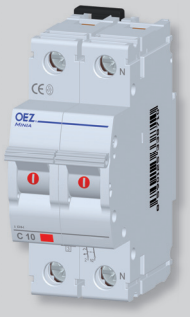
MINIATURE CIRCUIT BREAKERS LPN UP TO 63 A (10 kA)

- For building, commercial and industrial installations up to 63 A 230/400 V a.c. and 220/440 V d.c.
- For protection of cables and conductors against overload and short circuit
- Tripping characteristics B, C, D according to EN 60898
- Current-limiting miniature circuit breakers
- Wide range of accessories – auxiliary and relative switches, undervoltage releases and shunt trips, interconnecting busbars etc.
- Breaking capacity I_{cn} 10 kA – to achieve higher I_{cn} (up to 120 kA) it is recommended to use cylindrical fuse-links PV in fuse switch-disconnectors OPV
- Possibility of interconnection with residual current circuit breakers OFI (OFE) and OLFI (OLFE) by means of interconnecting busbars
- Possibility of locking and sealing in off or on position
- N-pole of miniature circuit breakers LPN-...-1N and LPN-...-3N contains neither thermal nor short circuit release, in switching on it closes before and in switching off it opens after the other poles
- For miniature circuit breakers LPN-DC-... device polarity must be always observed in connecting

Miniature circuit breakers 1-pole

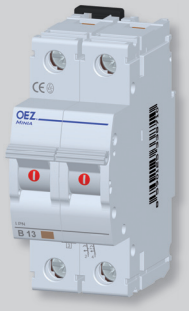
I_n	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight	Package
[A]	Type	Product code	Type	Product code	Type	Product code		[kg]	[pcs]
0.2	**LPN-0,2B-1**	34159	**LPN-0,2C-1**	33880	**LPN-0,2D-1**	33901	1	0.135	12
0.4	**LPN-0,4B-1**	34160	**LPN-0,4C-1**	33881	**LPN-0,4D-1**	33902	1	0.135	12
0.5	-	-	**LPN-0,5C-1**	33882	**LPN-0,5D-1**	33903	1	0.135	12
0.6	**LPN-0,6B-1**	34161	**LPN-0,6C-1**	33883	**LPN-0,6D-1**	33904	1	0.135	12
0.8	**LPN-0,8B-1**	33863	**LPN-0,8C-1**	33884	**LPN-0,8D-1**	33905	1	0.135	12
1	**LPN-1B-1**	33864	**LPN-1C-1**	33885	**LPN-1D-1**	33906	1	0.135	12
1.2	**LPN-1,2B-1**	33865	**LPN-1,2C-1**	33886	**LPN-1,2D-1**	33907	1	0.135	12
1.6	**LPN-1,6B-1**	33866	**LPN-1,6C-1**	33887	**LPN-1,6D-1**	33908	1	0.135	12
2	**LPN-2B-1**	33867	**LPN-2C-1**	33888	**LPN-2D-1**	33909	1	0.135	12
4	**LPN-4B-1**	33868	**LPN-4C-1**	33889	**LPN-4D-1**	33910	1	0.135	12
6	**LPN-6B-1**	33869	**LPN-6C-1**	33890	**LPN-6D-1**	33911	1	0.135	12
8	**LPN-8B-1**	33870	**LPN-8C-1**	33891	**LPN-8D-1**	33912	1	0.135	12
10	**LPN-10B-1**	33871	**LPN-10C-1**	33892	**LPN-10D-1**	33913	1	0.135	12
13	**LPN-13B-1**	33872	**LPN-13C-1**	33893	**LPN-13D-1**	33914	1	0.135	12
16	**LPN-16B-1**	33873	**LPN-16C-1**	33894	**LPN-16D-1**	33915	1	0.135	12
20	**LPN-20B-1**	33874	**LPN-20C-1**	33895	**LPN-20D-1**	33916	1	0.135	12
25	**LPN-25B-1**	33875	**LPN-25C-1**	33896	**LPN-25D-1**	33917	1	0.135	12
32	**LPN-32B-1**	33876	**LPN-32C-1**	33897	**LPN-32D-1**	33918	1	0.135	12
40	**LPN-40B-1**	33877	**LPN-40C-1**	33898	**LPN-40D-1**	33919	1	0.135	12
50	**LPN-50B-1**	33878	**LPN-50C-1**	33899	**LPN-50D-1**	33920	1	0.135	12
63	**LPN-63B-1**	33879	**LPN-63C-1**	33900	**LPN-63D-1**	33921	1	0.135	12



Miniature circuit breakers 1+N-pole

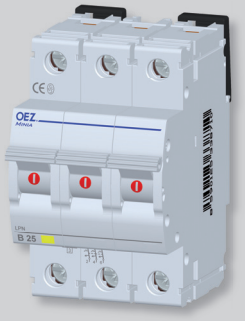
I_n	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight	Package
[A]	Type	Product code	Type	Product code	Type	Product code		[kg]	[pcs]
2	-	-	**LPN-2C-1N**	33933	-	-	2	0.25	6
4	-	-	**LPN-4C-1N**	33934	-	-	2	0.25	6
6	**LPN-6B-1N**	33922	**LPN-6C-1N**	33935	**LPN-6D-1N**	33946	2	0.25	6
8	**LPN-8B-1N**	33923	**LPN-8C-1N**	33936	**LPN-8D-1N**	33947	2	0.25	6
10	**LPN-10B-1N**	33924	**LPN-10C-1N**	33937	**LPN-10D-1N**	33948	2	0.25	6
13	**LPN-13B-1N**	33925	**LPN-13C-1N**	33938	**LPN-13D-1N**	33949	2	0.25	6
16	**LPN-16B-1N**	33926	**LPN-16C-1N**	33939	**LPN-16D-1N**	33950	2	0.25	6
20	**LPN-20B-1N**	33927	**LPN-20C-1N**	33940	**LPN-20D-1N**	33951	2	0,25	6
25	**LPN-25B-1N**	33928	**LPN-25C-1N**	33941	**LPN-25D-1N**	33952	2	0.25	6
32	**LPN-32B-1N**	33929	**LPN-32C-1N**	33942	**LPN-32D-1N**	33953	2	0.25	6
40	**LPN-40B-1N**	33930	**LPN-40C-1N**	33943	**LPN-40D-1N**	33954	2	0.25	6
50	**LPN-50B-1N**	33931	**LPN-50C-1N**	33944	**LPN-50D-1N**	33955	2	0.25	6
63	**LPN-63B-1N**	33932	**LPN-63C-1N**	33945	**LPN-63D-1N**	33956	2	0.25	6

MINIATURE CIRCUIT BREAKERS LPN UP TO 63 A (10 kA)



Miniature circuit breakers 2-pole

I_n	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight [kg]	Package [pcs]
[A]	Type	Product code	Type	Product code	Type	Product code			
0.2	-	-	**LPN-0,2C-2**	33968	**LPN-0,2D-2**	33989	2	0.26	6
0.4	-	-	**LPN-0,4C-2**	33969	**LPN-0,4D-2**	33990	2	0.26	6
0.5	-	-	**LPN-0,5C-2**	33970	**LPN-0,5D-2**	33991	2	0.26	6
0.6	-	-	**LPN-0,6C-2**	33971	**LPN-0,6D-2**	33992	2	0.26	6
0.8	-	-	**LPN-0,8C-2**	33972	**LPN-0,8D-2**	33993	2	0.26	6
1	**LPN-1B-2**	34162	**LPN-1C-2**	33973	**LPN-1D-2**	33994	2	0.26	6
1.2	-	-	**LPN-1,2C-2**	33974	**LPN-1,2D-2**	33995	2	0.26	6
1.6	-	-	**LPN-1,6C-2**	33975	**LPN-1,6D-2**	33996	2	0.26	6
2	**LPN-2B-2**	34163	**LPN-2C-2**	33976	**LPN-2D-2**	33997	2	0.26	6
4	**LPN-4B-2**	34164	**LPN-4C-2**	33977	**LPN-4D-2**	33998	2	0.26	6
6	**LPN-6B-2**	33957	**LPN-6C-2**	33978	**LPN-6D-2**	33999	2	0.26	6
8	**LPN-8B-2**	33958	**LPN-8C-2**	33979	**LPN-8D-2**	34000	2	0.26	6
10	**LPN-10B-2**	33959	**LPN-10C-2**	33980	**LPN-10D-2**	34001	2	0.26	6
13	**LPN-13B-2**	33960	**LPN-13C-2**	33981	**LPN-13D-2**	34002	2	0.26	6
16	**LPN-16B-2**	33961	**LPN-16C-2**	33982	**LPN-16D-2**	34003	2	0.26	6
20	**LPN-20B-2**	33962	**LPN-20C-2**	33983	**LPN-20D-2**	34004	2	0.26	6
25	**LPN-25B-2**	33963	**LPN-25C-2**	33984	**LPN-25D-2**	34005	2	0.26	6
32	**LPN-32B-2**	33964	**LPN-32C-2**	33985	**LPN-32D-2**	34006	2	0.26	6
40	**LPN-40B-2**	33965	**LPN-40C-2**	33986	**LPN-40D-2**	34007	2	0.26	6
50	**LPN-50B-2**	33966	**LPN-50C-2**	33987	-	-	2	0.26	6
63	**LPN-63B-2**	33967	**LPN-63C-2**	33988	-	-	2	0.26	6



Miniature circuit breakers 3-pole

I_n	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight [kg]	Package [pcs]
[A]	Type	Product code	Type	Product code	Type	Product code			
0.2	**LPN-0,2B-3**	34165	**LPN-0,2C-3**	34027	**LPN-0,2D-3**	34048	3	0.39	4
0.4	-	-	**LPN-0,4C-3**	34028	**LPN-0,4D-3**	34049	3	0.39	4
0.5	**LPN-0,5B-3**	34008	**LPN-0,5C-3**	34029	**LPN-0,5D-3**	34050	3	0.39	4
0.6	**LPN-0,6B-3**	34009	**LPN-0,6C-3**	34030	**LPN-0,6D-3**	34051	3	0.39	4
0.8	**LPN-0,8B-3**	34010	**LPN-0,8C-3**	34031	**LPN-0,8D-3**	34052	3	0.39	4
1	**LPN-1B-3**	34011	**LPN-1C-3**	34032	**LPN-1D-3**	34053	3	0.39	4
1.2	**LPN-1,2B-3**	34012	**LPN-1,2C-3**	34033	**LPN-1,2D-3**	34054	3	0.39	4
1.6	**LPN-1,6B-3**	34013	**LPN-1,6C-3**	34034	**LPN-1,6D-3**	34055	3	0.39	4
2	**LPN-2B-3**	34014	**LPN-2C-3**	34035	**LPN-2D-3**	34056	3	0.39	4
4	**LPN-4B-3**	34015	**LPN-4C-3**	34036	**LPN-4D-3**	34057	3	0.39	4
6	**LPN-6B-3**	34016	**LPN-6C-3**	34037	**LPN-6D-3**	34058	3	0.39	4
8	**LPN-8B-3**	34017	**LPN-8C-3**	34038	**LPN-8D-3**	34059	3	0.39	4
10	**LPN-10B-3**	34018	**LPN-10C-3**	34039	**LPN-10D-3**	34060	3	0.39	4
13	**LPN-13B-3**	34019	**LPN-13C-3**	34040	**LPN-13D-3**	34061	3	0.39	4
16	**LPN-16B-3**	34020	**LPN-16C-3**	34041	**LPN-16D-3**	34062	3	0.39	4
20	**LPN-20B-3**	34021	**LPN-20C-3**	34042	**LPN-20D-3**	34063	3	0.39	4
25	**LPN-25B-3**	34022	**LPN-25C-3**	34043	**LPN-25D-3**	34064	3	0.39	4
32	**LPN-32B-3**	34023	**LPN-32C-3**	34044	**LPN-32D-3**	34065	3	0.39	4
40	**LPN-40B-3**	34024	**LPN-40C-3**	34045	**LPN-40D-3**	34066	3	0.39	4
50	**LPN-50B-3**	34025	**LPN-50C-3**	34046	**LPN-50D-3**	34067	3	0.39	4
63	**LPN-63B-3**	34026	**LPN-63C-3**	34047	**LPN-63D-3**	34068	3	0.39	4

