

SG17011



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## Protective Devices

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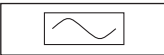

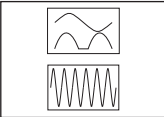

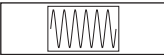
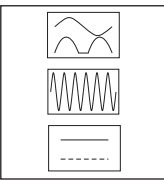
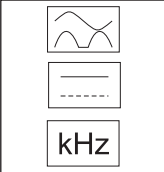
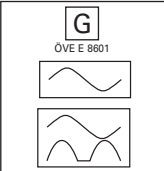
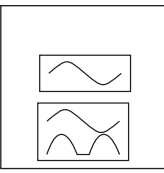


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## Residual Current Devices - General Data

### Short description of the most important RCD types

























Symbol	Description
	Eaton standard. Suitable for outdoor installation (distribution boxes for outdoor installation and building sites) up to -25° C.
	Conditionally surge-current proof (>250 A, 8/20 μs) for general application.
	Type AC: AC current sensitive RCCB
	Type A: AC and pulsating DC current sensitive RCCB
	Type F: AC and pulsating DC current sensitive RCCB, trip also at frequency composition (10 Hz, 50 Hz, 1000 Hz)
	Frequency range up to 20 kHz
	Trip also at frequency composition (10 Hz, 50 Hz, 1000 Hz)
	Type B: All-current sensitive RCD switchgear for applications where DC fault currents may occur. Non-selective, non-delayed. Protection against all kinds of fault currents.
	Type B+: All-current sensitive RCD switchgear for applications where DC fault currents may occur. Non-selective, non-delayed. Protection against all kinds of fault currents. Also meets the requirements of the VDE 0664-400 standard (formerly known as VDE V 0664-110) and therefore provides enhanced fire safety.
	RCD of type G (min 10 ms time delay) surge current-proof up to 3 kA. For system components where protection against unwanted tripping is compulsory to avoid personal injury and damage to property (§ 12.1.6 of ÖVE/ÖNORM E 8001-1). Also for systems involving long lines and high line capacity. Some versions are sensitive to pulsating DC. Some versions are available in all-current sensitive design.
	RCD of type S (selective, min 40 ms time delay) surge current-proof up to 5 kA. Mainly used as main switch according to ÖVE/ÖNORM E 8001-1 § 12.1.5, as well as in combination with surge arresters. This is the only RCD suitable for series connection with other types if the rated tripping current of the downstream RCD does not exceed one third of the rated tripping current of the device of type S. Some versions are sensitive to pulsating DC. Some versions are available in all-current sensitive design.
	„X-ray-proof“, for avoiding unwanted tripping caused by x-ray devices.
	„Frequency converter-proof“, for avoiding unwanted tripping caused by frequency converters, speed-controlled drives, etc.

# 1.4

## Protective Devices

General

### Kind of residual current and correct use of RCD Types

Kind of current	Current profile	Correct use / application field of RCCB types						Tripping current
		AC	A	F	B	/ B+		
Sinusoidal AC residual current								0.5 to 1.0 $I_{\Delta n}$
Pulsating DC residual current (positive or negative half-wave)		-						0.35 to 1.4 $I_{\Delta n}$
Cut half-wave current		-						Lead angle 90°: 0.25 to 1.4 $I_{\Delta n}$ Lead angle 135°: 0.11 to 1.4 $I_{\Delta n}$
Half-wave with smooth DC current of 6 mA		-						max. 1.4 $I_{\Delta n}$ + 6 mA
Half-wave with smooth DC current of 10 mA		-	-					max. 1.4 $I_{\Delta n}$ + 10 mA
Smooth DC current		-	-	-				0.5 to 2.0 $I_{\Delta n}$

### Tripping time

#### Break time and non-actuating time for alternating residual currents (r.m.s. values) for type AC and A RCCB

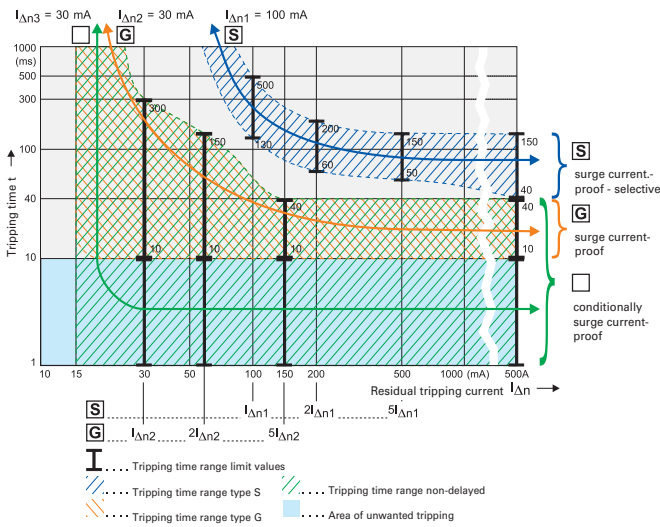
Classification	$I_{\Delta n}$ mA		$I_{\Delta n}$	2 x $I_{\Delta n}$	5 x $I_{\Delta n}$	5 x $I_{\Delta n}$ or 0.25A	500A
Standard RCD Conditionally surge current-proof 250 A	≤30	Max. tripping time (s)	0.3	0,15		0,04	0.04
Standard RCD Conditionally surge current-proof 250 A	>30	Max. tripping time (s)	0.3	0.15	0.04		0.04
RCCB Type G (Short-time-delay) Surge current-proof 3 kA	30	Min. non actuating time(s) Max. tripping time (s)	0.01 0.3	0.01 0.15		0.01 0.04	0.01 0.04
RCCB Type G (Short-time-delay) Surge current-proof 3 kA	>30	Min. non actuating time(s) Max. tripping time (s)	0.01 0.3	0.01 0.15	0.01 0.04		0.01 0.04
RCCB Type S (Selective) Surge current-proof 5 kA	>30	Min. non actuating time(s) Max. tripping time (s)	0.13 0.5	0.06 0.2	0.05 0.15		0.04 0.15

#### Break time for half-wave pulsating residual currents (r.m.s. values) for type A RCCB

Classification	$I_{\Delta n}$ mA		1.4 x $I_{\Delta n}$	2 x $I_{\Delta n}$	2.8 x $I_{\Delta n}$	4 x $I_{\Delta n}$	7 x $I_{\Delta n}$	0.35 A	0.5 A	350A
Standard RCD Conditionally surge current-proof 250 A	<30	Max. tripping time (s)		0.3		0.15			0.04	0.04
Standard RCD Conditionally surge current-proof 250 A	30	Max. tripping time (s)	0.3		0.15			0.04		0.04
Standard RCD Conditionally surge current-proof 250 A	>30	Max. tripping time (s)	0.3		0.15		0.04			0.04
RCCB Type G (Short-time-delay) Surge current-proof 3 kA	30	Max. tripping time (s)	0.3		0.15			0.04		0.04
RCCB Type G (Short-time-delay) Surge current-proof 3 kA	>30	Max. tripping time (s)	0.3		0.15		0.04			0.04
RCCB Type S (Selective) Surge current-proof 5 kA	>30	Max. tripping time (s)	0.5		0.2		0.15			0.15

**Tripping Characteristics (IEC/EN 61008)**

**Tripping characteristics, tripping time range and selectivity of instantaneous, surge current-proof „G” and surge current-proof - selective „S” residual current devices.**



§ 6.1.1 of ÖVE/ÖNORM E 8001-1/A1 deals with **additional protection** and provides essentially the following:

In circuits with **sockets up to 16 A** with fault current/residual current protection by protective earthing, protective multiple earthing or residual current devices (RCDs), additional residual current protection devices with a rated tripping current of **0.03 A** must be installed.

**This means when using RCDs for fault current/residual current protection two RCDs must be connected in series.**

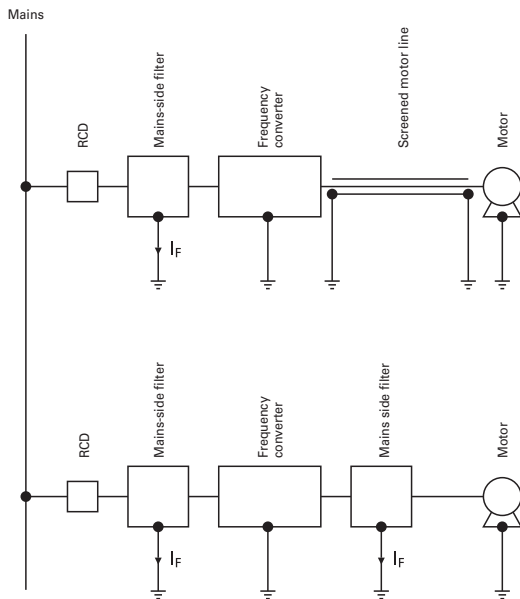
**Testing:**

RCDs with tripping time delay (Types -G and -S) may be function tested with conventional testing equipment which must be set according to the instructions for operation of the testing device. Due to reasons inherent in the measuring process, the tripping time determined in this way may be longer than expected in accordance with the specifications of the manufacturer of the measuring instrument.

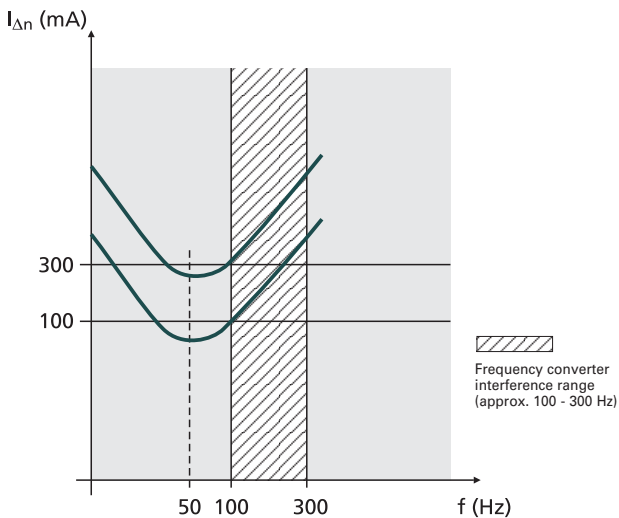
However, the device is ok if the result of measurement is within the time range specified by the manufacturer of the measuring instrument.

### Hints for the application of our frequency converter-proof RCDs:

Due to the currents flowing off through the filters (designated  $I_F$ ), the sum of currents through the RCD is not exactly zero, which causes unwanted tripping.



