.

Mass activity index $I < 1$, mass activity Ra 226 < 150 Bq /kg.

Tests of properties and technical parameters of switchboards (pillars) are designed according to valid ČSN EN 61439-1 ed.2, ČSN EN 61439-2 ed.2, ČSN EN 61439-3, ČSN EN 61439-4, ČSN EN 61439-5 ed.2, PNE 35 7000, PNE 35 7030 and certified in EZÚ Prague and GAS Prague, concrete products testing according to STO were carried out in TZÚS Prague. Short-circuit resistance is verified in compulsory tests. Quality management system is certified according to ČSN EN ISO 9001:2015, environmental system management according to ČSN EN ISO 14001:2015 and the system of occupational health and safety management according to ČSN OHSAS 18001:2008.

Certification was verified in CQS Prague (Certification of Management Systems). The products are provided with the Declaration of Conformity and EU Declaration of Conformity according to GD no. 117/2016 Coll., on Assessment of Product Conformity with Respect to Electromagnetic Compatibility upon Delivery to the Market, GD no. 118/2016 Coll., on Assessment of Conformity of Electric Equipment Designated for Using in Particular Limit Voltages upon Delivery to the Market, Act no. 90/2016 Coll., on Assessment of Conformity the Given Products upon Delivery to the Market, Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., on Technical Requirements for Products, GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll., and GD no.215/2016 Coll., on Technical Requirements for Selected Building Products, GD 375/2017 Coll., on Appearance and Placement of Safety Symbols, Act no. 18/1997 Coll., as amended by Regulation no. 307/2002 Coll., and Regulation no. 499/2005 Coll., on Radiation Protection", Act no. 102/2001 Coll., on General Safety of Products, as amended by Act no. 277/2003 Coll.

n Standard elements of accessories:

Distribution switchboards are provided with standard securing elements for fitting of fuse links.

In case of a special request, it is necessary to give the specification in the order. With switchboards using the connection of connecting flags conductors, these flags are provided with straps.

Standard securing elements

type	Nominal current
Fuse base of 00 size	160 A
Fuse base of 1 size	250 A
Fuse base of 2 size	400 A
Fuse board of 00 size	160 A
Fuse board of 2 size	400 A
Fuse isolating switch of 000 size	160 A
Fuse isolating switch of 2 size	400 A
Fuse isolating switch of cylindrical fuses of 14 x 51	63 A

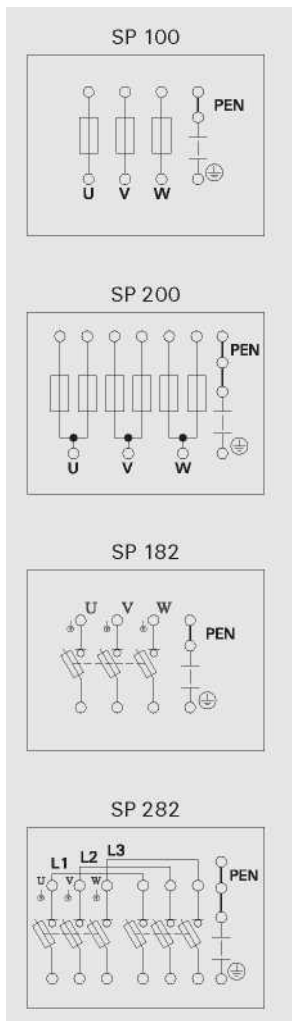
Busbar

type	material	max. current loading capacity	type marking of switchboard
Working	EAI 32 x 5	450 A	SS, SR, SV
	EAI 40 x 5	620 A	SR
	ECu 30x5	520 A	SR, SD
	EAI 20 x 3	190 A	SP
	EAI 25 x 4	320A	SV
PEN	EAI 32 x 5	450 A	SS, SV, SR, SB, RPO, EP, ES
	ECu 30x5	520 A	SR, SD
	ECu 25x2	220 A	SR, RPO
	EAI 25 x 4	320A	SS
	ECu 25x3	320A	SS

Distribution Switchboards

CONNECTING BOXES FOR CONNECTION OF UP TO 50 mm²

Circuit diagram



Technical parameters:

Nominal voltage Un:	690 V, AC
Nominal working voltage Un:	Up to 690 V, AC
Nominal insulation voltage Un:	690 V, AC
Nominal pulsating with stand voltage Uimp:	8 kV (1.2/50 ps)
Overvoltage category:	IV
Nominal current of switchboard InA:	63 - 160 A
Nominal current of circuit (secured outlet) Inc:	63, 100, 160 A
Nominal conditional short-circuit current Icc:	40 kA
Nominal frequency fn:	50Hz
Level of pollution:	3
Grounding set:	TN- C
Level of protection by cover:	IP44, after door opening IP00
Level of mechanical protection:	IK10
EMC environment:	B
Equipment securing from short-circuit (SCPD):	Fuse links, knife, size 00 size; fuse links, cylindrical, size 14 x 51 (switch off range and utilization category - char. gG) closable cover
Basic protection (protection from touching live parts):	Automatic disconnection from the source
Protection in case of failure (protection from touching non-live parts):	HB 40, V-0 according to ČSN EN 60695-11-10
Degree of flammability	10
Max. cross section of feeding conductors: in the wall niche, pillar on a pole	up to 50 mm ² up to 35 mm ² SP 182, SP 282 - up to 25 mm ²
Max. cross section of outlet conductors: in the wall niche, pillar on a pole	up to 50 mm ² up to 35 mm ² SP 182, SP 282 - up to 25 mm ²
Method of conductors' connection: securing element	- fuse base of 00 - clamp H/M8 - fuse isolating switch of cylindrical fuses of 14x51 - device clamp
busbar: working PEN grounding	- clamp H/M8 - clamp H/M8 - strap clamp PE/M8

Use:

Connecting switchboards are used for the end connection of a family house or other object to the cable or outer electric distribution network and at the same time, to the securing of supply lines to the distribution point. In E.ON power company, it is possible to use compact pillars and switchboards designated for building in continuous (loop) connection of network. The switchboards can be used by the persons who are at least familiar with the use.

The switchboards are designated for the installation and use outside and inside and are of stable design with fixed parts of the structure.

Technical design:

The switchboards are delivered with internal accessories without fuse links. There are two openings in the bottom used for the assembly of cable outlets from the switchboard. The switchboards designated for the assembly on a pole can be fixed by installation sets DCK f or Bandimex strip. When used on the pole, PG29 bushings are placed on the switchboard for cable inlets. The switchboards marked with the manufacturer's specification "L" have the cable entry closed with the removable closing strap. With switchboards SP182 and SP282, supply connection must be done on the upper clamps of the isolating switch. n Accessories:

Installation set DCK for mounting on a pole. Covering board of cable space. Covers of fuse bottoms contacts. Protective blank of cable bushing PG29. Backfill.

Product complies with the requirements of valid standard:

ČSN 33 3320 ed.2, ČSN EN 61439-1 ed.2, ČSN EN 61439-5 ed.2, PNE 35 7000

Tests performed, regulations, legislation:

Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order:

Type marking: SP 200/NVP1P-L

Signature: The connecting box for connection of up to 50 mm² containing two sets of fuse bottoms of 00 size, the switchboard is made of reactoplast, designated for building in the wall niche, with direct connection of supply and outlet conductors in the structural clamp H/M8, door closure with a simple closure for power industry.

Technical Parameters:

CEZ	ELON	type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]:	Device accessories	Outer dimensions width x height x depth [mm]	Weight [kg]
Connecting boxes for connection up to 50 mm ² - IN THE NICHE (closure for power industry)							
■		SP 100/NVP1P	100	100	1 set of fuse bottoms, size 00	325 x 290 x 120	3,5
■		SP200/ NVP1P	160	100	2 sets of fuse bottoms, size 00	325 x 290 x 120	4
■		SP 182/NVP1P	63	63	1 x isolating switch of cylindrical fuses 14 x 51	325 x 290 x 120	3
■		SP 282/NVP1P	100	63	2 x isolating switch of cylindrical fuses 14 x 51	325 x 290 x 120	3,5
Connecting boxes for connection up to 50 mm ² - IN THE NICHE (closure for power industry, removable closing strap)							
	■	SP 100/NKP1P-L	100	100	1 set of fuse bottoms, size 00	325 x 290 x 120	3,5
	■	SP 200/NKP1P-L	160	100	2 sets of fuse bottoms, size 00	325 x 290 x 120	4
Connecting boxes, loop for connection up to 50 mm ² - IN THE NICHE (closure for power industry)							
	■	SP 100/NKP1P- C	160	160	1 set of fuse bottoms, size 00	320 x 1810 x 220	19
	■	SP 200/NKP1P- C	160	160	2 sets of fuse bottoms, size 00	320 x 1810 x 220	20
Connecting boxes for connection up to 35 mm ² - ON THE POLE (closure for power industry)							
■	■	SP 100/NSP1P	100	100	1 set of fuse bottoms, size 00	325 x 290 x 120	3,5
■	■	SP200/ NVP1P	100	100	2 sets of fuse bottoms, size 00	325 x 290 x 120	4
■		SP 182/NSP1P	63	63	1 x isolating switch of cylindrical fuses 14 x 51	325 x 290 x 120	3
■		SP282/ NSP1P	100	63	2 x isolating switch of cylindrical fuses 14 x 51	325 x 290 x 120	3,5
Data for the order							

Connecting boxes of material design "P" can be custom- made.
It is also possible to made by this way a connecting box with three and four isolating switches of cylindrical fuses, size 14 x 51 (box type SP382, SP482) or with isolation switches of knife sues, size 000, type SP110, SP210) or with fuse bottom parts, size DIII - E33 (box type SP133, SP233). It is also possible to deliver a box with closure with sealable screw M6, or other type of closure.
It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis.

- Approved and agreed types of individual distribution companies

SP 100 - pole design



SP 100 - design for the niche with removable strap



SP 200 - design for the niche



SP 200 - pole design



SP 182 - pole design

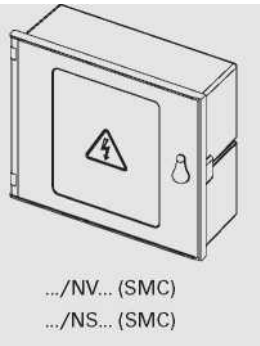


SP 282 - pole design

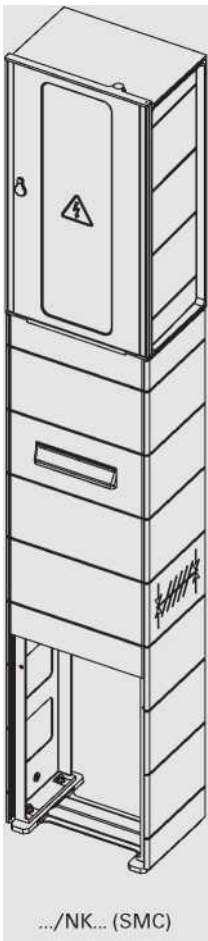


Structural and material design
in the wall niche or brick pillar

on the supporting spot of outer lines



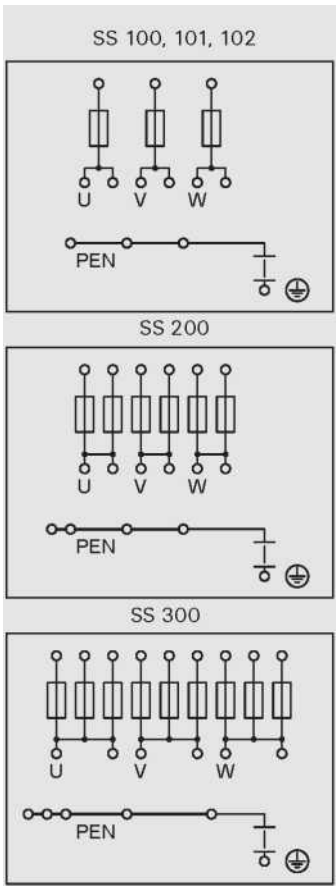
compact pillar



Distribution Switchboards

CONNECTING LOOP BOXES FOR CONNECTION OF UP TO 240 mm²

Circuit diagram



Technical parameters:

Nominal voltage Un:

690 V, AC

Nominal working voltage Ue:

up to 690 V, AC

Nominal insulation voltage Ui:

690 V, AC

Nominal pulsating withstand voltage Uimp:

8 kV (1.2/50 ps)

Overvoltage category:

IV

Nominal current of switchboard InA:

400 A

Nominal current of circuit (secured outlet) Inc:

160, 250, 400 A

Nominal current of circuit (secured outlet) Inc:

400 A

Nominal conditional short-circuit current Icc:

40 kA

Nominal short-term withstand current Icw (not secured outlet): 36 kA / 10 ms

Nominal frequency fn:

50Hz

Level of pollution:

3

Grounding set:

TN- C

Level of protection by cover:

IP44, after door opening IP00

Level of mechanical protection:

IK10

EMC environment:

B

Equipment securing from short-circuit (SCPD):

fuse links, knife, size 00, 1, 2 (switch off range and utility category - char. aG)

Equipment securing from not secured outlet:

Coordinated securing element in front-end outlet:

(switch-off range and utility category - char. gG)

Basic protection (protection from touching live parts):

closable cover

Protection in case of failure (protection from touching live parts):

Automatic disconnection from the source

Degree of flammability:

HB 40, V-0 according to ČSN EN 60695-11-10

Max. cross section of feeding conductors:

10 + 240 mm²

Max. cross section of outlet conductors according to the fuse bottom part:

size 00 - 50 mm²

Method of conductors' connection, securing element:

size 1, 2 - 10 + 150 mm²

busbar: working

PEN

Grounding

Use:

Connecting switchboards and pillars are used for the end or continuous (loop) connection of cable electric distribution network and securing of inlet lines to the distribution point. The switchboards are designated for use by the persons who are at least familiarized with it. The switchboards are designated for the installation and use outside and inside and are of stable design with fixed parts of the structure.

Technical design:

The switchboards are delivered with internal accessories without fuse links. To disconnect the conductors, the offer includes the securing elements with connecting V-clamps enabling the connection from 10 mm².

Cable distributors fitted with the flags of V shape are provided with straps as standard. In case of compact pillars, a special cable distributor can be delivered and also a relevant pillar base.

Accessories:

Cover side boards N-C (only for the series of switchboards marked xxx/Nxxx-C).

Covers of fuse bottoms contacts.

Backfill.

Product complies with the requirements of valid standard:

ČSN 33 3320 ed.2, ČSN EN 61439-1 ed.2, ČSN EN 61439-5 ed.2, PNE 35 7000

Tests performed, regulations, legislation:

Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order:

Type marking: SP 102/NKF1W-C

Description: Connecting compact pillar for connection up to 240 mm² containing one set of fuse bottom parts, size 2. The pillar is made of reactoplast and is designated for the installation in landscape, with connecting flags of V shape, provided with straps for looping on the inlet, door closing is provided with a simple closure for power industry and connecting flags of V shape fitted with straps on the outlet, monolithic design of the switchboard.

SS 100



SS 200



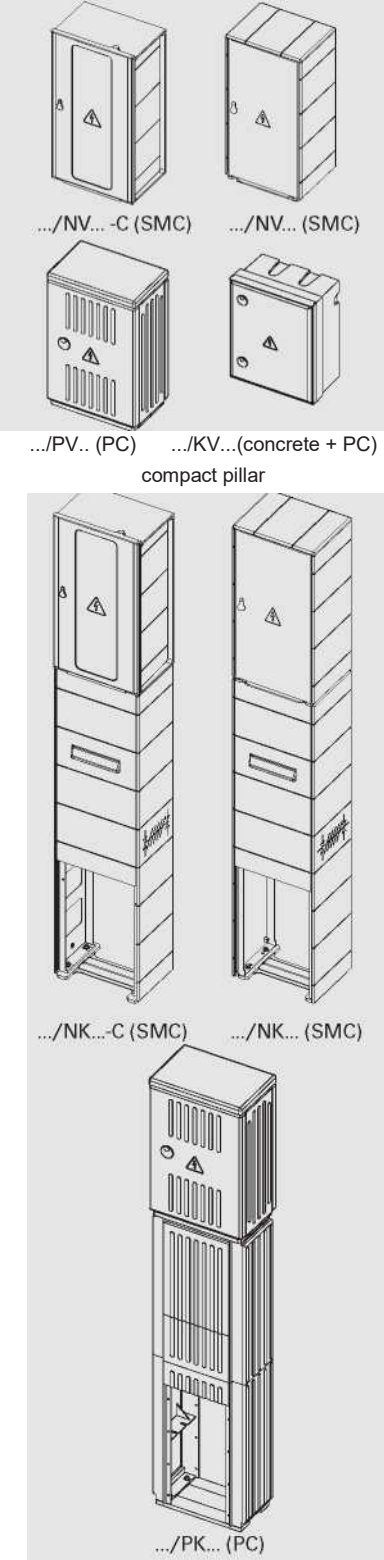
SS 300



Technical
Parameters:

	ČEZ	E.ON	PRE	Type	Nominal current InA [A]	Nominal current of circuit (Outlet) Inc [A]	Device accessories	Outer dimensions width x height x depth [mm]	Weight [kg]
Connecting boxes, loop, for connection up to 240 mm ² IN THE NIECHE (SMC, "C" design)	■	■		SP 100/NVE1P- C	400	160	1 set of fuse bottoms, size 00, straps	320 x 600 x 220	9
	■	■		SP 200/NVE1P- C	400	160	2 sets of fuse bottoms, size 00, straps	320 x 600 x 220	10
	■	■		SP 300/NVE1P- C	400	160	3 sets of fuse bottoms, size 00, straps	470 x 600 x 220	12
	■		□	SP 101/NVF1W- C	400	250	1 set of fuse bottoms, size 1, straps	320 x 600 x 220	10
	■		□	SP 102/NVF1W- C	400	400	1 set of fuse bottoms, size 2, straps	320 x 600 x 220	10
	□		□	SP 201/NVF1W- C	400	250	2 sets of fuse bottoms, size 1, straps	470 x 600 x 220	13
Connecting boxes, loop, for connection up to 240 mm ² IN THE NICHE (PC)	□	□		SP 100/PVE1P	400	160	1 set of fuse bottoms, size 00, straps	374 x 570 x 242	8
	□	□		SP 200/PVE1P	400	160	2 sets of fuse bottoms, size 00, straps	374 x 570 x 242	9
	□	□		SP 300/PVE1P	400	160	3 sets of fuse bottoms, size 00, straps	484 x 570 x 242	11
	□		■	SP 101/PVF1W	400	250	1 set of fuse basis, size 1, straps	374 x 570 x 242	8
	□		■	SP 102/PVF1W	400	400	1 set of fuse bases, size 2, straps	374 x 570 x 242	8
	□		■	SP 201/PVF1W	400	250	2 sets of fuse bases, size 1, straps	484 x 570 x 242	11
Connecting boxes, loop, for connection up to 240 mm ² IN THE NICHE SMC	□	□		SP 100/NVE1P	400	160	1 set of fuse bases, size 00, straps	320 x 640 x 250	11
	□	□		SP 200/NVE1P	400	160	2 sets of fuse bases, size 00, straps	320 x 640 x 250	15
	□	□		SP 300/NVE1P	400	160	3 sets of fuse bases, size 00, straps	470 x 640 x 250	16
	□		□	SP 101/NVF1W	400	250	1 set of fuse bases, size 1, straps	320 x 640 x 250	12
	□		□	SP 102/NVF1W	400	400	1 set of fuse bases, size 2, straps	320 x 640 x 250	12
	□		□	SP 201/NVF1W	400	250	2 sets of fuse bases, size 1, straps	470 x 640 x 250	17
Connecting boxes, loop, for connection up to 240 mm ² IN THE NICHE (concrete + plastic door, 610 mm in height)			■	SP 101/KVF4W	400	250	1 set of fuse bases, size 1, straps	410 x 610 x 250	28
			■	SP 102/KVF4W	400	400	1 set of fuse bases, size 2, straps	410 x 610 x 250	28
	□		■	SP 201/KVF4W	400	250	2 sets of fuse bases, size 1, straps	410 x 610 x 250	29
Connecting boxes, loop, for connection up to 240 mm ² IN THE NICHE (Concrete + plastic door, 510 mm in height)	■			SP 100/KVE4P M	400	160	1 set of fuse bases, size 00, straps	410 x 510 x 250	26
	■			SP 200/KVE4P M	400	160	2 sets of fuse bases, size 00, straps	410 x 510 x 250	27
	■			SP 300/KVE4P M	400	160	3 sets of fuse bases, size 00, straps	410 x 510 x 250	28
		□	□	SP 101/KVF4W M	400	250	1 set of fuse bases, size 1, straps	410 x 510 x 250	26
	■	□	■	SP 102/KVF4W M	400	400	1 set of fuse bases, size 2, straps	410 x 510 x 250	26
		□	■	SP 201/KVF4W M	400	250	2 sets of fuse bases, size 1, straps	540 x 510 x 250	36
Connecting boxes, loop, for connection up to 240 mm ² , COMPACT PILLAR (SMC, - C" design)	■	■		SP 100/NKE1P- C	400	160	1 set of fuse base, size 00, straps	320 x 1810 x 220	20
	■	■		SP 200/NKE1P- C	400	160	2 sets of fuse bases, size 00, straps	320 x 1810 x 220	21
	■	■		SP 300/NKE1P- C	400	160	3 sets of fuse bases, size 00, straps	470 x 1810 x 220	26
	■			SP 101/NKF1W- C	400	250	1 set of fuse base, size 1, straps	320 x 1810 x 220	21
	■		□	SP 102/NKF1W- C	400	400	1 set of fuse base, size 2, straps	320 x 1810 x 220	21
			□	SP 201/NKF1W- C	400	250	2 sets of fuse bases, size 1, straps	470 x 1810 x 220	27
Connecting boxes, loop, for connection up to 240 mm ² , COMPACT PILLAR (PC)	□		□	SP 100/PKE1P	400	160	1 set of fuse base, size 00, straps	374x 1785 x 242	21
	□	□		SP 200/PKE1P	400	160	2 sets of fuse bases, size 00, straps	374x 1785 x 242	22
	□	□		SP 300/PKE1P	400	160	3 sets of fuse bases, size 00, straps	484 x 1785 x 242	26
	□	□	■	SP 101/PKF1W	400	250	1 set of fuse base, size 1, straps	374 x 1785 x 242	21
	□		■	SP 102/PKF1W	400	400	1 set of fuse base, size 2, straps	374 x 1785 x 242	21
	□		■	SP 201/PKF1W	400	250	2 sets of fuse bases, size 1, straps	484 x 1785 x 242	26
Connecting boxes, loop, for connection up to 240mm ² , COMPACT PILLAR (SMC)	□			SP 100/NKE1P	400	160	1 set of fuse bases, size 00, straps	320x1830x250	22
	□	□		SP 200/NKE1P	400	160	2 sets of fuse bases, size 00, straps	320x1830x250	30
	□	□		SP 300/NKE1P	400	160	3 sets of fuse bases, size 00, straps	470 x 1830 x 250	31
	□	□		SP 101/NKF1W	400	250	1 set of fuse bases, size 1, straps	320 x 1830 x 250	23
	□		□	SP 102/NKF1W	400	400	1 set of fuse bases, size 2, straps	320 x 1830 x 250	23
	□		□	SP 201/NKF1W	400	250	2 sets of fuse bases, size 1, straps	470 x 1830 x 250	32
Data for the order									

Structural and material
design
in the wall niche or brick
pillar



Note: When ordering, it is necessary to state the name (abbreviation) of the power company (ČEZ, E.ON, PRE) to whose distribution system the switchboard will be connected (installed).

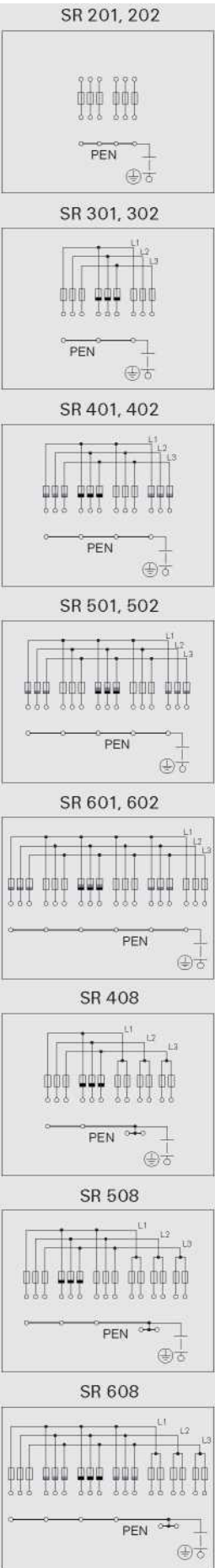
It is possible to manufacture connecting loop boxes fitted with fuse bases, size 1, 2 DIII - E33 or fuse bases, size 1, 2 with screws (or the combination of flags and screws) for possible connection by cable lugs, namely upon an order. Switchboards of SS201 type designated for PRE are delivered with double busbar PEN. It is possible to manufacture the switchboard of SS201 PR2 type, fitted with leakage strips enabling the connection of all conductors only in the lower part of the switchboard. It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis. In case of ordering the switchboards with preparation for optical cables distribution for the power company PRE, these switchboards are marked with "-OT" at the end of standard marking (e.g. SS102/KVF4W-OT). The accessories of these switchboards include protective shields to cover the power parts of the switchboard.

■ Approved and agreed types of individual distribution companies.

□ Connecting boxes must be negotiated in advance and approved by a relevant distribution company.

Combination of the connecting loop box with overvoltage protections is given on p. 28 Combination of the connecting loop box with electric meter switchboard is given on p. 20 and p. 33-41 (Helga® sets)

Circuit diagram



■ one lead
■ more leads

DISCONNECTING SECURING BOXES

Technical parameters:

Nominal voltage Un:	690 V, AC
Nominal working voltage Ue:	up to 690 V, AC
Nominal insulation voltage Ui:	690 V, AC
Nominal pulsating withstand voltage Uimp:	8 kV (1.2/50 ps)
Overvoltage category:	IV
Nominal current of switchboard InA:	250 - 1200 A
Nominal current of circuit (secured outlet) Inc:	160, 250, 400 A
Max. current loading capacity of busbars:	620 A
Nominal conditional short-circuit current Icc:	40 kA
Nominal frequency fn:	50Hz
Level of pollution:	3
Grounding set:	TN- C
Level of protection by cover:	IP44, after door opening IP00
Level of mechanical protection:	IK10
EMC environment:	B
Equipment securing from short-circuit (SCPD):	fuse links, knife, size 00; fuse links, cylindrical, size 14 x 51 (switch off range and utilization closable cover Automatic disconnection from the source HB 40, V-0 according to ČSN EN 60695-11-10 10 + 240 mm ² size 00 - 50 mm ² size 1, 2 - 10 + + 240 mm ²
Basic protection (protection from touching live Protection in case of failure (protection from Degree of flammability:	
Max. cross section of feeding conductors:	size 00 - 50 mm ² size 1, 2 - 10 + + 240 mm ²
Max. cross section of outlet conductors according to the fuse bases:	- fuse base of 00 - clamp H/M8
Method of conductors' connection according to the fuse base: securing element:	- fuse base of 1, 2 - connecting V-clamp
busbar:	- connecting V-clamp, clamp H/M8
PEN grounding	- strap clamp PE/M8

Use:

Disconnecting, in-line securing switchboards and pillars are used for disconnecting, splitting, continuous connection and securing of cable electric distribution networks. The switchboards are designated for use by the persons who are at least familiarized with it. The switchboards are designated for the installation and use outside and inside and are of stable design with fixed parts of the structure.