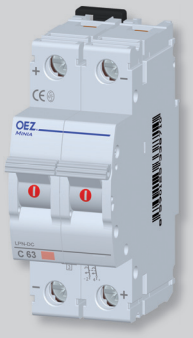
Miniature circuit breakers 3+N-pole

I_n	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight [kg]	Package [pcs]
[A]	Type	Product code	Type	Product code	Type	Product code			
2	**LPN-2B-3N**	34069	-	-	-	-	4	0.505	3
4	**LPN-4B-3N**	34070	-	-	-	-	4	0.505	3
6	**LPN-6B-3N**	34071	**LPN-6C-3N**	34082	**LPN-6D-3N**	34093	4	0.505	3
8	**LPN-8B-3N**	34072	**LPN-8C-3N**	34083	**LPN-8D-3N**	34094	4	0,505	3
10	**LPN-10B-3N**	34073	**LPN-10C-3N**	34084	**LPN-10D-3N**	34095	4	0.505	3
13	**LPN-13B-3N**	34074	**LPN-13C-3N**	34085	**LPN-13D-3N**	34096	4	0.505	3
16	**LPN-16B-3N**	34075	**LPN-16C-3N**	34086	**LPN-16D-3N**	34097	4	0.505	3
20	**LPN-20B-3N**	34076	**LPN-20C-3N**	34087	**LPN-20D-3N**	34098	4	0.505	3
25	**LPN-25B-3N**	34077	**LPN-25C-3N**	34088	**LPN-25D-3N**	34099	4	0.505	3
32	**LPN-32B-3N**	34078	**LPN-32C-3N**	34089	**LPN-32D-3N**	34100	4	0.505	3
40	**LPN-40B-3N**	34079	**LPN-40C-3N**	34090	**LPN-40D-3N**	34101	4	0.505	3
50	**LPN-50B-3N**	34080	**LPN-50C-3N**	34091	-	-	4	0.505	3
63	**LPN-63B-3N**	34081	**LPN-63C-3N**	34092	-	-	4	0.505	3

MINIATURE CIRCUIT BREAKERS LPN UP TO 63 A (10 kA)

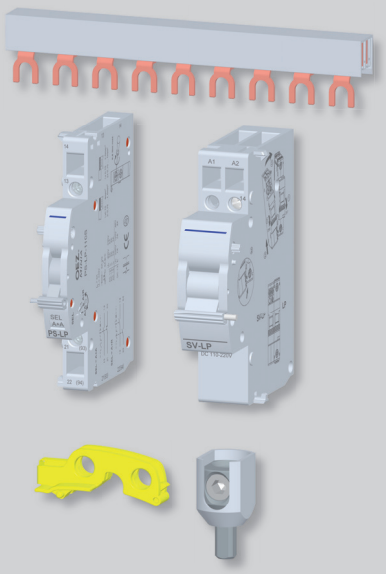
DC miniature circuit breakers 1-pole

I_n [A]	Characteristic C Type	Product code	Number of modules	Weight [kg]	Package [pcs]
2	**LPN-DC-2C-1**	34115	1	0.14	12
4	**LPN-DC-4C-1**	34116	1	0.14	12
6	**LPN-DC-6C-1**	34117	1	0.14	12
8	**LPN-DC-8C-1**	34118	1	0.14	12
10	**LPN-DC-10C-1**	34119	1	0.14	12
13	**LPN-DC-13C-1**	34120	1	0.14	12
16	**LPN-DC-16C-1**	34121	1	0.14	12
20	**LPN-DC-20C-1**	34122	1	0.14	12
25	**LPN-DC-25C-1**	34123	1	0.14	12
32	**LPN-DC-32C-1**	34124	1	0.14	12
40	**LPN-DC-40C-1**	34125	1	0.14	12
50	**LPN-DC-50C-1**	34126	1	0.14	12
63	**LPN-DC-63C-1**	34127	1	0.14	12



DC miniature circuit breakers 2-pole

I_n [A]	Characteristic C Type	Product code	Number of modules	Weight [kg]	Package [pcs]
2	**LPN-DC-2C-2**	34141	2	0.27	6
4	**LPN-DC-4C-2**	34142	2	0.27	6
6	**LPN-DC-6C-2**	34143	2	0.27	6
8	**LPN-DC-8C-2**	34144	2	0.27	6
10	**LPN-DC-10C-2**	34145	2	0.27	6
13	**LPN-DC-13C-2**	34146	2	0.27	6
16	**LPN-DC-16C-2**	34147	2	0.27	6
20	**LPN-DC-20C-2**	34148	2	0.27	6
25	**LPN-DC-25C-2**	34149	2	0.27	6
32	**LPN-DC-32C-2**	34150	2	0.27	6
40	**LPN-DC-40C-2**	34151	2	0.27	6
50	**LPN-DC-50C-2**	34152	2	0.27	6
63	**LPN-DC-63C-2**	34153	2	0.27	6



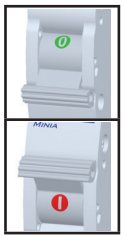
Accessories

Auxiliary and relative switches	**PS-LP-..**	page B18
Shunt trips	**SV-LP-..**	page B21
Undervoltage releases	**SP-LP-..**	page B24
Locking insert	**OD-LP-VU01**	page B27
Sealing insert	**OD-LP-VP01**	page B28
Insulating barriers	**OD-LP-MP01**	page B29
Interconnecting busbars	**G1L-.., G2L-.., G3L-.., G4L-.., S1L-.., S2L-.., S3L-..**	page D64
Connecting adapters	**AS-..**	page D69

MINIATURE CIRCUIT BREAKERS LPN UP TO 63 A (10 kA)

Description

- **Contact state signalling** is given by the position of the control lever

Holder position		State
down		OFF
up		ON

- **Upper and lower combined terminal with a secured screw makes it possible to connect interconnecting busbars and conductors.** Interconnecting busbar and conductor can be interconnected by one screw. These terminals are equipped with a cover, which at screw tightening fills the space under the terminal, thus eliminating wrong insertion of conductors in the terminal.

- **Upper sliding latch** makes it possible to withdraw a miniature circuit breakers from a row of devices interconnected on the top by a busbar without interruption of adjacent current circuits.
- **Lower latch** is used for mounting on „U" rail according to EN 60715 of type TH 35. It makes it possible to withdraw a miniature circuit breakers from a row of devices interconnected on the bottom by a busbar without interruption of adjacent current circuits.
- **Colour target** defining the miniature circuit breakers rated current I_n. Target colours correspond with the colours of the threaded fuse-links:

I_n [A]	Colour
0.2 ÷ 1.6	(black)
2	(pink)
4	(brown)
6	(green)
8	(light green)
10	(red)
13	(sandy)
16	(grey)
20	(blue)
25	(yellow)
32	(violet)
40	(black)
50	(white)
63	(copper)

- **Printing** on miniature circuit breakers is made by a laser – it is indelible.

MINIATURE CIRCUIT BREAKERS LPN UP TO 63 A (10 kA)

Specification

Type			LPN	LPN-DC
Standards			EN 60898-1	EN 60898
Approval marks				
Number of poles			1, 1+N, 2, 3, 3+N	1, 2
Tripping characteristics			B, C, D	C
Rated current		I_n	0.2 ÷ 63 A	2 ÷ 63 A
Rated operating voltage		U_e	230/400 V a.c. / 60/220 V d.c.	220/440 V d.c.
Max. operating voltage		U_{max}	253/440 V a.c. / 66/242 V d.c.	242/484 V d.c.
Min. operating voltage		U_{min}	12 V a.c. / d.c.	12 V d.c.
Rated frequency		f_n	40 ÷ 60 Hz	-
Rated short-circuit breaking capacity (EN 60898)		I_{cn}	10 kA	-
Rated short-circuit ultimate breaking capacity (EN 60947-2)		I_{cu}	-	10 kA ($\tau \leq 5$ ms)
Rated short-circuit service breaking capacity (EN 60947-2)		I_{cs}	-	100 % I_{cu}
Endurance	mechanical endurance		20 000 operating cycles	20 000 operating cycles
	electrical endurance		4 000 operating cycles	4 000 operating cycles
Energy limitation class			3	3
Rated pulse withstand voltage (1.2/50 µs)		U_{imp}	6 kV	6 kV
Overvoltage category (EN 664-1)			IV	IV
Mounting on "U" rail according to EN 60715 - type			TH 35	TH 35
Degree of protection			IP20	IP20
Connection	conductor Cu - rigid (solid, stranded)		0.5 ÷ 25 mm², 2x(0.5 ÷ 10) mm²	0.5 ÷ 25 mm², 2x(0.5 ÷ 10) mm²
	conductor Cu - flexible		0.5 ÷ 16 mm²	0.5 ÷ 16 mm²
	thickness of rail		2 mm	2 mm
	torque		2 Nm	2 Nm
	opposite		yes	yes
Operating conditions	ambient temperature		-30 ÷ +55 °C	-30 ÷ +55 °C
	working position		arbitrary	arbitrary
	seismic immunity		3 g / 8 ÷ 50 Hz [1]	3 g / 8 ÷ 50 Hz

[1] For miniature circuit breakers LPN of rated current 0.2 ÷ 4 A with characteristic B, seismic resistance is 1.5 g / 8 ÷ 50 Hz

Internal impedance Z, powers loss P, impedance Z_s

I_n	Z [1]	P [1]	Max. impedance of fault loop Z_s [Ω] [2]		
[A]	[mΩ/pole]	[W/pole]	**characteristic B**	**characteristic C**	**characteristic D**
0.2	30650	1.25	230.9	128.3	72.2
0.4	7670	1.25	115.5	64.2	36.1
0.5	5440	1.35	92.4	51.3	28.9
0.6	3400	1.2	77.0	42.8	24.1
0.8	2130	1.35	57.8	32.1	18.0
1	1350	1.35	46.2	25.7	14.4
1.2	763	1.1	38.5	21.4	12.0
1.6	544	1.4	28.9	16.0	9.0
2	392	1.55	23.1	12.8	7.2
4	75.5	1.2	11.6	6.4	3.6
6	26.0	0.95	7.7	4.3	2.4
8	17.4	1.1	5.8	3.2	1.8
10	12.6	1.25	4.6	2.6	1.4
13	10.8	1.85	3.6	2.0	1.1
16	7.56	1.95	2.9	1.6	0.9
20	5.70	2.3	2.3	1.3	0.7
25	4.24	2.65	1.8	1.0	0.6
32	2.72	2.8	1.4	0.8	0.5
40	2.18	3.5	1.2	0.6	0.4
50	1.56	3.9	0.9	0.5	0.3
63	1.37	5.4	0.7	0.4	0.2

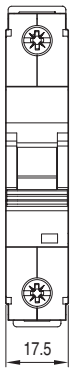
[1] Mean values

[2] For TN network, U = 230 V, break time up to 0.4 s; if the measured value exceeds the table value, use residual current miniature circuit breakers

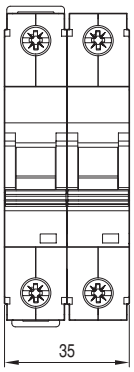
MINIATURE CIRCUIT BREAKERS LPN UP TO 63 A (10 kA)

