

Miniature Circuit Breakers PLHT

SG43611



- High-quality miniature circuit breakers for commercial and industrial applications
- Contact position indicator red - green
- Accessories suitable for subsequent installation
- Rated currents up to 125 A
- Tripping characteristics B, C, D
- Rated breaking capacity to 25 kA acc. to EN 60947-2

Miniature Circuit Breakers PLHT

Characteristic B

	Rated current I_n (A)	Type Designation	Article No.	Units per package
SG41311 	1-pole			
	20	PLHT-B20	247972	12
	25	PLHT-B25	247973	12
	32	PLHT-B32	247974	12
	40	PLHT-B40	247975	12
	50	PLHT-B50	247976	12
	63	PLHT-B63	247977	12
	80	PLHT-B80	247978	12
	100	PLHT-B100	247979	12
	125	PLHT-B125	247980	12
SG42111 	2-pole			
	20	PLHT-B20/2	247998	6
	25	PLHT-B25/2	247999	6
	32	PLHT-B32/2	248000	6
	40	PLHT-B40/2	248001	6
	50	PLHT-B50/2	248002	6
	63	PLHT-B63/2	248003	6
	80	PLHT-B80/2	248004	6
	100	PLHT-B100/2	248005	6
	125	PLHT-B125/2	248006	6
SG42911 	3-pole			
	20	PLHT-B20/3	248024	4
	25	PLHT-B25/3	248025	4
	32	PLHT-B32/3	248026	4
	40	PLHT-B40/3	248027	4
	50	PLHT-B50/3	248028	4
	63	PLHT-B63/3	248029	4
	80	PLHT-B80/3	248030	4
	100	PLHT-B100/3	248031	4
	125	PLHT-B125/3	248032	4
SG45111 	3+N-pole			
	20	PLHT-B20/3N	248050	3
	25	PLHT-B25/3N	248051	3
	32	PLHT-B32/3N	248052	3
	40	PLHT-B40/3N	248053	3
	50	PLHT-B50/3N	248054	3
	63	PLHT-B63/3N	248055	3
	80	PLHT-B80/3N	248056	3
	100	PLHT-B100/3N	248057	3
	125	PLHT-B125/3N	248058	3
SG44811 	4-pole			
	20	PLHT-B20/4	248076	3
	25	PLHT-B25/4	248077	3
	32	PLHT-B32/4	248078	3
	40	PLHT-B40/4	248079	3
	50	PLHT-B50/4	248080	3
	63	PLHT-B63/4	248081	3
	80	PLHT-B80/4	248082	3
	100	PLHT-B100/4	248083	3
	125	PLHT-B125/4	248084	3

Miniature Circuit Breakers PLHT

Characteristic C

	Rated current I_n (A)	Type Designation	Article No.	Units per package
SG41311 	1-pole			
	20	PLHT-C20	247981	12
	25	PLHT-C25	247982	12
	32	PLHT-C32	247983	12
	40	PLHT-C40	247984	12
	50	PLHT-C50	247985	12
	63	PLHT-C63	247986	12
	80	PLHT-C80	247987	12
	100	PLHT-C100	247988	12
	125	PLHT-C125	247989	12
SG42111 	2-pole			
	20	PLHT-C20/2	248007	6
	25	PLHT-C25/2	248008	6
	32	PLHT-C32/2	248009	6
	40	PLHT-C40/2	248010	6
	50	PLHT-C50/2	248011	6
	63	PLHT-C63/2	248012	6
	80	PLHT-C80/2	248013	6
	100	PLHT-C100/2	248014	6
	125	PLHT-C125/2	248015	6
SG42911 	3-pole			
	20	PLHT-C20/3	248033	4
	25	PLHT-C25/3	248034	4
	32	PLHT-C32/3	248035	4
	40	PLHT-C40/3	248036	4
	50	PLHT-C50/3	248037	4
	63	PLHT-C63/3	248038	4
	80	PLHT-C80/3	248039	4
	100	PLHT-C100/3	248040	4
	125	PLHT-C125/3	248041	4
SG45111 	3+N-pole			
	20	PLHT-C20/3N	248059	3
	25	PLHT-C25/3N	248060	3
	32	PLHT-C32/3N	248061	3
	40	PLHT-C40/3N	248062	3
	50	PLHT-C50/3N	248063	3
	63	PLHT-C63/3N	248064	3
	80	PLHT-C80/3N	248065	3
	100	PLHT-C100/3N	248066	3
	125	PLHT-C125/3N	248067	3
SG44811 	4-pole			
	20	PLHT-C20/4	248085	3
	25	PLHT-C25/4	248086	3
	32	PLHT-C32/4	248087	3
	40	PLHT-C40/4	248088	3
	50	PLHT-C50/4	248089	3
	63	PLHT-C63/4	248090	3
	80	PLHT-C80/4	248091	3
	100	PLHT-C100/4	248092	3
	125	PLHT-C125/4	248093	3