### Tripping characteristic



Frequency converters are used in a wide variety of systems and equipment requiring variable speed, such as lifts, escalators, conveyor belts, and large washing machines. Using them for such purposes in circuits with conventional residual current devices causes frequent problems with unwanted tripping.

The technical root cause of this phenomenon is the following: Fast switching operations involving high voltages cause high interference levels which propagate through the lines on the one hand, and in the form of interfering radiation on the other. In order to eliminate this problem, a mains-side filter (also referred to as input filter or EMC-filter) is connected between the RCD and frequency converter. The anti-interference capacitors in the filters produce discharge currents against earth which may cause unwanted tripping of the RCD due to the apparent residual currents. Connecting a filter on the output side between frequency converter and 3-phase AC motor results in the same behaviour.

This sample tripping characteristic of a 100 mA RCD and a 300 mA RCD shows the following: In the frequency range around 50 Hz, the RCDs trip as required (50 - 100 % of the indicated  $I_{\Delta n}$ ). In the range shown hatched in the diagram, i. e. from approx. 100 to 300 Hz, unwanted tripping occurs frequently due to the use of frequency converters. Frequency converter-proof residual current devices are much less sensitive in this frequency range than in the 50 - 60 Hz range, which leads to an enormous increase in the reliability of systems.

### Therefore, we recommend to use frequency converter-proof RCDs!

These special residual current devices can be recognised by an extension of the type designation („-U“). They meet the requirements of compatibility between RCDs and frequency converters with respect to unwanted tripping.

These are **NOT AC/DC-sensitive** RCDs of type B !!!

Our RCDs of type „-U“ are characterised by **SENSITIVITY TO RESIDUAL PULSATING DC**  and **SELECTIVITY**  or **SHORT-TIME DELAY**

### Protective Measures

The following rules for the application of RCDs of type „-U“ are only applicable in those cases where an RCD of type „-B“ is not explicitly demanded in the instructions of the manufacturer of the frequency converter.

#### How can you make sure that the required protective measures are in place when using RCDs type „-U“ and frequency converters in one system?

In Austria, the ÖVE Decision EN 219 is applicable.

Under this standard

- frequency converters must be equipped with current limiting devices in order to ensure disconnection in cause of faults or overload, and
- the installer of a system is obliged to make sure that additional equipotential bonding is provided (additional inclusion of all metal components, such as frequency converters, mains filters, motor filters, etc. into the existing equipotential bonding), in order to ensure that the permissible touch voltage of 50 V AC or 120 V DC is

not exceeded. (In ÖVE/ÖNORM E 8001-1 the term „touch voltage“ has been omitted. There is only a fault voltage limit of 65 V AC or 120 V DC which must not be exceeded).

In Germany, VDE 0100 is applicable, in Switzerland SEV 1000.

In case of application in any **other country** than those mentioned take into account national rules and recommendations.

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## Description

- A complete spectrum of compact residual current devices for a wide range of applications
- For fault current/residual current protection and additional protection
- Wide variety of nominal currents
- Comprehensive range of accessories
- Real contact position indicator
- Automatic re-setting possible

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type AC

#### Conditionally surge current-proof 250 A, type AC

SG16611



#### 2-pole

16/0.01	PFIM-16/2/001	235389	1/60
25/0.03	PFIM-25/2/003	235390	1/60
25/0.10	PFIM-25/2/01	235391	1/60
25/0.30	PFIM-25/2/03	235392	1/60
25/0.50	PFIM-25/2/05	235393	1/60
40/0.03	PFIM-40/2/003	235394	1/60
40/0.10	PFIM-40/2/01	235395	1/60
40/0.30	PFIM-40/2/03	235396	1/60
40/0.50	PFIM-40/2/05	235397	1/60
63/0.03	PFIM-63/2/003	235398	1/60
63/0.10	PFIM-63/2/01	235399	1/60
63/0.30	PFIM-63/2/03	235400	1/60
63/0.50	PFIM-63/2/05	235401	1/60
80/0.03	PFIM-80/2/003	235402	1/60
80/0.10	PFIM-80/2/01	235403	1/60
80/0.30	PFIM-80/2/03	235404	1/60
80/0.50	PFIM-80/2/05	235405	1/60
100/0.03	PFIM-100/2/003	102821	1/60
100/0.10	PFIM-100/2/01	102874	1/60
100/0.30	PFIM-100/2/03	102822	1/60

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#### 4-pole

25/0.03	PFIM-25/4/003	235406	1/30
25/0.10	PFIM-25/4/01	235407	1/30
25/0.30	PFIM-25/4/03	235408	1/30
25/0.50	PFIM-25/4/05	235409	1/30
40/0.03	PFIM-40/4/003	235410	1/30
40/0.10	PFIM-40/4/01	235411	1/30
40/0.30	PFIM-40/4/03	235412	1/30
40/0.50	PFIM-40/4/05	235413	1/30
63/0.03	PFIM-63/4/003	235414	1/30
63/0.10	PFIM-63/4/01	235415	1/30
63/0.30	PFIM-63/4/03	235416	1/30
63/0.50	PFIM-63/4/05	235417	1/30
80/0.03	PFIM-80/4/003	235418	1/30
80/0.10	PFIM-80/4/01	235419	1/30
80/0.30	PFIM-80/4/03	235420	1/30
80/0.50	PFIM-80/4/05	235421	1/30
100/0.03	PFIM-100/4/003	102823	1/30
100/0.10	PFIM-100/4/01	102824	1/30
100/0.30	PFIM-100/4/03	102825	1/30
100/0.50	PFIM-100/4/05	102826	1/30



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A** 

SG79511



**2-pole**

16/0.01	PFIM-16/2/001-A	235422	1/60
16/0.03	PFIM-16/2/003-A	235423	1/60
25/0.03	PFIM-25/2/003-A	235424	1/60
25/0.10	PFIM-25/2/01-A	235425	1/60
25/0.30	PFIM-25/2/03-A	235426	1/60
40/0.03	PFIM-40/2/003-A	235427	1/60
40/0.10	PFIM-40/2/01-A	235428	1/60
40/0.30	PFIM-40/2/03-A	235429	1/60
40/0.50	PFIM-40/2/05-A	235430	1/60
63/0.03	PFIM-63/2/003-A	235431	1/60
63/0.10	PFIM-63/2/01-A	235432	1/60
63/0.30	PFIM-63/2/03-A	235433	1/60
63/0.50	PFIM-63/2/05-A	235434	1/60
100/0.10	PFIM-100/2/01-A	102827	1/60
100/0.30	PFIM-100/2/03-A	102828	1/60

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**4-pole**

25/0.03	PFIM-25/4/003-A	235435	1/30
25/0.10	PFIM-25/4/01-A	235436	1/30
25/0.30	PFIM-25/4/03-A	235437	1/30
25/0.50	PFIM-25/4/05-A	235438	1/30
40/0.03	PFIM-40/4/003-A	235439	1/30
40/0.10	PFIM-40/4/01-A	235440	1/30
40/0.30	PFIM-40/4/03-A	235441	1/30
40/0.50	PFIM-40/4/05-A	235442	1/30
63/0.03	PFIM-63/4/003-A	235443	1/30
63/0.10	PFIM-63/4/01-A	235444	1/30
63/0.30	PFIM-63/4/03-A	235445	1/30
63/0.50	PFIM-63/4/05-A	235446	1/30
80/0.03	PFIM-80/4/003-A	235447	1/30
80/0.30	PFIM-80/4/03-A	235448	1/30
100/0.03	PFIM-100/4/003-A	102829	1/30
100/0.10	PFIM-100/4/01-A	102870	1/30
100/0.30	PFIM-100/4/03-A	102871	1/30
100/0.50	PFIM-100/4/05-A	102872	1/30

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type G

##### Surge current-proof 3 kA, type G (ÖVE E 8601)

SG16611



##### 2-pole

25/0.03	PFIM-25/2/003-G	235449	1/60
25/0.10	PFIM-25/2/01-G	235450	1/60
40/0.03	PFIM-40/2/003-G	235451	1/60
40/0.10	PFIM-40/2/01-G	235452	1/60
100/0.10	PFIM-100/2/01-G	110100	1/60

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##### 4-pole

40/0.03	PFIM-40/4/003-G	235453	1/30
40/0.10	PFIM-40/4/01-G	235455	1/30
63/0.03	PFIM-63/4/003-G	235456	1/30
63/0.10	PFIM-63/4/01-G	235458	1/30
80/0.03	PFIM-80/4/003-G	104385	1/30
100/0.03	PFIM-100/4/003-G	104383	1/30
100/0.3	PFIM-100/4/03-G	104384	1/30

#### Type G/A

##### Surge current-proof 3 kA, sensitive to residual pulsating DC, type G/A (ÖVE E 8601)

SG16611



##### 2-pole

40/0.03	PFIM-40/2/003-G/A	108045	1/60
40/0.10	PFIM-40/2/01-G/A	109429	1/60
63/0.03	PFIM-63/2/003-G/A	108046	1/60
80/0.03	PFIM-80/2/003-G/A	108047	1/60
100/0.03	PFIM-100/2/003-G/A	108048	1/60

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##### 4-pole

40/0.03	PFIM-40/4/003-G/A	235454	1/30
63/0.03	PFIM-63/4/003-G/A	235457	1/30
63/0.10	PFIM-63/4/01-G/A	109771	1/30
100/0.03	PFIM-100/4/003-G/A	102875	1/30
100/0.30	PFIM-100/4/03-G/A	102873	1/30

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type R**

**Surge current-proof 3 kA, X-ray application, type R** 

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**4-pole**

63/0.03	PFIM-63/4/003-R	235459	1/30
100/0.03	PFIM-100/4/003-R	102876	1/30

**Type S**

**Selective + surge current-proof 5 kA, type S** 

SG16611



**2-pole**

40/0.10	PFIM-40/2/01-S	235460	1/60
40/0.30	PFIM-40/2/03-S	235461	1/60

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**4-pole**

25/0.30	PFIM-25/4/03-S	235463	1/30
80/0.10	PFIM-80/4/01-S	235473	1/30

**Type S/A**

**Selective + surge current-proof 5 kA, sensitive to residual pulsating DC, type S/A** 

SG16611



**2-pole**

40/0.10	PFIM-40/2/01-S/A	109770	1/60
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**4-pole**

25/0.10	PFIM-25/4/01-S/A	235464	1/30
40/0.10	PFIM-40/4/01-S/A	235467	1/30
40/0.30	PFIM-40/4/03-S/A	235468	1/30
63/0.10	PFIM-63/4/01-S/A	235471	1/30
63/0.30	PFIM-63/4/03-S/A	235472	1/30
80/0.30	PFIM-80/4/03-S/A	235475	1/30
100/0.30	PFIM-100/4/03-S/A	290220	1/30