Dimensions

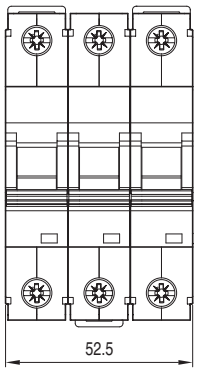
LPN-..-1
LPN-DC-..-1



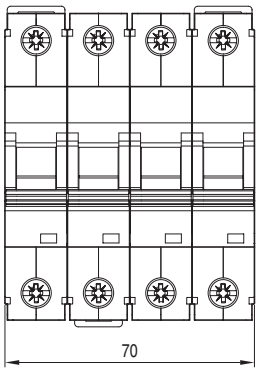
LPN-..-1N
LPN-..-2
LPN-DC-..-2

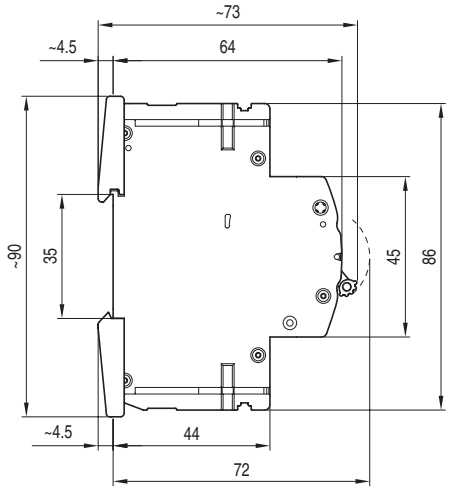


LPN-..-3



LPN-..3N

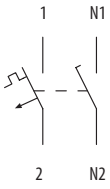




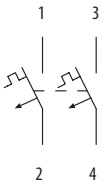
Diagram

LPN-..-1

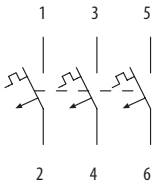
LPN-..-1N



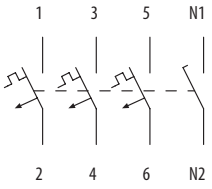
LPN-..-2



LPN-..-3

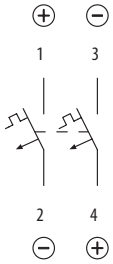


LPN-..-3N



LPN-DC-..-1

LPN-DC-..-2

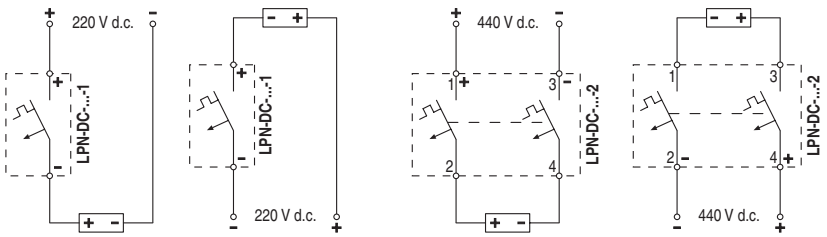


Protection of DC circuits

For protection of d.c. circuits it is possible to use both LPN and LPN-DC miniature circuit breakers depending on voltage.

For voltage U_e up to:

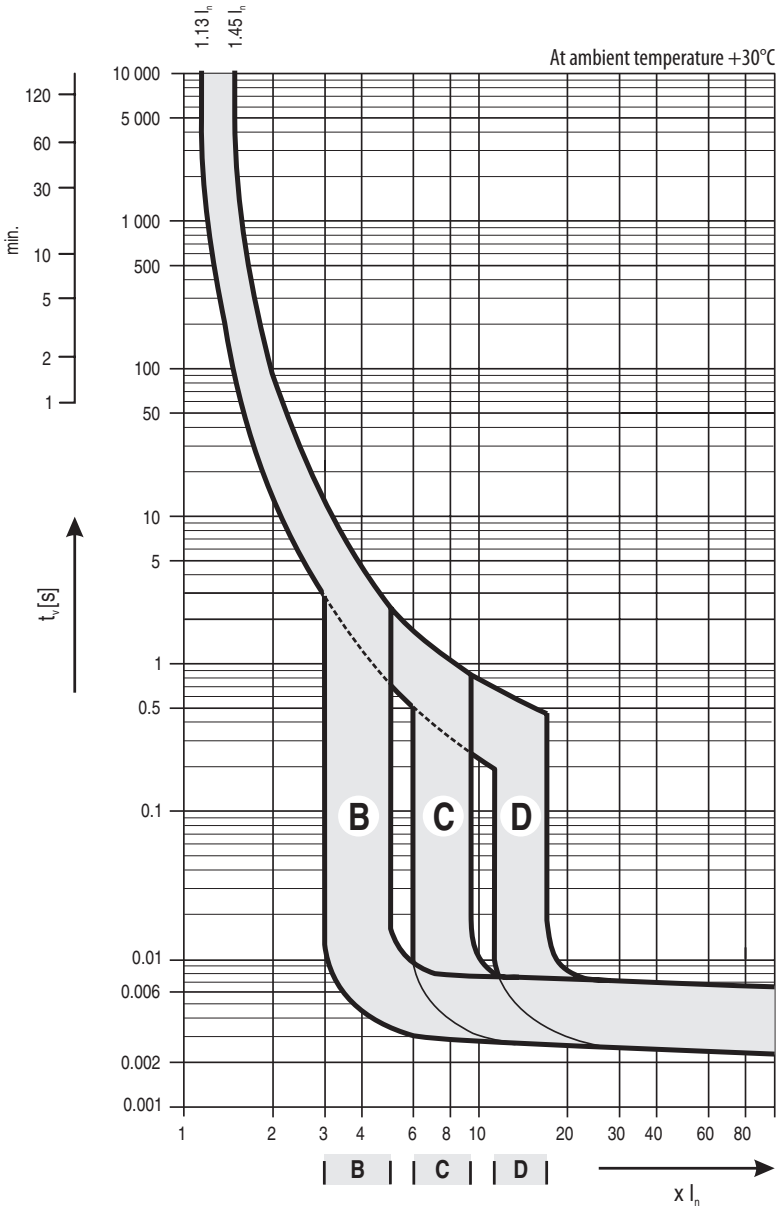
- 60 V d.c. resp. 220 V d.c. it is recommended to use miniature circuit breakers LPN-..-1 resp. LPN-..-2. Source poles (+) and (-) can be connected arbitrarily to miniature circuit breakers terminals.
- 220 V d.c. resp. 440 V d.c. use miniature circuit breakers LPN-DC-..-1 resp. LPN-DC-..-2. These miniature circuit breakers are equipped with permanent magnets, source poles (+) and (-) must be connected to identically marked miniature circuit breakers terminals (see connection example).



MINIATURE CIRCUIT BREAKERS LPN UP TO 63 A (10 kA)

Characteristics

- **Characteristic B**: for protection of electrical circuits with equipment which does not cause current surges (lighting and socket circuits etc.).
  The short-circuit release is set to (3 ÷ 5) I_n
- **Characteristic C**: for protection of electrical circuits with equipment which causes current surges (bulb lamp groups, motors etc.).
  The short-circuit release is set to (6 ÷ 9) I_n
- **Characteristic D**: for protection of electrical circuits with equipment which causes current surges (transformers, 2-pole motors etc.).
  The short-circuit release is set to (12 ÷ 16) I_n



Tripping characteristics of miniature circuit breakers according to EN 60898

Thermal release	Tripping characteristic type B, C, D
Conventional non-tripping current I_{nt} for $t \geq 1$ h	$I_{nt} = 1.13\ I_n$
Conventional tripping current I_t for $t < 1$ h	$I_t = 1.45\ I_n$
Current I_3 for $1\ s < t < 60\ s$ (for $I_n \leq 32$ A) $1\ s < t < 120\ s$ (for $I_n > 32$ A)	$I_3 = 2.55\ I_n$

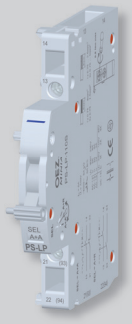
t - break time of the miniature circuit breakers

Electromagnetic release	Tripping characteristic type B	C	D
Current I_4 for $0.1\ s < t < 45\ s$ (for $I_n \leq 32$ A) $0.1\ s < t < 90\ s$ (for $I_n > 32$ A)	$I_4 = 3\ I_n$		
$0.1\ s < t < 15\ s$ (for $I_n \leq 32$ A) $0.1\ s < t < 30\ s$ (for $I_n > 32$ A)		$I_4 = 5\ I_n$	
$0.1\ s < t < 4\ s$ [1] (for $I_n \leq 32$ A) $0.1\ s < t < 8\ s$ (for $I_n > 32$ A)			$I_4 = 10\ I_n$
Current I_5 for $t < 0.1$ s	$I_5 = 5\ I_n$	$I_5 = 10\ I_n$	$I_5 = 20\ I_n$

[1] for $I_n \leq 10$ A it is permissible that $t < 8$ s

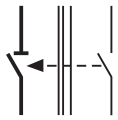
t - break time of the miniature circuit breakers

AUXILIARY AND RELATIVE SWITCHES



Auxiliary and relative switches PS-LP

- Accessories to: LPE, LPN, APN
- Auxiliary and relative switches are designed for signalling the position of the main contacts of miniature circuit breakers LPE, LPN and tumbler power switches APN in tripping:
  - A – *by releases or manually* – i.e. in tripping by overload, short-circuit, shunt trip, undervoltage release or control lever
  - R – *only by releases* – i.e. only in tripping by short-circuit, overload, shunt trip or undervoltage release
- Selection of auxiliary/relative contact function is performed by the rotary switch SEL on the side of the device
- 2 auxiliary and relative switches can be connected to one miniature circuit breakers (tumbler power switch)
- They are suitable for application in SELV and PELV circuits – sufficient insulation is provided between the miniature circuit breakers (power tumbler switch) and auxiliary and relative switches

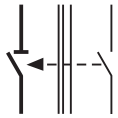


Arrangement of contacts [1] - position of switch SEL		Type	Product code	Number of modules	Weight [kg]	Package [pcs]
A+A [2]	A+R [2]					
A 11	A 10 + R 10	**PS-LP-110S**	34260	0.5	0.05	1
A 11	A 10 + R 10	**PS-LP-110S-Au** [3]	34261	0.5	0.05	1
A 11	A 01 + R 01	**PS-LP-110S-Y**	34262	0.5	0.05	1
A 20	A 10 + R 01	**PS-LP-200S**	34263	0.5	0.05	1
A 02	A 01 + R 10	**PS-LP-020S**	34264	0.5	0.05	1
A 001	R 001	**PS-LP-001S**	35265	0.5	0.045	1

[1] Each digit indicates successively the number of make, break and break-make contacts.
[2] A = auxiliary contact, R = relative contact
[3] Gold-plated contacts

Auxiliary switches PS-LS

- Accessories to: LST, AST
- Auxiliary switches are used for position signalling of main contacts of miniature circuit breakers LST and tumbler power switches AST in switching off by releases or manually - i.e. in switching off by overload, short circuit, shunt trip or undervoltage release and control lever
- They are suitable for application in SELV and PELV circuits – sufficient insulation is provided between the miniature circuit breakers (power tumbler switch) and auxiliary and relative switches



Arrangement of contacts [1]	Type	Product code	Number of modules	Weight [kg]	Package [pcs]
11	**PS-LS-1100**	35664	0.5	0.043	1
11	**PS-LS-1100-Au** [2]	35665	0.5	0.043	1
21	**PS-LS-2100**	35666	0.5	0.049	1
21	**PS-LS-2100-Au** [2]	35667	0.5	0.049	1