Technical design:

The switchboards are delivered with internal accessories without fuse links. To connect the conductors, the offer includes the securing elements with connecting V-clamps. Nominal current of the switchboard gives the summary of currents of all leads. If necessary to connect more leads to the switchboard, these leads must be exchanged with outlets so that maximum current loading capacity of working busbars of the switchboard is not exceeded (see circuit diagram). To enlarge a number of outlets, fuse bases of size 1 or 2, R200 type (created with two sets of fuse bases of 00 size) might be replaced.

Cable distributors fitted with the flags of V-shape are provided with straps as standard. In case of compact pillars, a special cable distributor can be delivered and also a relevant pillar base.

Accessories:

R200 reduction

Covers of fuse bases contacts material.

Product complies with the requirements of valid standard:

ČSN 33 3320 ed.2, ČSN EN 61439-1 ed.2,

ČSN EN 61439-5 ed.2, PNE 35 7000

Tests performed, regulations, legislation:

Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order:

Type marking: SP 402/NVW2

Description: Disconnecting securing boxes contain four sets of fuse bases of size 2. The switchboard is made of reactoplast, is designated for setting in the niche, with connecting flags of V shape, fitted with straps for connecting conductors, three-point closure of the switchboard on the closure insert for the power industry.

SR408



SR502



Technical Parameters:

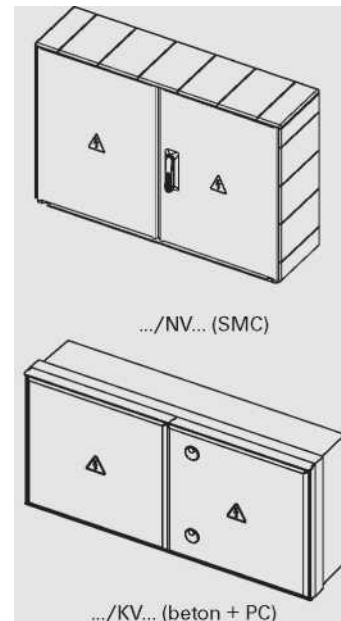
CEZ	E.ON	PRE	Type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]	Device accessories	Outer dimensions width x height x depth [mm]	Weight [kg]
Disconnecting securing boxes (fuse bases) - IN THE NICHE:								
■			SP 301/NVW1	250	250	3 sets of fuse bases, size 1, straps	620 x 640 x 250	22
■			SP 401/NVW2	500	250	4 sets of fuse bases, size 1, straps	930 x 640 x 250	30
■			SP 501/NVW2	500	250	5 sets of fuse bases, size 1, straps	1080 x 640 x 250	35
■			SP 601/NVW2	750	250	6 sets of fuse bases, size 1, straps	1230 x 640 x 250	43
■	□	□	SP 202/NVW1	400	400	2 sets of fuse bases, size 2, straps	470 x 640 x 250	17
■	□	□	SP 302/NVW1	400	400	3 sets of fuse bases, size 2, straps	620 x 640 x 250	22
■	□	□	SP 402/NVW2	800	400	4 sets of fuse bases, size 2, straps	930 x 640 x 250	31
■	□	□	SP 502/NVW2	800	400	5 sets of fuse bases, size 2, straps	1080 x 640 x 250	35
■	□	□	SP 602/NVW2	1200	400	6 sets of fuse bases, size 2, straps	1230 x 640 x 250	41
■	□		SP 408/NVW2	400	400 160	2 sets of fuse bases, size 2, straps 2 sets of fuse bases, size 00	780 x 640 x 250	26
□	□		SP 508/NVW2	720	400 160	3 sets of fuse bases, size 2, straps 2 sets of fuse bases, size 00	930 x 640 x 250	32
■	□		SP 608/NVW2	800	400 160	4 sets of fuse bases, size 2, straps 2 sets of fuse bases, size 00	1080 x 640 x 250	36
Disconnecting securing boxes (fuse bases) - IN THE NICHE (plastic doors):								
■		□	SP 202/KVW4	400	400	2 sets of fuse bases, size 2, straps	534 x 510 x 250	36
■		■	SP 302/KVW4	400	400	3 sets of fuse bases, size 2, straps	815 x 510 x 250	51
■		■	SP 402/KVW4	800	400	4 sets of fuse bases, size 2, straps	1065 x 510 x 250	68
■		■	SP 502/KVW4	800	400	5 sets of fuse bases, size 2, straps	1320 x 510 x 250	83
■			SP 408/KVW4	400	400 160	2 sets of fuse bases, size 2, straps 2 sets of fuse bases, size 00	815 x 510 x 250	51
■			SP 508/KVW4	720	400 160	3 sets of fuse bases, size 2, straps 2 sets of fuse bases, size 00	1065 x 510 x 250	68
■			SP 608/KVW4	800	400 160	4 sets of fuse bases, size 2, straps 2 sets of fuse bases, size 00	1320 x 510 x 250	83
Disconnecting securing boxes (fuse bases) - COMPACT PILLAR:								
■			SP 301/NKW1	250	250	3 sets of fuse bases, size 1, straps	620 x 1830 x 250	43
■			SP 401/NKW2	500	250	4 sets of fuse bases, size 1, straps	930 x 1830 x 250	58
■			SP 501/NKW2	500	250	5 sets of fuse bases, size 1, straps	1080 x 1830 x 250	66
■			SP 601/NKW2	750	250	6 sets of fuse bases, size 1, straps	1230 x 1830 x 250	73
■		□	SR202/ NKW1	400	400	2 sets of fuse bases, size 2, straps	470 x 1830 x 250	34
■		□	SR302/ NKW1	400	400	3 sets of fuse bases, size 2, straps	620 x 1830 x 250	44
■		□	SP 402/NKW2	800	400	4 sets of fuse bases, size 2, straps	930 x 1830 x 250	58
■		□	SP 502/NKW2	800	400	5 sets of fuse bases, size 2, straps	1080 x 1830 x 250	66
■		□	SP 602/NKW2	1200	400	6 sets of fuse bases, size 2, straps	1230 x 1830 x 250	73
■			SP 408/NKW2	400	400 160	2 sets of fuse bases, size 2, straps 2 sets of fuse bases, size 00	780 x 1830 x 250	49
□			SP 508/NKW2	720	400 160	3 sets of fuse bases, size 2, straps 2 sets of fuse bases, size 00	930 x 1830 x 250	59
■			SP 608/NKW2	800	400 160	4 sets of fuse bases, size 2, straps 2 sets of fuse bases, size 00	1080 x 1830 x 250	66
Data for the order								

It is possible to manufacture connecting loop boxes fitted with fuse bases, size 00 or fuse bases with crews for cable lugs.

Disconnecting securing boxes designated for PRE based on an order are delivered with system insert EVVA (GUARD) or in "P" material design. It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis. Based on an order, after consultation with a customer, it is possible to make the disconnection securing boxes of Smart Grid design. in case of ordering the switchboards with preparation for optical cables distribution for the power company PRE, these switchboards are marked with"-OT" at the end of standard marking (e.g., SR302/KVW9-OT). The accessories of these switchboards include protective shields to cover the power parts of the switchboard. n Approved and agreed types of individual distribution companies.

Disconnecting boxes must be negotiated in advance and approved by a relevant distribution company.

Structural and material design in the wall niche or brick pillar



compact pillar

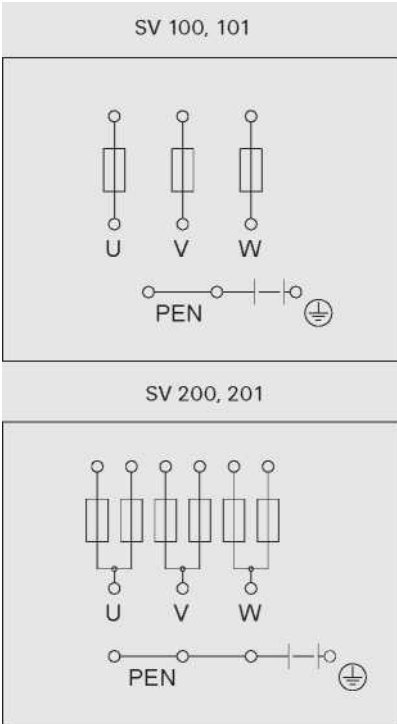


SR302



Circuit diagram

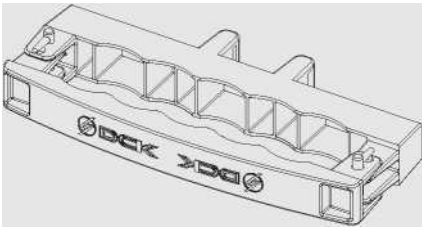
DISCONNECTING SECURING BOXES
FOR OUTSIDE LINES



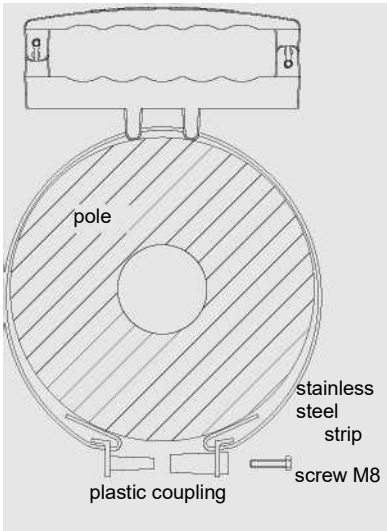
Technical parameters:

Nominal voltage Un:	690 V, AC
Nominal working voltage Ue:	up to 690 V, AC
Nominal insulation voltage Ui:	690 V, AC
Nominal pulsating withstand voltage Uimp:	8 kV (1.2/50 ps)
Overvoltage category:	IV
Nominal current of switchboard InA:	160 - 280 A
Nominal current of circuit (secured outlet) Inc:	160, 250 A
Nominal conditional short-circuit current Icc:	40 kA
Nominal frequency fn:	50Hz
Level of pollution:	3
Grounding set:	TN- C
Level of protection by cover:	IP44, after door opening IP00
Level of mechanical protection:	IK10
EMC environment:	B
Equipment securing from short-circuit (SCPD):	fuse links, knife, size 00, 1, 1 (switch off range and utility category - char. gG)
Basic protection (protection from touching live parts):	closable cover
Protection in case of failure (protection from touching	Automatic disconnection from the source
Degree of flammability:	HB 40, V-0 according to ČSN EN 60695-11-10
Max. cross section of feeding conductors:	10 + 150 mm ²
Max. cross section of outlet conductors according to the fuse base:	size 00 - 10 95 mm ² size 1 - 10 + 150 mm ²
Method of conductors' connection: securing element:	- fuse base, size 00 - clamp H/M8 - fuse base, size 00 - connecting V-clamp - connecting V-clamp - connecting V-clamp - strap clamp PE/M8
busbar: working	- connecting V-clamp
PEN	- connecting V-clamp
grounding	- strap clamp PE/M8

Cable duct holder UNI



Fastening to the pole by installation set DCK



Use:

Outside disconnecting boxes are used for disconnecting, splitting and securing of low-voltage distribution placed on poles of electric lines. The switchboards are designated for use by the persons who are at least familiarized with it. The switchboards are designated for the installation and use outside and inside and are of stable design with fixed parts of the structure.

Technical design:

The switchboards are delivered with internal accessories without fuse links. To connect the conductors, the offer includes the securing elements with connecting V-clamps. The switchboards are provided with holders and are fastened on a pole by installation set DCK or Bandimex strip. For cable inlets, the switchboard is provided with outlets securing a covered entry of leads by cable ducts Ø 63 or 75 mm. Cable distributors fitted with the flags of V-shape are provided with straps as standard.

Accessories:

Plastic holders of cable ducts UNI (1, 2, 3 leads-in). Installation set DCK for mounting on a pole. Covers of fuse bases contacts.

Product complies with the requirements of valid standard:

ČSN 33 3320 ed.2, ČSN EN 61439-1 ed.2, ČSN EN 61439-5 ed.2, PNE 35 7000

Tests performed, regulations, legislation:

Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order:

Type marking: SP 201/NSD1W-C ČEZ

Description: Disconnecting securing box for outside lines containing two sets of fuse bases of size 1; the switchboard is made of reactoplastic, is designated for mounting on a pole, with connecting conductors by flags of V-shape, including straps, door closing by a simple closure for the power industry. Placement of bushing in the upper part and 2 bushings in the lower part of the switchboard.

Technical Parameters

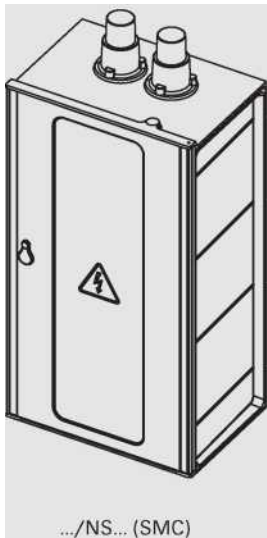
ČEZ	E.ON	Type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]	Device accessories	Outer dimensions width x height x depth [mm]	Weight [kg]
Disconnecting securing boxes for outside lines - ON A POLE) bushings in the upper and lower part):							
■		SP 100/NSV1V-C	160	160	1 set of fuse bases, size 00, bushing straps: 2x on top, 1x below	320 x 600 x 220	9
■		SP 200/NSC1V-C	280	160	2 set of fuse bases, size 00, bushing straps: 3x on top, 2x below	320 x 600 x 220	10
■	■	SP 101/NSW1W-C	250	250	1 set of fuse bases, size 1, bushing straps: 2x on top, 1x below	320 x 600 x 220	10
■	■	SP 201/NSD1W-C	280	250	2 set of fuse bases, size 1, bushing straps: 3x on top, 2x below	470 x 600 x 220	14
Data for an order							

It is possible to manufacture a disconnecting securing box fitted with fuse bases, size 2 or three or four sets of fuse bases, size 00 or size 1 or fuse bases with strews on cable lugs.

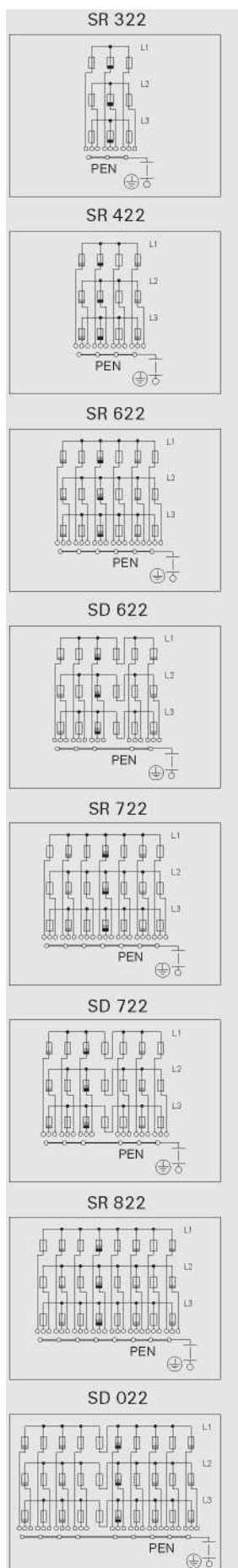
- Approved and agreed types of individual distribution companies.
- Disconnecting boxes must be negotiated in advance and approved by a relevant distribution company.

Note: When ordering, it is necessary to state the name (abbreviation) of the power company (ČEZ, E.ON) to whose distribution system the switchboard will be connected (installed).

Structural and material design
on the supporting spot of outer lines



Circuit diagram



DISCONNECTING STRIP SECURING BOXES

Technical parameters:

Nominal voltage U_n :	690 V, AC
Nominal working voltage U_e :	up to 690 V, AC
Nominal insulation voltage U_i :	690 V, AC
Nominal pulsating withstand voltage U_{imp} :	8 kV (1.2/50 js)
Overvoltage category:	IV
Nominal current of switchboard $I_n A$:	400 - 1600 A
Nominal current of circuit (secured outlet) I_{nc} :	160, 400 A
Max. current loading capacity of busbars:	520 A
Nominal conditional short-circuit current I_{cc} :	40 kA
Nominal frequency f_n :	50Hz
Level of pollution:	3
Grounding set:	TN- C
Level of protection by cover:	IP44, after door opening IP00
Level of mechanical protection:	IK10
EMC environment:	B
Equipment securing from short-circuit (SCPD):	fuse links, knife, size 00, 2 (switch off range and utilization category - char. gG)
Basic protection (protection from touching live parts):	closable cover
Protection in case of failure (protection from automatic disconnection from the source)	HB 40, V-0
Degree of flammability:	according to ČSN EN 60695-11-10
Max. cross section of feeding conductors:	10 + 240 mm ²
Max. cross section of outlet conductors according to the fuse strips:	size 2 - 10 240 mm ² size 00 - 95 mm ²
Method of conductors' connection: fuse strip	size 2 - connecting V-clamp size 00 - strap clamp
busbar:	
PEN	- connecting V-clamp / strap clamp
Grounding	- strap clamp PE/M8

Use:

Disconnecting, strip securing switchboards and pillars are used for disconnecting, splitting, continuous connection and securing of cable electric distribution networks. The switchboards are designated for use by the persons who are at least familiarized with it. The switchboards are designated for the installation and use outside and inside and are of stable design with fixed parts of the structure.

Technical design:

The switchboards are delivered with internal accessories without fuse links. To connect the conductors, the offer includes the securing elements with connecting V-clamps. Nominal current of the switchboard gives the sum of currents of all leads. If necessary to connect more leads to the switchboard, these leads must be exchanged with outlets so that maximum current loading capacity of working busbars of the switchboard is not exceeded (see circuit diagram). If it is necessary to enlarge a number of outlets, one fuse in-line of size 2 can be replaced by the reduction of R220 type with two strips of size 00. Cable distributors fitted with the flags of V-shape are provided with straps as standard. In case of compact pillars, a special cable distributor can be delivered and also a relevant pillar base.

Accessories:

R220 reduction, backfill.

Product complies with the requirements of valid standard:

ČSN 33 3320 ed.2, ČSN EN 61439-1 ed.2, ČSN EN 61439-5 ed.2, PNE 35 7000

Tests performed, regulations, legislation:

Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order:

Type marking: SP 522/NKW2 E.ON

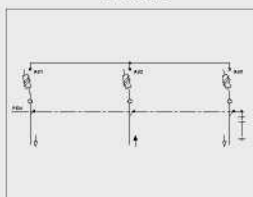
Description: Disconnecting securing strip compact pillar containing five fuse in-line of size 2 is made of reactoplastic, is designated for setting in the niche, with connecting flags of V-shape, fitted with straps, three-point closure of the switchboard on the closure insert for the power industry.

Note: When ordering, it is necessary to state the name (abbreviation) of the power company (ČEZ, E.ON) to whose distribution system the switchboard will be connected (installed).

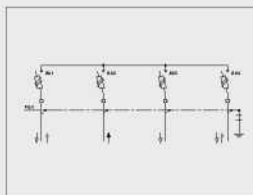
Other circuit diagrams are on www.dck.cz

Circuit diagram

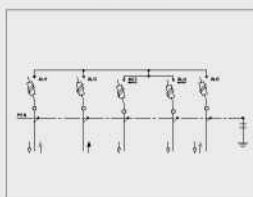
SR 332



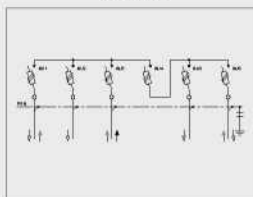
SR 432



SR 552



SD 632



DISCONNECTING SECURING BOXES, WITH ISOLATING SWITCHES in new DIN design series

■ Technical parameters:

Nominal voltage U_n :	690 V, AC
Nominal working voltage U_e :	690 V, AC
Nominal insulation voltage U_i :	690 V, AC
Nominal pulsating withstand voltage U_{imp} :	8 kV (1.2/50 μ s)
Overvoltage category:	IV
Nominal current of switchboard I_n A:	400 - 1600 A
Nominal current of circuit (secured outlet) I_{nc} :	160, 400 A

Max. current loading capacity of busbars:	520 A
Nominal conditional short-circuit current I_{cc} :	40 kA
Nominal frequency f_n :	50 Hz
Level of pollution:	3
Grounding set:	TN- C
Level of protection by cover:	IP44, after door opening IP00
Level of mechanical protection:	IK10
EMC environment:	B
Equipment securing from short-circuit (SCPD):	fuse links, knife size 00, 2 (switch-off range and utility category - char. gG)

Basic protection (protection from touching live parts): closable cover

Protection in case of failure (protection from touching non-live parts): Automatic disconnection from the source

Degree of flammability:	HB 40, V-0 according to ČSN EN 60695-11-10
Max. cross section of feeding conductors:	10 * 240 mm ²
Max. cross section of outlet conductors according to the fuse strips:	size 2 - 10 * 240 mm ² size 00 - to 95 mm ²
Method of conductors' connection: fuse isolating switch	size 2 - connecting V-clamp size 00 - strap clamp

busbar:

PEN

Grounding

- connecting V-clamp / strap clamp
- strap clamp PE/M8

■ Use:

Disconnecting, strip securing switchboards and pillars are used for disconnecting, splitting, continuous connection and securing of cable electric distribution networks. The switchboards are designated for use by the persons who are at least familiarized with it. The switchboards are designated for the installation and use outside and inside and are of stable design with fixed parts of the structure.

■ Technical design:

The switchboards are delivered with internal accessories without fuse links. To connect the conductors, the offer includes the securing elements with connecting V-clamps. Nominal current of the switchboard gives the sum of currents of all leads. If necessary to connect more leads to the switchboard, these leads must be exchanged with outlets so that maximum current loading capacity of working busbars of the switchboard is not exceeded (see circuit diagram). If it is necessary to enlarge a number of outlets, one fuse in-line of size 2 can be replaced by the reduction of R230 type with two strips of size 00. Cable distributors fitted with the flags of V-shape are provided with straps as standard. In case of compact pillars, a special cable distributor can be delivered and also a relevant pillar base.

■ Accessories:

R230 reduction, backfill.

■ Product complies with the requirements of valid standard:

ČSN 33 3320 ed.2, ČSN EN 61439-1 ed.2, ČSN EN 61439-5 ed.2, PNE 35 7000, DIN 43629

■ Tests performed, regulations, legislation:

Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

■ Example of data for an order:

Type marking: SP 532/NKW2-DIN E.ON

Description: Disconnecting securing strip compact pillar containing five fuse in-line of size 2 is made of reactoplastic, is designated for setting in the niche, with connecting flags of V-shape, fitted with straps, three-point closure of the switchboard on the closure insert for the power industry.

Note: When ordering, it is necessary to state the name (abbreviation) of the power company (ČEZ, E.ON) to whose distribution system the switchboard will be connected (installed).

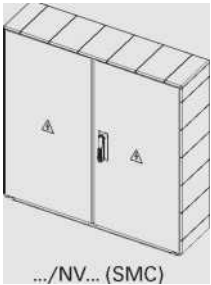
Other circuit diagrams are on www.dck.cz

Technical Parameters

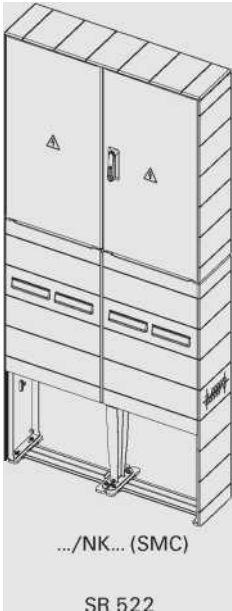
ČEZ E.ON	Type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]:	Device accessories	Outer dimensions width x height x depth [mm]	Weight [kg]
Strip disconnecting boxes - IN THE NICHE (fuse strips - size 2).						
■	SP 322/NVW2	400	400	3X fuse strip of size 2, straps	470 x 940 x 250	29
■	SP 422/NVW2	800	400	4x fuse strip of size 2, straps	470 x 940 x 250	32
■	SP 522/NVW2	800	400	5x fuse strip of size 2, straps	620 x 940 x 250	40
■	SP 622/NVW2	1200	400	6x fuse strip of size 2, straps	780 x 940 x 250	49
■	SP 722/NVW2	1200	400	7x fuse strip of size 2, straps	780 x 940 x 250	52
■	SP 822/NVW2	1600	400	8x fuse strip of size 2, straps	930 x 940 x 250	62
■	SP 922/NVW2	1600	400	9x fuse strip of size 2, straps	1080 x 940 x 250	67
Disconnecting securing boxes - IN THE NICHE (fuse strips - combination of size 2 and size 00).						
■	SP 442/NVW2	400	400 160	2x fuse strip of size 2, straps, 2x fuse strip of size 00, straps	470 x 940 x 250	29
■	SP 542/NVW2	720	400 160	3x fuse strip of size 2, straps, 2x fuse strip of size 00, straps	470 x 940 x 250	32
■	SP 642/NVW2	800	400 160	4x fuse strip of size 2, straps, 2x fuse strip of size 00, straps	620 x 940 x 250	40
■	SP 744/NVW2	800	400 160	3x fuse strip of size 2, straps, 4x fuse strip of size 00, straps	620 x 940 x 250	41
Strip disconnecting boxes - IN THE NICHE (fuse strips - size 2, with divided working busbar):						
■	SP 622/NVW2	800	400	5x fuse strip of size 2, straps, 1x disconnecting strip of size 2	780 x 940 x 250	48
■	SP 722/NVW2	800	400	6x fuse strip of size 2, straps, 1x disconnecting strip of size 2	780 x 940 x 250	52
■	SP 822/NVW2	1200	400	7x fuse strip of size 2, straps, 1x disconnecting strip of size 2	930 x 940 x 250	61
■	SP 922/NVW2	1600	400	8x fuse strip of size 2, straps, 1x disconnecting strip of size 2	1080 x 940 x 250	66
■	SP 022/NVW2	1600	400	9x fuse strip of size 2, straps, 1x disconnecting strip of size 2	1080 x 940 x 250	72
Disconnecting securing boxes - IN THE NICHE (fuse strips - combination of size 2 and size 00, with divided working busbar):						
■	SD742/ NVW2	720	400 160	4x fuse strip of size 2, straps, 1x disconnecting strip of size 2, 2x fuse strip of size 00, straps	780 x 940 x 250	48
□	SD842/ NVW2	800	400 160	5x fuse strip of size 2, straps, 1x disconnecting strip of size 2, 2x fuse strip of size 00, straps	780 x 940 x 250	51
□	SD942/ NVW2	1120	400 160	6x fuse strip of size 2, straps, 1x disconnecting strip of size 2, 2x fuse strip of size 00, straps	930 x 940 x 250	60
Disconnecting securing boxes - COMPACT PILLAR (fuse strips of size 2):						
■	SP 322/NKW2	400	400	3x fuse strip of size 2, straps	470 x 2130 x 250	44
■	SP 422/NKW2	800	400	4x fuse strip of size 2, straps	470 x 2130 x 250	48
■	SP 522/NKW2	800	400	5x fuse strip of size 2, straps	620 x 2130 x 250	61
■	SP 622/NKW2	1200	400	6x fuse strip of size 2, straps	780 x 2130 x 250	73
■	SP 722/NKW2	1200	400	7x fuse strip of size 2, straps	780 x 2130 x 250	76
■	SP 822/NKW2	1600	400	8x fuse strip of size 2, straps	930 x 2130 x 250	92
■	SP 922/NKW2	1600	400	9x fuse strip of size 2, straps	1080 x 2130 x 250	100
Disconnecting securing boxes - COMPACT PILLAR (fuse strips - combination of size 2 and size 00).						
■	SP 442/NKW2	400	400 160	2x fuse strip of size 2, straps, 2x fuse strip of size 00, straps	470 x 2130 x 250	46
■	SP 542/NKW2	720	400 160	3x fuse strip of size 2, straps, 2x fuse strip of size 00, straps	470 x 2130 x 250	49
■	SP 642/NKW2	800	400 160	4x fuse strip of size 2, straps, 2x fuse strip of size 00, straps	620 x 2130 x 250	61
■	SP 744/NKW2	800	400 160	3x fuse strip of size 2, straps, 4x fuse strip of size 00, straps	620 x 2130 x 250	62
Securing disconnecting boxes - ICOMPACT PILLAR (fuse strips - size 2, with divided working busbar):						
■	SP 622/NKW2	800	400	5x fuse strip of size 2, straps, 1x disconnecting strip of size 2	780 x 2130 x 250	71
■	SP 722/NKW2	800	400	6x fuse strip of size 2, straps, 1x disconnecting strip of size 2	780 x 2130 x 250	75
■	SP 822/NKW2	1200	400	7x fuse strip of size 2, straps, 1x disconnecting strip of size 2	930 x 2130 x 250	87
■	SP 922/NKW2	1600	400	8x fuse strip of size 2, straps, 1x disconnecting strip of size 2	1080 x 2130 x 250	95
■	SP 022/NKW2	1600	400	9x fuse strip of size 2, straps, 1x disconnecting strip of size 2	1080 x 2130 x 250	101
Disconnecting securing boxes - COMPACT PILLAR (fuse strips - combination of size 2 and size 00, with divided working busbar):						
■	SP 742/NKW2	720	400 160	4x fuse strip of size 2, straps, 1x disconnecting strip of size 2, 2x fuse strip of size 00, straps	780 x 2130 x 250	72
■	SP 842/NKW2	800	400 160	5x fuse strip of size 2, straps, 1x disconnecting strip of size 2, 2x fuse strip of size 00, straps	780 x 2130 x 250	75
■	SP 942/NKW2	1120	400 160	6x fuse strip of size 2, straps, 1x disconnecting strip of size 2, 2x fuse strip of size 00, straps	930 x 2130 x 250	87
Data for an order						

Structural and material design

in the wall niche or brick pillar



compact pillar



SR 522



It is possible to manufacture disconnecting securing boxes fitted with different variants and numbers of fuse strips of size 00 and size 2 or fitted with fuse isolating switches of size 2.