Type	Type Designation	Article No.	Units per package
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#### Sealing Cover Set Z-RC/AK

- for PFIM, PFR, PF6, PF7, CFI6, dRCM (not to use for PFDM)

SG82011



2-pole	Z-RC/AK-2TE	285385	10/30
4-pole	Z-RC/AK-4MU	101062	10/600

wa\_sg01015



## Description

- MEM Series for Malaysia
- For fault current/residual current protection and additional protection
- Real contact position indicator
- Automatic re-setting possible
- Comprehensive range of accessories

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type AC

#### Conditionally surge current-proof 250 A, type AC

wa\_sg00915



#### 2-pole

16/0.03	PFIM-16/2/003-MY	182981	1/60
25/0.03	PFIM-25/2/003-MY	182982	1/60
40/0.03	PFIM-40/2/003-MY	182983	1/60
40/0.30	PFIM-40/2/01-MY	182984	1/60
40/0.30	PFIM-40/2/03-MY	182985	1/60
63/0.03	PFIM-63/2/003-MY	182987	1/60
63/0.10	PFIM-63/2/01-MY	182988	1/60
63/0.30	PFIM-63/2/03-MY	182989	1/60

wa\_sg01015



#### 4-pole

40/0.03	PFIM-40/4/003-MY	184482	1/30
40/0.10	PFIM-40/4/01-MY	183197	1/30
40/0.30	PFIM-40/4/03-MY	182986	1/30
63/0.03	PFIM-63/4/003-MY	184483	1/30
63/0.10	PFIM-63/4/01-MY	182990	1/30
63/0.30	PFIM-63/4/03-MY	182991	1/30

SG62111



## Description

- Special residual current devices
  - for frequency converter applications
- Für Fehler- and Zusatzschutz
- Comprehensive range of accessories
- Real contact position indicator
- Selective or short-time delayed

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type U

#### Selective + surge current-proof 5 kA, frequency converter-proof, type U

SG62111



#### 4-pole

40/0.10	PFIM-40/4/01-U	235744	1/30
40/0.30	PFIM-40/4/03-U	235745	1/30
63/0.10	PFIM-63/4/01-U	235746	1/30
63/0.30	PFIM-63/4/03-U	235747	1/30
80/0.30	PFIM-80/4/03-U	290221	1/30
100/0.30	PFIM-100/4/03-U	290222	1/30

#### Type U

#### Short-time delayed + surge current-proof 3 kA, frequency converter-proof, type U

SG62111



#### 4-pole

63/0.03	PFIM-63/4/003-U	285465	1/30
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SG62011



## Description

- Special residual current devices
  - back up protection with nominal value possible (overload protection)
- For fault current/residual current protection and additional protection
- Comprehensive range of accessories
- Real contact position indicator
- Automatic re-setting possible
- Special U-types available

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type AC, type A

Conditionally surge current-proof 250 A, type AC , type A 

SG16611











#### 2-pole

40/0.03 	PFIM-40/2/003-X	110089	1/60
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SG62011



#### 4-pole

40/0.03 	PFIM-40/4/003-X	235737	1/30
40/0.10 	PFIM-40/4/01-X	235738	1/30
63/0.03 	PFIM-63/4/003-X	274293	1/30
63/0.10 	PFIM-63/4/01-X	274296	1/30
40/0.03 	PFIM-40/4/003-XA	235739	1/30
63/0.03 	PFIM-63/4/003-XA	294163	1/30
63/0.10 	PFIM-63/4/01-XA	293304	1/30
63/0.30 	PFIM-63/4/03-XA	293305	1/30






#### Type G, type G/A

Surge current-proof 3 kA, type G (ÖVE E 8601), type G , type G/A 

SG62011



#### 4-pole

40/0.03 	PFIM-40/4/003-XG	235742	1/30
40/0.10 	PFIM-40/4/01-XG	274292	1/30
63/0.10 	PFIM-63/4/01-XG	293306	1/30
40/0.03 	PFIM-40/4/003-XG/A	235743	1/30
63/0.03 	PFIM-63/4/003-XG/A	103016	1/30





#### Type S/A

Selective + surge current-proof 5 kA, sensitive to residual pulsating DC, type S/A 

SG62011



#### 4-pole

40/0.10 	PFIM-40/4/01-XS/A	235740	1/30
40/0.30 	PFIM-40/4/03-XS/A	235741	1/30
63/0.10 	PFIM-63/4/01-XS/A	274294	1/30
63/0.30 	PFIM-63/4/03-XS/A	274295	1/30



#### Type U

Selective + surge current-proof 5 kA, frequency converter-proof, type U 

SG62011



#### 4-pole

40/0.10 	PFIM-40/4/01-XU	235748	1/30
40/0.30 	PFIM-40/4/03-XU	235749	1/30

**Specifications | Residual Current Devices PFIM**

**Description**

- Residual Current Devices
- Shape compatible with and suitable for standard busbar connection to other devices of the P-series
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Universal tripping signal switch, also suitable for PLS., PKN., Z-A. can be mounted subsequently
- Auxiliary switch Z-HK can be mounted subsequently
- Contact position indicator red - green
- Delayed types suitable for being used with standard fluorescent tubes with or without electronical ballast (30mA-RCD: 30 units per phase conductor, 100mA-RCD: 90 units per phase conductor).  
Notes: Depending of the fluorescent lamp ballast manufacturer partly more possible. Symmetrical allocation of the fluorescent lamp ballasts on all phases favourably. Shifting references of the fluorescent lamp ballast manufacturer consider.
- The device functions irrespective of the position of installation
- Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the the meaning of the applicable installation rules
- Mains connection at either side
- The 4-pole device can also be used for 2- or 3-pole connection. See connection possibilities.
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have have not been smoothed
- **Type -G:** High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE/ÖNORM E 8001-1 § 12.1.6)
- **Type -G/A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed  
Special types for X-ray application PFIM-...-R
- **Type -R:** To avoid unwanted tripping due to X-ray devices
- **Type -S:** Selective residual current device sensitive to AC, type -S. Compulsory for systems with surge arresters downstream of the RCD (ÖVE/ÖNORM E 8001-1 § 12.1.5).
- **Type -S/A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed
- **Type -U:** Suitable for speed-controlled drives with frequency converters in household, trade, and industry.  
Unwanted tripping is avoided thanks to a tripping characteristic designed particularly for frequency converters.  
See also explanation "Frequency Converter-Proof RCDs - What for?"  
Application according to ÖVE/ÖNORM E 8001-1 and Decision EN 219 (1989), VDE 0100, SEV 1000.

**Accessories:**

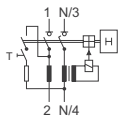
Auxiliary switch for subsequent installation to the left	Z-HK	248432
Tripping signal contact for subsequent installation to the right	Z-NHK	248434
Remote control and automatic switching device	Z-FW/LP	248296
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Sealing cover set	Z-RC/AK-2TE	285385
	Z-RC/AK-4MU	101062

## Technical Data

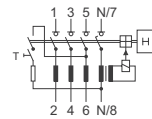
		PFIM	
<b>Electrical</b>			
Design according to		IEC/EN 61008 Type G according to ÖVE E 8601	
Current test marks as printed onto the device			
Tripping		instantaneous	
Type G, R		10 ms delay	
Type S		40 ms delay - selective disconnecting function	
Type U (only 30 mA)		10 ms delay	
Type U (without 30 mA)		40 ms delay - selective disconnecting function	
Rated voltage	$U_n$	230/400 V AC, 50 Hz	
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300, 500 mA	
Sensitivity		AC and pulsating DC	
Rated insulation voltage	$U_i$	440 V	
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)	
Rated short circuit strength	$I_{cn}$	10 kA	
Maximum back-up fuse		Short circuit	Overload
$I_n = 16$ A		63 A gG/gL	10 A gG/gL
$I_n = 25$ A		63 A gG/gL	16 A gG/gL
$I_n = 40$ A		63 A gG/gL	25 A gG/gL
$I_n = 63$ A		63 A gG/gL	40 A gG/gL
$I_n = 80$ A		80 A gG/gL	50 A gG/gL
$I_n = 100$ A		100 A gG/gL	63 A gG/gL
Type PFIM-X:			
$I_n = 40$ A		40 A gG/gL	40 A gG/gL
$I_n = 63$ A		63 A gG/gL	63 A gG/gL
In the case that the maximal possible operating current of the electrical installation don't exceed the rated current of the RCD only short circuit protection must be implemented. Overload protection must be implemented in the case if the maximal possible operating current of the electrical installation can exceed the rated current of the RCD.			
Rated breaking capacity	$I_m$		
Rated fault breaking capacity	$I_{\Delta m}$		
$I_n = 16-40$ A		500 A	
$I_n = 63$ A		630 A	
$I_n = 80$ A		800 A	
$I_n = 100$ A		1000 A	
Voltage range of test button			
2-pole		196 - 264 V~	
4-pole 30 mA		196 - 264 V~	
4-pole 10, 100, 300, 500 mA		196 - 456 V~	
Endurance			
electrical components		$\geq 4,000$ switching operations	
mechanical components		$\geq 20,000$ switching operations	
<b>Mechanical</b>			
Frame size		45 mm	
Device height		80 mm	
Device width		35 mm (2MU), 70 mm (4MU)	
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715	
Degree of protection, built-in		IP40	
Degree of protection in moisture-proof enclosure		IP54	
Upper and lower terminals		open mouthed/lift terminals	
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274	
Terminal capacity		1.5 - 35 mm <sup>2</sup> single wire 2 x 16 mm <sup>2</sup> multi wire	
Terminal screw		M5 (mit geschlitzter Schraube according to EN ISO 4757-Z2, Pozidriv PZ2)	
Terminal torque		2 - 2.4 Nm	
Busbar thickness		0.8 - 2 mm	
Tripping temperature		-25°C to +40°C	
Storage- and transport temperature		-35°C to +60°C	
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2	

Connection diagrams

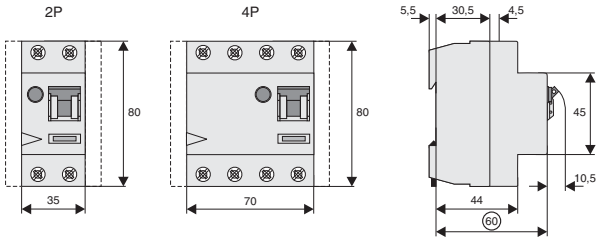
2-pole



4-pole



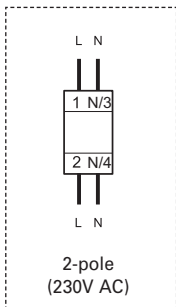
Dimensions (mm)