[1] Each digit indicates successively the number of make, break and break-make contacts.
[2] Gold-plated contacts

AUXILIARY AND RELATIVE SWITCHES

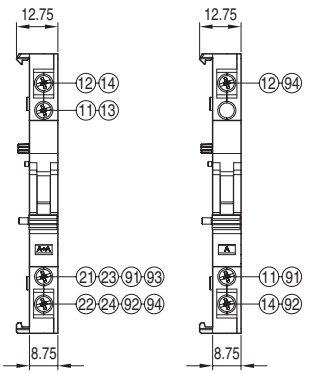
Specification

Type			PS-LP-..	PS-LS-..
Standards			EN 60947-5-1, EN 62019	EN 60947-5-1
Approval marks				
Arrangement of contacts [1) 2)]			A11/A10+R10, A11/A01+R01, A20/A10+R01, A02/A01+R10, A001/R001	11, 21
Rated operating voltage / current	U_e / I_e	AC-12	230 V a.c. / 6 A	230 V a.c. / 6 A
		AC-13	230 V a.c. / 4 A or 400 V a.c. / 2 A	-
		AC-15	230 V a.c. / 3 A	230 V a.c. / 4 A or 400 V a.c. / 2 A
		DC-13	220 V d.c. / 0.55 A	220 V d.c. / 1 A
Rated pulse withstand voltage (1.2/50 µs)	U_{imp}		4 kV	4 kV
Mechanical endurance			20 000 operating cycles	10 000 operating cycles
Electrical endurance			4 000 operating cycles	4 000 operating cycles
Mounting			on the right side of the device	on the right side of the device
Degree of protection			IP20	IP20
Connection				
Conductor - rigid (solid, stranded)			0.75 ÷ 4 mm²	0.75 ÷ 4 mm²
Conductor - flexible			0.75 ÷ 2.5 mm²	0.75 ÷ 2.5 mm²
Torque			0.8 Nm	0.8 Nm
Opposite			yes	yes
Operating conditions				
Ambient temperature			-30 ÷ 55 °C	-30 ÷ 55 °C
Working position			arbitrary	arbitrary
Seismic immunity			3g / 8 ÷ 50 Hz	3g / 8 ÷ 50 Hz

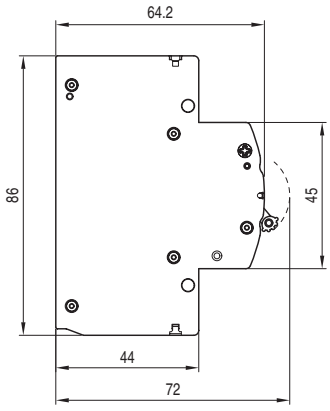
[1)] Each digit indicates successively the number of make, break and break-make contacts.
[2)] A=auxiliary contact, R=relative contact

Dimensions

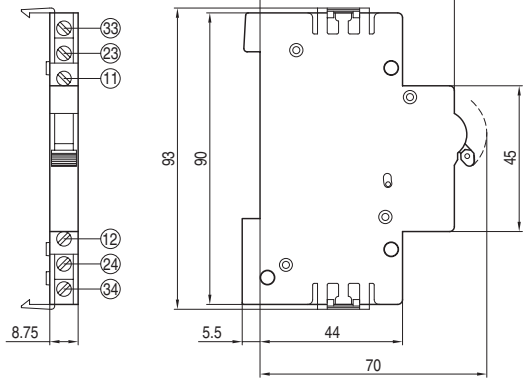
PS-LP-110S
PS-LP-110S-..
PS-LP-200S
PS-LP-020S



PS-LP-001S



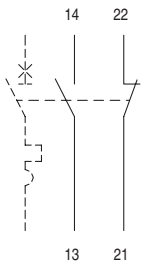
PS-LS-..



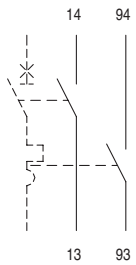
Diagram

PS-LP-110S, PS-LP-110S-Au

SEL => A+A

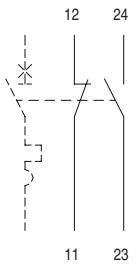


SEL => A+R

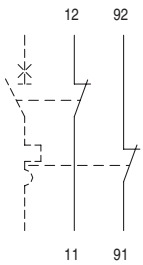


PS-LP-110S-Y

SEL => A+A

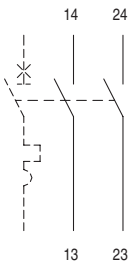


SEL => A+R

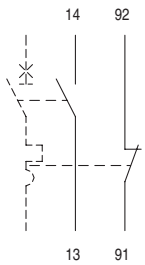


PS-LP-200S

SEL => A+A



SEL => A+R

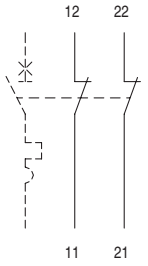


AUXILIARY AND RELATIVE SWITCHES

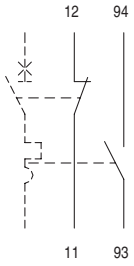
Diagram

PS-LP-020S

SEL => A+A

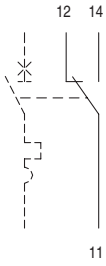


SEL => A+R

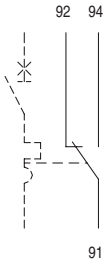


PS-LP-001S

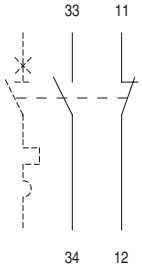
SEL => A



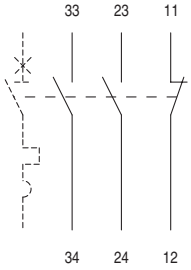
SEL => R



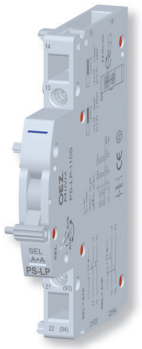
PS-LS-1100



PS-LS-2100



Installation of an auxiliary switch on a miniature circuit breaker (tumbler switch)

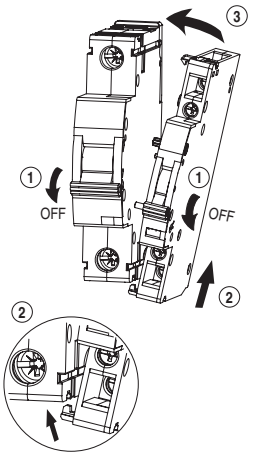


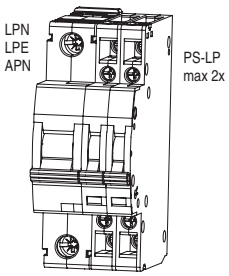
PS-LP-..

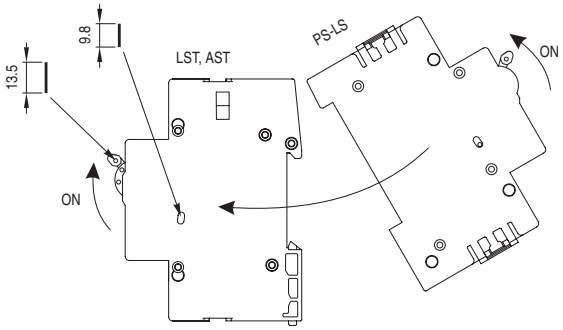
1. In mounting the levers of auxiliary switch and of the device are in OFF position
2. Insert the lower fastening catch in the device recess
3. Press the auxiliary switch to the device so that the upper fastening latch of the auxiliary switch snaps in the device recess
4. Check correct function by switching

PS-LS-..

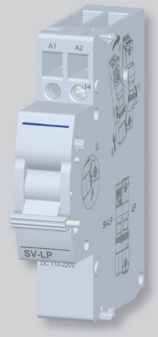
1. In mounting the levers of auxiliary switch and of the device are in ON position
2. From the right side the longer shaft in the control lever of the device and shorter one in the hole of the switching system of the device
3. From the right slide the auxiliary switch on the device so that one shaft interconnects control levers and the other the switching systems
4. Press the auxiliary switch to the device and snap the side fastening clamps of the auxiliary switch in the device recess
5. Check correct function by switching







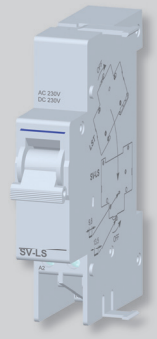
SHUNT TRIPS



Shunt trips SV-LP

- Accessories to: LPE, LPN, APN
- For tripping the miniature circuit breakers LPE, LPN and tumbler power switch APN by applied voltage
- It contains auxiliary make contact, which can be used for position signalling of the main contacts of miniature circuit breakers LPE, LPN and tumbler power switch APN

Rated voltage U_c	Type	Product code	Number of modules	Weight [kg]	Package [pcs]
12 ÷ 60 V a.c. / d.c.	**SV-LP-X060**	34325	1	0.125	1
110 ÷ 415 V a.c. / 110 ÷ 220 V d.c.	**SV-LP-X400**	34326	1	0.125	1



Shunt trips SV-LS

- Accessories to: LST, AST
- For tripping the miniature circuit breakers LST and tumbler power switch AST by applied voltage between 70 % and 110 % U_c
- It contains make contact (version SV-LS-....-1010 make and break contact), which can be used for position signalling of the main contacts of miniature circuit breakers LST and tumbler power switch AST

Rated voltage U_c	Arrangement of contacts [1]	Type	Product code	Number of modules	Weight [kg]	Package [pcs]
24 V a.c. / d.c.	10	**SV-LS-X024-1000**	35695	1	0.12	1
	101	**SV-LS-X024-1010**	35696	1	0.12	1
48 V a.c. / d.c.	10	**SV-LS-X048-1000**	35697	1	0.12	1
	101	**SV-LS-X048-1010**	35698	1	0.12	1
110 V a.c. / d.c.	10	**SV-LS-X110-1000**	35699	1	0.12	1
	101	**SV-LS-X110-1010**	35700	1	0.12	1
230 V a.c. / 220 V d.c.	10	**SV-LS-X230-1000**	35701	1	0.12	1
	101	**SV-LS-X230-1010**	35702	1	0.12	1
400 V a.c. / 440 V d.c.	10	**SV-LS-X400-1000**	35703	1	0.12	1
	101	**SV-LS-X400-1010**	35704	1	0.12	1

[1] Each digit indicates successively the number of make, break and break-make contacts