Miniature Circuit Breakers PLHT

Characteristic D

	Rated current I_n (A)	Type Designation	Article No.	Units per package
SG41311 	1-pole			
	20	PLHT-D20	247990	12
	25	PLHT-D25	247991	12
	32	PLHT-D32	247992	12
	40	PLHT-D40	247993	12
	50	PLHT-D50	247994	12
	63	PLHT-D63	247995	12
	80	PLHT-D80	247996	12
	100	PLHT-D100	247997	12
SG42111 	2-pole			
	20	PLHT-D20/2	248016	6
	25	PLHT-D25/2	248017	6
	32	PLHT-D32/2	248018	6
	40	PLHT-D40/2	248019	6
	50	PLHT-D50/2	248020	6
	63	PLHT-D63/2	248021	6
	80	PLHT-D80/2	248022	6
	100	PLHT-D100/2	248023	6
SG42911 	3-pole			
	20	PLHT-D20/3	248042	4
	25	PLHT-D25/3	248043	4
	32	PLHT-D32/3	248044	4
	40	PLHT-D40/3	248045	4
	50	PLHT-D50/3	248046	4
	63	PLHT-D63/3	248047	4
	80	PLHT-D80/3	248048	4
	100	PLHT-D100/3	248049	4
SG45111 	3+N-pole			
	20	PLHT-D20/3N	248068	3
	25	PLHT-D25/3N	248069	3
	32	PLHT-D32/3N	248070	3
	40	PLHT-D40/3N	248071	3
	50	PLHT-D50/3N	248072	3
	63	PLHT-D63/3N	248073	3
	80	PLHT-D80/3N	248074	3
	100	PLHT-D100/3N	248075	3
SG44811 	4-pole			
	20	PLHT-D20/4	248094	3
	25	PLHT-D25/4	248095	3
	32	PLHT-D32/4	248096	3
	40	PLHT-D40/4	248097	3
	50	PLHT-D50/4	248098	3
	63	PLHT-D63/4	248099	3
	80	PLHT-D80/4	248100	3
	100	PLHT-D100/4	248101	3

Miniature Circuit Breakers PLHT-V similar to characteristic D

SG69611



Rated current
 I_n (A)

1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
20	PLHT-20-V	248102	12
25	PLHT-25-V	248103	12
32	PLHT-32-V	248104	12
40	PLHT-40-V	248105	12
50	PLHT-50-V	248106	12
63	PLHT-63-V	248107	12

Accessories for Miniature Circuit Breakers PLHT, PLHT-V

SG09311



Operational voltage range
V~

Shunt trip release, Shunt trip release-Kit

Operational voltage range V~	Type Designation	Article No.	Units per package
110-415/Shunt trip release	Z-LHASA/230	248442	8
12-60/Shunt trip release	Z-LHASA/24	248441	8
110-415/Shunt trip release-Kit	Z-BHASA/230	248445	8
12-60/Shunt trip release-Kit	Z-BHASA/24	248444	8

Auxiliary switch

SG16111



Function

1NO+1NC

Type
Designation

Z-LHK

Article No.

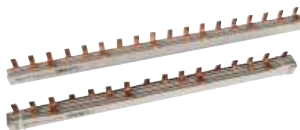
248440

Units per
package

10/100

Accessories for Miniature Circuit Breakers PLHT-V

W0_sg11402



Description

Switching interlock
Switching interlock
Switchoff interlock
Busbar block 35 mm²

Type
Designation

LH-SPL
LHSP-E
LHSP-A
Z-SV-35/PLHT-V

Article No.

285752
215999
216000
264939

Units per
package

1
1
1
4

Neutral disconnecter

SG15911



Type
Designation

Z-NTS

Article No.