Disconnecting securing boxes designated for PRE are delivered upon and order in "P" material design with the system link EVVA (GUARD) It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis. Based on an order, after consultation with a customer, it is possible to make the disconnection securing boxes of Smart Grid design. In case of ordering the switchboards with preparation for optical cables distribution for the power company PRE, these switchboards are marked with "-OT" at the end of standard marking (e.g. SR422/PVW9-OT). The accessories of these switchboards include protective shields to cover the power parts of the switchboard.

■ Approved and agreed types of individual distribution companies.

□ Disconnecting boxes must be negotiated in advance and approved by a relevant distribution company.

Technical Parameters

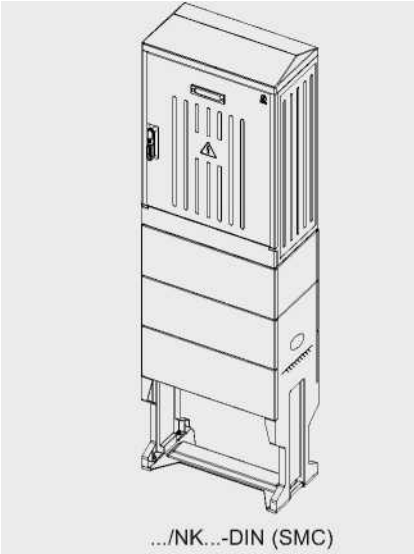
ČEZ E.ON	Type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]:	Device accessories	Outer dimensions width x height x x depth [mm]	Weight [kg]
Disconnecting securing boxes - IN THE NICHE (fuse isolating switches - size 2).						
■	SP 332/NVW2-DIN	400	400	3x fuse isolating switch size 2, straps	460x860x320	32
■	SP 432/NVW2-DIN	800	400	4x fuse isolating switch size 2, straps	460x860x320	36
■	SP 532/NVW2-DIN	800	400	5x fuse isolating switch size 2, straps	595x860x320	45
	SP 632/NVW2-DIN	1200	400	6x fuse isolating switch size 2, straps	790x860x320	55
	SP 732/NVW2-DIN	1200	400	7x fuse isolating switch size 2, straps	790x860x320	59
	SP 832/NVW2-DIN	1600	400	8x fuse isolating switch size 2, straps	1120x860x320	70
	SP 932/NVW2-DIN	1600	400	9x fuse isolating switch size 2, straps	1120x860x320	76
Disconnecting securing boxes - IN THE NICHE (fuse isolating switches - size 2 and size 00).						
■	SP 452/NVW2-DIN	400	400 160	2x fuse isolating switch size 2, straps, 2x fuse isolating switch size 00	460x860x320	32
■	SP 552/NVW2-DIN	720	400 160	3x fuse isolating switch size 2, straps, 2x fuse isolating switch size 00	460x860x320	36
■	SP 652/NVW2-DIN	800	400 160	4x fuse isolating switch size 2, straps, 2x fuse isolating switch size 00	595x860x320	45
■	SP 754/NVW2-DIN	800	400 160	3x fuse isolating switch size 2, straps, 4x fuse isolating switch size 00	595x860x320	46
Disconnecting securing boxes - IN THE NICHE (fuse isolating switches - size 2, with divided working busbar):						
■	SP 632/NVW2-DIN	800	400	5x fuse isolating switch size 2, straps, 1x disconnecting strip of size 2	790x860x320	54
■	SP 732/NVW2-DIN	800	400	6x fuse isolating switch size 2, straps, 1x disconnecting strip of size 2	790x860x320	58
■	SP 832/NVW2-DIN	1200	400	7x fuse isolating switch size 2, straps, 1x disconnecting strip of size 2	1120x860x320	69
■	SP 932/NVW2-DIN	1600	400	8x fuse isolating switch size 2, straps, 1x disconnecting strip of size 2	1120x860x320	75
	SP 032/NVW2-DIN	1600	400	9x fuse isolating switch size 2, straps, 1x disconnecting strip of size 2	1120x860x320	81
Disconnecting securing boxes - IN THE NICHE (fuse isolating switches - size 2 and size 00, with divided working busbar):						
■	SD752/ NVW2-DIN	720	400 160	4x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2, 2x fuse isolating switch size 00	790x860x320	54
□	SD852/ NVW2-DIN	800	400 160	5x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2, 2x fuse isolating switch size 00	790x860x320	57
□	SD952/ NVW2-DIN	1120	400 160	6x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2, 2x fuse isolating switch size 00	1120x860x320	67
Disconnecting securing boxes – COMPACT PILLAR (fuse strips of size 2):						
■	SP 332/NKW2-DIN	400	400	3x fuse isolating switch size 2, straps	460x2060x320	47
■	SP 432/NKW2-DIN	800	400	4x fuse isolating switch size 2, straps	460x2060x320	51
■	SP 532/NKW2-DIN	800	400	5x fuse isolating switch size 2, straps	595x2060x320	65
	SP 632/NKW2-DIN	1200	400	6x fuse isolating switch size 2, straps	790x2060x320	79
	SP 732/NKW2-DIN	1200	400	7x fuse isolating switch size 2, straps	790x2060x320	83
	SP 832/NKW2-DIN	1600	400	8x fuse isolating switch size 2, straps	1120x2060x320	100
	SP 932/NKW2-DIN	1600	400	9x fuse isolating switch size 2, straps	1120x2060x320	109
Disconnecting securing boxes - COMPACT PILLAR (fuse isolating switches - combination of size 2 and size 00).						
■	SP 452/NKW2-DIN	400	400 160	2x fuse isolating switch size 2, straps, 2x fuse isolating switch size 00	460x2060x320	47
■	SP 552/NKW2-DIN	720	400 160	3x fuse isolating switch size 2, straps, 2x fuse isolating switch size 00	460x2060x320	51
■	SP 652/NKW2-DIN	800	400 160	4x fuse isolating switch size 2, straps, 2x fuse isolating switch size 00	595x2060x320	66
■	SP 754/NKW2-DIN	800	400 160	3x fuse isolating switch size 2, straps, 4x fuse isolating switch size 00	595x2060x320	66
Disconnecting securing boxes - COMPACT PILLAR (fuse isolating switches - size 2, with divided working busbar):						
■	SP 632/NKW2-DIN	800	400	5x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2	790x2060x320	76
■	SP 732/NKW2-DIN	800	400	6x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2	790x2060x320	80
■	SP 832/NKW2-DIN	1200	400	7x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2	1120x2060x320	95
■	SP 932/NKW2-DIN	1600	400	8x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2	1120x2060x320	110
□	SP 032/NKW2-DIN	1600	400	9x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2	1120x2060x320	115
Disconnecting securing boxes - COMPACT PILLAR (fuse isolating switches - combination of size 2 and size 00, with divided working busbar):						
■	SP 752/NKW2-DIN	720	400 160	4x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2, 2x fuse isolating switch size 00	790x2060x320	76
■	SP 852/NKW2-DIN	800	400 160	5x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2, 2x fuse isolating switch size 00	790x2060x320	80
■	SP 952/NKW2-DIN	1120	400 160	6x fuse isolating switch size 2, straps, 1x disconnecting isolating switch size 2, 2x fuse isolating switch size 00	1120x2060x320	95
Data for an order						

Structural and material design

in the wall niche or brick pillar



compact pillar



SR 532



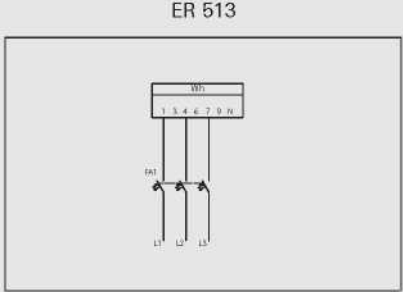
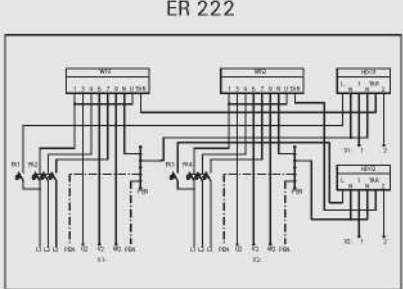
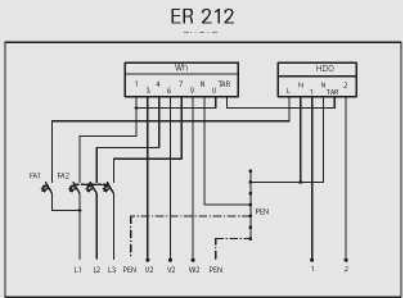
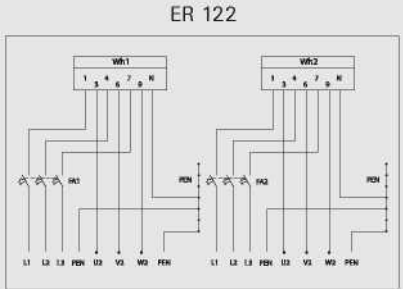
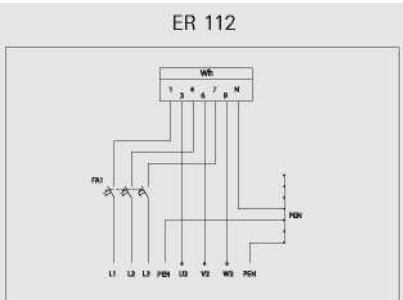
It is possible to manufacture disconnecting securing boxes fitted with different variants and numbers of fuse strips of size 00 and size 2 or fitted with fuse strips.

Disconnecting securing boxes designated for PRE are delivered upon and order in "P" material design with the system link EVVA (GUARD) It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis. Based on an order, after consultation with a customer, it is possible to make the disconnection securing boxes of Smart Grid design. In case of ordering the switchboards with preparation for optical cables distribution for the power company PRE, these switchboards are marked with "-OT" at the end of standard marking (e.g. SR422/PVW9-OT). The accessories of these switchboards include protective shields to cover the power parts of the switchboard.

- Approved and agreed types of individual distribution companies.
- Disconnecting boxes must be negotiated in advance and approved by a relevant distribution company.

SWITCHBOARDS FOR DIRECT MEASUREMENT

Circuit diagram



Technical parameters:

Nominal voltage U_n :
Nominal working voltage U_e :
Nominal insulation voltage U_i :
Nominal pulsating withstand voltage U_{imp} :
Overvoltage category:
Nominal current of switchboard I_n :
Nominal current of circuit (secured outlet) I_{nc} :
Nominal current of circuit (secured outlet) I_{nc} :
Nominal conditional short-circuit current I_{cc} :
Nominal short-term withstand current I_{cw} (not secured outlet):
Nominal frequency f_n :
Level of pollution:
Grounding set:
Level of protection by cover:

230/400 V, AC
230/400 V, AC
690 V, AC
6 kV (1.2/50 ps)
IV
ER - 40 - 100 A, ES (EP) - 400A
40 A (upon an order 50, 63, 80, 100A)
ES (EP) - 400 A
ER - 10kA, ES (EP) - 40 kA

ES (EP) - 36 kA / 10 ms
50Hz
3
TN- C
distribution part - IP44, after door opening IP00
electric meter part - IP44, after door opening IP20C
IK10
B
B

Level of mechanical protection:

DBO type:
EMC environment:

Equipment securing from short-circuit (SCPD):

Equipment securing from not secured outlet:

Basic protection (protection from touching live parts):
Protection in case of failure (protection from touching non-
Degree of flammability:
Max. cross section of feeding conductors:

Max. cross section of feeding conductors:

Method of conductors' connection:

circuit breaker (switch off range and utility category - char. B)
fuse links of size 00, 2
(switch-off range and utility category - char. gG)
coordinated securing element in the front
Switchboard (switch off range and utility category - char. gG) closable cover, partitions
automatic disconnection from the source
HB 40, V-0 according to ČSN EN 60695-11-10
ER - up to 16 mm²

ES, EP - 10 + 240 mm² power circuit up to 16 mm²
auxiliary circuit up to 4 mm² supply: ER - main circuit breaker clamps.
PEN terminal box
(ER513 - PEN - electricity meter clamps)
ES EP - connecting V-clamp outlet: terminal blocks up to 16 mm², terminal box PEN
(ER513 - electricity meter clamps) auxiliary circuits: terminal boxes up to 4 mm² (ER513 - clamps HDO) strap clamp PE/M8

Grounding:

Use: Electricity meter switchboards and pillars are designated as measuring equipment for measuring the consumption of electricity. They are suitable for family houses, holiday homes, cottages, and for production buildings of entrepreneurial activity. Distribution part of the switchboard is designated for the use by the persons who are at least familiar with it, the electricity meter part is designated for the use by laymen. The switchboards are designated for the installation and use outside and inside and are of stable design with fixed parts of the structure.
Technical design: Electricity meter switchboard with inner accessories for one-rate or two-rate measurement. In the set with the connecting box, it consists of two modules which are firmly connected together (ES) or are placed under each other (EP). According to individual designs, inner accessories consist of adjustable lugs for fastening the electricity meter and HDO receiver, circuit breakers of HDO receiver for two-rate switchboards, PEN terminal box and row clamps for outlet. Standard design of the switchboard allows fitting of the main three-phase circuit breaker up to 40A. As standard, the accessories of the connecting box are created by fuse bases of size 00 or size 2. The covers are prepared for a seal. The switchboards are delivered without the main circuit breaker. With ER513 switchboard, inner setting is adjusted for the use of the three-phase two-rate electricity meter with HDO receiver (design for PRE).
Accessories: Cover side boards N-C (only for the series of switchboards marked xxx/Nxxx-C) and covers of fuse bases contacts. Backfill.

Product complies with the requirements of valid standard:

ČSN EN 61439-1 ed2, ČSN EN 61439-3, ČSN EN 61439-5 ed.2, ČSN 33 3320 ed.2, PNE 35 7030, PNE 35 7000
Tests performed, regulations, legislation: Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order: Type marking: ER212/ NKP7P

Description: As standard, the electricity compact pillar enabling fitting with one three-phase electricity meter and HDO receiver for direct measurement up to 40A, structural design on the board with a sealable cover of circuit breakers. The pillar is made of rectoplastic/thermoplastic, is designated for the installation in the free space by connecting supply conductors in the main circuit breaker clamps, door closing is provided with the thorned key and connection of connector outlets in row clamps.

Type marking: ES212 +100/PKE8P

Description: The electricity meter compact pillar in combination with the connecting box (next to each other) enabling fitting with one three-phase electricity meter and HDO receiver for direct measurement up to 40 A, structural design on the board with a sealable cover of circuit breakers. The connecting box is fitted with one set of fuse bases of size 00. The pillar is made of reactoplastic/thermoplastic, is designated for the installation in the free space, with connecting flags of V-shape, fitted with straps for looping on the inlet, combined door closing with the thorned key 6 x 6 mm (electricity meter switchboard) and a simple closure for the power industry (connecting box). Connection of outlet conductors in row clamps.

Technical Parameters

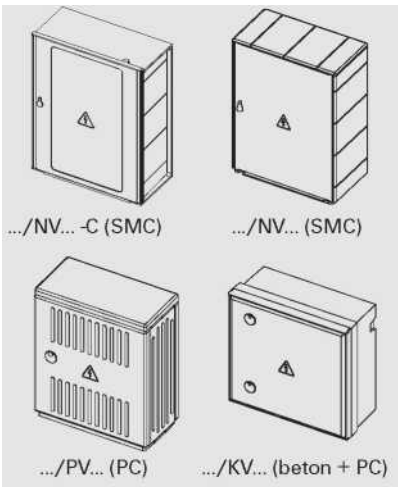
ČEZ	E.ON	PRE	Type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]:	Device accessories	Outer dimensions width x height x depth [mm]	Weight [kg]
Electricity meter switchboards - IN THE NICHE (1x one-tariff, three-phase).								
■	■		ER112/ NVP7P-C	40	40	1X terminal box PEN, row clamps, devices on the electricity meter board with a sealable cover of circuit breakers.	320 x 600 x 220	10
■	■		ER112/ PVP7P	40	40		484 x 570 x 242	12
■	■		ER112/ NVP7P	40	40		320 x 640 x 250	11
■	■		ER112/ KVP7P	40	40		540 x 510 x 250	33
Electricity meter switchboards - IN THE NICHE (2x one-tariff, three-phase).								
■	■		ER122/ NVP7P-C	80 (2x40)	40	1X terminal box PEN, row clamps, devices on the electricity meter board with a sealable cover of circuit breakers.	470 x 600 x 220	11
■	■		ER122/ NVP7P	80 (2x40)	40		470 x 640 x 250	16
Electricity meter switchboards - IN THE NICHE (1x two-tariff, three-phase).								
■	■		ER212/ NVP7P-C	40	40	1X terminal box PEN, 1x one-tariff circuit breaker 2A char. B for row clamps, devices on the electricity meter board with a sealable cover of circuit breakers.	470 x 600 x 220	12
■	■		ER212/ PVP7P	40	40		484 x 570 x 242	11
■	■		ER212/ NVP7P	40	40		470 x 640 x 250	16
■	■		ER212/ KVP7P	40	40		540 x 510 x 250	34
		■	ER513/ PVP7P	63	63	Devices on the electricity meter board with the sealable cover of circuit-breakers	484 x 570 x 242	11
		■	ER513/ KVP7P	63	63		410 x 510 x 250	25
Electricity meter switchboards - IN THE NICHE (2x two-tariff, three-phase).								
■	■		ER222/ NVP7P-C	80 (2x40)	40	1X terminal box PEN, 2x one-tariff circuit breaker 2A char. B for row clamps, devices on the electricity meter board with a sealable cover of circuit breakers.	640 x 600 x 220	14
■	■		ER222/ NVP7P	80 (2x40)	40		620 x 640 x 250	20
Electricity meter switchboards - COMPACT PILLAR (1x one-tariff, three-phase).								
■	■		ER112/ NKP7P-C	40	40	1X terminal box PEN, row clamps, devices on the electricity meter board with a sealable cover of circuit breakers.	320 x 1810 x 220	21
■	■		ER112/ PKP7P	40	40		484 x 1785 x 242	27
■	■		ER112/ NKP7P	40	40		320 x 1830 x 250	30
Electricity meter switchboards - COMPACT PILLAR (2x one-tariff, three-phase).								
■	■		ER122/ NKP7P-C	80 (2x40)	40	1X terminal box PEN, row clamps, devices on the electricity meter board with a sealable cover of circuit breakers.	470 x 1810x 220	23
■	■		ER122/ NKP7P	80 (2x40)	40		470 x 1830 x 250	29
Electricity meter switchboards - COMPACT PILLAR (1x two-tariff, three-phase).								
■	■		ER212/ NKP7P-C	40	40	1X terminal box PEN, 1x one-tariff circuit breaker 2A char. B for HDO row clamps, devices on the electricity meter board with a sealable cover of circuit breakers.	470 x 1810 x 220	25
■	■		ER212/ PKP7P	40	40		484 x 1785 x 242	23
■	■		ER212/ NKP7P	40	40		470 x 1830 x 250	29
		■	ER513/ PKP7P	63	63		484 x 1785 x 242	26
Electricity meter switchboards - COMPACT PILLAR (2x two-tariff, three-phase).								
■	■		ER222/ NKP7P-C	80 (2x40)	40	2X terminal box PEN, 2x one-tariff circuit breaker 2A char. B for HDO row clamps, devices on the electricity meter board with a sealable cover of circuit breakers.	640 x 1810 x 220	31
■	■		ER222/ NKP7P	80 (2x40)	40		620 x 1830 x 250	34
Data for an order								

■ Approved and agreed types of individual distribution companies.
Based on the order, we manufacture electricity meter switchboards with the value of the main switchboard 50, 63, 80 A and 100 A. It is also possible to manufacture one-phase electricity meter switchboards or design for the wall or pole.
It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis. Based on the order, it is possible to manufacture electricity meter switchboards for electricity production or to add a dividing member (converter).

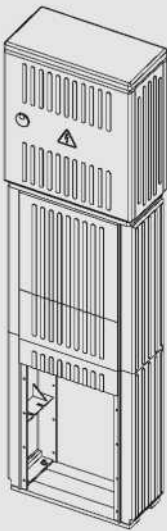
Note: When ordering, it is necessary to state the name (abbreviation) of the power company (ČEZ, E.ON, PRE) to whose distribution system the switchboard will be connected (installed) and the main circuit breaker value, if higher than 40A.



Structural and material design
in the wall
niche or brick pillar



compact pillar



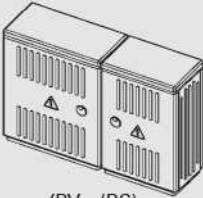
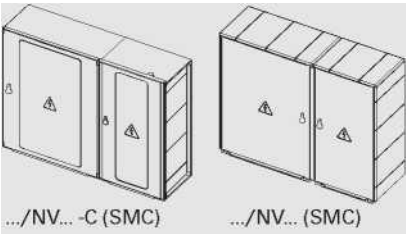
Technical Parameters

ELECTRICITY METER WITH CONNECTING BOX - NEXT TO EACH OTHER

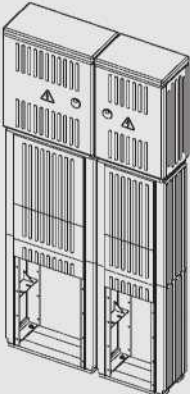
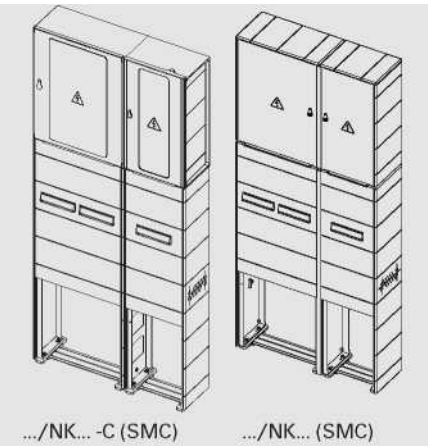
Structural and material design

in the wall

niche or brick pillar



compact pillar



ES 212+100



ČEZ	E.ON	PRE	Type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]:	Device accessories	Outer dimensions width x height x depth [mm]	Weight [kg]
Electricity meter switchboards with the connecting box (next to each other) - IN THE NICHE (1x one-tariff, three-phase):								
<input type="checkbox"/>	<input type="checkbox"/>		ES 112 +100/NVE8P-C	400	40	1X PEN bridge, row clamps, 1x set of fuse bases of size 00 Devices on the electricity meter board with the sealable cover of circuit-breakers	640 x 600 x 220	17
<input type="checkbox"/>	<input type="checkbox"/>		ES112 +100/PVE8P	400	40		858 x 570 x 242	18
<input type="checkbox"/>	<input type="checkbox"/>		ES122 +100/NVE8P	400	40		630 x 640 x 250	21
Electricity meter switchboards with the connecting box (next to each other) - IN THE NICHE (2x one-tariff, three-phase):								
<input type="checkbox"/>	<input type="checkbox"/>		ES122 +200/NVE8P-C	400	40	2X PEN bridge, row clamps, 2x sets of fuse bases of size 00 Devices on the electricity meter board with the sealable cover of circuit-breakers	790 x 600 x 220	21
<input type="checkbox"/>	<input type="checkbox"/>		ES 122 +200/NVE8P	400	40		780 x 640 x 250	24
Electricity meter switchboards with the connecting box (next to each other) - IN THE NICHE (1x two-tariff, three-phase):								
<input type="checkbox"/>	<input type="checkbox"/>		ES 212 +100/NVE8P-C	400	40	1X PEN bridge, row clamps. 1x set of fuse bases, size 2 Circuit breaker 2A/1 (HDO) Devices on the electricity meter board with the sealable cover of circuit-breakers	790 x 600 x 220	18
<input type="checkbox"/>	<input type="checkbox"/>		ES212 +100/PVE8P	400	40		858 x 570 x 242	18
<input type="checkbox"/>	<input type="checkbox"/>		ES 212 +100/NVE8P	400	40		780 x 640 x 250	24
		<input type="checkbox"/>	ES 513 +102/PVF8P	400	63	1X set of fuse bases, size 2. Devices on the electricity meter board with the sealable cover of circuit-breakers	858 x 570 x 242	18
Electricity meter switchboards with the connecting box (next to each other) - IN THE NICHE (2x two-tariff, three-phase):								
<input type="checkbox"/>	<input type="checkbox"/>		ES 222 +200/NVE8P-C	400	40	2X PEN bridge, row clamps. 2X set of fuse bases, size 00, circuit breaker 2A/1 (HDO) Devices on the electricity meter board with the sealable cover of circuit breakers.	1110 x 600 x 220	25
<input type="checkbox"/>	<input type="checkbox"/>		ES 222 +200/NVE8P	400	40		1080 x 640 x 250	35
Electricity meter switchboards with the connecting box (next to each other) - COMPACT PILLAR (1x one-tariff, three-phase):								
<input type="checkbox"/>	<input type="checkbox"/>		ES 112 +100/NKE8P-C	400	40	1X PEN bridge, row clamps, 1x set of fuse bases of size 00 Devices on the electricity meter board with the sealable cover of circuit breakers.	640 x 1810 x 220	37
<input type="checkbox"/>	<input type="checkbox"/>		ES 112 +100/PKE8P	400	40		858 x 1785 x 242	46
<input type="checkbox"/>	<input type="checkbox"/>		ES 112 +100/NKE8P	400	40		630 x 1830 x 250	50
Electricity meter switchboards with the connecting box (next to each other) - COMPACT PILLAR (2x one-tariff, three-phase):								
<input type="checkbox"/>	<input type="checkbox"/>		ES 122 +200/NKE8P-C	400	40	2X PEN bridge, row clamps, 2x sets of fuse bases of size 00 Devices on the electricity meter board with the sealable cover of circuit breakers.	790 x 1810 x 220	47
<input type="checkbox"/>	<input type="checkbox"/>		ES 122 +200/NKE8P	400	40		780 x 1830 x 250	66
Electricity meter switchboards with the connecting box (next to each other) - COMPACT PILLAR (1x two-tariff, three-phase):								
<input type="checkbox"/>	<input type="checkbox"/>		ES 212 +100/NKE8P-C	400	40	1X PEN bridge, row clamps. 1x set of fuse bases, size 2 Circuit breaker 2A/1 (HDO) Devices on the electricity meter board with the sealable cover of circuit breakers.	790 x 1810 x 220	46
<input type="checkbox"/>	<input type="checkbox"/>		ES 212 +100/PKE8P	400	40		858 x 1785 x 242	44
<input type="checkbox"/>	<input type="checkbox"/>		ES 212 +100/NKE8P	400	40		780 x 1830 x 250	54
		<input type="checkbox"/>	ES 513 +102/PKF8P	400	63	1X set of fuse bases, size 2. Devices on the electricity meter board with the sealable cover circuit breakers.	858 x 1780 x 242	51
Electricity meter switchboards with the connecting box (next to each other) - COMPACT PILLAR (2x two-tariff, three-phase):								
<input type="checkbox"/>	<input type="checkbox"/>		ES 222 +200/NKE8P-C	400	40	2X PEN bridge, row clamps. 2X set of fuse bases, size 00, circuit breaker 2A/1 (HDO) Devices on the electricity meter board with the sealable cover of circuit breakers.	1110 x 1810 x 220	55
<input type="checkbox"/>	<input type="checkbox"/>		ES 222 +200/NKE8P	400	40		1080 x 1830 x 250	70
Data for an order								

☐Sets with the connecting box must be negotiated in advance and approved by a relevant distribution company.