SHUNT TRIPS

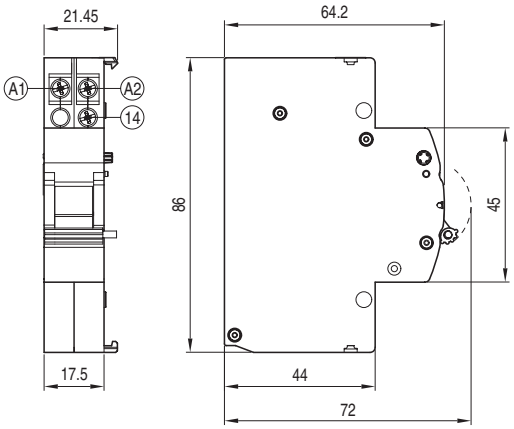
Specification

Type			SV-LP-..	SV-LS-..
Standards			EN 60947-1	EN 60947-1
Approval marks				
Mounting			on the left side of the device	on the left side of the device
Degree of protection			IP20	IP20
Control circuit (coil)				
Rated voltage	U_c		12 ÷ 60 V a.c. / d.c.	24, 48, 110, 230, 400 V a.c.
			110 ÷ 415 V a.c. / 110 ÷ 220 V d.c.	24, 48, 110, 220, 440 V d.c.
Rated frequency	f_n		40 ÷ 60 Hz	40 ÷ 60 Hz
Max. starting input power			150 VA	90 VA
Break time			max. 15 ms	10 ms
Contact				
Sequence [1]			10	10, 101
Rated operating voltage / current	U_e / I_e	AC-1	230 V a.c. / 4 A or 400 V a.c. / 2 A	230 V a.c. / 4 A or 400 V a.c. / 2 A
		AC-15	230 V a.c. / 2 A	230 V a.c. / 2 A
		DC-1	220 V d.c. / 0.5 A	220 V d.c. / 0.5 A
Mechanical endurance			20 000 operating cycles	10 000 operating cycles
Electrical endurance			4 000 operating cycles	4 000 operating cycles
Connection				
Conductor - rigid (solid, stranded)			0.75 ÷ 4 mm²	0.75 ÷ 4 mm²
Conductor - flexible			0.75 ÷ 2.5 mm²	0.75 ÷ 2.5 mm²
Torque			0.8 Nm	0.8 Nm
Opposite			yes	yes
Operating conditions				
Ambient temperature			-30 ÷ 55 °C	-30 ÷ 55 °C
Working position			arbitrary	arbitrary
Seismic immunity			3g / 8 ÷ 50 Hz	3g / 8 ÷ 50 Hz

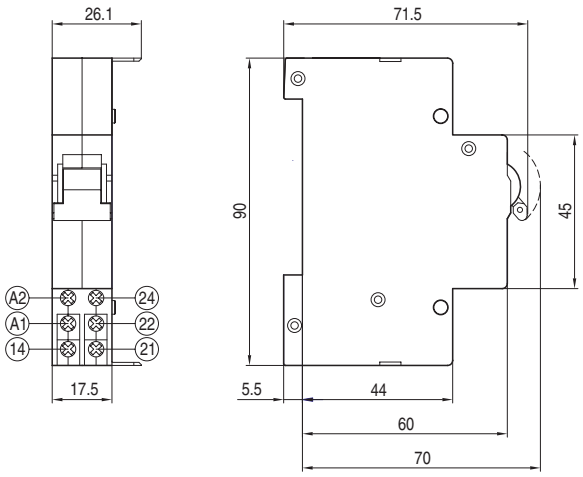
[1] Each digit indicates successively the number of make, break and break-make contacts

Dimensions

SV-LP-..

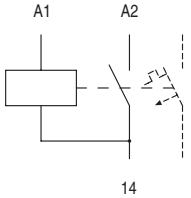


SV-LS-..

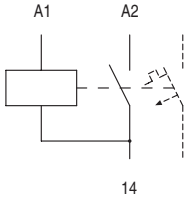


Diagram

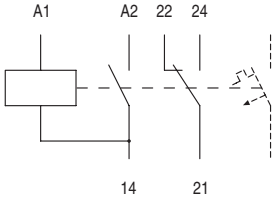
SV-LP-..



SV-LS-..-1000

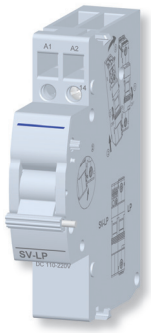


SV-LS-..-1010



SHUNT TRIPS

Installation of a shunt trip on a miniature circuit breaker (tumbler switch)

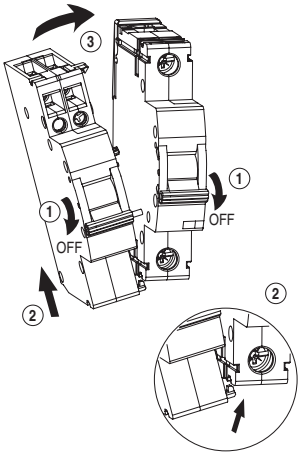


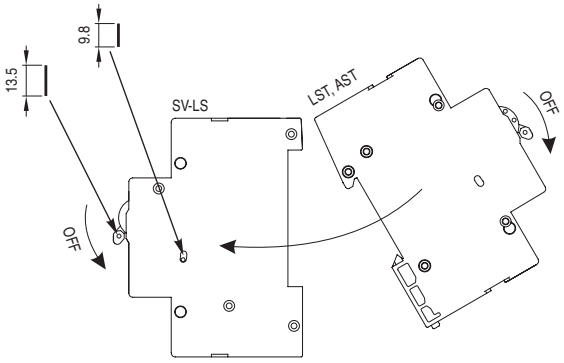
SV-LP-..

1. In mounting the levers of the shunt trip and of the device are in OFF position
2. Insert the lower fastening catch in the device recess
3. Press the shunt trip to the device so that the upper fastening latch of the shunt trip snaps in the device recess
4. Check correct function by switching

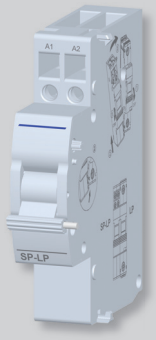
SV-LS-..

1. In mounting the levers of the shunt trip and of the device are in OFF position
2. From the right side the longer shaft in the control lever of the shunt trip and shorter one in the hole of the switching system of the shunt trip
3. From the right slide the device on the shunt trip so that one shaft interconnects control levers and the other the switching systems
4. Press the device to the shunt trip and snap the side fastening clamps of the shunt trip in the device recess
5. Check correct function by switching





UNDERVOLTAGE RELEASES

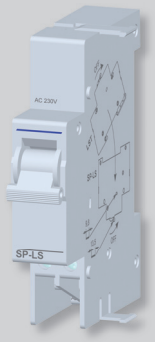


Undervoltage releases SP-LP

- Accessories to: LPE, LPN, APN
- For tripping the miniature circuit breakers LPE, LPN and tumbler power switch APN at loss of voltage as well as at gradual decrease of voltage between 70 % and 35 % U_c
- For elimination of closing of miniature circuit breakers LPE, LPN and tumbler power switch APN, if voltage is lower than 35 % U_c (switching is possible at voltage higher than 85 % U_c)
- They are often used for protection against device restart following mains failure
- With delay of 0.2 or 0.4 s for protection against short-time unwanted mains failures

Rated voltage U_c	Delay	Type	Product code	Number of modules	Weight [kg]	Package [pcs]
24 V a.c.	-	**SP-LP-A024**	34327	1	0.125	1
48 V a.c.	-	**SP-LP-A048**	34328	1	0.125	1
110 V a.c.	-	**SP-LP-A110**	34329	1	0.13	1
230 V a.c.	-	**SP-LP-A230**	34330	1	0.125	1
230 V a.c.	0.4 s	**SP-LP-A230-T004**	34331	1	0.13	1
400 V a.c.	-	**SP-LP-A400**	34332	1	0.13	1
24 V d.c.	0 s or 0.2 s [1]	**SP-LP-D024-Y004**	34333	1	0.13	1
48 V d.c.	0 s or 0.2 s [1]	**SP-LP-D048-Y004**	34334	1	0.13	1
110 V d.c.	0 s or 0.2 s [1]	**SP-LP-D110-Y004**	34335	1	0.13	1
220 V d.c.	0 s or 0.2 s [1]	**SP-LP-D220-Y004**	34336	1	0.125	1
400 V d.c.	0 s or 0.2 s [1]	**SP-LP-D400-Y004**	34337	1	0.125	1

[1] Delay is activated by interconnection of terminals 1, 2



Undervoltage releases SP-LS

- Accessories to: LST, AST
- For tripping the miniature circuit breakers LST and tumbler power switch AST at loss of voltage as well as at gradual decrease of voltage between 70 % and 35 % U_c
- For elimination of miniature circuit breakers LST and tumbler power switch AST, if voltage is lower than 35 % U_c (switching is possible at voltage higher than 85 % U_c)
- They are often used for protection against device restart following mains failure
- Undervoltage releases SP-LS-....-1010 contain in addition an auxiliary switch with make and break-make contact for position signalling of the main contacts of miniature circuit breakers LST or tumbler power switch AST

Rated voltage U_c	Arrangement of contacts [1]	Type	Product code	Number of modules	Weight [kg]	Package [pcs]
24 V a.c.	-	**SP-LS-A024**	35944	1	0.12	1
	101	**SP-LS-A024-1010**	35945	1	0.12	1
48 V a.c.	-	**SP-LS-A048**	35946	1	0.12	1
	101	**SP-LS-A048-1010**	35947	1	0,12	1
110 V a.c.	-	**SP-LS-A110**	35948	1	0.12	1
	101	**SP-LS-A110-1010**	35949	1	0.12	1
230 V a.c.	-	**SP-LS-A230**	35950	1	0.12	1
	101	**SP-LS-A230-1010**	35951	1	0.12	1
400 V a.c.	-	**SP-LS-A400**	35952	1	0.12	1
	101	**SP-LS-A400-1010**	35953	1	0.12	1

[1] Each digit indicates successively the number of make, break and break-make contacts

UNDERVOLTAGE RELEASES

Specification

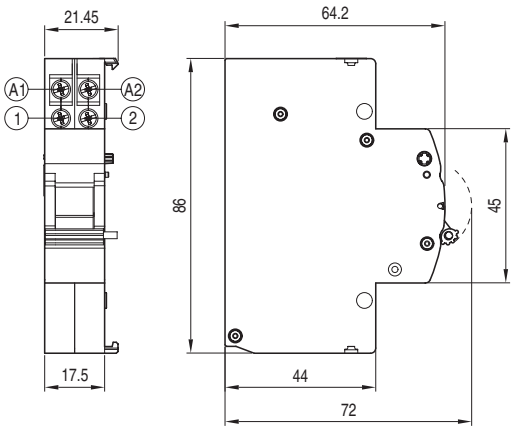
Type			SP-LP-..	SP-LS-..
Standards			EN 60947-1	EN 60947-1
Approval marks				
Mounting			on the left side of the device	on the left side of the device
Degree of protection			IP20	IP20
Control circuit (coil)				
Rated voltage	U_c		24, 48, 110, 230, 400 V a.c.	24, 48, 110, 230, 400 V a.c.
			24, 48, 110, 220, 400 V d.c.	
Consumption			2.6 W	2.5 W
Rated frequency	f_n		40 ÷ 60 Hz	40 ÷ 60 Hz
Break time			max. 45 ms [2]	25 ms
Contact				
Sequence [1]			-	10, 101
Rated operating voltage / current	U_e / I_e	AC-1	-	230 V a.c. / 4 A or 400 V a.c. / 2 A
		AC-15	-	230 V a.c. / 2 A
		DC-1	-	220 V d.c. / 0.5 A
Mechanical endurance			-	10 000 operating cycles
Electrical endurance			-	4 000 operating cycles
Connection				
Conductor - rigid (solid, stranded)			0.75 ÷ 4 mm²	0.75 ÷ 4 mm²
Conductor - flexible			0.75 ÷ 2.5 mm²	0.75 ÷ 2.5 mm²
Torque			0.8 Nm	0.8 Nm
Opposite			yes	yes
Operating conditions				
Ambient temperature			-30 ÷ 55 °C	-30 ÷ 55 °C
Working position			arbitrary	arbitrary
Seismic immunity			3g / 8 ÷ 50 Hz	3g / 8 ÷ 50 Hz

[1] Each digit indicates successively the number of make, break and break-make contacts

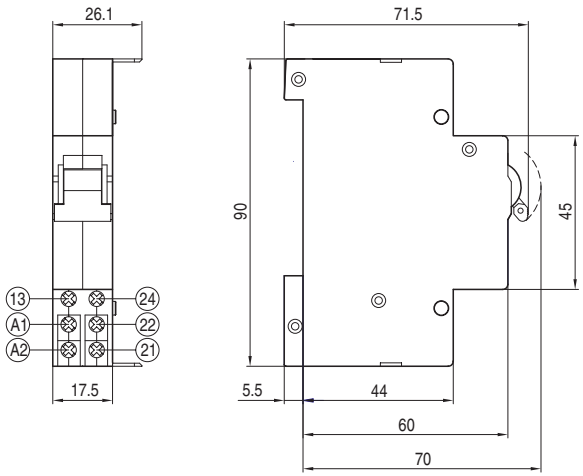
[2] The stated time is valid for undelayed undervoltage releases

Dimensions

SP-LP-..