248443

Units per
package

1

Specifications | Miniature Circuit Breakers PLHT

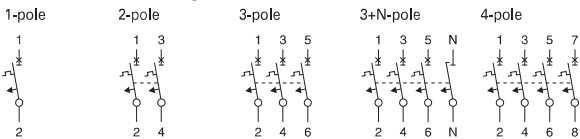
Description

- Independent switching contacts
- With isolator function, meets the requirements of insulation co-ordination, distance between contacts ≥ 4 mm, for secure isolation

Accessories:

Auxiliary switch for		
subsequent installation (0.5 MU)	Z-LHK	248440
Shunt trip release		
subsequent installation (1.5 MU)	Z-LHASA/230	248442
	Z-LHASA/24	248441
Anti-tamper device	LH-SPL	285752
Busbar see capter busbar system		

Connection diagrams



Technical Data

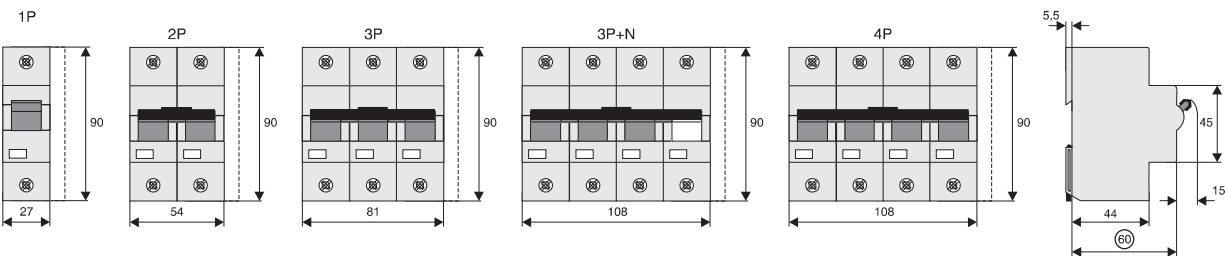
Electrical

Design according to	EN 60947-2
Current test marks as printed onto the device	
Rated voltage	
AC	230/400V
DC	60V (per pole, max. 2 poles)
Ultimate short circuit breaking capacity acc. to IEC/EN 60947-2	
Characteristic B,C	$I_n = 20-63\text{ A}$ 25 kA $I_n = 80-100\text{ A}$ 20 kA
	$I_n = 125\text{ A}$ 15 kA
Characteristic D	$I_n = 20-63\text{ A}$ 25 kA $I_n = 80\text{ A}$ 20 kA $I_n = 100\text{ A}$ 15 kA
Characteristic	in accordance with characteristics B, C, D
Back-up fuse	max. 200 A gL
Rated insulation voltage	440 V
Peak withstand voltage U_{imp}	4 kV
Selectivity class	in acc. with class 3
Endurance	≥ 20,000 switching op.

Mechanical

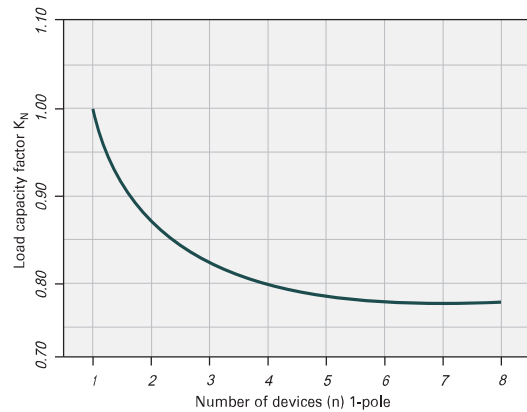
Frame size	45 mm
Device height	90 mm
Device width	27 mm (1.5MU) per pole
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Upper and lower terminals	lift terminals
Terminal protection	finger and hand touch safe DGUV VS3, EN 50274
Terminal capacity	2.5-50 mm ²

Dimensions (mm)