It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis.

Note: When ordering, it is necessary to state the name (abbreviation) of the power company (ČEZ, E.ON, PRE) to whose distribution system the switchboard will be connected (installed).

ELECTRICITY METER WITH CONNECTING BOX - ABOVE EACH OTHER

The set of the electricity meter switchboard designated for direct measurement and connecting boxes arranged above each other. The switchboards are designated for secondary measurement. In isolated cases, these switchboards can be used for commercial measurement after previous negotiations and agreement by a relevant distribution company. These switchboards are made upon an order, material design SMC or PC.

Design according to standards ČSN EN 61439-1 ed.2 and ČSN EN 61439-3 and ČSN EN 61439-5 ed.2, PNE 35 7000, PNE 35 7030

n Basic types of switchboards:

EP112+100 - one-tariff three-phase measurement with the connecting box

EP212+100 - two-tariff three-phase measurement with the connecting box

ELECTRICITY METER SWITCHBOARDS, ONE-PHASE

Electricity meter switchboards for direct measurement can be manufactured in one-phase design (up to 25A). These switchboards are made upon an order, material design SMC, PC or concrete. Design according to standards ČSN EN 61439-1 ed.2 and ČSN EN 61439-3 -3, PNE 7030-5

n Basic types of switchboards:

ER312 - one-tariff one-phase measurement

ER313 - one-tariff one-phase measurement (arrangement for PRE)

ER412 - two-tariff one-phase measurement

ES312+100 - one-tariff one-phase measurement with the connecting box

ES412+102 - one-tariff one-phase measurement (arrangement for PRE) with the connecting box

ES412+100 - two-tariff one-phase measurement with the connecting box

ELECTRICITY METER SWITCHBOARDS, GROUP

These switchboards are suitable for cases when it is convenient to concentrate the electricity meters for several consumers in one group electricity meter switchboard such as allotments and cottage areas, row garages, etc. Switchboard design - one-phase with even distribution of phases, for fitting with main circuit breakers up to 25A. Pre-securing of the switchboard must be carried out individually for each measuring equipment. These switchboards are made upon an order, material design SMC. Design according to standards ČSN EN 61439-1 ed.2 and ČSN EN 61439-3 -3, PNE 7030.

n Basic types of switchboards:

ER342 - 4x one-tariff one-phase measurement

ER352 - 5x one-tariff one-phase measurement

ER362 - 6x one-tariff one-phase measurement

ER372 - 7x one-tariff one-phase measurement ER382 - 8x one-tariff one-phase measurement

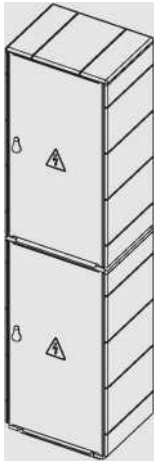
SWITCHBOARDS BOXES

Switchboard boxes are designated for house or industrial applications. They are fitted with "U" strips TH 35-7.5 for the assembly of modular device of nominal voltage 230/400V. Level of protection by a cover is IP44/20C, level of mechanical protection is IK10. The boxes can be delivered without or with a covering board for devices which can be provided with openings 45 mm according to the selected number of modules. The box size, number of modules, maximum nominal current and output losses are given by the agreement with a customer. These switchboards are made upon an order, material design SMC or PC. Design according to standard ČSN EN 62208 ed. 2.

CUSTOM MANUFACTURING OF ELECTRICITY METER SWITCHBOARDS FOR ELECTRICITY PLANTS

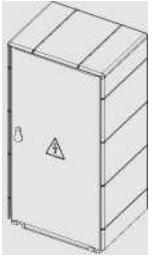
Structural and material design

Electricity meter with the connecting box



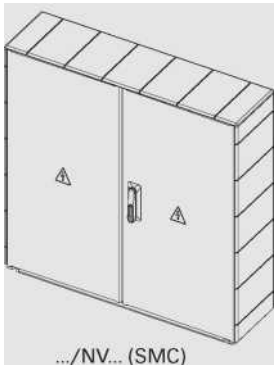
.../NV... (SMC)

Electricity meter, one-phase



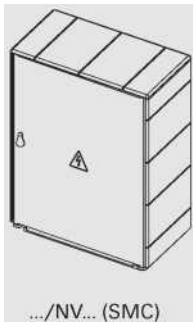
.../NV... (SMC)

Electricity meter, group



.../NV... (SMC)

Switchboard boxes



.../NV... (SMC)

ER312

ER382

Switchboard box

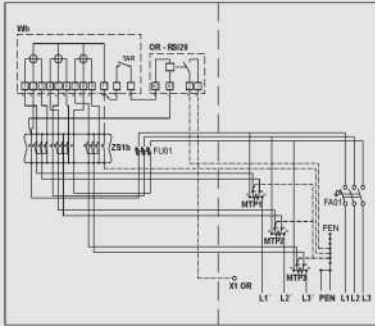


Electricity Meter Switchboards

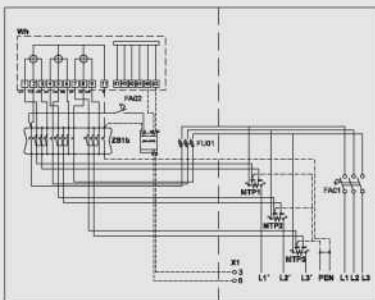
SWITCHBOARDS FOR INDIRECT MEASUREMENT

Circuit diagram

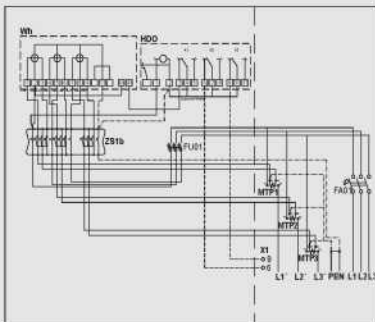
NR212 - ČEZ



NR212 - E.ON



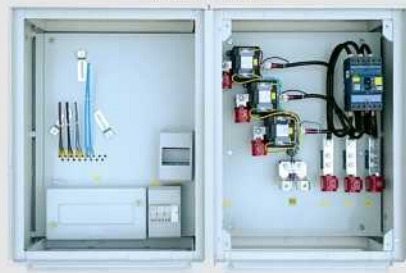
NR513



NR513



NS 212+102



Technical parameters:

Nominal voltage Un:

230/400 V, AC

Nominal working voltage Ue:

230/400 V, AC

Nominal insulation voltage Ui:

400-690 V, AC

Nominal pulsating withstand voltage Uimp:

4 - 8 kV (1.2/50 ps)

Overvoltage category:

IV

Nominal current of switchboard InA:

100 - 1000 A

Nominal current of circuit (secured outlet) Inc:

100 - 1000 A

Nominal current of circuit not (secured outlet) Inc:

NS (NP) - 400A

Nominal conditional short-circuit current Icc:

NR - 10kA, NS (NP) - 40 kA

Nominal short-term withstand current Icw (not secured outlet):

NS (NP) - 36 kA / 10 ms

Nominal frequency fn:

50Hz

Level of pollution:

3

Grounding set:

TN- C

Level of protection by cover:

Distribution part - IP44

after door opening IP00, electricity meter

part - IP44, after door opening IP20C

IK10

B

B

circuit breaker (switch off range and utility category - char. B)

fuse links, size 2

Level of mechanical protection:

DBO type:

EMC environment:

Equipment securing from short-circuit (SCPD):

Equipment securing from not secured outlet:

coordinated securing element

in the front-end switchboard (switch off

range and utility category - char. gG)

closable cover, partitions

automatic disconnection from the source

HB 40, V-0 according to ČSN EN 60695-

10 - 240 mm²

power circuit 10 - 240 mm² auxiliary circuit

up to 4 mm²

supply: connecting V-clamp outlet:

connecting V-clamp auxiliary circuits:

row clamps up to 4 mm²

Method of conductors' connection:

grounding:

strap clamp PE/M8

Use: Electricity meter switchboards and pillars are designated for indirect measurement of electricity consumption. They are suitable for family houses and production buildings of entrepreneurial activities with electricity consumption higher than the electricity distributor permits in the connection place by direct measurement. Distribution part of the switchboard is designated for the use by the persons who are at least familiar with it, the electricity meter part is designated for the use by laymen. The switchboards are designated for the installation and use outside and inside and are of stable design with fixed parts of the structure.

Technical design:

Electricity meter switchboard of indirect measurement is created by two modules firmly connected next to each other or above each other. Inner accessories consist of adjustable lugs for fastening the electricity meter, testing terminal box, fuse isolating switch, measuring transformers of current, main circuit breaker, PEN terminal box, or of the dividing member (converter). Instrumental measuring transformers of current (MTP) for indirect measurement are installed behind the main circuit breaker. Secondary circuit of MTP and electricity meter are secured by the fuse isolating switch. Testing terminal box is placed under the space for the electricity meter. The covers are prepared for a seal. Supply leads can be locked-off. In design with the NS connecting box, the boxes are arranged next to each other and in NP design - they are above each other. Accessories of the connecting box are created by PEN busbar and fuse bases of size 2. The placement of the connecting box is given in specification.

Accessories: Backfill.

Product complies with the requirements of valid standard:

ČSN EN 61439-1 ed.2, ČSN EN 61439-2, ČSN EN 61439-3 ed.2, ČSN 33 61439 -5 ed.2,

ČSN 33 3320 ed.2, PNE 35 7000, PNE 35 7030

Tests performed, regulations, legislation: Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order:

Type marking: NR212/NVD7D/160A E.ON

Description: Electricity meter switchboard designated for two-tariff measurement enabling fitting with one three-phase electricity meter for indirect measurement, structural design on the board with a sealable cover of devices. The switchboard is made of reactoplastic, is designated for building in the niche, connection of supply and outlet conductors by auxiliary connecting V-clamps fitted with straps, door closing with the thorned key 6x6 mm. Electricity meter switchboard is fitted with main circuit breaker 160 A and is designated for connecting to the distribution system of E.ON company.

Type marking: NS212+102/PKW8D/250A ČEZ

Description: Electricity meter compact pillar in combination with the connecting box (arranged next to each other), designated for two-tariff measurement, enabling fitting with one three-phase electricity meter for indirect measurement, structural design under a sealable transparent cover. The connecting box is fitted with one set of fuse bases of size 2. The pillar is made of reactoplastic/thermoplastic, is designated for the installation in the free space, with the connection of supply conductors by connecting V-clamps of fuse bases fitted with straps, combined door closing with the thorned key 6x6 mm (electricity meter switchboard) and a simple closure for the power industry (connecting box). Connection of outlet conductors by auxiliary connecting V-clamps fitted with straps. Electricity meter switchboard is fitted with main circuit breaker 250 A and is designated for connecting to the distribution system of ČEZ company.

Note: When ordering, it is necessary to state the name (abbreviation) of the power company (ČEZ, E.ON, PRE) to whose distribution system the switchboard will be connected (installed), due to different conditions for connection. When ordering, it is also necessary to state the main circuit breaker value and type of measurement (A, B, C).

Technical Parameters

ČEZ	E.ON	PRE	Type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]	Device accessories	Outer dimensions width x height x depth [mm]	Weight [kg]
Switchboard, electricity meter - indirect measurement - secondary IN THE NICHE								
■	■		NR 212/NVD7D	Up to 1000	Up to 1000	Main circuit breaker, 3x MTP, testing terminal box, fuse isolating switch (only ČEZ), PEN bridge, row clamps Designated for two-tariff measurement	930 x 640 x 250	35
		■	NR 513/NVD7D	Up to 1000	Up to 1000	Main circuit breaker, 3x MTP, testing terminal box, fuse base, PEN bridge, row clamps	930 x 640 x 250	35
Electricity meter switchboards with the connecting box (next to each other) - indirect measurement - secondary IN THE NICHE:								
□	□		NS 212 + 102/NVF8D	400	Up to 400	Main circuit breaker, 3x MTP, testing terminal box, fuse isolating switch (only ČEZ), PEN bridge, row clamps, 1x set of fuse bases size 2 Designated for two-tariff measurement	1240 x 640 x 250	46
		□	NS 513 + 102/NVF8D	400	Up to 400	Main circuit breaker, 3x MTP, testing terminal box, fuse base, PEN bridge, row clamps, 1x set of fuse bases of size 2	1240 x 640 x 250	46
Electricity meter switchboards with the connecting box (above each other) - indirect measurement - secondary IN THE NICHE:								
□	□		NP 212 + 102/NVF8D	400	Up to 400	Main circuit breaker, 3x MTP, testing terminal box, fuse isolating switch (only ČEZ), PEN bridge, row clamps, 1x set of fuse bases size 2 Designated for two-tariff measurement	930 x 1250 x 250	67
		□	NP 513 + 102/NVF8D	400	Up to 400	Main circuit breaker, 3x MTP, testing terminal box, fuse base, PEN bridge, row clamps, 1x set of fuse bases size 2	930 x 1250 x 250	67
Switchboard, electricity meter - indirect measurement - secondary COMPACT PILLAR:								
■	■		NR 212/NKD7D	Up to 1000	Up to 1000	Main circuit breaker, 3x MTP, testing terminal box, fuse isolating switch (only ČEZ), PEN bridge, row clamps Designated for two-tariff measurement	930 x 1830 x 250	65
		■	NR 513/NKD7D	Up to 1000	Up to 1000	Main circuit breaker, 3x MTP, testing terminal box, fuse base PEN bridge, row clamps	930 x 1830 x 250	65
Electricity meter switchboards with the connecting box (next to each other) - indirect measurement - secondary COMPACT PILLAR:								
□	□		NS 212 + 102/NKF8D	400	Up to 400	Main circuit breaker, 3x MTP, testing terminal box, fuse isolating switch (only ČEZ), PEN bridge, row clamps, 1x set of fuse bases size 2 Designated for two-tariff measurement	1240 x 1830 x 250	94
		□	NS 513 + 102/NKF8D	400	Up to 400	Main circuit breaker, 3x MTP, testing terminal box, fuse base, PEN bridge, row clamps, 1x set of fuse bases of size 2	1240 x 1830 x 250	94
Electricity meter switchboards with the connecting box (above each other) - indirect measurement - secondary COMPACT PILLAR:								
□	□		NP 212 + 102/NKF8D	400	Up to 400	Main circuit breaker, 3x MTP, testing terminal box, fuse isolating switch (only ČEZ), PEN bridge, row clamps, 1x set of fuse bases size 2 Designated for two-tariff measurement	930 x 2440 x 250	95
		□	NP 513 + 102/NKF8D	400	Up to 400	Main circuit breaker, 3x MTP, testing terminal box, fuse base, PEN bridge, row clamps, 1x set of fuse bases of size 2	930 x 2440 x 250	95
Switchboard, electricity meter - indirect measurement - primary ON THE WALL:								
□	□		NR 212/NNP7/HV	5	-	Variable testing terminal box, fuse isolating switch, terminal box (clamps), socket circuit breaker, socket, dividing member (converter), source, phone socket	470 x 620 x 320	8
□	□		NR 212/NNP7/VHV	5	-	Variable testing terminal box, fuse isolating switch, terminal box (clamps), socket circuit breaker, socket, dividing member (converter), source, phone socket	470 x 620 x 320	
Data for an order								

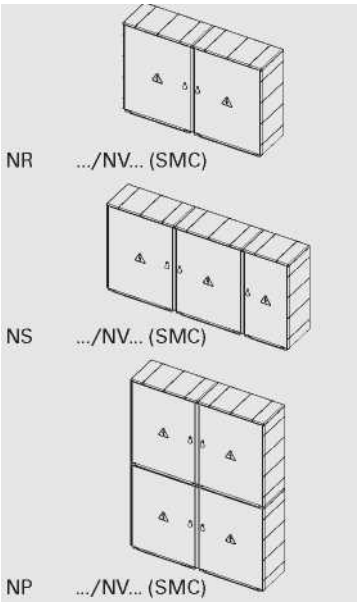
These switchboards are custom made after the consultation with a customer.

Electricity meter switchboards of indirect measurement can be delivered upon an order in "P" material design.

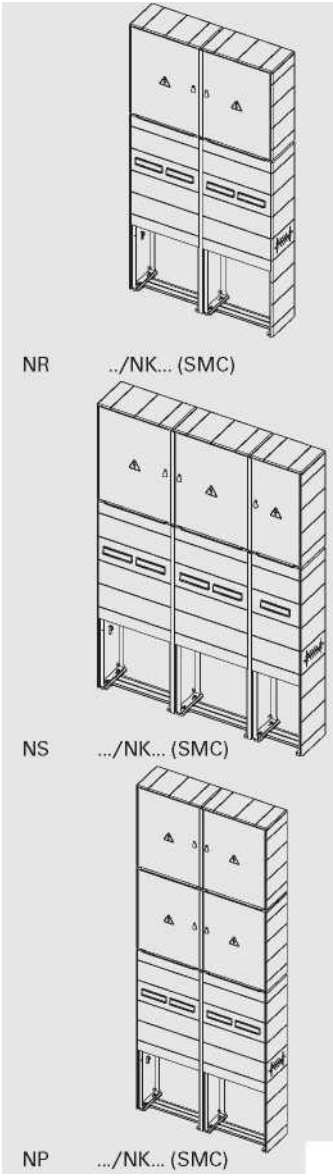
It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis. Based on the order, it is possible to manufacture electricity meter switchboards for electricity production or to add a dividing member (converter). It is also possible to add in the switchboard guarding of the 1/4 hour maximum or compensation of reactive power. Standard design of the switchboard is given for secondary measurement of B, C type. Upon an order, it is possible to manufacture a switchboard for primary measurement of A, B type according to the customer's specification.

- Approved and agreed types of individual distribution companies.
- Sets with the connecting box must be negotiated and approved in advance by a relevant distribution company.

Structural and material design
in the wall niche or brick pillar

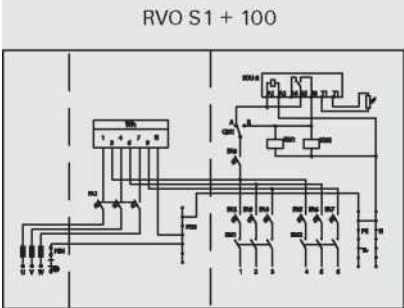
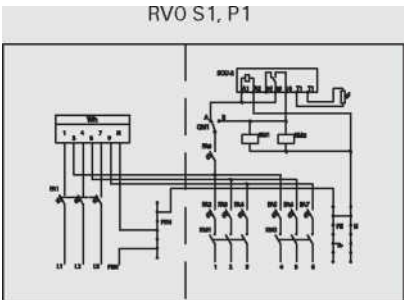
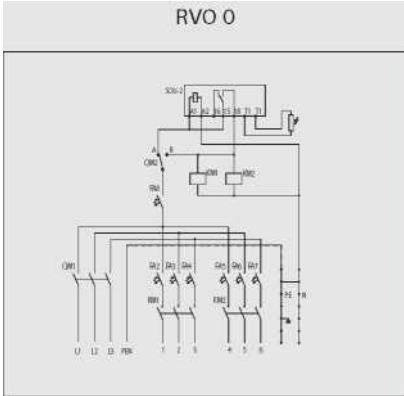


compact pillar

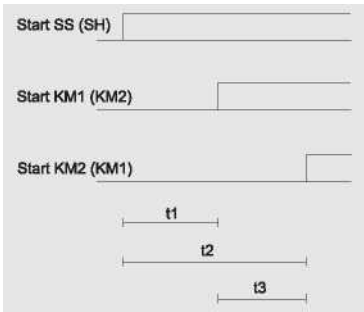


Switchboards of Public Lighting

Circuit diagram



Switching diagram
(when using time member)



- t1 - time of lamp regeneration
t2 - time of lamp regeneration +
time of progressive switching
on
(max. 500 s)
t3 - time difference between
switching on KM1 and KM2
(max. 20 s)

Technical parameters:

Nominal voltage Un:
Nominal working voltage Ue:
Nominal insulation voltage Ui:
Nominal pulsating withstand voltage Uimp:
Overvoltage category:
Nominal current of switchboard InA:
Nominal current of circuit (secured outlet) Inc:
Nominal current of circuit not (secured outlet) Inc:
Nominal conditional short-circuit current Icc:
Nominal short-term withstand current Icw (not secured outlet):
Nominal frequency fn:
Level of pollution:
Grounding set:
Level of protection by cover:

Level of mechanical protection:
DBO type:
EMC environment:
Equipment securing from short-circuit (SCPD):

Equipment securing from not secured outlet:

Basic protection (protection from touching live parts):
Protection in case of failure (protection from touching non-
Degree of flammability:
Max. cross section of feeding conductors:

Max. cross section of feeding conductors:

Method of conductors' connection:

230/400 V, AC
230/400 V, AC
400 V, AC
4 kV (1.2/50 ps)
III
RVO 0 - 40 + 80 A, ES (EP) - 400 A
20 A (upon an order up to 40A)
RVO S1 + 100 - 400 A
RVO 0, RVO S1, RVO P1 - 10kA,
RVO S1 + 100 - 40 kA
RVO S1 + 100 - 36 kA / 10 ms
50Hz
3
TN-C, TN-C-S
Distribution part - IP44
after door opening IP00, electricity meter
part -RVO - IP44, after door opening
IP20C IK10
B
B
circuit breaker (switch off range and utility
fuse links of size 00
(switch-off range and utility category -
char. gG) coordinated securing element in
switchboard
(switch-off range and utility category -
char. aG) closable cover, partitions
automatic disconnection from the source
HB 40, V-0 according to ČSN EN 60695-
RVO 0, RVO S1, RVO P1 - do 16 mm²
RVO S1 + 100 - 10 + 240 mm²
network circuit up to 16 mm²
auxiliary circuit up to 4 mm²
supply: RVO 0, RVO S1, RVO P1

- main circuit breaker clamps or PEN
terminal box switches
RVO S1 + 100 - connecting V-clamp,
outlet: row clamps up to 16 mm² or
contactor clamps, PE and N terminal box
auxiliary circuits: row clamps up to 4 mm²
strap clamp PE/M8

grounding:

Use:

The switchboard and pillar of public lighting are used to control public lighting with the possibility of using a twilight switch, switching clock or pulse from the network (HDO). Distribution part of the switchboard is designated for the use by the persons who are at least familiar with it, electric meter part and RVO part of the switchboard is designated for laymen. The switchboards are designated for the installation and use outside and inside and are of stable design with fixed parts of the structure

Technical design:

Distributors are arranged in modules above each other (P) or next to each other (S). One module is used to control public lighting, the second module is electric meter and with RVO S1+100 switchboard, the third module is used as connecting. Upon a special request, it is possible to deliver the switchboards with higher current values of switchboards. It is also possible to extend a number of controlled directions. Due to savings of power, it is possible to switch off public lighting automatically during less frequented hours at night (e.g., 0.30-3.00 h.). It is possible to set the hour of switching off and the hour of repeated switching on (economical mode). With regard to the necessary regeneration of lamps when switched off due to power failure and progressive loading of the network, it is possible to install in our products time delay (time member). Upon a request, the switchboards can be delivered with switching astronomic clock which enable controlling depending on the season of the year. The switchboards without switching clock can be provided with an additional switch between automatic and manual operation. If needed, the switchboard of public lighting can be delivered with a module with diverters of lightning current providing maximum protection against unwanted lightning currents.

Accessories: Backfill.

Product complies with the requirements of valid standard:

ČSN EN 61439-1 ed.2, ČSN EN 61439-3, ČSN EN 61439-5 ed.2, ČSN 33 3320 ed.2, PNE 35 7000, PNE 35 7030

Tests performed, regulations, legislation:

Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order:

Type marking: RVO P1 / NSP7P / SHC6M

Description: The distributor of public lighting in combination with one-tariff measurement of consumption up to InA (modules are arranged above each other). The switchboard is made of reactoplastic/thermose, is designated for the assembly on the supporting spot of outer lines (pole), connection supply conductors in the main circuit breaker clamps, door closing with the thorned key 6x6 mm. Connection of outlet conductors in contactor clamps. Switching of public lighting by twilight switch, economical mode by switching clock, time member, 6 outlets, module diverters of overvoltage (B class).

Note:

When ordering, it is necessary to state the name (abbreviation) of the power company (ČEZ, E.ON, PRE) to whose distribution system the switchboard will be connected (installed).

Technical Parameters

PEZ	WON	Type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]:	Device accessories	Outer dimensions Width x height x depth [mm]	Weight [kg]
Switchboard of public lighting - IN THE NICHE							
■	■	RVO 0/NVP7P-C	40	40	One-phase circuit breakers of outlets up to 40A. Three-pole contactors 40A, PE bridge and N, control elements according to the specification of accessories	320 x 600 x 220	14
■	■	RVO 0/NVP7P			320 x 640 x 250	15	
■	■	RVO P1/NVP7P	40	40	One-phase circuit breakers of outlets up to 40A, three- pole contactors 40A, PE bridge and N, control elements according to the specification of accessories, space for electricity meter - one-tariff measurement, boxes arranged above each other	320 x1250 x 250	25
■		RVO S1/NVP7P-C	40	40	One-phase circuit breakers of outlets up to 40A, three- pole contactors 40A, PE bridge and N, control elements according to the specification of accessories, space for electricity meter - one-tariff measurement, boxes arranged next to each other	640 x 600 x 220	17
■	■	RVO S1/NVP7P			630 x 640 x 250	25	
□		RVO S1 + 100/NVE8P-C	400	40	One-phase circuit breakers of outlets up to 40A, three- pole contactors 40A, PE bridge and N, control elements according to the specification of accessories, space for electricity meter - one-tariff measurement, boxes arranged next to each other, 1x set of fuse bases of size 00	960 x 600 x 220	29
□	□	RVO S1 + 100/NVE8P			940 x 640 x 250	32	
Switchboard of public lighting - COMPACT POLE:							
■	■	RVO 0/NKP7P-C	40	40	One-phase circuit breakers of outlets up to 40A., PE and N bridge, control elements according to the specification	320 x 1810 x 220	23
■	■	RVO 0/NKP7P			320 x 1830 x 250	34	
■	■	RVO P1/NKP7P	40	40	One-phase circuit breakers of outlets up to 40A, three- pole contactors 40A, PE bridge and N, control elements according to the specification of accessories, space for electricity meter - one-tariff measurement, boxes arranged above each other.	320 x 2440 x 250	44
■		RVO S1/NKP7P-C	40	40	One-phase circuit breakers of outlets up to 40A, three- pole contactors 40A, PE bridge and N, control elements according to the specification of accessories, space for electricity meter - one-tariff measurement, boxes arranged next to each other	640 x 1810 x 220	39
■	■	RVO S1/NKP7P			630 x 1830 x 250	61	
□		RVO S1 + 100/NKE8P-C	400	40	One-phase circuit breakers of outlets up to 40A, three- pole contactors 40A, PE bridge and N, control elements according to the specification of accessories, space for electricity meter - one-tariff measurement, boxes arranged next to each other, 1x set of fuse bases of size 00	960 x 1810 x 220	54
□	□	RVO S1 + 100/NKE8P			940 x 1830 x 250	87	
Switchboard of public lighting - ON THE POLE:							
□	□	RVO 0/NSP7P	40	40	One-phase circuit breakers of outlets up to 40A., PE and N bridge, control elements according to the specification	320 x 620 x 250	16
□	□	RVO P1/NSP7P	40	40	One-phase circuit breakers of outlets up to 40A, three- pole contactors 40A, PE bridge and N, control elements according to the specification of accessories, space for electricity meter - one-tariff measurement, boxes arranged above each other	320 x 1350 x 250	26
Data for an order							

These switchboards are custom made after the consultation with a customer. Based on an order, it is possible to extend the given types of RVO on the outlet by the disconnecting boxes of SR type. RVO closing can be made on e.g., cylinder lock. We can also manufacture the switchboards of public lighting with the main circuit breaker value 50, 63, 80A. It is also possible to deliver the switchboards of "P" material design.