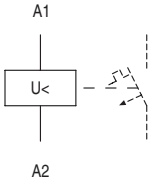


SP-LS-..

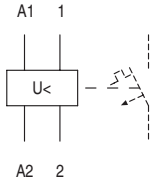


Diagram

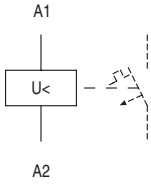
SP-LP-A..



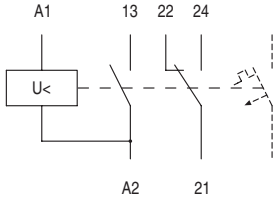
SP-LP-D..



SP-LS-

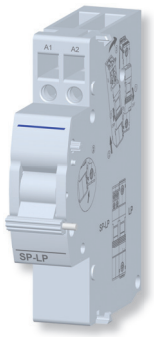


SP-LS-..-1010



UNDERVOLTAGE RELEASES

Installation of an undervoltage release on a miniature circuit breaker (tumbler switch)

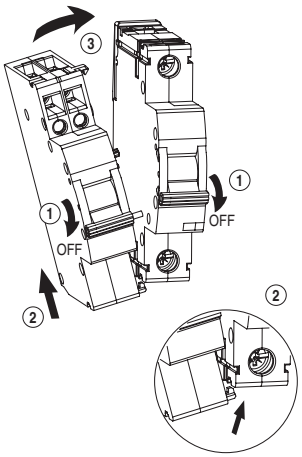


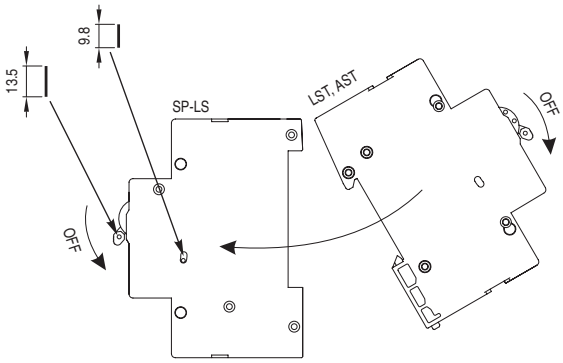
SP-LP-..

1. In mounting the levers of undervoltage release and of the device are in OFF position
2. Insert the lower fastening catch in the device recess
3. Press the undervoltage release to the device so that the upper fastening latch of the undervoltage release snaps in the device recess
4. Check correct function by switching

SP-LS-..

1. In mounting the levers of undervoltage release and of the device are in OFF position
2. From the right side the longer shaft in the control lever undervoltage releases and shorter one in the hole of the switching system of the undervoltage release
3. From the right slide the device on the undervoltage release so that one shaft interconnects control levers and the other the switching systems
4. Press the device to the undervoltage release and snap the side fastening latches of the undervoltage release in the recess devices
5. Check correct function by switching





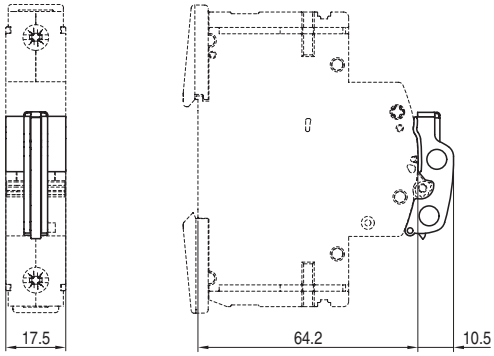
LOCKING INSERT

- Accessories to: LPE, LPN, APN
- For safe locking of the control lever in off or on position
- The protective function of the miniature circuit breakers is functional even in locked position
- Maximum diameter of lock rod - 5 mm
- The lock is not included in the package

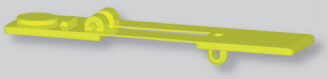
Type	Product code	Weight [kg]	Package [pcs]
OD-LP-VU01	37287	0.003	1

Dimensions

OD-LP-VU01



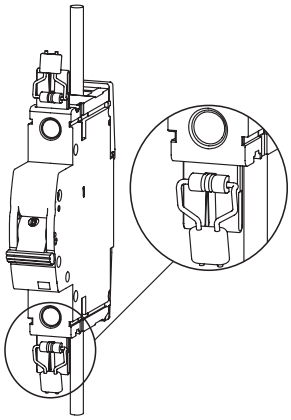
INSERT



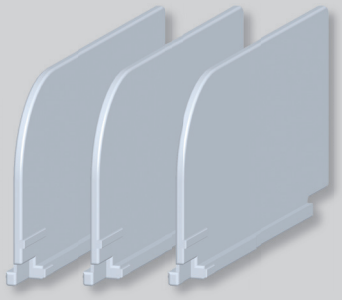
- Accessories to: LPE, LPN, APN
- For covering and sealing of terminal screws

Type	Product code	Weight [kg]	Package [pcs]
OD-LP-VP01	37289	0.004	1

Use



INSULATING BARRIERS

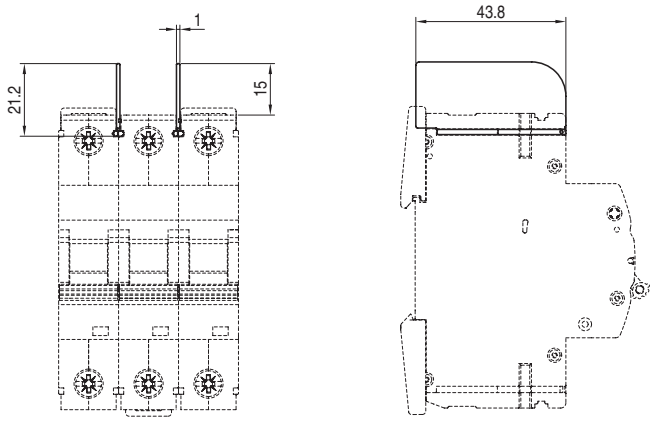


- Accessories to: LPE, LPN, APN
- For additional increase of surface distances between individual poles of the miniature circuit breakers LPE, LPN or tumbler power switch APN
- 1 set contains 3 pieces

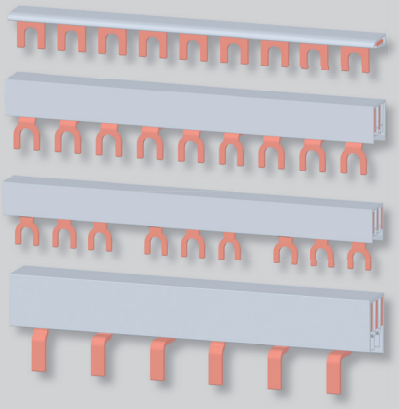
Type	Product code	Weight [kg]	Package [number of set]
OD-LP-MP01	37288	0.002	1

Dimensions

OD-LP-MP01



INTERCONNECTING BUSBARS

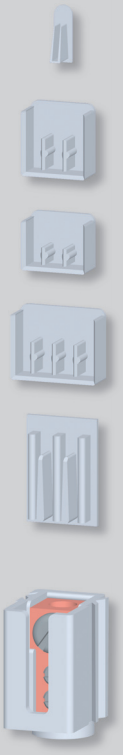


Interconnecting busbars

- For interconnection of 1 to 4-pole circuit breakers, tumbler switches, residual current circuit breakers, lightning current arresters and surge voltage arresters
- For interconnection of a series of single-phase or three-phase circuit breakers and tumbler switches, on which an auxiliary switch is mounted switch
- Busbars G1L-.., G2L-.., G3L-.., G4L-.. with forks into the head part of the terminal,
  Busbars S1L-.., S2L-.., S3L-.., S4L-.. with pins into the clamp part of the terminal

Busbar shape	Number of poles	Output spacing [mm]	Number of outlets	Cross-section [mm²]	Type	Product code	End cap	Weight [kg]	Package [pcs]
fork	1	17.8	2	10	**G1L-30-10**	37352	- [1]	0.008	50
				16	**G1L-30-16**	37356	- [1]	0.012	50
			6	10	**G1L-106-10**	37353	- [1]	0.023	50
				16	**G1L-106-16**	37357	- [1]	0.037	50
			12	10	**G1L-210-10**	37354	- [1]	0.045	50
				16	**G1L-210-16**	37358	- [1]	0.073	50
			57	12	**G1L-1000-12**	37355	EKC-1	0.227	50
				20	**G1L-1000-20**	37359	-	0.367	50
		27 [2]	37	24	**G1L-27-1000-24**	37360	-	0.307	50
	2	17.8	2x 28	16	**G2L-1000-16**	37361	EKC-2+3	0.477	20
	3	17.8	3x 2	10	**G3L-106-10**	37362	- [1]	0.046	25
				16	**G3L-106-16**	37366	- [1]	0.074	25
			3x 3	10	**G3L-160-10**	37363	- [1]	0.069	25
				16	**G3L-160-16**	37367	- [1]	0.111	25
			3x 4	10	**G3L-210-10**	37364	- [1]	0.091	25
				16	**G3L-210-16**	37368	- [1]	0.147	25
			3x 19	10	**G3L-1000-10C**	37365	EKC-3	0.457	20
				16	**G3L-1000-16C**	37369	EKC-2+3	0.737	20
		17.8 + 9	3x 16	16	**G3L+9-1000-16**	37370	EKC-2+3	0.614	20
	4	17.8	4x 14	16	**G4L-1000-16**	37371	EKC-4	0.983	15
			2x 27	16	**G3L+N-1000-16**	37372	EKC-4	0.983	15
pin	1	17.8	12	16	**S1L-210-16**	37374	- [1]	0.047	50
			57	10	**S1L-1000-10**	37373	EKC-1	0.204	50
				16	**S1L-1000-16**	37375	EKC-1	0.302	50
		27	38	16	**S1L-27-1000-16**	37376	EKC-1	0.201	50
			37	25	**S1L-27-1000-25**	37377	-	0.315	30
	2	17.8	2x 28	16	**S2L-1000-16**	37378	EKC-2+3	0.477	20
	3	17.8	3x 19	16	**S3L-1000-16**	37379	EKC-2+3	0.737	20
		27	3x 12	16	**S3L-27-1000-16**	37380	EKC-2+3	0.537	20
				25	**S3L-27-1000-25**	37381	EKC-3-36	0.995	10
	4	27	4x 9	25	**S4L-27-1000-25**	37382	EKC-3-36	1.327	5

[1] The busbar is manufactured as enclosed one
[2] For single-pole devices with auxiliary switch



Accessories

End caps

- For covering the ends of connecting busbars

Type	Product code	Description	Weight [kg]	Package [pcs]
EKC-1	37383	for 1-pole rails cross-section 10, 12, 16 mm²	0.0005	10
EKC-2+3	37384	for 2-pole rails and for 3-pole rails cross-section 16 mm²	0.001	10
EKC-3	37385	for 3-pole rails cross-section 10 mm²	0.001	10
EKC-3-36	37386	for 3-pole rails and for 4-pole rails cross-section 25 mm²	0.002	10
EKC-4	37387	for 4-pole rails cross-section 16 mm²	0.002	10

Power supply unit

- It enables power supply of interconnecting busbars by conductors of cross section up to 35 mm²
- The blocks can be assembled in series to create a multi-pole connection unit.
- Degree of protection IP20

Type	Product code	Weight [kg]	Package [pcs]
ES-35-GS	37388	0.035	10

INTERCONNECTING BUSBARS

Specification

Type		G.., S..
Rated operating voltage	U_e	415 V a.c.
Max. operating voltage	U_{max}	500 V a.c.
Loading current		63 ÷ 180 A
Cross-section		10 ÷ 25 mm²
Short-circuit strength with primary fuse 250 A gG		50 kA
Overvoltage category		III
Busbar material		E-Cu-F25
Insulation material		PC/ABS-Blend

Max. loading current per phase

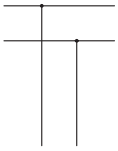
	Rail cross-section					
	10 mm²	12 mm²	16 mm²	20 mm²	24 mm²	25 mm²
Power supply from the rail edge	63 A	65 A	80 A	90 A	100 A	100 A
Power supply from the rail centre [1)]	100 A	110 A	130 A	150 A	170 A	180 A

[1)] Max. loading current in one direction must not be higher than max. loading current at power supply from the rail edge

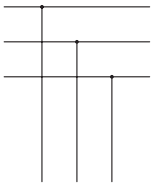
Diagram

G1L-.., S1L-..