Correct connection

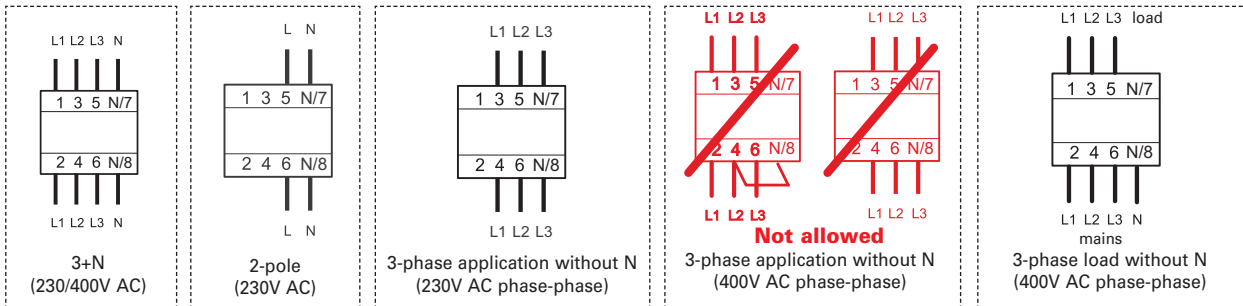
2-pole

30, 100, 300, 500mA types:

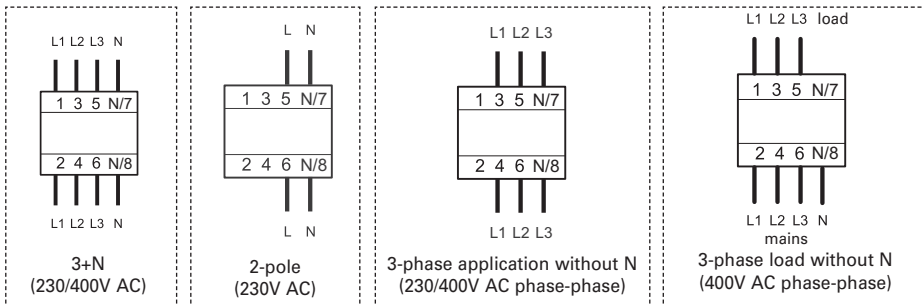


4-pole

30mA types:



10, 100, 300, 500mA types:



**Influence of the ambient temperature to the maximum continuous current (A)**

Ambient temperature	16A		25A		40A		63A		80A		100A	
	2p	4p	2p	4p	2p	4p	2p	4p	2p	4p	2p	4p
40°	16	16	25	25	40	40	63	63	80	80	100	100
45°	14	14	21	22	37	37	59	59	76	76	95	95
50°	11	11	18	19	33	34	55	55	72	72	90	90
55°	9	9	14	16	30	31	50	50	68	68	85	85
60°	– *)	–	–	–	26	27	45	45	64	64	80	80

Annotation: It has to be ensured that the values in the table are not exceeded and the back-up fuse/thermal protection works properly.

\*) not applicable

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## Description

- Increased protection in applications with 1phase frequency converter due to the detection of mixed frequencies
- Reduction of nuisance tripping thanks to
  - time delayed tripping
  - increased current withstand capability > 3 kA
- Higher load rating with DC residual currents up to 10 mA
- For fault current/residual current protection and additional protection
- Comprehensive range of accessories
- Real contact position indicator
- Automatic re-setting possible

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type G/F

**Surge current-proof 3 kA, sensitive to residual pulsating DC, type G/F (ÖVE E 8601)**



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#### 2-pole

25/0.03	PFIM-25/2/003-G/F	187449	1/60
25/0.30	PFIM-25/2/03-G/F	187452	1/60
40/0.03	PFIM-40/2/003-G/F	187450	1/60
40/0.30	PFIM-40/2/03-G/F	187453	1/60
63/0.03	PFIM-63/2/003-G/F	187451	1/60
63/0.30	PFIM-63/2/03-G/F	187454	1/60

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#### 4-pole

25/0.03	PFIM-25/4/003-G/F	187455	1/30
25/0.30	PFIM-25/4/03-G/F	187359	1/30
40/0.03	PFIM-40/4/003-G/F	187456	1/30
40/0.30	PFIM-40/4/03-G/F	187360	1/30
63/0.03	PFIM-63/4/003-G/F	187358	1/30
63/0.30	PFIM-63/4/03-G/F	187361	1/30

#### Type S/F

**Selective + surge current-proof 5 kA, sensitive to residual pulsating DC, type S/F**



wa\_sg02716



#### 4-pole

25/0.30	PFIM-25/4/03-S/F	187362	1/30
40/0.30	PFIM-40/4/03-S/F	187363	1/30
63/0.30	PFIM-63/4/03-S/F	187364	1/30



**Specifications | Residual Current Devices PFIM-F**

**Description**

- Residual Current Devices
  - Shape compatible with and suitable for standard busbar connection to other devices of the P-series
  - Twin-purpose terminal (lift/open-mouthed) above and below
  - Busbar positioning optionally above or below
  - Free terminal space despite installed busbar
  - Universal tripping signal switch, also suitable for PLS., PKN., Z-A. can be mounted subsequently
  - Auxiliary switch Z-HK can be mounted subsequently
  - Contact position indicator red - green
  - Delayed types suitable for being used with standard fluorescent tubes with or without electronical ballast (30mA-RCD: 30 units per phase conductor).  
Notes: Depending of the fluorescent lamp ballast manufacturer partly more possible. Symmetrical allocation of the fluorescent lamp ballasts on all phases favourably. Shifting references of the fluorescent lamp ballast manufacturer consider.
  - The device functions irrespective of the position of installation
  - Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the the meaning of the applicable installation rules
  - Mains connection at either side
  - The 4-pole device can also be used for 2- or 3-pole connection. See connection possibilities.
  - The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
  - Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -F:** Increased protection in applications with 1phase frequency converter due to the detection of mixed frequencies, higher load capacity with smooth DC fault currents up to 10 mA.

**Accessories:**

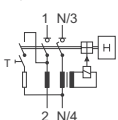
Auxiliary switch for subsequent installation to the left	Z-HK	248432
Tripping signal contact for subsequent installation to the right	Z-NHK	248434
Remote control and automatic switching device	Z-FW/LP	248296
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Sealing cover set	Z-RC/AK-2TE	285385
	Z-RC/AK-4MU	101062

#### Technical Data

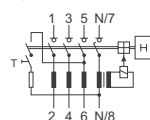
		PFIM-F
<b>Electrical</b>		
Design according to		IEC/EN 62423 Type G according to ÖVE E 8601
Current test marks as printed onto the device		
Tripping		instantaneous
Type G		10 ms delay
Type S		40 ms delay - selective disconnecting function
Rated voltage	$U_n$	230/400 V AC, 50 Hz
Rated tripping current	$I_{\Delta n}$	30, 300 mA
Sensitivity		AC and pulsating DC
Rated insulation voltage	$U_i$	440 V
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Rated short circuit strength	$I_{cn}$	10 kA
Maximum back-up fuse		Short circuit                      Overload
$I_n = 25$ A		63 A gG/gL                      16 A gG/gL
$I_n = 40$ A		63 A gG/gL                      25 A gG/gL
$I_n = 63$ A		63 A gG/gL                      40 A gG/gL
In the case that the maximal possible operating current of the electrical installation don't exceed the rated current of the RCD only short circuit protection must be implemented. Overload protection must be implemented in the case if the maximal possible operating current of the electrical installation can exceed the rated current of the RCD.		
Rated breaking capacity	$I_m$	
Rated fault breaking capacity	$I_{\Delta m}$	
$I_n = 16-40$ A		500 A
$I_n = 63$ A		630 A
Voltage range of test button		
2-pole		196 - 264 V~
4-pole 30 mA		196 - 264 V~
4-pole 300 mA		196 - 456 V~
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU), 70 mm (4MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in		IP40
Degree of protection in moisture-proof enclosure		IP54
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1.5 - 35 mm <sup>2</sup> single wire 2 x 16 mm <sup>2</sup> multi wire
Terminal screw		M5 (mit geschlitzter Schraube according to EN ISO 4757-Z2, Pozidriv PZ2)
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

#### Connection diagrams

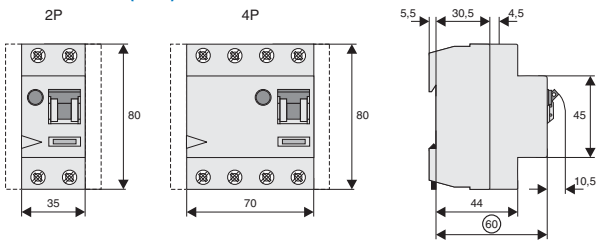
2-pole



4-pole



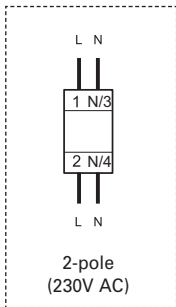
Dimensions (mm)



Correct connection

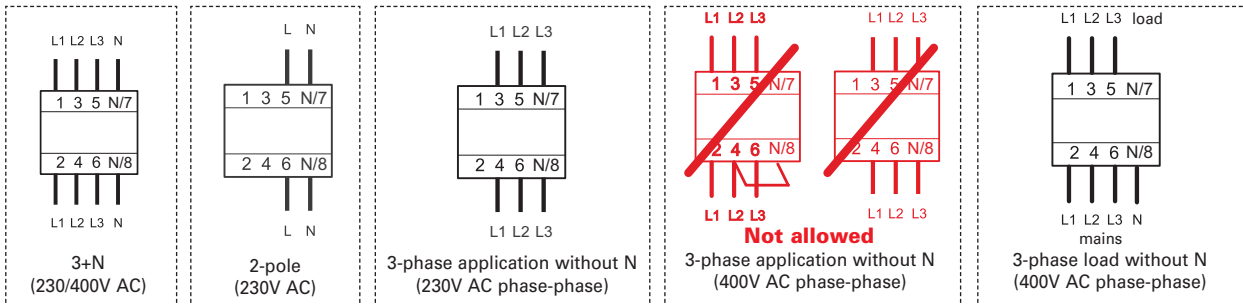
2-pole

30, 300mA types:

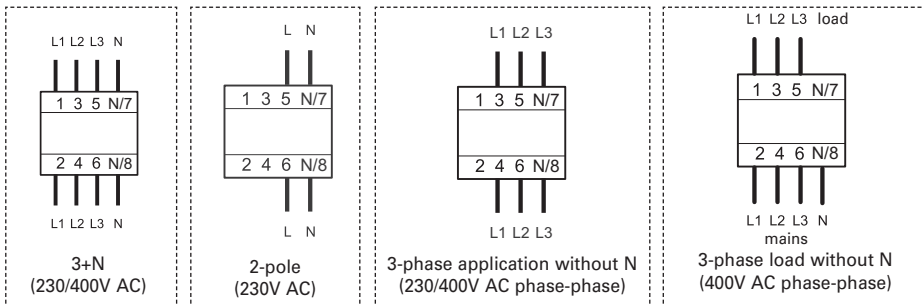


4-pole

30mA types:



300mA types:



wa\_ren\_02619



## Description

- All-current sensitive RCCB for fault or additional protection
- 4-pole types can also be used as 2-pole devices for photovoltaic / EV charging applications
- New level of accuracy -> reduced unwanted tripping
  - time delay tripping
  - increased current withstand capability
    - > 3 kA
  - handles all DC currents
  - handles mixed frequencies up to 1kHz
- Back up protection with nominal value possible (overload protection)
- Yearly test interval
- Real contact position indicator
- Automatic re-setting possible
- Transparent designation plate

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type G/B**

**Short-time-delayed + surge current-proof 3 kA, all current-sensitive, Type G/B (ÖVE E 8601)**

wa\_ren\_02619



**4-pole**

40/0.03	PFIM-40/4/003-XG/B	300305	1/30
63/0.03	PFIM-63/4/003-XG/B	300306	1/30

**Type S/B**

**Selective + surge current-proof 5 kA, all current-sensitive, Type S/B**

wa\_ren\_02719



**4-pole**

40/0.30	PFIM-40/4/03-XS/B	300307	1/30
63/0.30	PFIM-63/4/03-XS/B	300308	1/30

## Specifications | Residual Current Devices PFIM-B

### Description

- Residual Current Devices
- Shape compatible with and suitable for standard busbar connection to other devices of the P-series
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Universal tripping signal switch, also suitable for PLS., PKN., Z-A. can be mounted subsequently
- Auxiliary switch Z-HK can be mounted subsequently
- Contact position indicator red - green
- Delayed types suitable for being used with standard fluorescent tubes with or without electronical ballast (30mA-RCD: 30 units per phase conductor)  
Notes: Depending of the fluorescent lamp ballast manufacturer partly more possible. Symmetrical allocation of the fluorescent lamp ballasts on all phases favourably. Shifting references of the fluorescent lamp ballast manufacturer consider.
- The device functions irrespective of the position of installation
- The RCD is suitable for "fault protection" and "additional protection" within the meaning of the applicable installation rules.
- The 4-pole device can also be used for 2- or 3-pole connection.  
See connection possibilities.
- The test key "T" must be pressed every year. The system operator must be informed of this obligation and his responsibility in a way that can be proven. Under special conditions (e.g. damply and/or dusty environments, environments with polluting and/or corroding conditions, environments with large temperature fluctuations, installations with a risk of overvoltages due to switching of equipment and/or atmospheric discharges, portable equipment ...), it's recommended to test in monthly intervals.
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -G/B:** High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE/ÖNORM E 8001-1 § 12.1.6). Protection against all types of fault currents.
- **Type -S/B:** Selective residual current device. Protection against all types of fault currents.

### Accessories:

Auxiliary switch for subsequent installation to the left	Z-HK	248432
Tripping signal contact for subsequent installation to the right	Z-NHK	248434
Remote control and automatic switching device	Z-FW/LP	248296
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Sealing cover set	Z-RC/AK-2TE	285385
	Z-RC/AK-4MU	101062

**Technical Data**

		<b>PFIM-B</b>	
<b>Electrical</b>			
Design according to		acc. to IEC/EN 61008, IEC/EN 62423, additional acc. to ÖVE E 8601	
Current test marks as printed onto the device			
Tripping			
Type G		10 ms delay @ 50 Hz	
Type S		40 ms delay @ 50 Hz - with selective disconnecting function	
Rated voltage	$U_n$	230/400 V AC, 50 Hz	
Limits operation voltage electronic		50 – 456V AC	
Limits operation voltage test circuit			
30 mA		196 - 253V AC	
300 mA		196 - 440V AC	
Rated tripping current	$I_{\Delta n}$	30, 300 mA	
Sensitivity		All types of current	
Rated insulation voltage	$U_i$	440 V	
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)	
Rated short circuit capacity	$I_{cn}$	10 kA with back-up fuse	
Maximum back-up fuse		Short circuit	Overload
$I_n = 40$ A		63 A gG/gL	40 A gG/gL
$I_n = 63$ A		63 A gG/gL	63 A gG/gL
<b>Important:</b> In the case that the maximal possible operating current of the electrical installation don't exceed the rated current of the RCD only short circuit protection must be implemented. Overload protection must be implemented in the case if the maximal possible operating current of the electrical installation can exceed the rated current of the RCD.			
Peak withstand current			
Type G/B		3 kA (8/20 $\mu$ s) surge current-proof	
Type S/B		5 kA (8/20 $\mu$ s) selective + surge current-proof	
Rated breaking capacity	$I_m$		
Rated fault breaking capacity	$I_{\Delta m}$		
$I_n = 25-40$ A		500 A	
$I_n = 63$ A		630 A	
Endurance			
electrical components		$\geq 4,000$ switching operations	
mechanical components		$\geq 20,000$ switching operations	
<b>Mechanical</b>			
Frame size		45 mm	
Device height		80 mm	
Device width		70 mm (4MU)	
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715	
Degree of protection, built-in		IP40	
Degree of protection in moisture-proof enclosure		IP54	
Upper and lower terminals		open mouthed/lift terminals	
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274	
Terminal capacity		1.5 - 35 mm <sup>2</sup> single wire 2 x 16 mm <sup>2</sup> multi wire	
Terminal screw		M5 (with slotted screw acc. to EN ISO 4757-Z2, Pozidriv PZ2)	
Terminal torque		2 - 2.4 Nm	
Busbar thickness		0.8 - 2 mm	
Operation temperature		-25°C to +40°C (for higher values see table on ambient temperature)	
Storage- and transport temperature		-35°C to +60°C	
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2	
Contact position indicator		red / green	

**Power Loss at  $I_n$  PFIM-B**

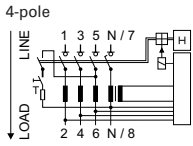
(entire unit)	
$I_n$ [A]	P* [W]
40	6.2
63	10.0

\* 50Hz

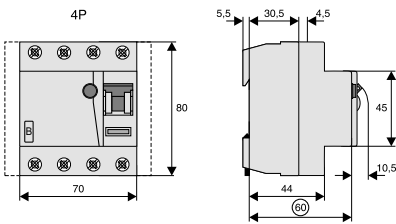
**Influence of the ambient temperature to the maximum continuous current (A)**

Ambient temperature	40A	63A
	4p	4p
40°	40	63
45°	37	56
50°	34	50
55°	31	45
60°	27	40

### Connection diagram

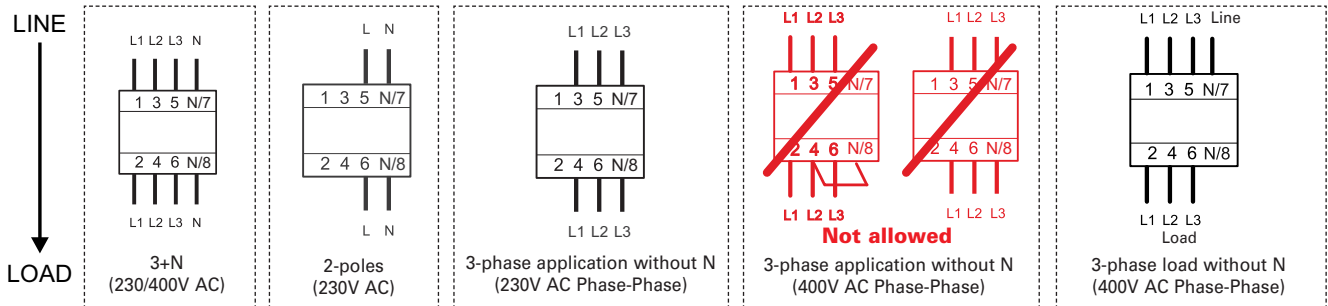


### Dimensions (mm)

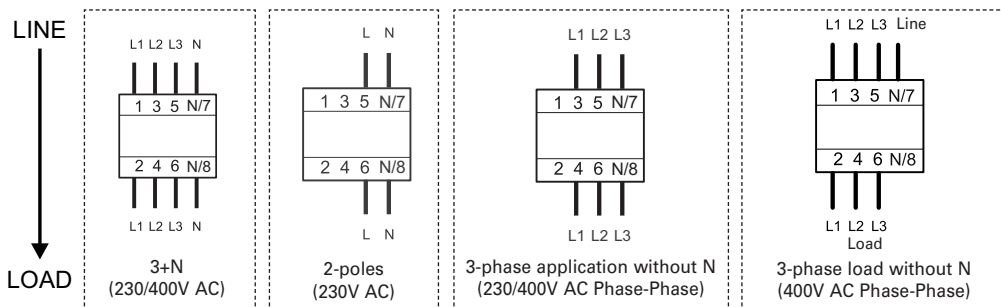


### Correct connection

30mA Types:



300mA Types:

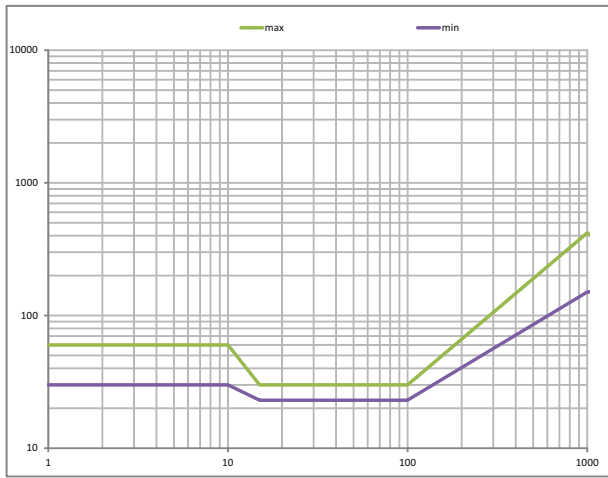


- Disconnect load side of the switch gear, if you make a insulation test of the installation!
- Please take care of supply side and load side!