It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis.

Note: Placement of the switchboard of public lighting on the pole of public lighting which is owned by a distribution company must be negotiated and agreed in advance by this company.

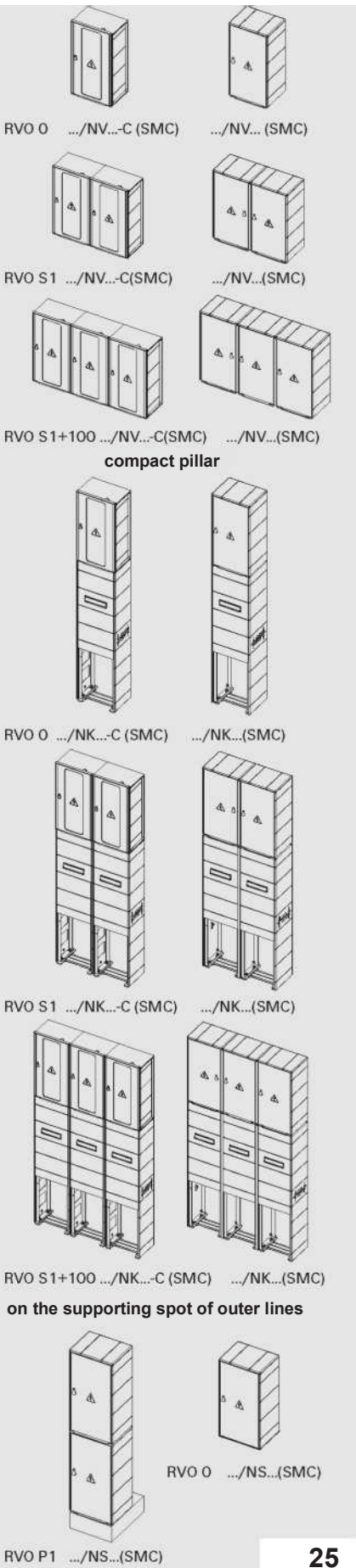
- Approved and agreed types of individual distribution companies.
- Switchboards of public lighting must be negotiated in advance and approved by a relevant distribution company.

The above given type accessories RVO can be supplemented by other specification upon a request:

Metjpd pf RVO switching	Method of switching of	Time member	Number of outlets	Diverterers of overvoltage
S	H	C	6	M
S - twilight switch H - switching clock A - switching astronomic clock I - switching by pulse (HDO)	H - switching clock O - without switching	C - time member O - without a time member	1- to 12-phase	M - diverter of lightning current module (B) V - diverter of lightning current - valve (B+C) O - without a diverter

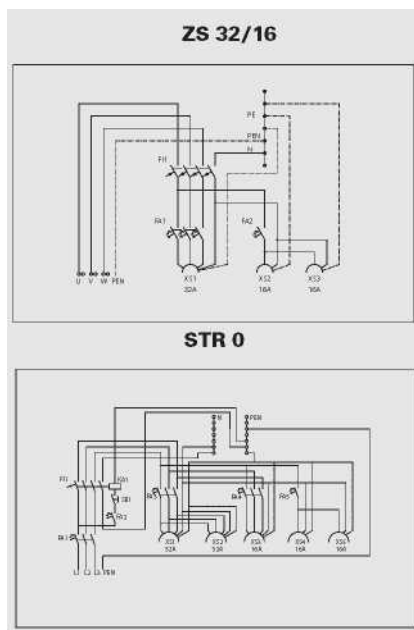


Structural and material design in the wall niche or brick pillar



Socket and Building Site Switchboards

Circuit diagram



Technical parameters:

Nominal voltage U_n :

230/400 V, AC

Nominal working voltage U_e :

230/400 V, AC

Nominal insulation voltage U_i :

500 V, AC

Nominal pulsating withstand voltage U_{imp} :

4 kV (1.2/50 ps)

Overvoltage category:

IV

Nominal current of switchboard I_nA :

ZS - 25, 32 A

Nominal current ACS I_nA :

STR - up to 40 A (upon an order up to

Nominal current of circuit (secured outlet) I_{nc} :

16, 32 A (upon an order up to 63A)

Nominal residual current $I_{\Delta n}$:

30 mA

Nominal conditional short-circuit current I_{cc} :

10kA

Nominal frequency f_n :

50Hz

Level of pollution:

3

Grounding set:

TN-C-S, TN-S

Level of protection by cover:

ZS - IP44, after door opening IP43C

STR - IP44, after door opening IP20C

IK10

ZS-B

STR - distribution, measurement, supply

B

circuit breaker (switch off range and utility

closable cover, partitions, total isolation

(ZS)

automatic disconnection from the source,

additional protection by a current protector

HB 40, V-0 according to ČSN EN 60695-

up to 16 mm²

RVO S1 + 100 - 10 + 240 mm²

supply lead:

ZS - clamps of current protector, PEN

terminal box

STR- main circuit breaker clamps, PE and

N or PEN terminal box

STR - bolted joint M8

Level of mechanical protection:

DBO type:

ACS function:

EMC environment:

Equipment securing from short-circuit (SCPD):

Basic protection (protection from touching live parts):

Protection in case of failure (protection from touching non-live parts):

Degree of flammability:

Max. cross section of feeding conductors:

Method of conductors' connection:

grounding:

Use:

Socket and building site switchboards are used for supplying electric appliances such as construction machines or manual electric tools. The building site switchboard can be used for supplying a construction cell as well. The switchboards are used by laymen.

The switchboards are designated for the installation and use outside and inside, ZS are of stable design and STR are of stable and mobile design with fixed parts of the structure.

STR (ACS) is of a covered structure. Assembly method - fixed and removable parts.

Technical design:

With the socket switchboard, all sockets are placed inside the box, including protection.

Row clamps are also a part of the switchboard enabling looping of the leads at the input. All outlets for appliances are protected against short circuit, overvoltage and they are also protected by earth-leakage breaker with nominal residual current 30 mA.

Socket switchboard can be also placed in the end part of electric meter pillars ER212, ES212. The main circuit breaker in the building site switchboard is provided with a switch-off trigger controlled by the button outside the switchboard. In the lower part, a cable bushing is prepared for connection to the network. The possibility of delivering a metal base of holder for fastening on the pole.

Product complies with the requirements of valid standard:

Socket switchboards - ČSN EN 61439-1 ed.2; ČSN EN 61439-3

Building site switchboards - ČSN EN 61439-1 ed.2; ČSN EN 61439-4,

ČSN 341090 ed.2; ČSN 33 2000-7-704 ed.2

Tests performed, regulations, legislation:

Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order:

Type marking: ZS32/16/PVP7

Description: Socket switchboard enabling connection of two one-phase plugs 16A and one three-phase plug 32A. The switchboard is made of thermoplastic and is designated for building in the niche, connection of supplying lead in row clamps, door closing with the thorned key 6x6 mm.

Technical Parameters

SOCKET SWITCHBOARDS					
Type	Nominal current I _n A [A]	Nominal current of circuit (outlet) I _{nc} [A]	Device accessories	Outer dimensions width x height x depth [mm]	Weight [kg]
Socket switchboards - IN THE NICHE					
ZS 32/16/PVP7	40	16 32	Circuit breaker 16A/1, circuit breaker 32A/3, 1x socket 32A/3, 2x socket 16A/1, current protector	315 x 280 x 120	4
ZS 16/16/PVP7	25	16	Circuit breaker 16A/1, circuit breaker 16A/3, 1x socket 16A/3, 2x socket 16A/1, current protector	315 x 280 x 120	4
Socket switchboards - COMPACT PILLAR					
ZS 32/16/NKP7	40	16 32	Circuit breaker 16A/1, circuit breaker 32A/3, 1x socket 32A/3, 2x socket 16A/1, current protector	470 x1225 x 250	21
ZS 16/16/NKP7	25	16	Circuit breaker 16A/1, circuit breaker 16A/3, 1x socket 16A/3, 2x socket 16A/1, current protector	470 x1225 x 250	21
Data for an order					

These switchboards are custom made. It is also possible to fit the cylinder lock upon a request.

Note: Sets of electric meter and socket switchboard HELHA2H - p. 39 - 41

It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis. The device accessories can be extended according to the customer specification.

BUILDING SITE SWITCHBOARDS

These switchboards are custom made according to the customer request in variants STR0, STR1 (including one-tariff measurement) and STR2 (including two-tariff measurement). Switchboards can be also manufactured as secondary.

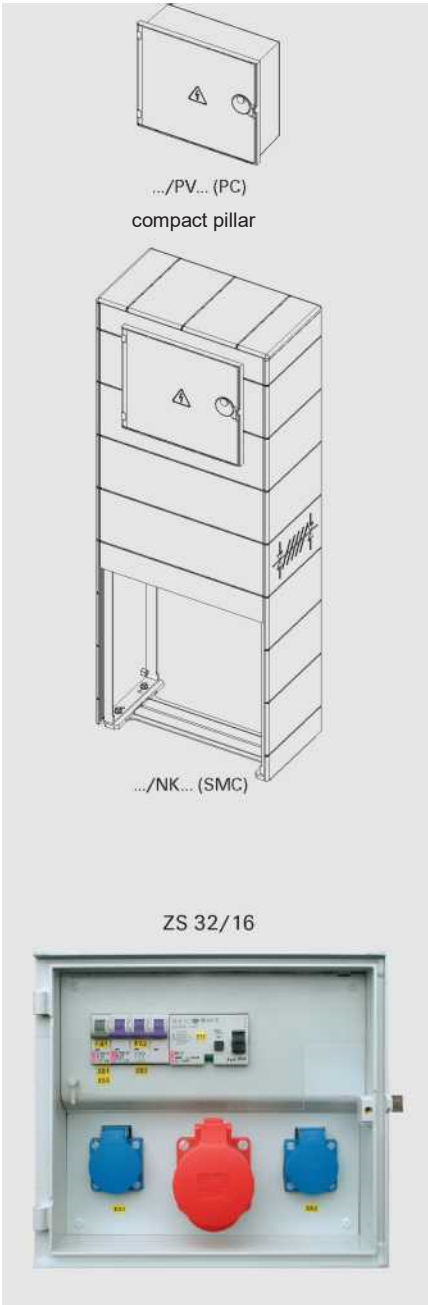
HELGA 2H - front view

HELGA 2H - rear view



HELGA 2H set is a suitable solution when installing underground services.

Structural and material design
in the wall niche or brick pillar



STR1



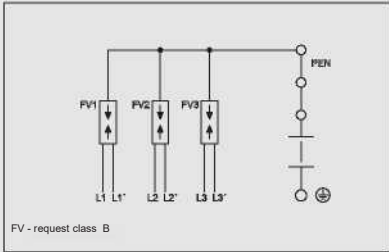
ZS 32/16



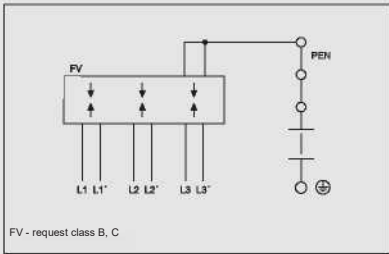
Switchboards with Overvoltage Protections

Circuit diagram

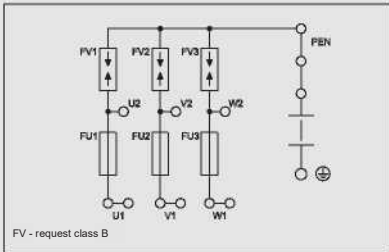
RPO – M



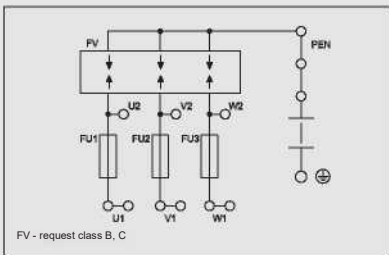
RPO – V



SB 100 – M, SB 101 – M



SB 100 – V, SB 101 – V



SB 102



Technical parameters:

Nominal voltage Un: 230/400 V, AC
Nominal working voltage Ue: 230/400 V, AC
Nominal insulation voltage Ui: 690 V, AC
Nominal pulsating withstand voltage Uimp: 8 kV (1.2/50 pS)
Overvoltage category: IV
Nominal current of switchboard InA: RPO - 125 A, SB - 400 A
Nominal current of circuit (secured outlet) Inc: SB - 160, 250, 400 A
Nominal current of circuit not (secured outlet) Inc: RPO - 125 A, SB - 400 A
Nominal conditional short-circuit current Icc: SB - 40 kA
Nominal short-term withstand current Icw (not secured): SB - 36 kA / 10 ms
Nominal frequency fn: 50Hz
Level of pollution: 3
Grounding set: TN- C
Level of protection by cover: IP44, after door opening IP00
(RPO with the partition, after door opening IP20C)

Level of mechanical protection:

EMC environment:

Equipment securing from short-circuit (SCPD):

Equipment securing from not secured outlet:

Lightning pulse current (Iimp):

Nominal pulse current (I)

Protection level:

Equipment securing from lightning effect:

Basic protection (protection from touching live parts):

Protection in case of failure (protection from touching non-):

Degree of flammability:

Max. cross section of feeding conductors:

Max. cross section of feeding conductors:

Method of conductors' connection:

Grounding:

Use:

Switchboards in which the diverters of lightning current are installed according to the set of valid standards ČSN EN 62305 ed.2 and PNE 33 0000-5 ed.2 are designated for the protection of buildings against lightning and overvoltage (e.g. family houses and residential buildings, industrial buildings).

Switchboards are designated for use by the persons who are at least familiarized with it (SB), or laymen (RPO with partition). They are designated for the installation and use outside and inside, are of stable design with fixed part of the structure. Diverters of lightning currents are tested by lightning current up to the top value of 100 kA and wave 10/350s and protection level is between 1.5 + 2.5 kV. For not coordinated diverters of lightning currents having protection level 4kV must be installed between types T1 and T2 (or request class B and C) coordination choke. Switchboards of lightning currents should be installed as close as possible to outside walls so that the lightning is taken by the shortest way to the grounding set. If the switchboard with the diverter is further than 2 m from the outside wall of the building (outside the building), it does not make a sense to install the diverter in this switchboard. Each installation of lightning current diverter in the switchboard (SS-distribution switchboard) in the area before the electricity meter (before measurement) must be negotiated with a technician of the given distribution company. Before measurement, the SB switchboards are designated, which are solved as connecting. Behind the diverters of lightning current of T1 type (or request class B) there are installed diverters of overvoltage of T2 and T3 type (or request class C and D), but in the secondary switchboards or before the end equipment. Grounding clamp must be interconnected with the busbar of the main interconnection of the building by the conductor of cross section minimum 25 mm², Cu (recommended cross section 50 mm²). Switchboards can be places on the wall, in the pillar or in the niche about 0.6 m above the ground level (recommended length of lead. Grounding lead must be secured mechanically against pulling out by electric dynamic forces. The implementation of three-level overvoltage protection of the building should be always designed with the elements from one manufacturer providing the continuity of individual zones of lightning protection.

Technical design: Inner accessories consist of lightning current diverters FV1-FV3. SB switchboards are fitted with fuse bases of size 00 or 1. Fuses must not exceed current value 160A or 250A according to the type of lightning current diverter used. Cable distributors fitted with the flags of V-shape are provided with straps as standard.

Accessories: Cover side boards N-C (only for the series of switchboards marked xxx/Nxxx-C)

Covers of fuse bases contacts. Backfill.

Product complies with the requirements of valid standard: ČSN EN 61439-1 ed.2, ČSN EN 61439-3,

ČSN EN 61439-5 ed.2, ČSN 33 3320 ed.2, ČSN EN 61643-11, PNE 33 0000-5 ed.2, PNE 35 7000

Tests performed, regulations, legislation:

Certificate, Declaration of Conformity and EU Declaration of Conformity according to GD no.117/2016 Coll., GD no. 118/2016 Coll., Act no. 90/2016 Coll., Act no. 22/1997 Coll., as amended by Act no. 91/2016 Coll., GD no.163/2002 Coll., as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

Example of data for an order: Type marking: SB 100 / NVE1P/M

Description: Switchboard of overvoltage protection in combination with the connecting box containing on set of fuse bases of size 00. The switchboard is made of reactoplast and is designated for the installation in niche, with connecting flags of V shape, provided with straps for looping on the inlet, door closing is provided with a simple closure for power industry and direct connection of outlet conductors in the construction clamp H/M8. The switchboard is fitted with module lightning current diverters of type T1 (class B).

230/400 V, AC
230/400 V, AC
690 V, AC
8 kV (1.2/50 pS)
IV
RPO - 125 A, SB - 400 A
SB - 160, 250, 400 A
RPO - 125 A, SB - 400 A
SB - 40 kA
SB - 36 kA / 10 ms
50Hz
3
TN- C
IP44, after door opening IP00
(RPO with the partition, after door opening IP20C)

IK10
B
SB - fuse links, size 00, 2 (switch off range and utilization category - char. qG) coordinated securing element in the front-end switchboard (switch off range and T1 - 50 / 100 kV (10/350 pS), T1 + T1 - 25 / 75kV (10/350 pS), T1 - 50 / 100 kV (8/20 pS), T1 + T1 - 25 / 75kV (8/20 pS) 2.5 kV (T1), 1.5 kV (T1 + T2) Lightning current diverters (T1), overvoltage diverters (T2) closable cover, partitions (RPO) automatic disconnection from the source HB 40. V-0 according to ČSN EN 60695- RPO - up to 50 mm² SB - 10 + 240 mm² RPO, SB100- up to 50 mm² SB101 - 10 + 150 mm² supply RPO - diverter clamps, clamp H/M8 SB - connecting V-clamp, outlet: RPO - diverter clamps, clamp H/M8 SB100 - clamp H/M8 SB101 - connecting V-clamp

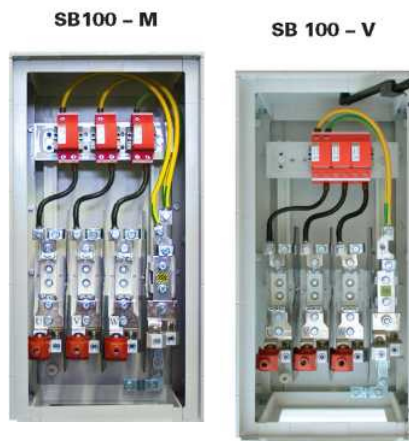
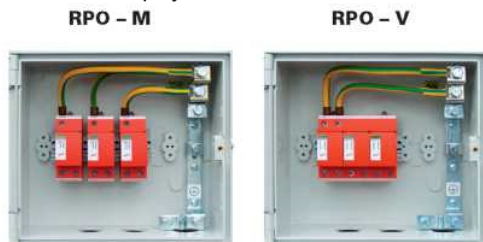
strap clamp PE/M8

Technical Parameters

Type	Nominal current InA [A]	Nominal current of circuit (outlet) Inc [A]	Device accessories	Outer dimensions width x height x depth [mm]	1
Switchboard of overvoltage protection - IN THE NICHE (module diverters, class B):					
RPO/PVP1P/ M	125	125	3x 1f module lightning current diverter class B	315 x 280 x 117	5
Switchboard of overvoltage protection - IN THE NICHE (module diverters, class valve, class B, C):					
RPO/PVP1P/ V	125	125	1x 3f lightning current diverter class B, C - valve	315 x 280 x 117	5
Switchboards of overvoltage protection (combination with the connecting box) - IN THE NICHE (module diverters, class. B):					
SB 100 / NVE1P-C/M	400	160	3x 1f module lightning current diverter class B 1x set of fuse bases of size 00	320 x 600 x 220	10
SB 100 / PVE1P/M	400	160		374 x 570 x 242	10
SB 100 / NVE1P/M	400	160		320 x 640 x 250	13
SB 101 / NVF1D-C/M	400	250	3X 1f module lightning current diverter cl. B 1x set of fuse bases of size 1	470 x 600 x 220	12
SB 101 / PVF1D/M	400	250		374 x 570 x 242	10
SB 101 / NVF1D/M	400	250		470 x 640 x 250	15
Switchboards of overvoltage protection (combination with the connecting box) - IN THE NICHE (valve cl. B, C):					
SB 100 / NVE1P-C/V	400	160	1X 3f lightning current diverter class B, C - valve 1x set of fuse bases of size 00	320 x 600 x 220	10
SB 100 / PVE1P/V	400	160		374 x 570 x 242	10
SB 100 / NVE1P/V	400	160		320 x 640 x 250	13
SB 101 / NVF1D-C/V	400	250	1X 3f lightning current diverter class B, C - valve, 1x set of fuse bases of size 1	320 x 600 x 220	10
SB 101 / PVF1D/V	400	250		374 x 570 x 242	10
SB 101 / NVF1D/V	400	250		320 x 640 x 250	13
Switchboards of overvoltage protection (combination with the connecting box) - COMPACT PILLAR (module diverters, class B):					
SB 100 / NKE1P-C/M	400	160	3x 1f module lightning current diverter class B 1x set of fuse bases of size 00	320 x 1810 x 220	20
SB 100 / PKE1P/M	400	160		374 x 1785 x 242	23
SB 100 / NKE1P/M	400	160		320 x 1830 x 250	24
SB 101 / NKF1D-C/M	400	250	3x 1f module lightning current diverter class B 1x set of fuse bases of size 1	320 x 1810 x 220	20
SB 101 / PKF1D/M	400	250		374 x 1785 x 242	23
SB 101 / NKF1D/M	400	250		320 x 1830 x 250	24
Switchboards of overvoltage protection (combination with the connecting box) - COMPACT PILLAR (valve cl. B, C):					
SB 100 / NKE1P-C/V	400	160	1X 3f lightning current diverter class B, C - valve, 1x set of fuse bases of size 00	320 x 1810 x 220	20
SB 100 / PKE1P/V	400	160		374 x 1785 x 242	23
SB 100 / NKE1P/V	400	160		320 x 1830 x 250	24
SB 101 / NKF1D-C/V	400	250	1X 3f lightning current diverter class B, C - valve, 1x set of fuse bases of size 1	470 x 1810 x 220	25
SB 101 / PKF1D/V	400	250		374 x 1785 x 242	23
SB 101 / NKF1D/V	400	250		470 x 1830 x 250	29
Data for an order					

These switchboards are custom made. Based on an order, it is also possible to manufacture the switchboard with nominal current of outlet up to 400A (SB 102) with coordinated combined diverter of cl. B, C (DEHNvenCI) with built in fuses. It is possible to make switchboards designated for the installation in the wall niche upon an order; in case of box lining design or design of a building product of its basis different from reaction to fire A1 according to ČSN EN 13501-1+A1, it is possible to add lining in the flammable basis.

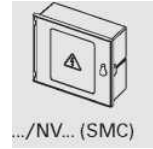
Note: When placing the switchboards of SB type in the part which is not measures, they must be negotiated and agreed in advance by a relevant distribution company.



Structural and material design

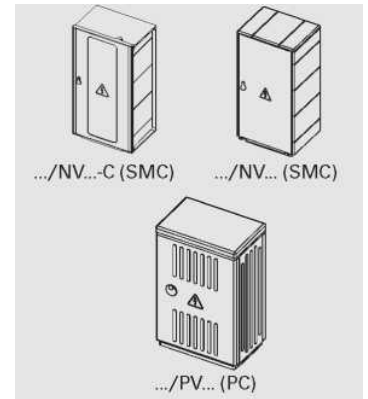
SWITCHBOARDS RPO

in the wall niche or brick pillar

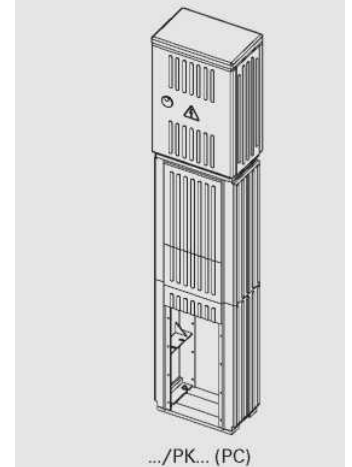
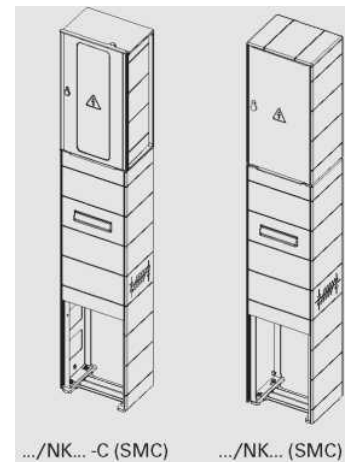


SB SWITCHBOARDS

in the wall niche or brick pillar



compact pillar



Gas Meter Distributors

Technical parameters:

Maximum overpressure:	0.4 MPa
Medium:	natural gas, biogas, coal gas, gas propane fraction
Gas meter:	connecting pitch R = 100, 250 mm, type G4, G6
Pressure regulator 1“:	Inlet overpressure: up to 0.5 MPa output overpressure: 0.9-7.0 KPa: flow: 6-10 m ³ /h

Main gas valve:	ball valve 1“
Mechanical protection level:	IK10
Combustibility grade:	HB 40, V-0, according to ČSN EN 60695-11-10,
Combustion heat:	< 20MJ/kg (SMC), < 25MJ/kg (PC, basis weight < 8kg/m ²)

Use:

Distributors and pillars are designated for the ending of the medium-pressure gas branch, pressure regulation, gas consumption measurement for individual consumers and the placement of gas valve.

Technical design:

All-plastic distributors and pillars of APZ type are made of thermoplastic (polycarbonate, material version - P) or thermoset (polyester, material version - N).

The distributors of SPZ type are made of thin-wall concrete, all-plastic doors are made of polycarbonate. Distributors and pillars housings are identical with the distributors and pillars used in the electric industry. They differ by marking only (HUP).

They are provided with a movable installation frame made of C-profiles for attaching fixing sleeves to stabilize devices and connecting pipes. We recommend to interconnect the devices with flexible pipes

Ventilation is ensured through the labyrinth between the box body and door. The distributors are designated for setting in the niche or brick pillar. Compact pillars can be built up in the free space or fencing. The distributors and pillars can be assembled in the joint set together with electric switchboards (see HELGA® set, page 33)

APZ



Accessories:

Flexible pipes CATS-SK.

Covering side boards N-C (only for the distributors series marked xxx/Nxxx-C).