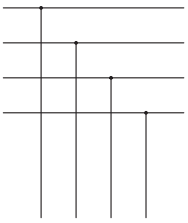
G2L-.., S2L-..



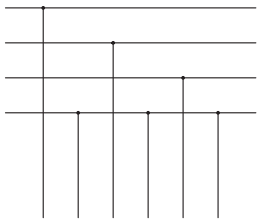
G3L-.., S3L-..



G4L-.., S4L-..



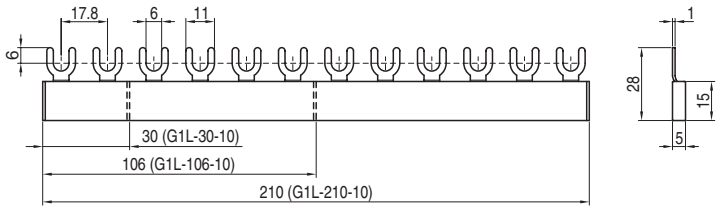
G3L+N-..



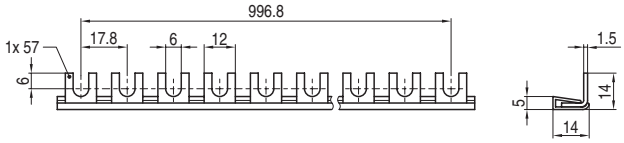
INTERCONNECTING BUSBARS

Dimensions

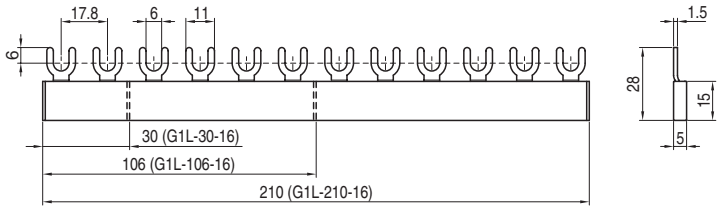
G1L-30-10, G1L-106-10, G1L-210-10



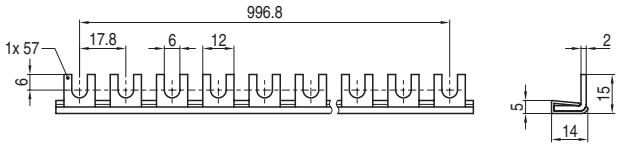
G1L-1000-12



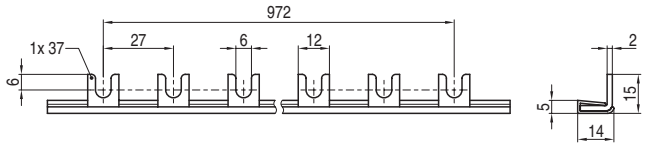
G1L-30-16, G1L-106-16, G1L-210-16



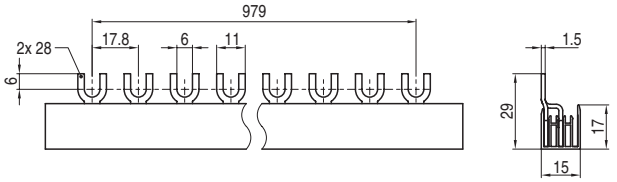
G1L-1000-20



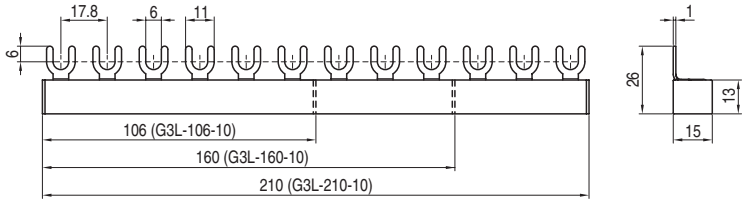
G-1L-27-1000/24



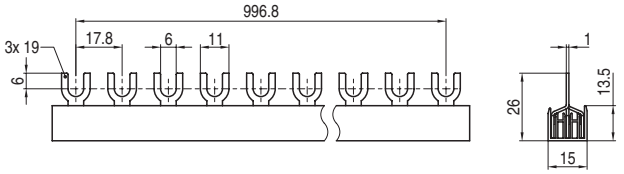
G2L-1000-16



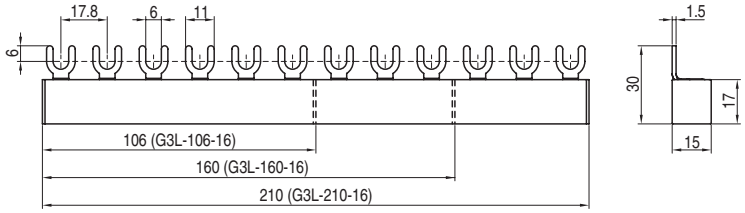
G3L-106-10, G3L-160-10, G3L-210-10



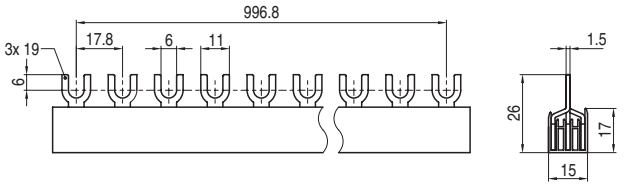
G3L-1000-10C



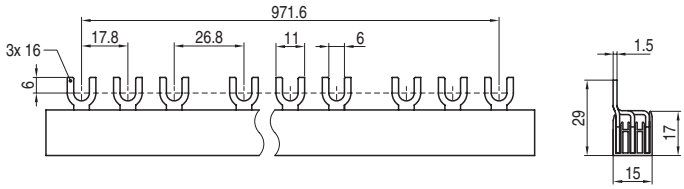
G3L-106-16, G3L-160-16, G3L-210-16



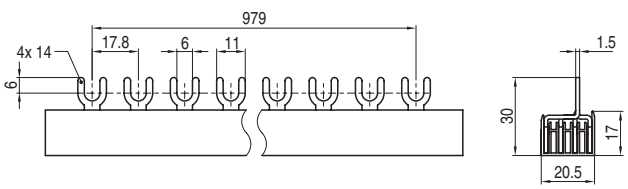
G-3L-1000/16C



G3L+9-1000-16



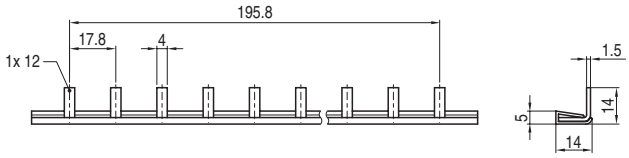
G4L-1000-16, G3L+N-1000-16



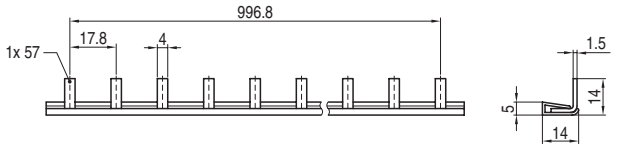
INTERCONNECTING BUSBARS

Dimensions

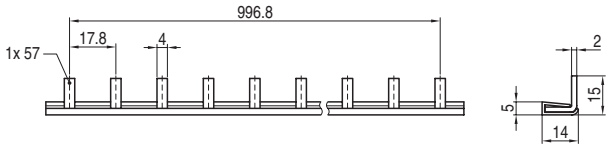
S1L-210-16



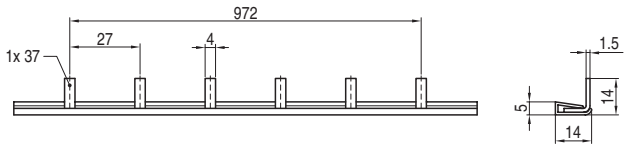
S1L-1000-10



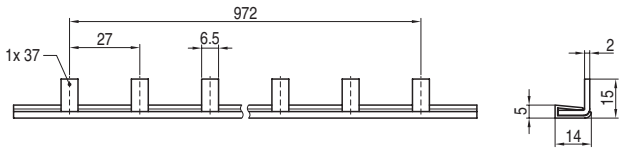
S1L-1000-16



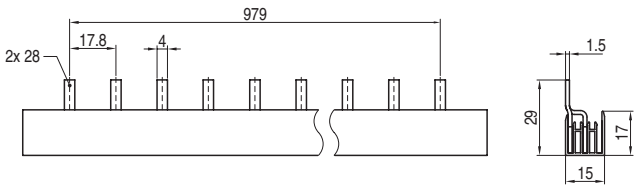
S1L-27-1000-16



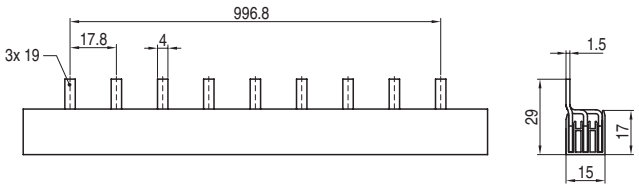
S1L-27-1000-25



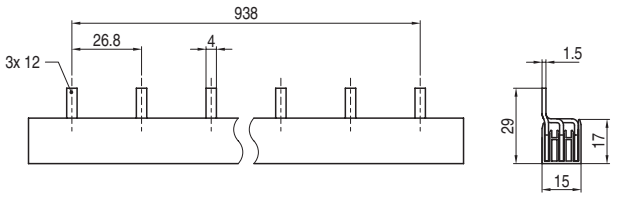
S2L-1000-16



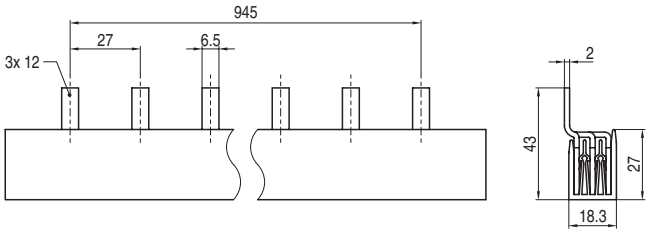
S3L-1000-16



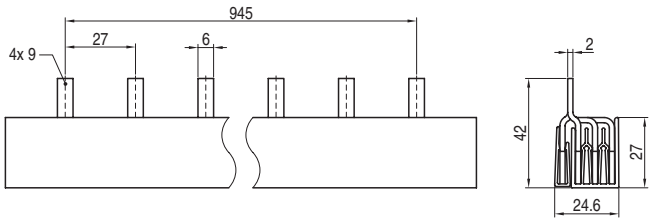
S3L-27-1000-16



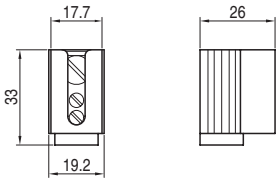
S3L-27-1000-25



S4L-27-1000-25



ES-35-GS

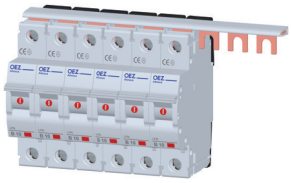


INTERCONNECTING BUSBARS

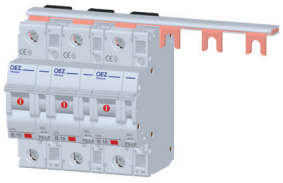
Examples of use of interconnecting busbars