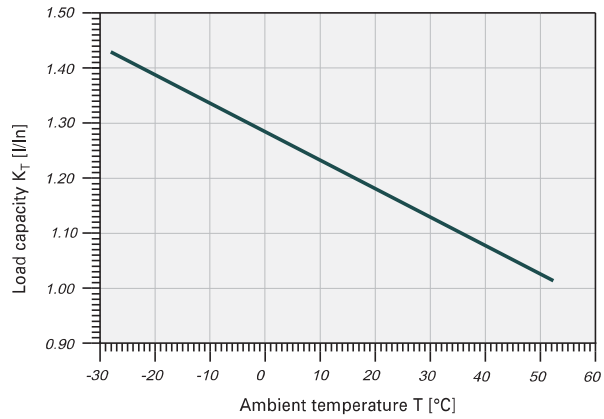


Load Capacity

Load capacity in case of block installation



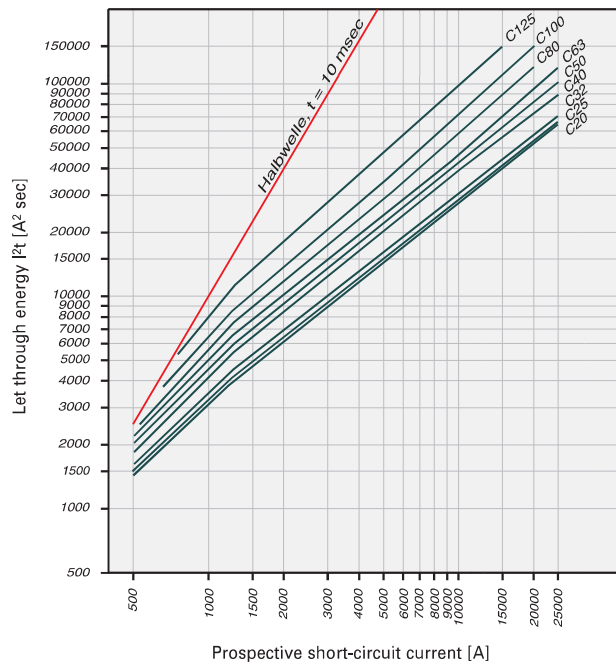
Effect of ambient temperature



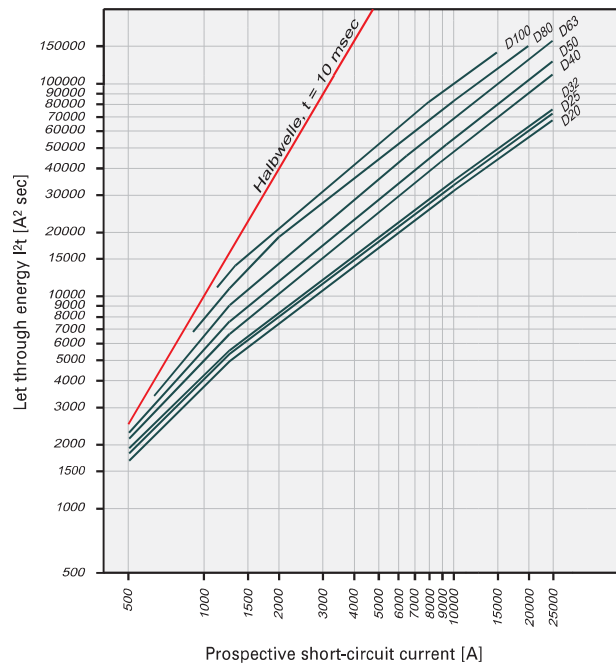
Permitted permanent load at ambient temperature T [°C] with n devices: $I_{DL} = I_n K_T(T) K_N(N)$.

Let-through Energy

Maximum let-through energy PLHT, characteristic C, 1-pole



Maximum let-through energy PLHT, characteristic D, 1-pole



Determined according to EN 60898-1.

Short Circuit Selectivity

- Short circuit selectivity (in kA) between PLHT and upstream fuse D0 or NH, operating class gL/gG
- 1.4 ... selectivity up to 1.4 kA; ... no selectivity

Selectivity towards back-up fuses D01, D02, D03

Rated current I_n PLHT in A		Rated current of the back-up fuse in A					
		25	35	50	63	80	100
C- Characteristic	20	0.5	1.0	2.0	2.9	3.9	7.6
	25		1.0	1.9	2.8	3.8	7.3
	32		1.0	1.8	2.7	3.6	7.0
	40			1.6	2.2	3.0	5.6
	50				2.1	2.8	5.2
	63					2.7	4.8
	80						4.3
	100						
	125						
	160						
D- Characteristic	20	0.5	0.9	1.7	2.5	3.4	6.7
	25		0.9	1.6	2.3	3.2	6.2
	32		0.9	1.5	2.3	3.0	6.0
	40			1.4	2.0	2.6	4.7
	50				1.8	2.3	4.3
	63					2.1	3.7
	80						3.1
	100						
	125						
	160						