The product complies with the requirements of the certification programme:

CP 20-01-2000/II (initial documents:

ČSN EN 1775, TPG 609 01, TPG 704 01,

TPG 934 01, TPG 702 01)

Tests performed, regulations, legislation:

Certificate, Declaration of Conformity according to Act no. 22/1997 Coll. as amended by act no. 91/2016 Coll., GD no. 163/2002 Coll. as amended by GD no. 312/2005 Coll. And GD no. 215/2016 Coll.

Example of data for an order:

Type marking: APZ/NK-7-2

Description: Gas meter pillar made of thermoset designated for the installation in free space with the door with a 6x6 thorn key.

Technical parameters:

RWE	E.ON	PP	Type	Flow [m³/hod]	Device accessories		Outer dimensions width x height x x depth [mm]	Weight [kg]
Gas meter distributors - IN THE NICHE (all-plastic)								
■	■	■	APZ/NV-7- C-2	6	Movable installation frame	100, 250	640 x 600 x 220	11
■	■	■	APZ/PV-7	6		100, 250	484 x 570 x 242	10
■	■	■	APZ/NV-7	6		100, 250	470 x 640 x 250	15
■	■	■	APZ/NV-7-2	10		100, 250	620 x 640 x 250	17
Gas meter distributors - IN THE NICHE (concrete + plastic door)								
	□	■	SPZ 9/KV-7	6	Movable installation frame	100	410 x 510 x 250	18
■	■	■	SPZ 10/KV-7	6		100, 250	540 x 510 x 250	28
Gas meter distributors - COMPACT PILLAR (all-plastic)								
■	■	■	APZ/NK-7- C-2	6	Movable installation frame	100, 250	640 x 1810 x 220	29
■	■	■	APZ/PK-7	6		100, 250	484 x 1785 x 242	23
■	■	■	APZ/NK-7	6		100, 250	470 x 1830 x 250	32
■	■	■	APZ/NK-7-2	10		100, 250	620 x 1830 x 250	38
Door with the frame - IN THE NICHE (all-plastic)								
■	■	■	APZ/NV-7- C-2 door + frame	10	-	100, 250	640 x 600 x100	2
Data for an order								

Note:

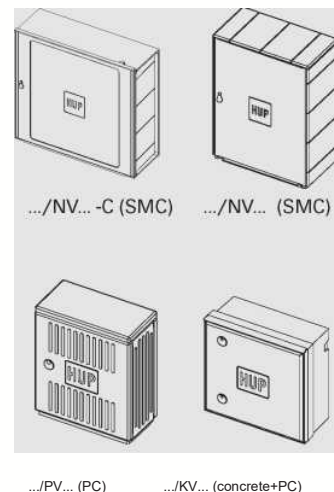
Gas meter boxes APZ/PV-7-C (APZ/PK-7-C) and SPZ9/KV-7 are designated for the gas meter connecting span of 100 mm.

- Gas meter boxes designated for individual distribution companies.
- Gas meter boxed must be negotiated and approved by a relevant distribution company in advance.

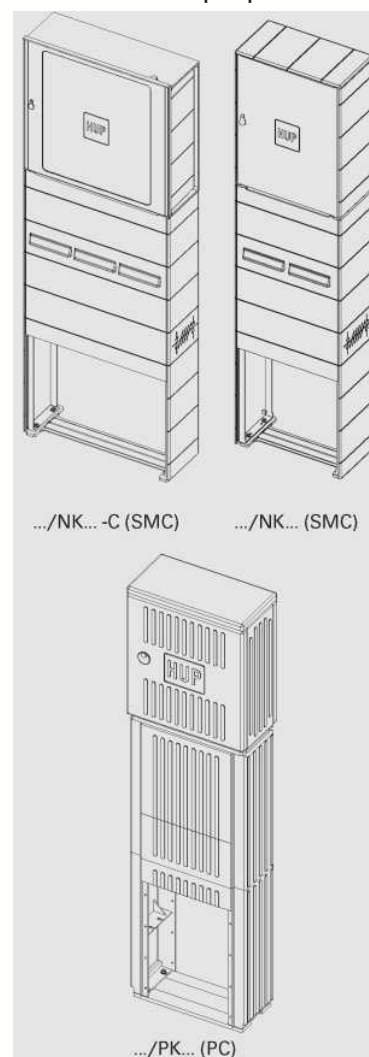


Construction and material design

RPO DISTRIBUTORS for the niche in the wall or brick pillar



compact pillar



EXCLUSIVE

Together with the standard design of distributors, DCK Holoubkov Bohemia a.s. also offers its clients a premium version of the products.

These products are suitable for using in historic buildings, conservation areas or luxury residential area where stress is put not only on product functionality but also on its appearance and life span of materials used which should be in compliance with the style of a building.

Design of Exclusive series:

Concrete housing + stainless steel door + black plastic frame Dimensions

Single-leaf design: 410 x 510 x 250 mm, 540 x 510 x 250 mm

Double-leaf design: 815 x 510 x 250 mm, 1065 x 510 x 250 mm

The products of EXCLUSIVE series are custom-made.

For detailed information and price calculation contact our sales department:

tel.: 371 510 529, mobile: 602 423 730, e-mail: odbyt@dck.cz

Concrete shell + stainless steel
door
540 x 510 x 250 mm



ATYPICAL DISTRIBUTORS, RP INSTRUMENT DISTRIBUTORS



For the need of switchboards different from the standard, we offer the provision of technical assistance and subsequently the production of the required distributors. These distributors are custom-made.

For professional assistance and consultation contact directly our department of atypical distributors production:
tel.: 371 510 525, mobile: 602 528 152, email: atypy@dck.cz

DISTRIBUTORS OF INDIRECT MEASUREMENT OF HV, VHV (ERNM, USM, SM)

Technical parameters:

Nominal voltage (Un):	230/400 V, AC
Nominal insulation voltage (Ui):	400 V, AC
Nominal pulsating withstand voltage (Uimp):	4kV (1,2/50 ms)
Nominal current of distributor (InA):	external source - 10 A, MTP - x/5 A, x/1 A
Nominal frequency (fn):	50 Hz
Nominal conditional short-circuit current (Ioc):	10kA
Rate of protection by a cover IK:	IP44/IP20
Rate of mechanical protection IK:	IK10
Type of DBO:	B

Use:

Electricity meter distributors and pillars of low voltage are designated for placing the electricity meter set (electronic electricity meter), registration and communication devices and designed for indirect billing measurement of electricity in distribution and transfer points connected from distribution networks of HV and VHV.

The distributors are designated for using by laymen and also persons familiar with them. The distributors are designated for the installation and use in the interior and exterior and are of stable design with fixed parts of structure.

Technical design:

The distributor is designed with a tiltable panel. On the distributor tiltable panel, electricity meters are placed as well as totalizers, time switches, modems. In the rear part of the distributor (behind the tiltable sealable panel), fuse isolating switches are placed as well as interface of output pulses (optical separators), 230 V AC sockets, circuit breakers, terminal boxes, testing terminal boxes, phone socket.

When installed indoor in the power distribution buildings, the distributors are placed as a matter of priority outside the space of the HV substation, preferentially in the space of the LV substation or in a separate room for measurement. The distributors for outdoor installation can be placed on the perimeter wall of the transformer station, on the block substation housing or in the brick pillars or compact plastic pillars.

The distributors are custom-made and it is necessary to show a name of the energy company (ČEZ, E.ON, PRE). We will provide technical assistance and subsequent production of distributors. For professional assistance and consultation contact directly our department of atypical distributors production: 371 510 525, mobile: 602 528 152, email: atypy@dck.cz

RK COMPENSATION DISTRIBUTORS

Technical parameters:

Nominal voltage (Un):	230/400 V, AC
Nominal insulation voltage of circuit (Ui):	Up to 500V, AC
Nominal pulsating withstand voltage (Uimp):	4kV (1,2/50 ms)
nominal values of current (InA):	up to do 400 A,
Compensation power:	up to do 300 kVAR
Nominal frequency (fn):	50 Hz
Nominal conditional short-circuit current (Ioc):	10 kA
Rate of protection IP:	IP44/IP20
Rate of protection by a cover IK:	IK10

Use:

Compensation distributors are designated for the automatic regulation of reactive power. The distributors are designated for using by laymen and also persons familiar with them. The distributors are designated for the installation and use in the interior and exterior and are of stable design with fixed parts of structure.

Technical design:

Regulation of a required value of power factor is solved by a microprocessor regulator. The regulator controls switching of individual capacitor levels by contactors or thyristor switches. Compensation can be also done as enclosed (protected) with a choke coil. The distributors are made in DCK type boxes. Distributor accessories are individual depending on the customer's specification. These distributors can be combined mainly with the distributors of indirect measurement of NR, NS, NP type.

They are custom-made according to the customer's design and requirements. We will provide technical assistance and subsequent production of distributors. For professional assistance and consultation contact directly our department of atypical distributors production: tel.: 371 510 525, mobile: 602 528 152, email: atypy@dck.cz

Indirect measurement



Indirect measurement



Compensation distributor



Connection to the networks of power and gas

from the manufacturer of exterior distributors DCK Holoubkov Bohemia a.s.

SETS IN ONE INTEGRATED UNIT IN A SINGLE DESIGN FOR ONE OR MORE CONSUMERS

DCK offers a comprehensive solution of connecting residential buildings in the form of the sets of distributors with identical dimensions, colour and design. In case of individual construction of family homes or terraced housing, the identical appearance of individual components will become apparent. If a customer does not chose anything from a standard solution offered in this catalogue, it is possible to make the atypical sets (e.g. a combination with the distributors of overvoltage protection, one-phase electricity meter distributors, etc.). We also have for our customers a solution for the need of connecting semi-detached houses when maintaining individual design of distributors used.

You need for power supply:

1. **Power distribution board** - detailed information on particular accessories is given on p. 8 -11 of this catalogue
2. **Electricity meter distributor** - detailed information on particular accessories is given on p. 18 -19 of this catalogue
3. **Gas meter distributor** - detailed information on particular accessories is given on p. 30 - 31 of this catalogue

Type HELGA® 1: The sets designated for building in the niche or brick pillar



Type HELGA® 2: complete sets of pillar design for fitting in free space.



Consultation in the area of using suitable material design or type:
sales department - tel.: 371 510 529, 371 510 525, fax: 371 751 413.

HELGA® 1 SET OF DISTRIBUTORS DESIGNATED FOR SETTING INTO THE WALL

MATERIAL VERSION - POLYESTER (SMC)

ČEZ	E.ON	PRE	NAME OF A SET (for an order)	SET COMPOSITION		
				Description of distributors / boxes in the set	Gas	measurement
■	■		HELGA 1A-N-C fig. 1	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/NVP7P-C SP100/NVP1P
■			HELGA 1B-N-C fig. 1	Electricity meter - two-tariff, 3f Connecting - fuse isolating switches of up to 160 A (lead of up to 50 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/NVP7P-C SP182/NVP1P
■	■		HELGA 1C-N-C fig. 2	Gas meter Electricity meter - two-tariff, 3f (lead of up to 50 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7-C-2	ER212/NVP7P-C
■	■		HELGA 1D-N-C fig. 2	Gas meter Electricity meter - two-tariff, 3f (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7-C-2	ER112/NVP7P-C
□	□		HELGA 1E-N-C fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7-C-2	ER212/NVP7P-C SS100/NVE1P-C
□	□		HELGA 1F-N-C fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7-C-2	ER112/NVP7P-C SS100/NVE1P-C
■	■		HELGA 1G-N-C fig. 4	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7-C-2	ER212/NVP7P-C SP100/NVP1P
■	■		HELGA 1H-N-C fig. 1	Electricity meter - two-tariff, 3f Socket - 16 A (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/NVP7P-C ZS16 / 16/PVP7
□	□		HELGA 1I-N-C (ES112+100/NVE8P-C) fig. 5	Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER112/NVP7P-C SS100/NVE1P-C
□	□		HELGA 1K-N-C (ES212+100/NVE8P-C) fig. 5	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER212/NVP7P-C SS100/NVE1P-C

1 Measurement / branch



1A-N-C, 1B-N-C, 1H-N-C:
470 x (600 + 260) x 220 mm

gas measurement



1C-N-C: 1110 x 600 x 220 mm
1D-N-C: 960 x 600 x 220 mm

2

3 gas measurement branch



1E-N-C: 1430 x 600 x 220 mm
1F-N-C: 1280 x 600 x 220 mm

4 gas branch / measurement



1G-N-C: 1110 x (600 + 260) x 220 mm

5 branch of measurement



1I-N-C: 640 x 600 x 200 mm
1K-N-C: 790 x 600 x 220 mm

Note: When ordering, it is necessary to provide a name (abbreviation) of the power company (ČEZ, E.ON, PRE) to which system a distributor will be connected (installed).

In case of set with a socket distributor, this distributor is fitted from the rear part of the set. Upon a request, the socket distributor can be fitted with a lock cylinder.

If you are interested in an individual electric meter or gas meter distributor, see detailed information on p. 18-19 (ER), on p. 30-31 (APZ).

Accessories: Covering side boards N-C, flexible pipes CATS-SK.

Based on an order it is possible to supplement the distributors with lining in the flammable base - when the distributors are to be fitted in the wall niche, when material lining design for the boxes or their base is made of a construction product different from the class of reaction to fire A1 according to ČSN EN 13501-A1.

- The sets designated for individual distribution companies
- The sets with a connecting box or gas meter distributor must be negotiated and approved in advance by a relevant distribution company.

HELGA® 1 SET OF DISTRIBUTORS DESIGNATED FOR SETTING INTO THE WALL

MATERIAL VERSION - POLYESTER (SMC)

ČEZ	E.ON	PRE	NAME OF A SET (for an order)	SET COMPOSITION		
				Description of distributors / boxes in the set	Gas	measurement / branch
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1A-N fig. 1	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/NVP7P SP100/NVP1P
<input checked="" type="checkbox"/>			HELGA 1B-N fig. 1	Electricity meter - two-tariff, 3f Connecting - fuse isolating switches of up to 63 A (lead of up to 25 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/NVP7P SP182/NVP1P
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1C-N fig. 2	Gas meter Electricity meter - two-tariff, 3f (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7	ER212/NVP7P
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1D-N fig. 2	Gas meter Electricity meter - one-tariff, 3f (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7	ER112/NVP7P
<input type="checkbox"/>	<input type="checkbox"/>		HELGA 1E-N fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7	ER212/NVP7P SS100/NVE1P
<input type="checkbox"/>	<input type="checkbox"/>		HELGA 1F-N fig. 3	Gas meter Electricity meter - ONE-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7	ER112/NVP7P SS100/NVE1P
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1G-N fig. 4	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/NV-7	ER212/NVP7P SP100/NVP1P
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1H-N fig. 1	Electricity meter - two-tariff, 3f Socket - 16 A (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/NVP7P ZS16 / 16/PVP7
<input type="checkbox"/>	<input type="checkbox"/>		HELGA 1I-N (ES112+100/NVE8P) fig. 5	Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER112/NVP7P SS100/NVE1P
<input type="checkbox"/>	<input type="checkbox"/>		HELGA 1K-N (ES212+100/NVE8P) NVE8P Fig. 5	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER212/NVP7P SS100/NVE1P

1 Measurement / branch



1A-N, 1B-N, 1H-N:
470 x (640 + 260) x 250 mm

2 gas measurement



1C-N: 1090 x 640 x 250 mm
1D-N: 940 x 640 x 250 mm

3 gas measurement branch



1E-N: 1400 x 640 x 250 mm
1F-N: 1250 x 640 x 250 mm

4 gas measurement / branch



1I-N: 1090 x (640 + 260) x 250 mm

Note: When ordering, it is necessary to provide a name (abbreviation) of the power company (ČEZ, E.ON, PRE) to which system a distributor will be connected (installed).

In case of set with a socket distributor, this distributor is fitted from the rear part of the set. Upon a request, the socket distributor can be fitted with a lock cylinder.

Based on an order it is possible to supplement the distributors with lining in the flammable base - when the distributors are to be fitted in the wall niche, when material lining design for the boxes or their base is made of a construction product different from the class of reaction to fire A1 according to ČSN EN 13501-1+A1.

If you are interested in an individual electric meter or gas meter distributor, see detailed information on p. 18-19 (ER), on p. 30-31 (APZ).
Accessories: Flexible pipes CATS-SK.

☒ The sets designated for individual distribution companies

☐ The sets with a connecting box or gas meter distributor must be negotiated and approved by a distribution company.

5 measurement branch




1I-N: 630 x 640 x 250 mm
1K-N: 780 x 640 x 250 mm

HELGA® 1 SET OF DISTRIBUTORS DESIGNATED FOR SETTING INTO THE WALL


MATERIAL VERSION - POLYCARBONATE (PC)

ČEZ	E.ON	PRE	NAME OF A SET (for an order)	SET COMPOSITION		
				Description of distributors / boxes in the set	gas	measurement branch
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1A-P fig. 1	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/PVP7P SP100/NVP1P
<input checked="" type="checkbox"/>			HELGA 1B-P fig. 1	Electricity meter - two-tariff, 3f Connecting - fuse isolating switches of up to 63 A (lead of up to 25 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/PVP7P SP182/NVP1P
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1C-P fig. 2	Gas meter Electricity meter - one-tariff, 3f (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/PV-7-2	ER212/PVP7P
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1D-P fig. 2	Gas meter electricity meter - one-tariff, 3f (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/PV-7-2	ER112/PVP7P
<input type="checkbox"/>	<input type="checkbox"/>		HELGA 1E-P fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/PV-7-2	ER212/PVP7P SS100/PVE1P
<input type="checkbox"/>	<input type="checkbox"/>		HELGA 1F-P fig. 3	Gas meter Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/PV-7-2	ER112/PVP7P SS100/PVE1P
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1G-P fig. 4	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/PV-7-2	ER212/PVP7P SP100/NVP1P
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HELGA 1H-P fig. 1	Electricity meter - two-tariff, 3f Socket - 16 A (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/PVP7P ZS16/16/PVP7
<input type="checkbox"/>	<input type="checkbox"/>		HELGA 1I-P (ES112+100/PVE8P) fig. 5	Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER112/PVP7P SS100/PVE1P
<input type="checkbox"/>	<input type="checkbox"/>		HELGA 1K-P (ES212+100/PVE8P) fig. 5	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER212/PVP7P SS100/PVE1P
		<input checked="" type="checkbox"/>	HELGA 1L-P (ES513+102/PVF8P) fig. 5	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 400 A (lead of up to 240 mm ² , measurement up to 60 A) DISTRIBUTORS INTERCONNECTED, SET		ER513/PVP7P SS102/PVF1W-OT
		<input checked="" type="checkbox"/>	HELGA 1M-P fig.3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 400 A (lead of up to 240 mm ² , measurement up to 60 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/PV-7	ER513/PVP7P SS102/PVF1W-OT
		<input checked="" type="checkbox"/>	HELGA 1N-P fig.2	Gas meter Electricity meter - two-tariff, 3f (lead of up to 16 mm ² , measurement up to 60 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	APZ/PV-7	ER513/PVP7P


- measurement / branch




1A-P, 1B-P, 1H-P:
484 x (570 + 260) x 242 mm
- gas measurement




1C-P, 1D-P, 1N-P: 1080 x 570 x 242 mm
- gas measurement branch



1E-P, 1F-P, 1M-P: 1565 x 570 x 242 mm
- gas measurement / branch



1G-P: 970 x (570 + 260) x 242 mm
- measurement branch



1I-P, 1J-P, 1K-P, 1L-P: 858 x 570 x 242 mm

Note: When ordering, it is necessary to provide a name (abbreviation) of the power company (ČEZ, E.ON, PRE) to which system a distributor will be connected (installed).

In case of set with a socket distributor, this distributor is fitted from the rear part of the set. Upon a request, the socket distributor can be fitted with a lock cylinder.

Based on an order it is possible to supplement the distributors with lining in the flammable base - when the distributors are to be fitted in the wall niche, when material lining design for the boxes or their base is made of a construction product different from the class of reaction to fire A1 according to ČSN EN 13501-+A1.

If you are interested in an individual electricity meter or gas meter distributor, see detailed information on p. 18-19 (ER), on p. 30-31(APZ). Accessories: Flexible pipes CATS-SK.

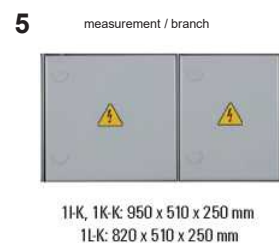
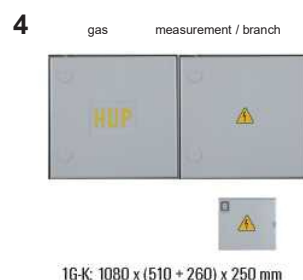
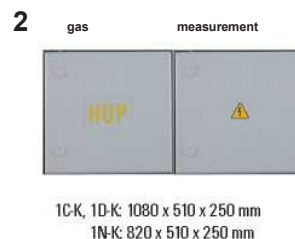
☒ The sets designated for individual distribution companies

☐ The sets with a connecting box or gas meter distributor must be negotiated and approved by a relevant distribution company.

HELGA® 1 SETS OF DISTRIBUTORS DESIGNATED FOR SETTING INTO THE WALL

MATERIAL DESIGN CONCRETE + POLYCARBONATE (PC)

ČEZ	E.ON	PRE	NAME OF A SET (for an order)	SET COMPOSITION			
				Description of distributors / boxes in the set	gas	measurement	branch
■	■		HELGA 1A-K fig. 1	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/KVP7P	SP100/NVP1P
■			HELGA 1B-K fig. 1	Electricity meter - two-tariff, 3f Connecting - fuse isolating switches of up to 63 A (lead of up to 25 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/KVP7P	SP182/NVP1P
■	■		HELGA 1C-K fig. 2	Gas meter Electricity meter - two-tariff, 3f (lead of up to 16 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	SPZ10/KV-7	ER212/KVP7P	
■	■		HELGA 1D-K fig. 2	Gas meter Electricity meter - one-tariff, 3f (lead of up to 16 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	SPZ10/KV-7	ER112/KVP7P	
□	□		HELGA 1E-K fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	SPZ10/KV-7	ER212/KVP7P	SS100/KVE4P-M
□	□		HELGA 1F-K fig. 3	Gas meter Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	SPZ10/KV-7	ER112/KVP7P	SS100/KVE4P-M
■	■		HELGA 1G-K fig. 4	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	SPZ10/KV-7	ER212/KVP7P	SP100/NVP1P
■	■		HELGA 1H-K fig. 1	Electricity meter - two-tariff, 3f Socket - 16 A (lead of up to 16 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/KVP7P	ZS16/16/PVP7
□	□		HELGA 1I-K fig. 5	Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER112/KVP7P	SS100/KVE4P-M
□	□		HELGA 1K-K fig. 5	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER212/KVP7P	SS100/KVE4P-M
		■	HELGA 1L-K fig.5	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 400A (lead of up to 240 mm², measurement up to 63 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY		ER513/KVP7P	SS102/KVF4W-M
		■	HELGA 1M-K fig.3	Gas meter- 100 mm Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 400 A (lead of up to 240 mm², measurement up to 60 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	SPZ9/KV-7	ER513/KVP7P	SS102/KVF4W-M
		■	HELGA 1N-K fig.2	Gas meter - span of 100 mm Electricity meter - two-tariff, 3f (lead of up to 240 mm², measurement up to 60 A) DISTRIBUTORS NOT INTERCONNECTED, SEPARATELY	SPZ9/KV-7	ER513/KVP7P	



Note: When ordering, it is necessary to provide a name (abbreviation) of the power company (ČEZ, E.ON, PRE) to which system a distributor will be connected (installed).

If you are interested in an individual electricity meter or gas meter distributor, see detailed information on p. 18-19 (ER), on p. 30-31 (APZ).

Accessories: Flexible pipes CATS-SK. In case of set with a socket distributor, this distributor is fitted from the rear part of the set. Upon a request, the socket distributor can be fitted with a lock cylinder.

- The sets designated for individual distribution companies
- The sets with a connecting box or gas meter distributor must be negotiated and approved by a relevant distribution company in advance.

HELGA® 2 SETS OF DISTRIBUTORS OF PILLAR DESING

MATERIAL DESIGN - POLYESTER (SMC)

ČEZ	E.ON	PRE	NAME OF A SET (for an order)	SET COMPOSITION		
				Description of distributors / boxes in the set	gas	measurement branch
■	■		HELGA 2C-N-C fig. 2	Gas meter Electricity meter - two-tariff, 3f (lead of up to 16 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/NK-7-C-2	ER212/NKP7P-C
■	■		HELGA 2D-N-C fig. 2	Gas meter Electricity meter - one-tariff, 3f (lead of up to 16 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/NK-7-C-2	ER112/NKP7P-C
□	□		HELGA 2E-N-C fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/NK-7-C-2	ES212+100/NKE8P-C
□	□		HELGA 2F-N-C fig. 3	Gas meter Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/NK-7-C-2	ES112+100/NKE8P-C
■	■		HELGA 2H-N-C fig. 1	Electricity meter - two-tariff, 3f Socket - 16 A (lead of up to 16 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER212/NKP7P-C ZS16/16/PVP7
□	□		HELGA 2I-N-C (ES112+100/NKE8P-C) fig. 4	Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ES112+100/NKE8P-C
□	□		HELGA 2K-N-C (ES212+100/NKE8P-C) fig. 4	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ES212+100/NKE8P-C

Measurement / branch



1 2A-N-C, 2B-N-C, 2H-N-C: 470 x 1810 x 220 mm

gas measurement



2 2C-N-C: 1110 x 1810 x 220 mm
2D-N-C: 960 x 1810 x 220 mm

gas measurement branch



3 2E-N-C: 1430 x 1810 x 220 mm
2F-N-C: 1280 x 1810 x 220 mm

measurement branch



4 2I-N-C: 640 x 1810 x 220 mm
2K-N-C: 790 x 1810 x 220 mm

Note: When ordering, it is necessary to provide a name (abbreviation) of the power company (ČEZ, E.ON, PRE) to which system a distributor will be connected (installed).

In case of set with a socket distributor, this distributor is fitted from the rear part of the set. Upon a request, the socket distributor can be fitted with a lock cylinder.

If you are interested in an individual electricity meter or gas meter distributor, see detailed information on p. 18-19 (ER), on p. 30-31 (APZ). Accessories: Covering side boards N-C, flexible pipes CATS-SK.

■ The sets designated for individual distribution companies

□ The sets with a connecting box or gas meter distributor must be negotiated and approved in advance by a relevant distribution company.