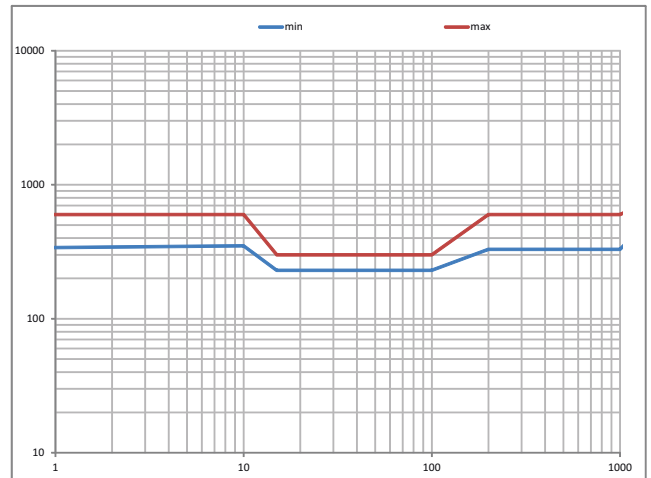


Tripping current frequency response PFIM-B

Type B 30mA




Type B 300mA



SG08211



### Description

- A complete spectrum of compact residual current devices for a wide range of applications to 100 A
- Rated short circuit strength 10 kA
- Especially for protection against accidents caused by current and property protection
- Wide variety of types (G, S, A, G/A, S/A, R, U, ...)
- Special type U for frequency converter applications with high surge current proof
- Comprehensive range of accessories can be mounted subsequently
- Frost resistance 

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**Conditionally surge current-proof 250 A, type AC** 

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**2-pole**

25/0.03	PF7-25/2/003	263577	1/60
25/0.10	PF7-25/2/01	263578	1/60
40/0.03	PF7-40/2/003	263579	1/60
40/0.10	PF7-40/2/01	263580	1/60
63/0.03	PF7-63/2/003	263581	1/60
63/0.10	PF7-63/2/01	263582	1/60
63/0.30	PF7-63/2/03	263583	1/60
100/0.03	PF7-100/2/003	166797	1/60
100/0.10	PF7-100/2/01	166799	1/60
100/0.30	PF7-100/2/03	166822	1/60

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**4-pole**

25/0.03	PF7-25/4/003	263584	1/30
25/0.10	PF7-25/4/01	263585	1/30
40/0.03	PF7-40/4/003	263586	1/30
40/0.10	PF7-40/4/01	263587	1/30
40/0.30	PF7-40/4/03	263588	1/30
40/0.50	PF7-40/4/05	263589	1/30
63/0.03	PF7-63/4/003	263590	1/30
63/0.10	PF7-63/4/01	263591	1/30
63/0.30	PF7-63/4/03	263592	1/30
63/0.50	PF7-63/4/05	263593	1/30
80/0.03	PF7-80/4/003	263594	1/30
80/0.10	PF7-80/4/01	263595	1/30
80/0.30	PF7-80/4/03	263596	1/30
80/0.50	PF7-80/4/05	263597	1/30
100/0.03	PF7-100/4/003	102925	1/30
100/0.10	PF7-100/4/01	102926	1/30
100/0.30	PF7-100/4/03	102927	1/30
100/0.50	PF7-100/4/05	102928	1/30

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type A

Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A 

SG07411



#### 2-pole

16/0.01	PF7-16/2/001-A	263598	1/60
25/0.03	PF7-25/2/003-A	263599	1/60
25/0.10	PF7-25/2/01-A	263600	1/60
25/0.30	PF7-25/2/03-A	263601	1/60
40/0.03	PF7-40/2/003-A	263602	1/60
40/0.10	PF7-40/2/01-A	263603	1/60
40/0.30	PF7-40/2/03-A	263604	1/60
63/0.03	PF7-63/2/003-A	263605	1/60
63/0.10	PF7-63/2/01-A	263606	1/60
63/0.30	PF7-63/2/03-A	263607	1/60
100/0.10	PF7-100/2/01-A	166820	1/60
100/0.30	PF7-100/2/03-A	166823	1/60

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#### 4-pole

25/0.03	PF7-25/4/003-A	263608	1/30
25/0.10	PF7-25/4/01-A	263609	1/30
25/0.30	PF7-25/4/03-A	263610	1/30
40/0.03	PF7-40/4/003-A	263611	1/30
40/0.10	PF7-40/4/01-A	263612	1/30
40/0.30	PF7-40/4/03-A	263613	1/30
63/0.03	PF7-63/4/003-A	263614	1/30
63/0.10	PF7-63/4/01-A	263615	1/30
63/0.30	PF7-63/4/03-A	263616	1/30
80/0.03	PF7-80/4/003-A	263617	1/30
80/0.30	PF7-80/4/03-A	263618	1/30
100/0.03	PF7-100/4/003-A	102929	1/30
100/0.10	PF7-100/4/01-A	102930	1/30
100/0.30	PF7-100/4/03-A	102931	1/30
100/0.50	PF7-100/4/05-A	102932	1/30

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package









**Type G, type G/A**

**Surge current-proof 3 kA, type G (ÖVE E 8601), type G  , type G/A **

SG07411










**2-pole**

25/0.03 	PF7-25/2/003-G	263619	1/60
25/0.10 	PF7-25/2/01-G	263620	1/60
40/0.03 	PF7-40/2/003-G	263621	1/60
40/0.10 	PF7-40/2/01-G	263622	1/60
40/0.03 	PF7-40/2/003-G/A	166826	1/60
63/0.03 	PF7-63/2/003-G/A	166827	1/60
80/0.03 	PF7-80/2/003-G/A	166828	1/60
100/0.03 	PF7-100/2/003-G/A	166798	1/60

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**4-pole**

40/0.03 	PF7-40/4/003-G	263623	1/30
40/0.10 	PF7-40/4/01-G	263624	1/30
63/0.03 	PF7-63/4/003-G	263625	1/30
63/0.10 	PF7-63/4/01-G	263627	1/30
80/0.03 	PF7-80/4/003-G/A	166824	1/30
100/0.03 	PF7-100/4/003-G/A	166829	1/30
100/0.3 	PF7-100/4/03-G/A	166825	1/30

**Type R**

**Surge current-proof 3 kA, X-ray application, type R **

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**4-pole**

63/0.03	PF7-63/4/003-R	263628	1/30
100/0.03	PF7-100/4/003-R	102935	1/30

**Type S**

**Selective + surge current-proof 5 kA, type S **

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**2-pole**

40/0.10	PF7-40/2/01-S	263629	1/60
40/0.30	PF7-40/2/03-S	263630	1/60

SG08211



**4-pole**

80/0.10	PF7-80/4/01-S	263636	1/30
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$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No.    Units per  
package

#### Type S/A

**Selective + surge current-proof 5 kA, sensitive to residual pulsating DC, type S/A** 

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#### 4-pole

25/0.10	PF7-25/4/01-S/A	263631	1/30
40/0.10	PF7-40/4/01-S/A	263632	1/30
40/0.30	PF7-40/4/03-S/A	263633	1/30
63/0.10	PF7-63/4/01-S/A	263634	1/30
63/0.30	PF7-63/4/03-S/A	263635	1/30
80/0.30	PF7-80/4/03-S/A	263637	1/30
100/0.30	PF7-100/4/03-S/A	292494	1/30

SG08211



## Description

- Special residual current devices
  - for frequency converter applications
- For fault current/residual current protection and additional protection
- Comprehensive range of accessories can be mounted subsequently
- Real contact position indicator
- Selective
- Frost resistance 

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No.    Units per  
package

#### Type U

**Selective + surge current-proof 5 kA, frequency converter-proof, type U** 

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#### 4-pole

40/0.10	PF7-40/4/01-U	263638	1/30
40/0.30	PF7-40/4/03-U	263639	1/30
63/0.10	PF7-63/4/01-U	263640	1/30
63/0.30	PF7-63/4/03-U	263641	1/30
80/0.30	PF7-80/4/03-U	292495	1/30
100/0.30	PF7-100/4/03-U	292496	1/30

Type

Type  
Designation

Article No.    Units per  
package

#### Sealing Cover Set Z-RC/AK

- for PF1M, PFR, PF6, PF7, CF16, dRCM (not to use for PFDM)

SG82011



2-pole	Z-RC/AK-2TE	285385	10/30
4-pole	Z-RC/AK-4MU	101062	10/600



**Specifications | Residual Current Devices PF7**

**Description**

- Residual Current Devices
- Shape compatible with and suitable for standard busbar connection to other devices of the P-series
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Universal tripping signal switch, also suitable for PL, PFL, Z-A. can be mounted subsequently
- Auxiliary switch Z-HK can be mounted subsequently
- Contact position indicator red - green
- Delayed types suitable for being used with standard fluorescent tubes with or without electronical ballast (30mA-RCD: 30 units per phase conductor, 100mA-RCD: 90 units per phase conductor).  
Notes: Depending of the fluorescent lamp ballast manufacturer partly more possible. Symmetrical allocation of the fluorescent lamp ballasts on all phases favourably. Shifting references of the fluorescent lamp ballast manufacturer consider.
- The device functions irrespective of the position of installation
- Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the the meaning of the applicable installation rules
- Mains connection at either side
- Types with 80 and 100 A permissible short-circuit back-up fuse (PF7-80, PF7-100): Take into account overload protection
- The 4-pole device can also be used for 2- or 3-pole connection. See connection possibilities.
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.

- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed
- **Type -G:** High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE/ÖNORM E 8001-1 § 12.1.6)
- **Type -G/A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed Special types for X-ray application PF7-...-R
- **Type -S:** Selective residual current device sensitive to AC, type -S. Compulsory for systems with surge arresters downstream of the RCD (ÖVE/ÖNORM E 8001-1 § 12.1.5).
- **Type -S/A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed

**Accessories:**

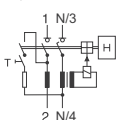
Auxiliary switch for subsequent installation to the left	Z-HK	248432
Tripping signal contact for subsequent installation to the right	Z-NHK	248434
Remote control and automatic switching device	Z-FW/LP	248296
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Sealing cover set	Z-RC/AK-2TE	285385
	Z-RC/AK-4MU	101062

### Technical Data

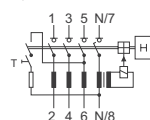
		PF7
<b>Electrical</b>		
Design according to		IEC/EN 61008 Type G according to ÖVE E 8601
Current test marks as printed onto the device		
Tripping		instantaneous
Type G		10 ms delay
Type S		40 ms delay - selective disconnecting function
Rated voltage	$U_n$	230/400 V AC, 50 Hz
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300, 500 mA
Sensitivity		AC and pulsating DC
Rated insulation voltage	$U_i$	440 V
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Rated short circuit strength	$I_{cn}$	10 kA
Maximum back-up fuse		Short circuit                      Overload
$I_n = 16$ A		63 A gG/gL                      10 A gG/gL
$I_n = 25$ A		63 A gG/gL                      16 A gG/gL
$I_n = 40$ A		63 A gG/gL                      25 A gG/gL
$I_n = 63$ A		63 A gG/gL                      40 A gG/gL
$I_n = 80$ A		80 A gG/gL                      50 A gG/gL
$I_n = 100$ A		100 A gG/gL                      63 A gG/gL
In the case that the maximal possible operating current of the electrical installation don't exceed the rated current of the RCD only short circuit protection must be implemented. Overload protection must be implemented in the case if the maximal possible operating current of the electrical installation can exceed the rated current of the RCD.		
Rated breaking capacity	$I_m$	
Rated fault breaking capacity	$I_{\Delta m}$	
$I_n = 16-40$ A		500 A
$I_n = 63$ A		630 A
$I_n = 80$ A		800 A
$I_n = 100$ A		1000 A
Voltage range of test button		
2-pole		196 - 264 V~
4-pole 30 mA		196 - 264 V~
4-pole 10, 100, 300, 500 mA		196 - 456 V~
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU), 70 mm (4MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in		IP40
Degree of protection in moisture-proof enclosure		IP54
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1x (1.5 - 35) mm <sup>2</sup> single wire 2x (1.5 - 16) mm <sup>2</sup> multi wire
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

### Connection diagrams

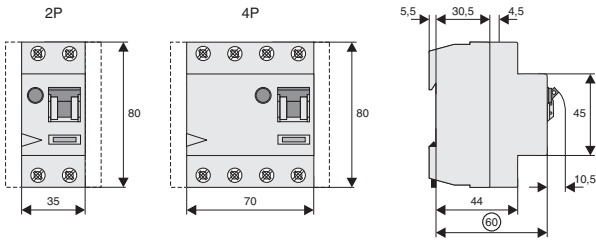
2-pole



4-pole



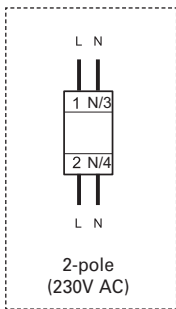
Dimensions (mm)



Correct connection

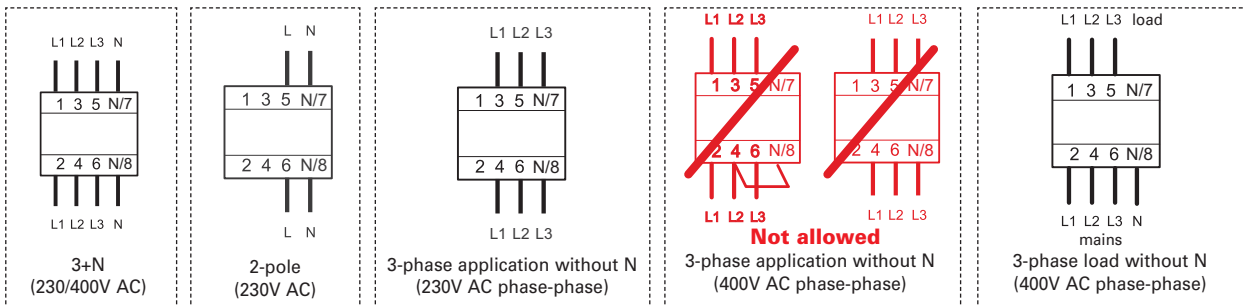
2-pole

30, 100, 300, 500mA types:

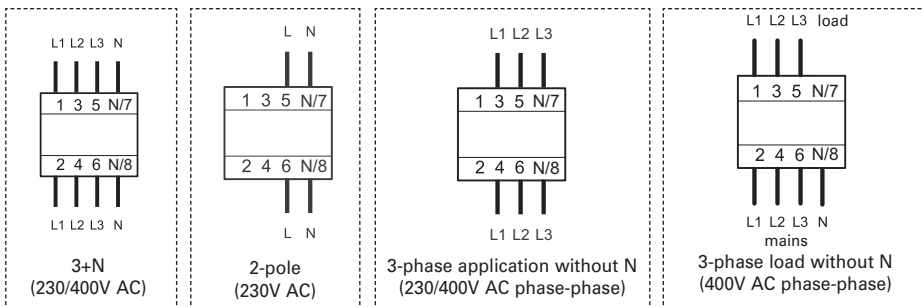


4-pole

30mA types:



10, 100, 300, 500mA types:



Influence of the ambient temperature to the maximum continuous current (A)

Ambient temperature	16A	25A	4p	40A	4p	63A	4p	80A	100A
	2p	2p		2p		2p		4p	4p
40°	16	25	25	40	40	63	63	80	100
45°	14	21	22	37	37	59	59	76	95
50°	11	18	19	33	34	55	55	72	90
55°	9	14	16	30	31	50	50	68	85
60°	—*)	—*)	—*)	26	27	45	45	64	80


Annotation: It has to be ensured that the values in the table are not exceeded and the back-up fuse/thermal protection works properly.

\*) not applicable

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### Description

- Economy series of RCD
- Rated short circuit strength 6 kA
- For fault current/residual current protection and additional protection
- Comprehensive range of accessories can be mounted subsequently
- Frost resistance 

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**Conditionally surge current-proof 250 A, type AC** 

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**2-pole**

16/0.01	PF6-16/2/001	165756	1/60
16/0.03	PF6-16/2/003	119429	1/60
25/0.03	PF6-25/2/003	286492	1/60
25/0.10	PF6-25/2/01	286493	1/60
25/0.30	PF6-25/2/03	286494	1/60
25/0.50	PF6-25/2/05	286495	1/60
40/0.03	PF6-40/2/003	286496	1/60
40/0.10	PF6-40/2/01	286497	1/60
40/0.30	PF6-40/2/03	286498	1/60
40/0.50	PF6-40/2/05	286499	1/60
63/0.03	PF6-63/2/003	286500	1/60
63/0.10	PF6-63/2/01	286501	1/60
63/0.30	PF6-63/2/03	286502	1/60
63/0.50	PF6-63/2/05	286503	1/60
80/0.03	PF6-80/2/003	165790	1/60
80/0.10	PF6-80/2/01	165791	1/60
80/0.30	PF6-80/2/03	165792	1/60
80/0.50	PF6-80/2/05	165793	1/60

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**4-pole**

25/0.03	PF6-25/4/003	286504	1/30
25/0.10	PF6-25/4/01	286505	1/30
25/0.30	PF6-25/4/03	286506	1/30
25/0.50	PF6-25/4/05	286507	1/30
40/0.03	PF6-40/4/003	286508	1/30
40/0.10	PF6-40/4/01	286509	1/30
40/0.30	PF6-40/4/03	286510	1/30
40/0.50	PF6-40/4/05	286511	1/30
63/0.03	PF6-63/4/003	286512	1/30
63/0.10	PF6-63/4/01	286513	1/30
63/0.30	PF6-63/4/03	286514	1/30
63/0.50	PF6-63/4/05	286515	1/30
80/0.03	PF6-80/4/003	165795	1/30
80/0.10	PF6-80/4/01	165796	1/30
80/0.30	PF6-80/4/03	165799	1/30
80/0.50	PF6-80/4/05	165802	1/30

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type A

Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A 

SG79411



#### 2-pole

16/0.01	PF6-16/2/001-A	165755	1/60
16/0.03	PF6-16/2/003-A	165757	1/60
25/0.03	PF6-25/2/003-A	112921	1/60
25/0.10	PF6-25/2/01-A	112922	1/60
25/0.30	PF6-25/2/03-A	112923	1/60
40/0.03	PF6-40/2/003-A	112924	1/60
40/0.10	PF6-40/2/01-A	112925	1/60
40/0.30	PF6-40/2/03-A	112926	1/60
40/0.50	PF6-40/2/05-A	165770	1/60
63/0.03	PF6-63/2/003-A	112927	1/60
63/0.10	PF6-63/2/01-A	112928	1/60
63/0.30	PF6-63/2/03-A	112929	1/60
63/0.50	PF6-63/2/05-A	165779	1/60

SG80011



#### 4-pole

25/0.03	PF6-25/4/003-A	112930	1/30
25/0.10	PF6-25/4/01-A	112931	1/30
25/0.30	PF6-25/4/03-A	112932	1/30
25/0.50	PF6-25/4/05-A	165763	1/30
40/0.03	PF6-40/4/003-A	112933	1/30
40/0.10	PF6-40/4/01-A	112934	1/30
40/0.30	PF6-40/4/03-A	112935	1/30
40/0.50	PF6-40/4/05-A	165778	1/30
63/0.03	PF6-63/4/003-A	112936	1/30
63/0.10	PF6-63/4/01-A	112937	1/30
63/0.30	PF6-63/4/03-A	112938	1/30
63/0.50	PF6-63/4/05-A	165789	1/30
80/0.03	PF6-80/4/003-A	165794	1/30
80/0.30	PF6-80/4/03-A	165798	1/30

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

**Type G**

**Surge current-proof 3 kA, type G (ÖVE E 8601)** 

SG79411



**2-pole**

25/0.03	PF6-25/2/003-G	165758	1/60
25/0.10	PF6-25/2/01-G	165759	1/60
40/0.03	PF6-40/2/003-G	165764	1/60
40/0.10	PF6-40/2/01-G	165766	1/60

SG80011



**4-pole**

40/0.03	PF6-40/4/003-G	165772	1/30
40/0.10	PF6-40/4/01-G	165773	1/30
63/0.03	PF6-63/4/003-G	165781	1/30
63/0.10	PF6-63/4/01-G	165784	1/30

**Type G/A**

**Surge current-proof 3 kA, sensitive to residual pulsating DC, type G/A (ÖVE E 8601)** 

SG79411



**2-pole**

40/0.10	PF6-40/2/01-G/A	165765	1/60
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SG80011



**4-pole**

40/0.03	PF6-40/4/003-G/A	165771	1/30
63/0.03	PF6-63/4/003-G/A	165780	1/30
63/0.10	PF6-63/4/01-G/A	165783	1/30

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type R

##### Surge current-proof 3 kA, X-ray application, type R

SG80011



##### 4-pole

63/0.03	PF6-63/4/003-R	165782	1/30
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#### Type S