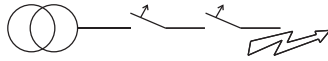
Selectivity towards back-up fuses NH Gr. 00

Rated current I_n PLHT in A		Rated current of the back-up fuse in A									
		25	35	40	50	63	80	100	125	160	200
C- Characteristic	20	0.5	1.0	1.3	1.9	2.7	3.7	6.7	17.0	25.0	25.0
	25		0.9	1.3	1.8	2.6	3.5	6.5	17.0	25.0	25.0
	32		0.9	1.2	1.7	2.4	3.3	6.0	15.0	23.0	25.0
	40				1.4	2.1	2.9	4.8	12.0	18.0	25.0
	50					1.9	2.7	4.5	11.0	17.0	25.0
	63							4.2	10.0	15.0	25.0
	80							3.8	8.5	12.0	25.0
	100								7.0	10.0	25.0
	125									7.5	25.0
	160										25.0
D- Characteristic	20	<0.5	0.8	1.1	1.5	2.3	3.1	5.6	16.0	25.0	25.0
	25		0.7	1.0	1.4	2.1	3.0	5.3	14.0	23.0	25.0
	32		0.7	1.0	1.3	2.1	2.9	5.0	13.0	22.0	25.0
	40				1.1	1.8	2.5	4.2	10.0	15.0	25.0
	50					1.6	2.3	3.8	8.5	13.0	22.0
	63						2.1	3.2	7.0	10.5	18.0
	80							2.8	5.5	8.4	15.0
	100								4.8	7.5	12.5

Short Circuit Selectivity PLHT towards NZM 1

In case of short circuit, there is selectivity between the miniature circuit breakers PLHT and the upstream NZM up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s , only the MCB will trip, in case of short circuit currents above this value both protective devices will respond). Overload and short-circuit release unit NZM at max. value.

*) basically in accordance with EN 60898-1 D.5.2.b



Short circuit selectivity **characteristic C** towards **NZM***)

PLHT	NZM...1-A gL/gG					
I_n [A]	40	50	63	80	100	125
20	0.3	0.4	0.5	0.75	0.9	1.25
25	0.3	0.4	0.5	0.7	0.9	1.2
32		0.4	0.5	0.7	0.85	1.2
40			0.5	0.6	0.85	1.1
50				0.6	0.85	1.1
63					0.8	1
80						1
100						
125						

Short circuit selectivity **characteristic D** towards **NZM***)

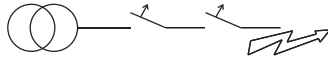
PLHT	NZM...1-A gL/gG					
I_n [A]	40	50	63	80	100	125
50						
63						
80						
100						

no selectivity

Short Circuit Selectivity PLHT towards NZM 2

In case of short circuit, there is selectivity between the miniature circuit breakers PLHT and the upstream NZM up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s , only the MCB will trip, in case of short circuit currents above this value both protective devices will respond). Overload and short-circuit release unit NZM at max. value.

*) basically in accordance with EN 60898-1 D.5.2.b



Short circuit selectivity **characteristic C** towards **NZM***)

PLHT	NZM...2-A gL/gG								
I_n [A]	40	50	63	80	100	125	160	200	250
20	0.3	0.4	0.5	0.75	0.9	1.25	1.8	2.5	3.5
25	0.3	0.4	0.5	0.7	0.9	1.2	1.7	2.4	3.3
32		0.4	0.5	0.7	0.85	1.2	1.65	2.3	3.2
40			0.5	0.6	0.85	1.1	1.5	2.1	2.9
50				0.6	0.85	1.1	1.5	2	2.8
63					0.8	1	1.4	1.8	2.5
80						1	1.4	1.8	2.4
100							1.3	1.7	2.3
125								1.6	2.1

Short circuit selectivity **characteristic D** towards **NZM***)

PLHT	NZM...2-A gL/gG								
I_n [A]	40	50	63	80	100	125	160	200	250
50							1	1.4	2.6
63							1	1.3	2.3
80									2.1
100									

no selectivity

Specifications | Miniature Circuit Breakers PLHT-V

Description

- Special type of miniature circuit breaker PLHT for trade and industry applications upstream of the meter
- Independent switching contacts
- High current limit
- With isolator function, meets the requirements of insulation co-ordination, distance between contacts ≥ 4 mm, for secure isolation
- Anti-Tamper device and Switchoff interlock available

Accessories:

Auxiliary switch for subsequent installation (0.5 MU)	Z-LHK	248440
Shunt trip release subsequent installation (1.5 MU)	Z-LHASA/230	248442
	Z-LHASA/24	248441
Neutral disconnector	Z-NTS	248443
Busbar see capter busbar systems		

Connection diagram



Technical Data

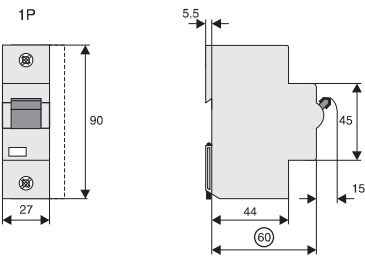
Electrical

Design according to	EN 60947-2
Current test marks as printed onto the device	
Rated voltage	
AC	230/400V
DC	60V (per pole, max. 2 poles)
Rated frequency	50/60 Hz
Ultimate short circuit breaking capacity	25 kA
acc. to IEC/EN 60947-2	
Service short circuit breaking capacity	20 kA
Rated breaking capacity	
DC	max. 60V, 1-pole
Characteristic	similar to D
Back-up fuse	max. 200 A gL (>20 kA)
Rated insulation voltage	440 V
Peak withstand voltage Uimp	4 kV
Selectivity class	in acc. with class 3
Endurance	≥ 20,000 switching op.

Mechanical

Frame size	45 mm
Device height	90 mm
Device width	27 mm (1.5MU) per pole
	30 mm per pole PLHT-V with interlock
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Upper and lower terminals	lift terminals
Terminal protection	finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity	2.5-50 mm ²

Dimensions (mm)

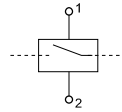


Specifications | Accessories for PLHT, PLHT-V

Shunt trip release Z-LHASA

- Can be mounted subsequently
- Contact position indicator red - green
- Marking labels can be fitted
- Wide operational voltage range
- Sufficient power of extra low voltage source must be ensured
Z-LHASA/24: min. 90 VA

Connection diagram



Technical Data

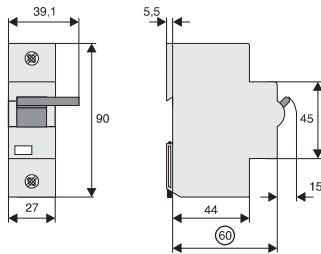
Electrical

Operational voltage range	
Z-LHASA/230:	110-415 V~
Z-LHASA/24:	12-60 V~
Operational frequency	50-60 Hz
Maximum current consumption during switch-on at U_n	
Z-LHASA/230:	2 A
Z-LHASA/24:	18 A

Mechanical

Frame size	45 mm
Device height	90 mm
Device width	27 mm
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Upper and lower terminals	lift terminals

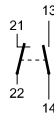
Dimensions (mm)



Auxiliary switch Z-LHK

- Auxiliary switch according to IEC 947-5-1
- Can be mounted subsequently

Connection diagram



Technical Data

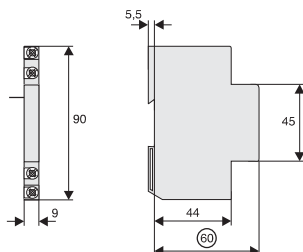
Electrical

Rated operational current	(250 V~) 6A/AC13
Mindest-Minimum operational voltage	24V each line
Rated thermal current	8 A
Rated insulation voltage	440 V~
Maximum back-up fuse	6 A gL or CLS6-4./B-HS
Contacts	1NO+1NC
Utilisation category AC13	6A/250VAC 2A/440VAC
Utilisation category DC13	4A/60VDC 2A/110VDC 0.5A/230VDC

Mechanical

Frame size	45 mm
Device height	90 mm
Device width	9 mm
Mounting	mounted onto protective devices
Degree of protection, built-in	IP40
Upper and lower terminals	lift terminals
Terminal capacity	1 x 1 mm ² to 2 x 2.5 mm ²

Dimensions (mm)



Specifications | Accessories for PLHT-V

Anti-tamper device LHSP-E, LH-SPL

- Prevents undesired switching ON or OFF

Switchoff interlock LHSP-A

- Prevents undesired switch-OFF

Busbar block 35 mm² Z-SV-35/PLHT-V, 3-pole (see capter busbar systems)

- 110/220 A
- Step distance 30 mm

Dimensions (mm)