HELGA® 2 SETS OF DISTRIBUTORS OF PILLAR DESING

MATERIAL DESIGN - POLYESTER (SMC)

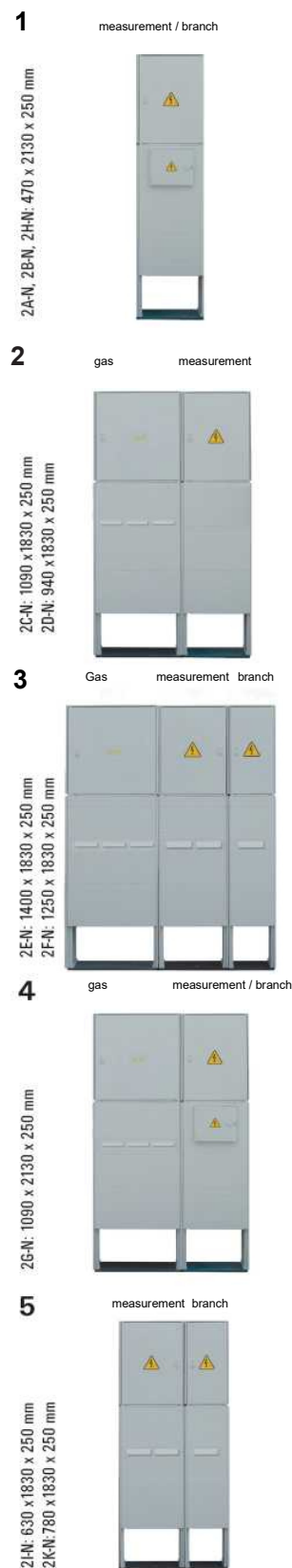
ČEZ	E.ON	PRE	NAME OF A SET (for an order)	SET COMPOSITION		
				Description of distributors / boxes in the set	gas	measurement / branch
■	■		HELGA 2A-N fig. 1	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER212/NKP7P SP100/NVP1P
■			HELGA 2B-N fig. 1	Electricity meter - two-tariff, 3f Connecting - isolating switches of up to 63 (lead of up to 25 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER212/NKP7P SP182/NPVP1P
■	■		HELGA 2C-N fig. 2	Gas meter Electricity meter - two-tariff, 3f (lead of up to 16 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/NK-7-2	ER212/NKP7P
■	■		HELGA 2D-N fig. 2	Gas meter Electricity meter - one-tariff, 3f (lead of up to 16 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/NK-7-2	ER112/NKP7P
□	□		HELGA 2E-N fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/NK-7-2	ES212+100/NKE8P
□	□		HELGA 2F-N fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/NK-7-2	ES112+100/NKE8P
■	■		HELGA 2G-N fig. 4	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 50 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/NK-7-2	ER212/NKP7P SP100/NVP1P
■	■		HELGA 2H-N fig. 1	Electricity meter - two-tariff, 3f Socket - 16 A (lead of up to 16 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER212/NKP7P ZS16/16/PVP7
□	□		HELGA 2I-N (ES112+100/NKE8P) fig. 5	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ES112+100/NKE8P
□	□		HELGA 2K-N (ES212+100/NKE8P) fig. 5	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm², measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ES212+100/NKE8P

Note: When ordering, it is necessary to provide a name (abbreviation) of the power company (ČEZ, E.ON, PRE) to which system a distributor will be connected (installed).

In case of set with a socket distributor, this distributor is fitted from the rear part of the set. Upon a request, the socket distributor can be fitted with a lock cylinder.

If you are interested in an individual electricity meter or gas meter distributor, see detailed information on p. 18-19 (ER), on p. 30-31 (APZ).
Accessories: Flexible pipes CATS-SK.

- The sets designated for individual distribution companies
- The sets with a connecting box or gas meter distributor must be negotiated and approved by a relevant distribution company in advance.



HELGA® 2 SETS OF DISTRIBUTORS OF PILLAR DESING

MATERIAL DESIGN - POLYESTER (SMC)

ČEZ	E.ON	PRE	NAME OF A SET (for an order)	SET COMPOSITION		
				Description of distributors / boxes in the set	gas	measurement branch
■	■		HELGA 2C-P fig. 2	Gas meter Electricity meter - two-tariff, 3f (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/PK-7	ER212/PKP7P
■	■		HELGA 2D-P fig. 2	Gas meter Electricity meter - one-tariff, 3f (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/PK-7	ER112/PKP7P
□	□		HELGA 2E-P Fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/PK-7	ES212+100/PKE8P
□	□		HELGA 2F-P fig. 3	Gas meter Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/PK-7	ES112+100/PKE8P
■	■		HELGA 2H-P Fig. 1	Electricity meter - two-tariff, 3f Socket - 16 A (lead of up to 16 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ER212/PKP7P ZS16/16/PVP7
□	□		HELGA 2I-P (ES111+100/PKE8P) fig. 4	Electricity meter - one-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ES112+100/PKE8P
□	□		HELGA 2K-P (ES212+100/PKE8P) fig. 4	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 160 A (lead of up to 240 mm ² , measurement up to 40 A) DISTRIBUTORS INTERCONNECTED, SET		ES212+100/PKE8P
		■	HELGA 2L-P (ES513+102/PKF8P) fig. 4	Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 400 A (lead of up to 240 mm ² , measurement up to 60 A) DISTRIBUTORS INTERCONNECTED, SET		ES513+102/PKF8P
		■	HELGA 2M-P fig. 3	Gas meter Electricity meter - two-tariff, 3f Connecting - fuse bases of up to 400 A (lead of up to 240 mm ² , measurement up to 60 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/PK-7	ES513+102/PKF8P
		■	HELGA 2N-P fig. 2	Gas meter Electricity meter - one-tariff, 3f (lead of up to 16 mm ² , measurement up to 60 A) DISTRIBUTORS INTERCONNECTED, SET	APZ/PK-7	ER513/PKP7P

1

Measurement / branch



2A-P, 2B-P, 2H-P: 484 x 1785 x 242 mm

2

gas measurement



2C-P, 2D-P, 2N-P: 370 x 1785 x 242 mm

3

gas measurement branch



2E-P, 2F-P, 2M-P: 1455 x 1785 x 242 mm

4

measurement branch



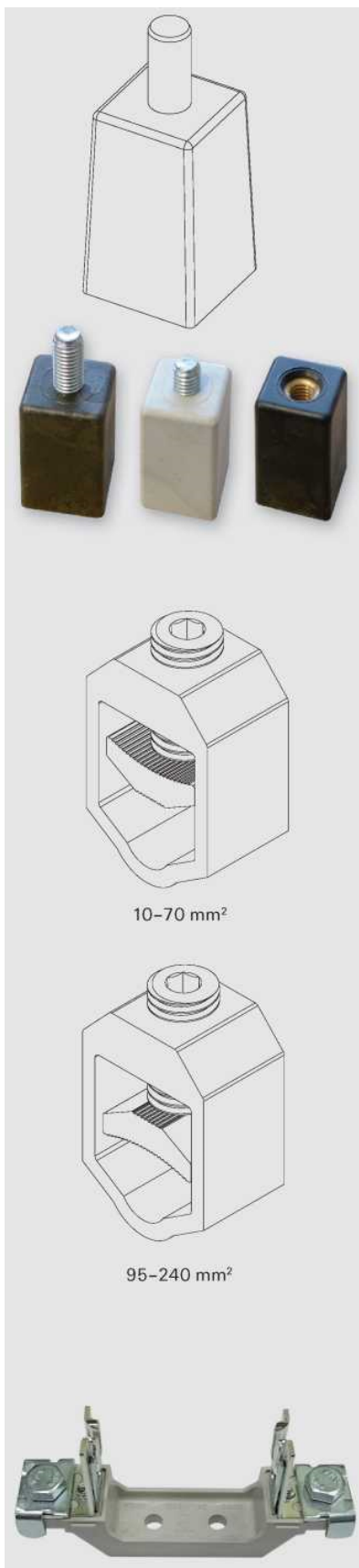
2I-P, 2J-P, 2K-P, 2L-P: 858 x 1785 x 242 mm

Note: When ordering, it is necessary to provide a name (abbreviation) of the power company (ČEZ, E.ON, PRE) to which system a distributor will be connected (installed).

In case of set with a socket distributor, this distributor is fitted from the rear part of the set. Upon a request, the socket distributor can be fitted with a lock cylinder. If you are interested in an individual electricity meter or gas meter distributor, see detailed information on p. 18-19 (ER), on p. 30-31 (APZ). Accessories: Flexible pipes CATS-SK.

■ The sets designated for individual distribution companies

□ The sets with a connecting box or gas meter distributor must be negotiated and approved by a relevant distribution company in advance.



RIGID INSULATORS

■ Technical parameters:

Working voltage: up to 1000 V

Working temperature: - 40 to +130 °C

Tensile strength: > 500 N

Flexural strength: > 500 N

Twisting strength: > 20 N

Internal breakdown voltage: > 20 kV

External breakdown voltage: > 8 kV

Combustibility grade: HB40, V-0

TYPE MARKING	PI 40-17	PI 40-6	PI 40
Bolt length [mm]	17	6	-
Supporting height [mm]	40	40	40
Weight [g]	41	41	35

■ Use:

Rigid insulators are designated for the construction and assembly of electric devices in distribution equipment of low voltage of up to 1,000 V. They are used for the assembly and fastening of bus bars, and live parts of devices for building electric equipment. They are designated for the assembly in the interior.

Note: Rigid insulator PI40 is manufactured upon an order only.

V-STRAPS

■ Use:

The straps of a V-shape are designated for connecting the conductors to the flags of V-shape. The strap together with the flag create a connecting V-clamp. Internal segment of W 10-240 clamp is revolving, and thus allows convenient connection of wires in the range of 10-240 mm².

Note: We recommend to provide the ends of finely segmental conductors with a suitable ending.

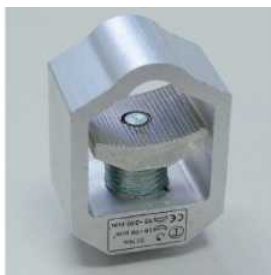
■ Accessories:

Plastic cover of V-strap W 10-240 (used as a protection of live parts against dangerous touch)

TYOE MARKING	W 10-95 (NT/95)	W 10-240 (NT/10-240)	W 2x70-240
Conductor cross section [mm²]	10- 95	10- 240	2x 50-240
Torque moment [Nm]	20	23	25
Weight [g]	40	80	167

V-strap

Plastic cover of the strap



Connecting V-clamp

Flag

Strap

FUSE BASES OF 00 IN SIZE

■ Use:

One-pole fuse bases of 00 in size are designated for knife fuse links of 00 and 000. Nominal current of the fuse base is 160 A. The base is made of a composite with good mechanical strength and thermal resistance. Optional accessories: contact cover.

Clamp design - connection:

H - saddle terminal for direct connecting of one or two conductors to the cross section of 50 mm²

S - bolted clip for connecting the cable lug by M8 bolt

V - flag of V-shape for connecting the conductor by straps (NT/95 type) to the cross section of 95mm²

REDUCTION OF DISTRIBUTION SWITCHBOARDS, DISCONNECTING, SECURING

Technical parameters:

Nominal operating voltage U_e:	up to 690 V
Nominal current of reduction $I_n A$:	320 A
Nominal current of circuit (outlet) I_{nc}:	160 A
Nominal frequency f_n:	50 Hz
Max. cross section of outlet conductors:	R200 - up to 50 mm ² Cu-Al, R220 - up to 95 mm ² Cu-Al
Method of connection:	
operating bus bar:	R200 - M10 screw, R220 - M12 screw
PEN bus bar:	R200 - M10 screw, R220 - M12 screw
outlet conductors:	R200 - H/M8 clamp, R220 - saddle terminal
Combustibility grade:	HB 40, V-0, according to ČSN EN 60695-11-10,

Use:

The reduction is used in the disconnecting securing boxes DCK as possible extension of a number of outlets so that it replaces a set of fuse bases (strips) of a size of 2 or 1 with two sets of fuse bases (strips) of 00 in size.

Technical design:

The reduction consists of a beam (adapter) on which the fuse bases (strips) are screwed, PEN bus bar reduction and fasteners.

Installation of R200 and R220 reductions

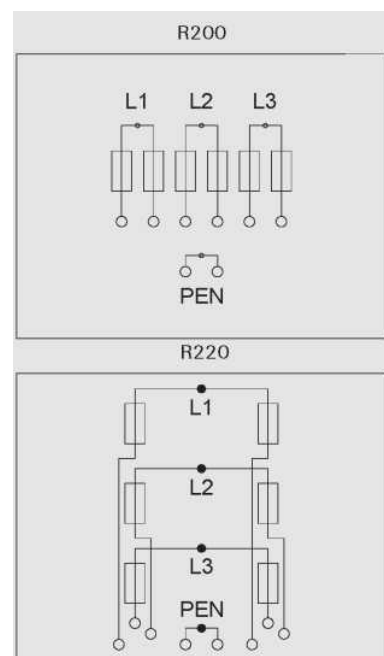
Before the installation of R200 reduction, one set of existing fuse bases must be disassembled first. Disassemble fuse bases of 00 in size from the plastic beam. Use three M8 screws with cylindrical head for screwing the beam on the beam in the box. Screw fuse bases of 00 in size on and screw working bus bars together. Then screw the PEN reduction bus bar onto the PEN bus bars. Before installing R220 reduction, disassemble one existing fuse strip of 2 or 1 in size from the disconnecting box first. Use M12 screw and screw a copper adapter of the reduction on the working bus bar and using M8 screw of 00 in size, screw two fuse strips on the adapter. Using M12, screw the PEN bus bar reduction on the PEN bus bar.

Tests performed, regulations, legislation:

Certificate of Declaration of Conformity and EU Declaration of Conformity according to GD no. 117/2016 Coll., GD no. 118/2016 Coll., act no. 90/2016 Coll., act no. 22/1997 Coll. as amended by the act no. 91/2016 Coll., GD no. 163/2002 Coll. as amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll.

The product complies with the requirements of the certification programme: ČSN EN 61439 - 5 ed.2 (part of the distributor)

Circuit diagram

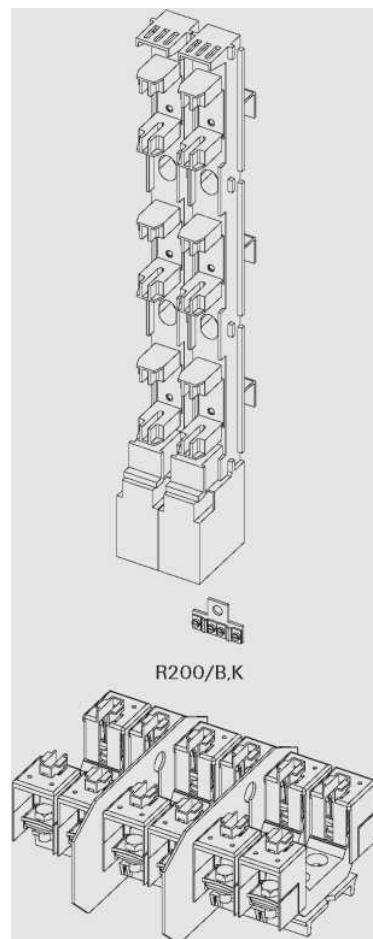


Type of construction
R220/N,P

Reduction R220



Reduction R200



Accessories



ALL-PLASTIC HOLDER OF UNI CABLE DUCTS

■ **Use:** The universal holder of cable ducts for fastening cable ducts 0 63 or 75 mm on the pole, universal design for 1 - 3 leads

■ **Fastening on the pole may be carried out using:**

- DCK installation kit
- Bandimex tape

PLASTIC HOLDER

■ **Use:** The holder is a transition element for fastening the distributor on the pole. DCK offers following types of holders to its customers:

Production of some types of holders can be limited by a minimum required quantity.

TYPE MARKING	SP holder	SV-C holder	SV holder	ER holder	UNI holder
length [mm]	330	240	430	530	160
total dimension [mm]	330 x 57 x 47	240 x 57 x 47	430 x 57 x 47	530 x 57 x 47	160 x 40 x 35

■ **Fastening on the pole may be carried out using:**

- DCK installation kit
- Bandimex tape

INSTALLATION KIT

■ **Use:** The installation kit for assembling on the support base of outside conduction (pole) is designated for fastening distribution switchboards of SV and SP type accommodated to the assembly on the pole. The kit consists of a stainless-steel tape, plastic clamping couplings and a screw. The installation is performed by pulling the tape through the switchboard holder only, inserting its ends into a plastic coupling and then tightening the screw without using special equipment.

(Note: do not stress the installation kit with excessive pulling)

FLEXIBLE PIPES CATS-SK

■ **Use:** CATS-SK pipes are designated for easy installation of measuring and control elements in gas meter distributors up to a pressure of 0.5 MPa. They are made of stainless-steel bellows provided with the plastic protective pipe of yellow colour. Simple and convenient installation increases the overall safety of the entire installation.

CONCRETE ROOFS OF BRICK PILLAR

■ **Use:** Concrete roofs of HD type made of vibrated concrete reinforced with the steel armature are designated for fitting on the brick pillars with inbuilt distributors. The roofs are of a panel shape with the drip ledge of 60-50 mm in height (thickness) as standard.

The roofs are custom-made according to the customer's request for dimension.

OUTER MARKING OF NN DISTRIBUTION SWITCHBOARDS

■ **Use:** Marking is designated for recording the individual NN distributors. For example, marking will simplify orientation when troubleshooting or the placement of the switchboards placement will become well arranged.

TYPE	width x length [mm]	height [mm]	weight [g]
HD 450x670/60-50/BPŠ	450 x 670	60 - 50	39
HD 450x750/60-50/BPŠ	450x750	60 - 50	44
HD 450x910/60-50/BPŠ	450 x 910	60 - 50	53
HD 450x1100/60-50/BPŠ	450x 1100	60 - 50	64
HD 450x1220/60-50/BPŠ	450 x 1220	60 - 50	71
HD 450x1330/60-50/BPŠ	450x 1330	60 - 50	78
HD 450x1440/60-50/BPŠ	450 x 1440	60 - 50	84
HD 450x1560/60-50/BPŠ	450 x 1560	60- 50	91
HD 450x1700/60-50/BPŠ	450 x 1700	60 - 50	99

■ **Technical design:** Fasten the all-plastic frame on the doors of existing switchboards using two M5 screws and plastic nuts. Marking consists of a combination of seven types of individual numbers (0-9) and letters (A, B, C, D, E, P, R, S) which are placed in the frame before its fastening. If requested, the numerical series can be added with other letters. The base board is black as standard and if requested, the colours may be different or provided with reflective effect. Upon a request, new switchboards can be marked with additional marking. Individual types of numbers and letters are ordered separately.



NEW ACCESSORIES

■ **Use:** New accessories are designated for the replacement of accessories with new once in existing distribution switchboards. To mark new accessories, use marking of distribution switchboards according to PNE 35 7040 (construction design - R).
Example of data for an order: SS100/PRE-P accessories

CIRCUIT DIAGRAM

■ **Use:** Laminated removable blind circuit diagram of A5 size designated for distribution switchboards with the possibility of the description of all inlets, outlets, current values of fuse links and ground resistance values. Placement on the inner part of the door.

ASSEMBLY BOARDS

■ **Use:** These boards can be used in all types of distributors for the assembly of inbuilt devices. Upon a customer's request, the boards delivered may be plain, perforated or already installed in the distributor.

TRANSPARENT PLASTIC WINDOW

■ **Use:** This polycarbonate transparent small window is designated for placing in the distributor door and enables e.g., to read the values in the electricity or gas meter without opening it. Window dimensions are 79 x 89 mm. Production can be limited by a minimum required quantity.

BOX FOR DOCUMENTS

■ **Use:** Due to the box, needed documentation can be placed directly in the distributor.
This thermoplastic cover can be fastened to the inner side of the door by screws with glue. Box dimensions are 180 x 170 mm. Production can be limited by a minimum required quantity.

KVE COVER OF ELECTRIC METER CONDUCTORS

■ **Use:** The cover is used to cover the conductors after disassembling the electricity meter from the electricity meter distributor or panel. The cover comb provides a separation of individual conductors. PEN wires can be inserted including a jumper. The cover can be sealed using a sealing screw. The product complies with the requirements of standard: ČSN EN 60670.

Tests performed, regulations, legislation:

EC Certificate, Declaration of Conformity §12 and 13 of the Act no. 22/1997 Coll.+ GD no. 17/2003 Coll., on Technical Requirements for Low Voltage Electric Equipment with regard to the safety of persons, property and environment.

COMBINED KEY

■ **Use:** The combined key is designated for opening/closing the distributors provided with a closure according to ČSN 35 9754 - Appendices 1, 2 and PN-DCK 01-2006 ed.2 (half-moon) nor the thorn key closure 6 x 6 mm according to ČSN 35 9756 and PN-DCK 01-2006 ed.2 (square). Sale to the persons with professional qualification only.

THORN KEY

■ **Use:** The key is designated only for opening/closing the distributors provided with the thorn key closure 6 x 6 mm according to ČSN 35 9756 and PN-DCK 01-2006 ed.2 (square).

PROTECTIVE BLIND OF CABLE BUSHING PG29

■ **Use:** The blind is designated for the connecting boxes of SP type (version on the pole) to seal the cable bushing and then the cable can be installed additionally.

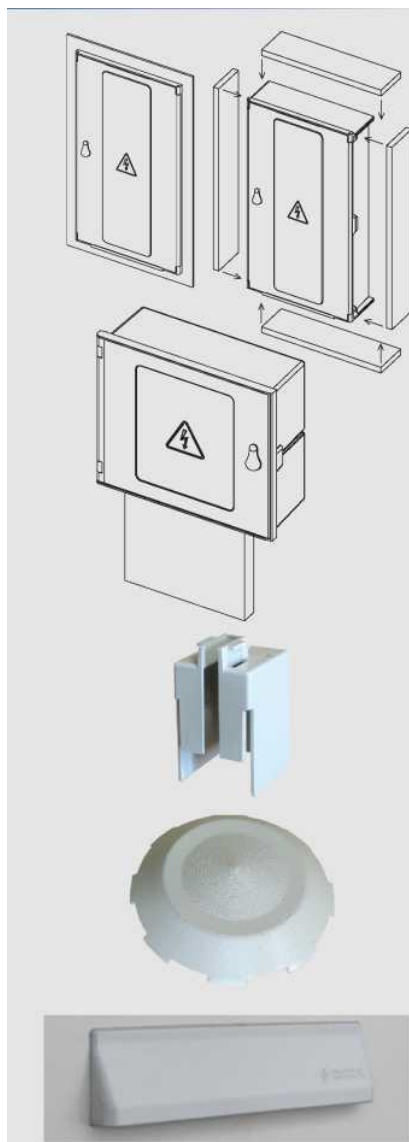
BACKFILL MATERIAL

■ **Use:** Backfill material (haydite) is designated for filling up the inner space of the compact pillar above the terrain level.

DOOR WITH CABLE BUSHING, SPLIT BUSHING, COVER, BLIND

■ **Use:** For the purpose of connecting the existing (temporary) distribution point from the distribution switchboard, a replaceable door can be used with the already installed bushing of PG type according to the selected interconnecting cable or separate specially split bushing (0.3-35 mm or 0.8-67 mm), including a relevant cover and blind of the opening for additional assembly on the existing distributor door. The products are made according to the customer's request.

Accessories



COVERING FRAME FOR CLEANING

■ **Use:** The frame of 70 mm in width is used to cover the building opening around the installed distributor in the niche without the necessity to clean facade. The frame is fixed by glue. These frames are custom-made according to the type of the distributor used.

LINING IN FLAMMABLE BASE

■ **Use:** This lining is designated for additional lining of the distributors determined for fitting on the wall or in the wall niche, when the design of material lining in the box or its base is a building product different from the class of reaction to fire A1 according to ČSN EN 13501-1+ A1. It is mainly about weatherproofing systems, wooden houses, etc. Lining is made of non-flammable thermally insulating board of 15 mm in thickness. Lining size differs according to the distributor size and placement in the base. This lining is custom-made. Standard width of lining is 100 mm.

COVERING PANEL OF CABLE SPACE

■ **Use:** The covering panel is used to cover free cable space under the distributor (mainly SP type) when assembled in the niche. The covering panel is of standard dimension 260 x 200 x 20 mm. The panel is placed together with plaster. The panel is accommodated for the application of final facade.

SP ASSEMBLY SET

■ **Use:** The assembly set is used for assembling the distributor of SP type in the weatherproofing system wider than 100 mm. Using adjustable screws of the assembly set, the distributor can be easily levelled to the prescribed level of walling up (placement in the niche). The assembly set is custom-made.

CONTACT COVERS

■ **Use:** To increase protection against random touch of live parts, the fuse bases of NT00, NT1 or NT2 type can be supplemented with contact covers. The production of the covers of NT1 and NT2 fuse bases can be limited by a minimum required quantity.

VENTILATION BUSHING

■ **Use:** The ventilation bushing improves natural ventilation of the distributor.

AIR GRATING

■ **Use:** Air grating improves natural ventilation of the distributor. It is designated for the pillar design of the distributor.

SHORT-CIRCUITING POINT

■ **Use:** Short-circuiting point is used for additional assembly in the existing distributors of SRx22/N, SRx42/N and SRx44/N type providing safe connection of the short-circuiting set.

PILLAR BLIND

■ **Use:** The blind is designated for blinding the additionally made opening in the pillar base to connect a current (temporary) distribution point from the distribution switchboard. The blind is custom-made.

CORRECTIVE PAINT

■ **Use:** Corrective paint is used to make small repairs on the distributors (scratches, etc.). RAL 7035 tone in the spray, quick-drying.

PROTECTIVE PAINT

■ **Use:** Protective paint is designated for the distributors of N, N-C type (series K, P, P-C is already standard). It is used to protect the distributor surface from weather conditions. Protective paint used after the final assembly of the distributor provides colour stability together with the delay of ageing (plastic) and total increase in the utility properties of the distributor. Colour shade is RAL 7035 (light grey) as standard. Protective paint (apart from above given option) is on sale separately and is not a part of the distributor.

HOLDER OF CUT-OUT RELAY

This universal holder is designated for additional assembly in the existing distributors with direct two-tariff measurement of power when establishing a manufacturing plant (usually photovoltaic power station) in the distribution point.



CONNECTING AND LOOPING FLAGS

■ Technical parameters:

Nominal current / rating capacity
Shape of conductor cross section:

400 A

sm - segmental **se** - sector full
rm - round segmental **re** - round full
10 - 240 mm² Cu, Al (using V-straps)
NT/10 - 240
Cu - (tinned)

Range of fastening the conductor:

Type of strap:

Material:

Note: We recommend to provide the ends of finely segmental conductors with a suitable ending.



■ Shape of a connecting flag:

Flat - R



30° - 30



Storey - P



Standard types of flags	Type	Dimension - width x height [mm]	Opening diameter [mm]	Opening pitch [mm]
	W9-R	25 x 63	9	-
	W11-R	25 x 63	11	-
	W13-R	25 x 66	13	-
	WC2-R	53 x 63	9	35.5
	WD2-R	70 x 63	11	48.5
	WC3-R	88 x 63	9	35.5
	WE1-R	64 x 88	9	27
	WE1-P*	53 x 90	9	27
	WF1-R	62 x 68	11	-
	WF1-P*	53 x 69	11	-
	WE2-R	64 x 59	9	30-40
	WE2-P*	53 x 73	9	35.5
	WE3-R	105 x 59	9	30-40
	WE3-P*	88 x 73	9	35.5

Note: flags are available upon an order only.

■ Tests performed, regulations, legislation:

- EC Test Report EC Declaration of Conformity §12 and 13 of the act no. 22/1997 Coll. + GD no. 17/2003 Coll., on Technical Requirements for Low Voltage Electric Equipment with regard to the safety of persons, property and environment.

■ Example of data for an order: Type marking: W9-R

Description: Connecting flag for connecting the conductor of 10-240 mm² by a single strap, with one opening of 9 mm in diameter for M8 screw, flat shape.

1.1 PURPOSE

The Instructions for Use are designated for assembly, handling, transport, storing, use (operators) and maintenance of distributors of DCK Holoubkov Bohemia a.s. company.

1.2 USE

The products of DCK company must be used in compliance with the relevant valid Instructions for Use. The product must not be used for the purpose other than it was manufactured for. The product must not be intentionally modified compared to the type design. The product must not be operated under voltage, current and frequency other than designed one. Before each new commissioning, e.g., after repair, after maintenance, etc. all precautions must be renewed in the full scope to provide safety, mainly marking and coverage. The product must not be operated under the conditions and in the environment which do not provide safe operation. The product is not designated for using in the permanently damp environment, in the environment with aggressive corrosive particles, vapours or salts, in the places with fire or explosion hazard, in the places exposed to strong vibrations and hits. Fast changes of temperature of pressure may cause exceptional condensation inside the distributor. Possible assembly of distributors in the environment with extreme climatic conditions can be carried out after an agreement with the manufacturer.