INTERCONNECTING BUSBARS WITH FORKS

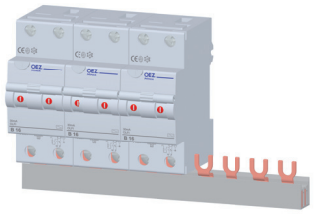
1-pole interconnecting busbars
For interconnection of 1-pole devices in the head part of the terminal
Use: LPE, LPN, SJB, SVL, SVM, APN



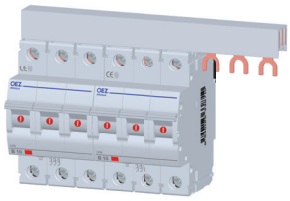
1-pole interconnecting busbars with spacing 27 mm
For interconnection of 1-pole devices with auxiliary switch in the head part of the terminal
Use: LPE, LPN, APN



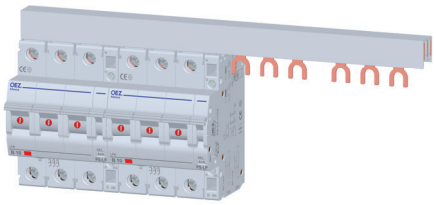
2-pole interconnecting busbars
For interconnection of 2-pole devices in the head part of the terminal
Use: LSN, LSE, SVL, SJL, ASN



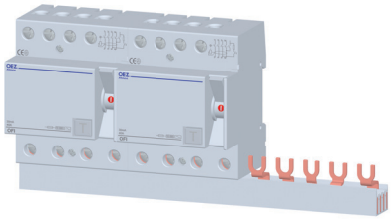
3-pole interconnecting busbars
For interconnection of 3-pole devices in the head part of the terminal
Use: LPE, LPN, SJB, SVL, SVM, APN



3-pole interconnecting busbars with a gap on the auxiliary switch
For interconnection of 3-pole devices with auxiliary switch in the head part of the terminal
Use: LPE, LPN, APN

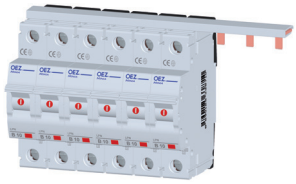


4-pole interconnecting busbars
For interconnection of 4-pole devices in the head part of the terminal
Use: LPE, LPN, OFI, OFE, APN

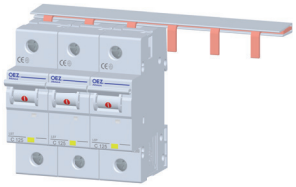


INTERCONNECTING BUSBARS WITH PINS

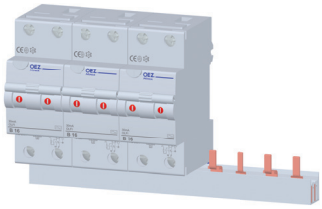
1-pole interconnecting busbars
For interconnection of 1-pole devices in clamp part of the terminal
Use: LPE, LPN, SJB, SVL, SVM, APN



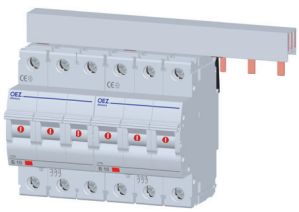
1-pole interconnecting busbars with spacing 27 mm
For interconnection of 1-pole circuit breakers LST in clamp part of the terminal or for interconnection of 1-pole devices with auxiliary switch in clamp part of the terminal
Use: LPE, LPN, LST, APN, AST



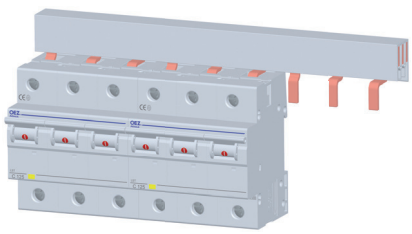
2-pole interconnecting busbars
For interconnection of 2-pole devices in clamp part of the terminal
Use: LPE, LPN, OLFE, OLFI, OFE, OFI, APN



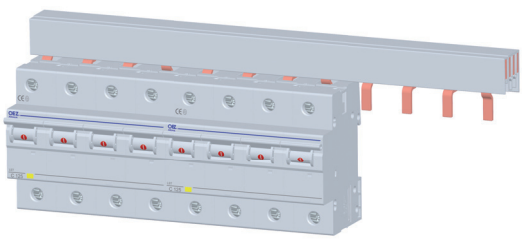
3-pole interconnecting busbars
For interconnection of 3-pole devices in clamp part of the terminal
Use: LPE, LPN, APN



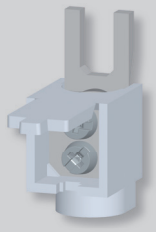
3-pole interconnecting busbars with spacing 27 mm
For interconnection of 3-pole circuit breakers LST in clamp part of the terminal or for interconnection of 1-pole devices with auxiliary switch in clamp part of the terminal
Use: LPE, LPN, LST, APN, AST



4-pole interconnecting busbars with spacing 27 mm
For interconnection of 4-pole circuit breakers LST in clamp part of the terminal
Use: LST, AST



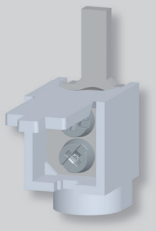
CONNECTING ADAPTERS



Connecting adapter up to 25 mm² with fork

- For connection of another conductor to the head part of the terminal of a circuit breaker, residual current circuit breaker, tumbler power switch etc.
- For example, the best solution is to connect a conductor for power supply of an electric meter in the clamp part of the circuit breaker terminal, and another conductor through the connecting adapter AS-25-G in the head part of the circuit breaker terminal
- Conductor cross-section: 6 ÷ 25 mm²

Type	Product code	Accessories	Weight [kg]	Package [pcs]
AS-25-G	37390	LPE, LPN, OLFI, OLFE, OFI, OFE, SJB, SVM, APN	0.013	30



Connecting adapter up to 25 mm² with pin

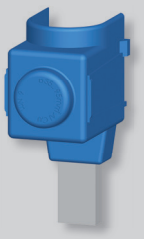
- Accessories to: OFI20, OFE20, SVL, SJL, RP1
- For connection of conductors to the clamp part of the terminal
- Conductor cross-section: 6 ÷ 25 mm²

Type	Product code	Accessories	Weight [kg]	Package [pcs]
AS-25-S	37389	OFI-..-2-...., OFE-..-2-...., RLP	0.014	30

Connecting adapter up to 50 mm²

- For connection of Al or Cu conductors
- Cross-section of Cu conductors: 2.5 ÷ 50 mm²
- Cross-section of Al conductors: 16 ÷ 50 mm²

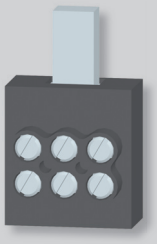
Type	Product code	Accessories	Weight [kg]	Package [pcs]
AS-50-S-AL	37391	LPE, LPN, LST, SJBplus, APN, AST	0.018	15



Connecting adapters up to 95 mm²

- For connection of Cu/Al conductors of cross section 35 ÷ 95 mm²
- With direct or outbowed terminal

Type	Product code		Accessories	Weight [kg]	Package [pcs]
CS-FH000-3NP95	13740	straight guidon – the package contains the set of 3 pieces	LST, SJBplus, SJB-NPE, AST	0.176	1
CS-FH000-1NP95	14378	straight guidon	LST, SJBplus, SJB-NPE, AST	0.06	1
CS-FH000-3NV95	13742	outbowed guidon – the package contains the set of 3 pieces	LST, SJBplus, SJB-NPE, AST	0.184	1



Connecting adapter 3x10 mm²

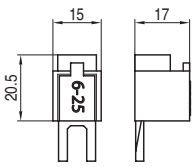
- For connection of 3 conductors / device pole of cross section 10 mm²

Type	Product code	Accessories	Weight [kg]	Package [pcs]
N3x10-FH000	14127	LST, SJB, SVM, AST	0.035	1

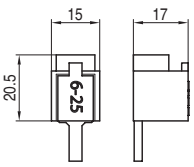
CONNECTING ADAPTERS

Dimensions

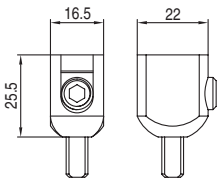
AS-25-G



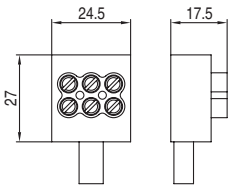
AS-25-S



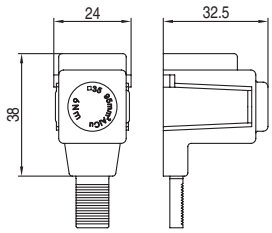
AS-50-S-AL



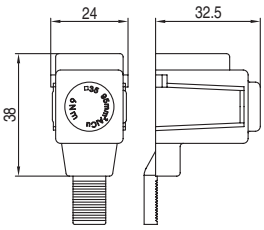
N3x10-FH000



CS-FH000-...NP95



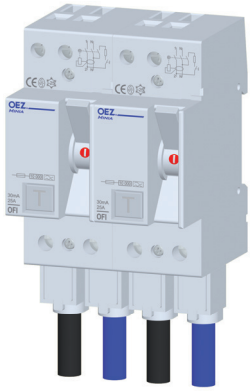
CS-FH000-3NV95



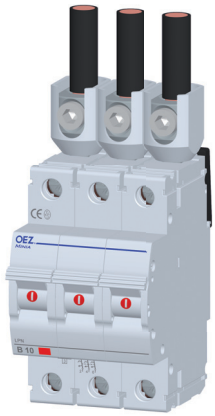
Examples of use of connecting adapters and blocks

AS-25-G
For connection of another conductor of cross section up to 25 mm² to the head part of the terminal
Use: LPE, LPN, OLFI, OLFE, OFI, OFE, SJB, SVM, APN

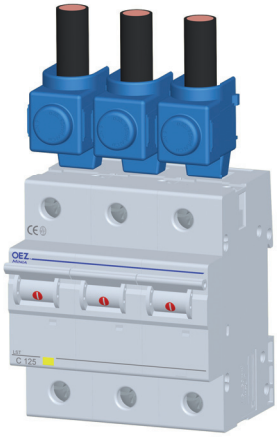
AS-25-S
For connection of conductors of cross section up to 25 mm² to the clamp part of the terminal
Use: OFI-..-2-.., OFE-..-2-.., RLP



AS-50-S-AL
For connection of Cu/Al conductors of cross section up to 50 mm² to the clamp part of the terminal
Use: LSN, LST, LSE, LFI, LFE, SJBplus, ASN, AST



CS-FH000-3NP95, CS-FH000-1NP95, CS-FH000-3NV95
For connection of Cu/Al conductors of cross section up to 95 mm² to the clamp part of the terminal
Use: LST, SJBplus, SJB-NPE, AST



N3x10-FH000
For connection of three conductors of cross section 10 mm² to the clamp part of one terminal
Use: LST, SJB, SVM, AST