1.3 DESCRIPTION

The distributors are designated for the installation and use in the interior and exterior and are of stable design with fixed parts of structure (only distributors used on-site are of a mobile design). Both plastic materials marked with P and N are resistant to static and dynamic stress, comply with classification HB40 in horizontal position, V-0 in vertical position (ČSN EN 60695-11-10), self-extinguishing ability of material according to UL 94-VO with increased stability to climatic conditions and UV radiation. The products meet hot loop test at 960°C according to ČSN IEC 60695-2-11, resisting to permanent thermal loading of 115°C according to IEC 216. The products meet strength mechanical tests according to ČSN EN 61439-5 ed.2 in the range of temperature from - 25°C to + 40°C. Thermoplastic of marking - P is fully recyclable, reactoplastic of marking - N cannot be recycled. Plastic colour is light grey RAL 7035. Type tests according to ČSN EN 61439-1 ed.2, -2 ed.2, -3, -4, -5 ed.2 carried out by the accredited testing laboratories. The products comply with PNE 35 7000 PNE 35 7030. Technological procedure of production is certified according to ČSN EN ISO 9001. The following documents are prepared for the products - Certificate of Declaration of Conformity and EU Declaration of Conformity according to GD no. 117/2016 Coll., GD no. 118/2016 Coll., act no. 90/2016 Coll., act no. 22/1997 Coll. as amended by the act no. 91/2016 Coll., GD no.163/2002 Coll. ad amended by GD no. 312/2005 Coll. and GD no. 215/2016 Coll. , GD no. 375/2017 Coll., of act no.18/1997 Coll. as amended by regulation no. 307/2002 Coll. and regulation no. 499/2005 Coll., of act no.102/2001 Coll. as amended by act no. 277/2003 Coll. Inbuilt devices and parts do not including electronic circuits are not sensitive to electromagnetic interference. Inbuilt devices and parts including electronic circuits correspond to the requirements for EMC for the distributors in the designed B environment. the distributors are delivered without fuse links. When delivering a compact pillar, a universal distributor and relevant pillar base are delivered for easier handling and transport, which is designated for the assembly into the niche. Distributors for the assembly on a supporting point (pole) are equipped with plastic holders and cable bushings. We recommend to use a fuse holder of DP type to fit and replace fuse links. The distributors with sheet metal door are provided with priming coat only.

Possible assembly of distributors in the environment with extreme climatic conditions can be carried out after an agreement with the manufacturer.

1.4 SAFETY MEASURES FOR WORK AND OPERATORS

Works on the distributors mean the activities related to their assembly, revisions, repairs and maintenance. It also includes measurements carried out in the distributors by portable measuring devices. Distributor's operation means the activities associated with their operation, e.g., inspection and cleaning of outer space and accessories, replacement of fuse links, switching on/off the circuit breaker, pushing a button, monitoring of indicator lamps, etc. If there is given for operating staff to use personal protective equipment, this must be used. The organizations performing works and operation of distributors must carry out the evaluation of electric risk and stipulate according to it how works or operation will be performed and which measures must be used for securing safety in compliance with ČSN EN 50110-1 ed. 3. Determination of professional competence of persons within the meaning of Regulation no. 50/1978 Coll. is related to this

as well as a number of persons performing particular works and operation of distributors. The persons without electrotechnical qualification - laymen, must not perform works on the distributors, only operate them in the scope of non-professional operation of distributors which are a part of fixed electric installation. Within the meaning of ČSN 331310 ed. 2, the instructions in correct and safe use of electric installation, including relevant bus bars and distributors are given by a person which made electric wiring or a person authorized by him. Based on the instructions, the laymen handle the equipment but do not interfere with it. Replacement of the fuses in the distributor under voltage is carried out according to the stipulated method of operation. If this is not stipulated, replacement must be done when the distributor is switched off. In cases when the fuse is fitted in the distributor device protecting a person from direct touch of the live part and possible effect of short circuit, replacement might be carried out by a person familiarized without verifying the presence of voltage according to ČSN EN 50110-1 ed. 3. If the conditions of protection from direct touch is not met, fuse replacement might be done by a familiarized person when using corresponding working aids and personal protective equipment.

2. ASSEMBLY

Video instructions for a correct procedure during the assembly of distributors (niche, compact pillar, pole)



<http://www.dck.cz/podpora/montaz/videomontaz.htm>

Locating of distribution switchboards in niches of building perimeter walls is always solved by the project in compliance with ČSN 33 3320 ed. 2. There must be free space in front of the distributor namely at least 800 mm enabling full opening of the distributor door to operate and work safely on it

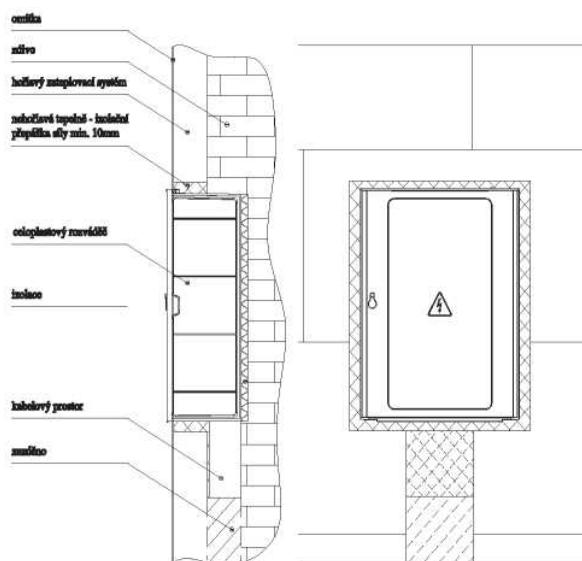
2.1 ASSEMBLY INTO NICHE, BRICK PILLAR

It is necessary to choose the place for the distributor so that the surroundings (corners, skirting, etc.) do not block a natural flow of air through the distributor's door labyrinth, thus continuous ventilation is secured. The minimum height of the lower edge of the distribution switchboard is 0.6 m, maximum height is 1.5 m above the definitive plain of the terrain with regard to local conditions. The niche size is determined by the height and width of the distributor enlarged by 20-30 mm. The niche depth is determined by the distributor depth enlarged by the thickness of insulation, min. 30 mm (insulation removes thermal loss occurred due to the reduction of masonry, it is not a part of delivery; in case of stonework and the materials of similar thermal character it is a must to observe inserting of thermal insulation, including upper and side walls in a consistent manner) and reduced by a needed lap between the plaster and door according to the type.

Instructions for Use

With the distributors of SP and SS types, lintels are not fitted. In case of a niche of more than 600 mm in width, the lintels must be provided. Cable space width is determined by the wall width reduced by 150 mm. In case of the distributors of SP type, cable space width is 235 mm, depth must be shallower than the niche by 40 mm to create a bearing edge for setting the distributor in the rear part.

Before walling up the distributor, it is necessary to clean and dampen the niche, fit in the distributor and level it by wedges to the horizontal and vertical position (it is necessary to avoid deformation of the distributor skeleton during and after levelling) to observe minimum laps from the plaster surface due to a proper function of the door. We recommend you to observe following dimensions: P-min.35 mm; K-min.30 mm; P-C min.18 mm; N-min.10 mm; N-C min.15 mm. Given dimensions are from the door surface to the final coat surface. Before walling up, it is necessary to strut the distributor side parts with a spacer and secure the door in closed position. In case of all-plastic distributors of "C" design, the side parts must be strutted by an enclosed tape when the door is closed. To avoid excessive tension in the distributors of "P-C" and "N-C" design, the hinges and seat must be protected against the penetration of impurities by covering paper tape which will be removed after finishing construction works. The distributor shall be fastened by cement mortar, gypsum or expanding foam. When using expanding foam, it must be used only in the corners of the distributor (after hardening, the expanding foam should be max. 50 mm around the corner) to eliminate deformation of the distributor walls occurring due to the hardening process of expanding foam. When using low-expanding foam, the distributor can be foamed around its entire circumference. Use the expanding foam according to the manufacturer's instructions. When fitting the all-plastic distributor in the facade with thermal insulation, the distributor can be fitted by screws and wall plugs in its back part, and at the same time, it is necessary to meet the condition under which weatherproofing material surrounding the distributor must be non-flammable, class of reaction to fire A1 according to ČSN EN 13501-1.

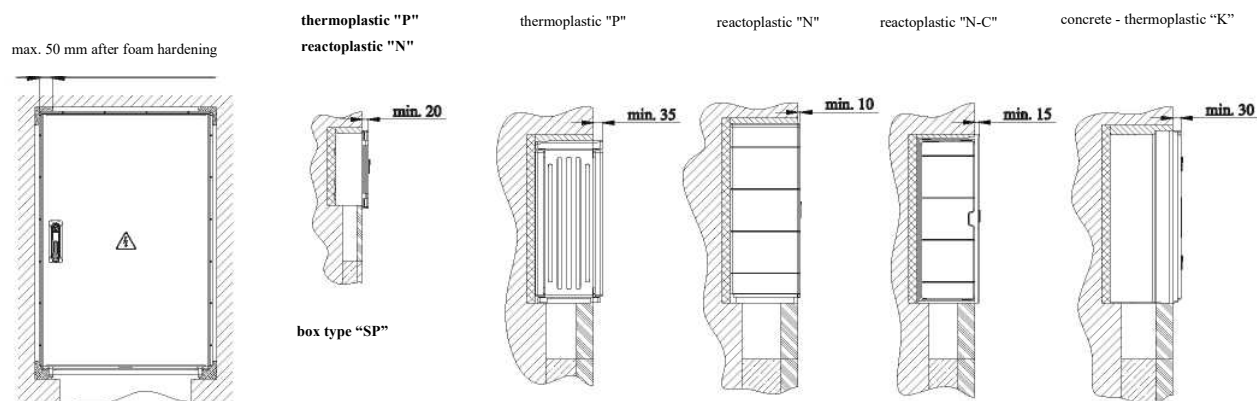


In case of flammable weatherproofing material different from class of reaction to fire A1 (e.g., polystyrene) it is necessary to install around the distributor non-flammable, thermal insulation board of min. 10 mm in thickness, class of reaction to fire A1 (e.g., PROMATEKT, EMVIN, NEFALIT). For this purpose, it is possible to use DCK lining in the flammable base. Concrete distributors with plastic or sheet metal doors can be installed directly into weatherproofing material, class of reaction to fire A1.

Cable entry can be solved by two methods: a) insert the cables into the cable space which will be walled up; b) after shaping the first loading section, leave under the distributor the free space of 200 mm in height from outer side closed. To pull the cables in the cable space, the same number of protective pipes is fitted - according to the expected number of cable entries. Protective pipes will be cut obliquely in the lower part below the ground level (to make first loading section easier) and ended 200 mm below the lower edge of the distributor. Cable ducts, including outer side of the free space of 200 mm under the distributor will be walled in.

Note: In case of the distributor door disassembly by ejecting the hinge pins, it is necessary to disjoin their limiters. We recommend to use the accessories with the distributors of SP type - polystyrene board (260 x 200 mm) designated for covering the cable space under the distributor (one part of the board is ready for easy plastering). The method of walling up the cable space is given by a technological procedure of individual power companies.

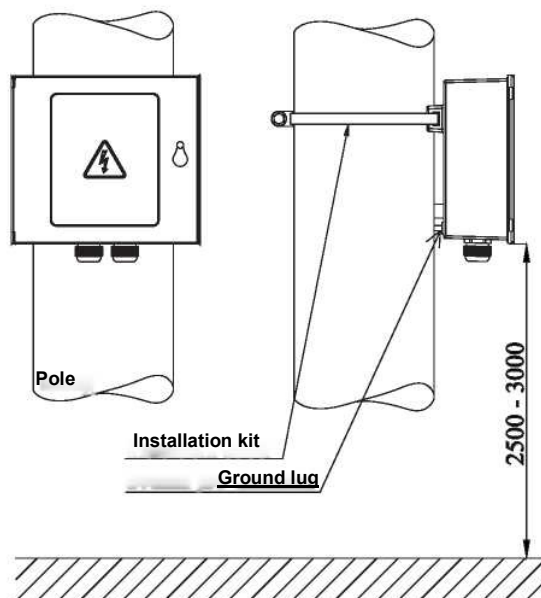
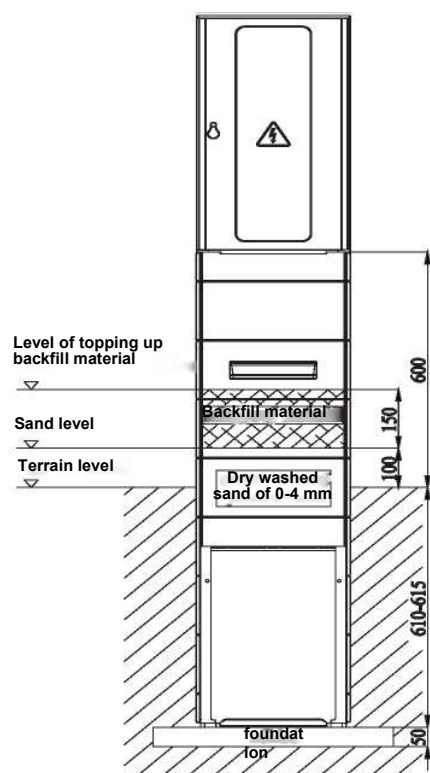
Note: Cable passage in the distributor fitted in the facade with weatherproofing can be solved by a sufficient end part (KD) placed under the distributor. When using protective pipes / cable ducts, seal the cables with low-expanding foam (due to the reduction of penetration of ground damp in the distribution switchboard space). Use the expanding foam according to the manufacturer's instructions. When assembling the distribution switchboard in the brick pillar, use dry washed sand to fill the cable space, fraction of 0 - 4 mm min. 100 mm above the terrain level and also top it up with filling material - (it is possible to use above given type of sand; however, we recommend filling material - haydite due to its improved properties) 250 mm above the ground level (due to the reduction of penetration of ground damp and warmth to the distribution switchboard space). After walling up and final finish of plaster, the IP44 protection of the distributor must be maintained and the distributor walls must not be deformed. It is possible to glue the covering DCK frame on surface finish of plaster as a replacement for masonry cleaning. After completing individual bricklaying works (foaming, walling up, finishing, ...) it is necessary to immediately clean up bearing surfaces of doors and frame of the distributor ("C" design - including the door seat on the hinges part). When assembling the distribution switchboard in the vicinity of the gas meter distributor, it is necessary to separate the cable space and the space below the gas meter distributor in terms of construction due to fire safety.



Instructions for Use

2.2 ASSEMBLY OF COMPACT PILLAR

Compact pillars can be built up in the free space or fencing. The excavation size is determined by the size of the foundation mat (excavation dimensions - width and depth of the pillar enlarged by 150-200 mm). Excavation depth - 650 mm from the final treatment of the terrain. Excavation bottom must be thoroughly compacted and levelled with the sand or concrete layer of 50 mm in both horizontal directions. After erection and stabilization of the compact pillar or pillar base in the vertical position, the foundation part of the pillar base is filled with soil from the sides during constant compacting. In the upper part of the pillar base, disassemble the upper lid and bolted couplings, fit the relevant distributor and connect it with the pillar base by bolted couplings into the set of the compact pillar (with the distributors of N-C type, fit the sealing washers under front bolted connection which are enclosed to the electricity meter distributor as accessories so that it is possible to seal this joint with the closing strip of the base; with the distributors of N type, these sealing washers with screws are already fitted). Or it is possible to disassemble the distributor door by ejecting the hinge pins (when disassembling the door, limiters must be disconnected). Disassemble the closing strip and front lower lid of the pillar base which results in opening the cable space for placing the cables. After placing non connected cables with dilation loop and ground tape (wire), install back the disassembled front lower lid of the pillar base foundation part (it is necessary to distinguish between the upper and lower lids of the base) and fill up the excavation with soil which must be compacted so that the pillar is stable (at the same time, pay increased attention to sufficient compacting of the excavation for cable laying to reduce drainage effect). After shaping and connecting the cable cores to the securing element, fasten the cables on the holder placed in the cable space by SONAP clips. When using protective pipes / cable ducts, seal the cables with low-expanding foam) due to the reduction of penetration of ground damp in the distribution switchboard space). Use assembly foam to seal not fitted protective pipes / cable ducts as well. Use the assembly foams according to the manufacturer's instructions. After finishing the above given work, it is necessary to fill up the pillar base with dry washed sand, fraction 0 - 4 mm min. 100 mm above the terrain level and also fill up backfill material - (the above given type of sand can be used; however, we recommend to use backfill material - haydite, due to its improved properties) min. 250 mm above the terrain level (due to the reduction of penetration of ground damp and warmth to the distribution switchboard space). Then, return back the front upper lid of the pillar base and secure it with the closing strip of the distributor only (screw on the front upper lid on the distribution switchboards). Or fit the door and secure the limiters and close the distributor. Note - the pillar with the end (above-ground) plastic part is fitted on the prepared concrete base to which it is fastened by steel wall plugs of at least 80 mm in length.



2.3 ASSEMBLY ON THE WALL

In case of placing the plastic version on the wall, the distributor is completed with the bottom cover and provided with a relevant number of cable bushings. The openings for fastening by wall plugs and screws are in the rear wall. In case of fastening it on the flammable weatherproofing material different from class of reaction to fire A1 (e.g., polystyrene) it is necessary to install under the distributor non-flammable, thermal insulation board of min. 10 mm in thickness, class of reaction to fire A1 (e.g. PROMATEKT, EMVIN, NEFALIT) or separated it with the air gap of 50 mm. For this purpose, it is possible to use DCK lining in the flammable base. We recommend to protect connecting cables with cable ducts.

2.4 ASSEMBLY ON THE SUPPORTING POINT OF EXTERNAL LINE (POLE)

Locating of distribution switchboards on the supporting point of external line (pole) is always solved by the project in compliance with ČSN 33 3320. Fastening on the pole can be done by DCK installation kit or stainless steel Bandimex tape. Minimum height of the lower edge of the SP type distributor (outside branch) must be at the height of 2.5 to 3 m above the terrain or according to the implementing instructions of a relevant power company. Minimum height of the lower edge of the SP type distributor (outside branch) must be at the height of 2.5 to 1.5 m above the terrain or according to the implementing instructions of a relevant power company.

■ 2.5 ASSEMBLY OF ACCESSORIES, SUPPLY AND OUTLET LINES

■ 2.5.1 ACCESSORIES

The electricity meter distributor will be fitted with the main circuit breaker (is not a part of delivery, type and value is stipulated in the agreement on payment concluded with the operator of the relevant distribution network based on the power requirements of the consumer, the circuit breakers with the short-circuit resistance of 10 kA according to PPDS should be fitted) which will be interconnected by a jumper with HDO circuit breaker, if HDO receiver is used. The electricity meter or HDO receiver are fastened by adjustable fastening lugs which enable a simple assembly and replacement of different types of electricity meters or HDO receivers. The conductors for devices connection are shortened, insulated and connected according to the circuit diagram on the type plate (in case of ER513, outlet conductors must be marked with enclosed sleeve-couplings or in case of two-tariff measurement the sleeve-couplings of control conductors are moved and marked according to the equipment type used). In case of the distribution switchboard, we recommend to treat the contacts of fuse bases and strips with the thin layer of contact mineral jelly before inserting a fuse link. If during transport the distributor is exposed to the unwanted excessive shocks, it is necessary to check and possibly tighten up all electric joints mainly the joints of the protective circuit. Completed built-in elements used (main circuit breaker, fuse links, electricity meter, etc.) must correspond with valid standards, must be marked with "CE" mark and must be provided with the declaration of conformity; their installation must be carried out according to the manufacturer's instructions. Inbuilt devices and parts comprising electronic circuits (electricity meters, HDO receivers) must comply with the requirements for EMC for using the distributors in the designed environment B, their installation and connection must be carried out according to the instructions of the devices and parts manufactures with regard to mutual influences, cables, shielding, grounding, etc.

■ 2.5.2 SUPPLY AND OUTLET LINES

In case of the SP type distributors designated for the assembly on a pole, plastic cable duct must be slid onto the connecting cables and fastened to the pole with Bandimex tape, cable inlet into the distributor is solved through PG 29 cable bushings. In case of the SV type distributors designated for the assembly on a pole, plastic duct with the diameter of 63 or 75 mm must be slid onto the connecting cables and fastened to the pole by DCK plastic holders of cable ducts or DCK installation kit or by stainless steel Bandimex tape. The upper holder is placed about 0.5 m under the upper end of the cable ducts, the lower holder is placed about 0.5 m above the upper edge of the distribution switchboard; if needed, the holders might be added to the centre of cable ducts. The pipes must be provided with covers in the upper part to stop water leaking into the distribution switchboard (cable duct DCK holders and pipe covers are not a part of delivery). Ground cable outlet is fastened in a similar way (upper holder of cable ducts is placed about 0.5 m under the lower edge of the distribution switchboard).

Cable entry into the distributor is solved through cable bushings (the ends of used bushings must be cut), on which cable ducts are slid. After removing the cable sheath, creating the dilation loop and shaping the conductors (cable cores) they are shortened to the needed length and isolated or provided with cable lugs. (With the distribution switchboards, the conductors must be shaped so that they do not prevent the clip from disconnecting grounding and clips of PEN conductors). Connection inside the distributor can be performed directly to the construction clips or by pressed cable lugs (version with screws) or directly in the connecting V-clamps in version with the flags of V-shape.

When doing loops, it is necessary to connect cable lugs in the order of lug-lug-flag. The connection of one conductor in the H-clamp is made on the side of its shorter end stop. With H-clamps of aluminium PEN bus bar, the tinned rectangular bolsters must be placed between the aluminium bus bar and conductor. Maximum cross section of the conductor is given on the production plate. If more supplies must be connected to the distributor (with the distributors of SR and SD type), then they have to alternate with the outlets so that the maximum load bearing capacity of the distributor operating bus bars is not exceeded - see the diagram in the catalogue. Individual cables must be marked with the labels showing "CABEL DIRECTION" or "blind diagram". When using protective pipes / cable ducts, seal the cables with low-expanding foam (due to the reduction of penetration of ground damp in the distribution switchboard space). Use the assembly foams according to the manufacturer's instructions. The grounding conductor of a round or rectangular section is connected in the construction PE clip (in the boxes designated for the assembly on a pole by M8 screw outside the box) marked with grounding. The clip of PE disconnection must be checked (connection and tightening to the prescribed torque moment).

To connect the conductors reliably, it is necessary to maintain the sizes of moments given in the table:

Screw, clip	Element	Torque moment [Nm]	Assembly tools
M3	Terminal block 2.5 mm ²	0.5	3
M4	Terminal block 16 mm ²	1.2	4, PB2, PH2
M5	Fuse isolating switch, size 14X51, circuit breaker	2	6, PB2, PH2
M6	PEN	3	10
M8	Fuse base (strip), size 00, PEN, PE	6	13
M10	Fuse base, size 1.2 PEN	10	16, 17
M12	Fuse strip, size 2, PEN	15.5	18, 19
Connecting V-clamp	Fuse base size 00 PEN	20 (according to the clamp manufacturer)	sw 6 - inner hexagon bolt
Connecting V-clamp	Fuse base, size 1, 2, PEN	23 (according to the clamp manufacturer)	sw 6 - inner hexagon bolt

- Addition to SP182 and SP282: Observe the connection of supply to the upper clamps of the isolating switch!
- Addition to SP200, SS200, SS300, SR408, SR508, SR608: After connecting the conductors, fit the contacts with fuse bases, size 00 with the covers to prevent random touch of adjacent outlets.

■ 3. HANDLING, TRANSPORT, STORAGE

When delivering a compact pillar, the distributor and relevant pillar base (PP / ...) will be delivered separately for easier handling and transport. Handling of the products must be carried out so that shocks and falls are avoided. When transporting the products on pallets, the belts must be used; if transported freely, then they must be secured against movement and must be suitably placed to avoid mechanical damage. During transport, the products must not be deformed (e.g., excessive tightening with binding means, etc.). The products can be stored on the pallets only in three layers with using suitable pads. The products should be stored in the assembly position, in closed and dry rooms, in the original wrapping without vermin so that they are protected against water penetration and secured against mechanical damage and pollution.

When storing longer than 4 months, we recommend to treat inner accessories with a suitable preservative.

■ 4. BOXES MAINTENANCE

■ 4.1 IN GENERAL

Inspection, revision and maintenance of distribution switchboards is stipulated in each power company in the Preventive Maintenance Rules (according to the valid standard ČSN 33 1500). We point out especially the necessity of inspection and renewal of safety tables and safety marking (according to the valid set of standards ČSN ISO 3864 - 1 and ČSN EN ISO 7010).

■ 4.2 OUTSIDE SURFACE

All-plastic distributors do not require any special maintenance with respect to surface finish. The surface can be cleaned with usual detergents which are always thoroughly rinsed. If the colour shade does not comply due to architectural reasons, it is possible to use special colours for PC and SMC (e.g., polyurethane paints, water-based paints Balakryl Plast, ...), safety tables and safety marking according to the valid set of standards ČSN ISO 3864-1 a ČSN EN ISO 7010 must be maintained.

The concrete distributors with sheet metal doors (they are provided with primary coat from production) must be provided with outer paint directly during the assembly and then as needed - once every two or three years. We recommend two-component polyurethane paint.

■ 4.3 LOCKS

The locks of distributors must be lubricated with the stable waterproof lubricant (e.g., WD40, plastic lubricant, white mineral jelly in spray, etc.) and repeat it during regular maintenance.

■ 4.4 HINGES

No maintenance of hinges is needed in case of all-plastic distributor doors.

■ 4.5 INNER ACCESSORIES

Plastic accessories and sheet-steel accessories of the distributors which are zinc coated require no maintenance. The screws and clamps of electric joints must be tightened to the prescribed torque moment during regular maintenance, once every four years due to the reduction of transition losses. Regular cleaning of dust and impurities. With current protectors FI - it is necessary to execute a regular test by the "test" button in the intervals prescribed in operation regulation, or given by the FI manufacturer (unless prescribed otherwise, we recommend twice a year). With lightning current diverters and surge protectors - we recommend to execute a regular inspection of their conditions or testing them according to the recommendations of the protection manufacturer. Operation and maintenance of inbuilt devices and parts comprising electronic circuits corresponding with the requirements for EMC must be carried out according to the instructions of the manufacturers of devices and parts. We recommend to tighten the clamp screws with aluminium conductors after about 1 month of distributor operation.

■ 5. IMPACT ON THE ENVIRONMENT AND CONDITIONS OF DISPOSAL

Materials used for the distributors production are harmless in terms of their impact on the environment. After their service life expires or in case of damage, thermoplastic (PC) and reactoplastic (SMC) are taken by the manufacturer for disposal for fees or they can be passed on to the organizations dealing with material separation and recycling. Concrete products are disposed of as construction rubbish on waste dumps. Other elements used (fuse bases, closures, bus bars, ...) can be disposed ecologically in compliance with the Act on Wastes or passed on to the organizations dealing with material separation and recycling. For non-returnable packaging (stretch foil, cardboard, ...) a service fee is paid to ensure take-back and utilization of packaging waste.

■ 6. DISTRIBUTION SWITCHBOARDS FROM THE POINT OF VIEW OF FIRE SAFETY OF BUILDINGS

From the point of view of design of fire safety of buildings, distributors and electric equipment such as distribution switchboards are not assessed as a selected construction product within the meaning of the Government Decree no. 163/2002 Coll., as amended.

However, in particular cases they must be assessed as a construction product meeting the requirements related to fire safety of buildings. It is mainly about the cases when they are installed in fire dividing structures or if they are located in the area of protected escape routes. Particular requirements must be stipulated in details in the fire safety solution as a part of project documentation of construction and elaborated according to the standards of fire safety. The requirements are governed by the location of this electric equipment and the specified degree of fire safety of the affected areas.

Technical parameters of products can change, photographs and drawings of distributors are of an illustrative character.

You can find current information on www.dck.cz

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