##### Selective + surge current-proof 5 kA, type S

SG79411



##### 2-pole

40/0.10	PF6-40/2/01-S	165768	1/60
40/0.30	PF6-40/2/03-S	165769	1/60

SG80011



##### 4-pole

25/0.10	PF6-25/4/01-S	165761	1/30
25/0.30	PF6-25/4/03-S	165762	1/30
40/0.10	PF6-40/4/01-S	165775	1/30
40/0.30	PF6-40/4/03-S	165777	1/30
63/0.10	PF6-63/4/01-S	165786	1/30
63/0.30	PF6-63/4/03-S	165788	1/30
80/0.10	PF6-80/4/01-S	165797	1/30
80/0.30	PF6-80/4/03-S	165801	1/30

#### Type S/A

##### Selective + surge current-proof 5 kA, sensitive to residual pulsating DC, type S/A

SG79411



##### 2-pole

40/0.10	PF6-40/2/01-S/A	165767	1/60
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SG80011



##### 4-pole

25/0.10	PF6-25/4/01-S/A	165760	1/30
40/0.10	PF6-40/4/01-S/A	165774	1/30
40/0.30	PF6-40/4/03-S/A	165776	1/30
63/0.10	PF6-63/4/01-S/A	165785	1/30
63/0.30	PF6-63/4/03-S/A	165787	1/30
80/0.30	PF6-80/4/03-S/A	165800	1/30



Type	Type Designation	Article No.	Units per package
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**Sealing Cover Set Z-RC/AK**

- for PFIM, PFR, PF6, PF7, CFI6, dRCM (not to use for PFDM)

SG82011



2-pole	Z-RC/AK-2TE	285385	10/30
4-pole	Z-RC/AK-4MU	101062	10/600

## Specifications | Residual Current Devices PF6

### Description

- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Universal tripping signal switch, also suitable for PLS., PKN., Z-A. can be mounted subsequently
- Auxiliary switch Z-HK can be mounted subsequently
- Contact position indicator red - green
- Delayed types suitable for being used with standard fluorescent tubes with or without electronical ballast (30mA-RCD: 30 units per phase conductor, 100mA-RCD: 90 units per phase conductor).  
Notes: Depending of the fluorescent lamp ballast manufacturer partly more possible. Symmetrical allocation of the fluorescent lamp ballasts on all phases favourably. Shifting references of the fluorescent lamp ballast manufacturer consider.
- The device functions irrespective of the position of installation
- Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the the meaning of the applicable installation rules
- Mains connection at either side
- The 4-pole device can also be used for 2- or 3-pole connection. See connection possibilities.
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have have not been smoothed
- **Type -G:** High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE/ÖNORM E 8001-1 § 12.1.6)
- **Type -G/A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed. Special types for X-ray application PFIM-...-R
- **Type -R:** To avoid unwanted tripping due to X-ray devices
- **Type -S:** Selective residual current device sensitive to AC, type -S. Compulsory for systems with surge arresters downstream of the RCD (ÖVE/ÖNORM E 8001-1 § 12.1.5).
- **Type -S/A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed.

### Accessories:

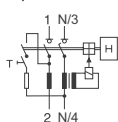
Auxiliary switch for subsequent installation to the left	Z-HK	248432
Tripping signal contact for subsequent installation to the right	Z-NHK	248434
Remote control and automatic switching device	Z-FW/LP	248296
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Sealing cover set	Z-RC/AK-2TE	285385
	Z-RC/AK-4MU	101062

**Technical Data**

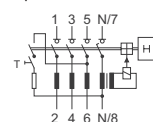
		<b>PF6</b>
<b>Electrical</b>		
Design according to		IEC/EN 61008 Type G according to ÖVE E 8601
Current test marks as printed onto the device		
Tripping		instantaneous
Type G, R		10 ms delay
Type S		40 ms delay - selective disconnecting function
Rated voltage	$U_n$	230/400 V AC, 50 Hz
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300, 500 mA
Sensitivity		AC and pulsating DC
Rated insulation voltage	$U_i$	440 V
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Rated short circuit strength	$I_{cn}$	10 kA
Maximum back-up fuse		Short circuit                      Overload
$I_n = 16$ A		63 A gG/gL                      10 A gG/gL
$I_n = 25$ A		63 A gG/gL                      16 A gG/gL
$I_n = 40$ A		63 A gG/gL                      25 A gG/gL
$I_n = 63$ A		63 A gG/gL                      40 A gG/gL
$I_n = 80$ A		80 A gG/gL                      50 A gG/gL
In the case that the maximal possible operating current of the electrical installation don't exceed the rated current of the RCD only short circuit protection must be implemented. Overload protection must be implemented in the case if the maximal possible operating current of the electrical installation can exceed the rated current of the RCD.		
Rated breaking capacity	$I_m$	
Rated fault breaking capacity	$I_{\Delta m}$	
$I_n = 16-40$ A		500 A
$I_n = 63$ A		630 A
$I_n = 80$ A		800 A
Voltage range of test button		
2-pole		196 - 264 V~
4-pole 30 mA		196 - 264 V~
4-pole 10, 100, 300, 500 mA		196 - 456 V~
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU), 70 mm (4MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in		IP40
Degree of protection in moisture-proof enclosure		IP54
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1x (1.5 - 35) mm <sup>2</sup> single wire 2x (1.5 - 16) mm <sup>2</sup> multi wire
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

**Connection diagrams**

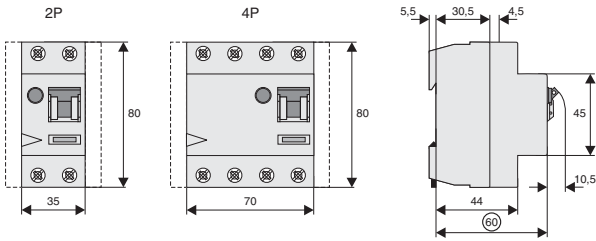
2-pole



4-pole



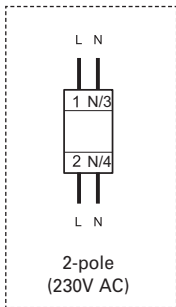
### Dimensions (mm)



### Correct connection

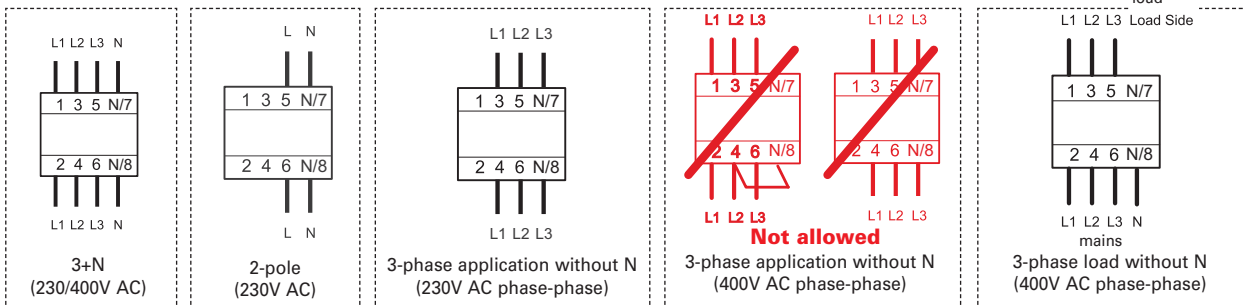
#### 2-pole

30, 100, 300, 500mA types:

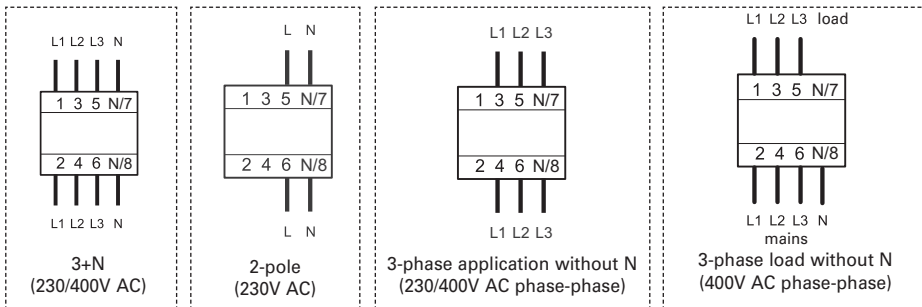


#### 4-pole

30mA types:



10, 100, 300, 500mA types:



### Influence of the ambient temperature to the maximum continuous current (A)

Ambient temperature	16A	25A	40A		63A		80A	
	2p	2p	4p	2p	4p	2p	4p	4p
40°	16	25	25	40	40	63	63	80
45°	14	21	22	37	37	59	59	76
50°	11	18	19	33	34	55	55	72
55°	9	14	16	30	31	50	50	68
60°	-*)	-*)	-*)	26	27	45	45	64

Annotation: It has to be ensured that the values in the table are not exceeded and the back-up fuse/thermal protection works properly.

\*) not applicable

SG17311

SG47212



## Description

- Especially matched residual current relays and core balance transformers
- Nominal fault currents 0.3 A and 1 A
- Standard (-S/A) and frequency converter-proof (-U) models
- Auxiliary switch can be mounted subsequently

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Residual Current Relays PFR, type S/A

**Selective + surge current-proof 5 kA, sensitive to residual pulsating DC, type S/A** 

SG17311



0.30	PFR2-03-S/A	235864	1/30
0.30	PFR3-03-S/A	235865	1/30
1	PFR2-1-S/A	235866	1/30
1	PFR3-1-S/A	235867	1/30

Maximum cable lead-through diameter (mm)	Type Designation	Article No.	Units per package
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#### Core Balance Transformers for PFR-S/A

SG47112



60	Z-WFR 2-S/A	236981	1
130	Z-WFR 3-S/A	236982	1

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Residual Current Relays PFR, type U

**Selective + surge current-proof 5 kA, frequency converter-proof, type U** 

SG17211



0.30	PFR2-03-U	235868	1/30
0.30	PFR3-03-U	235869	1/30
1	PFR2-1-U	235870	1/30
1	PFR3-1-U	235871	1/30

Maximum cable lead-through diameter (mm)	Type Designation	Article No.	Units per package
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#### Core Balance Transformers for PFR-U

SG47112



60	Z-WFR 2-U	104386	1
130	Z-WFR 3-U	104387	1

Type	Type Designation	Article No.	Units per package
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#### Sealing Cover Set Z-RC/AK

- for PFIM, PFR, PF6, PF7, CF16, dRCM (not to use for PFDM)

SG82011



2-pole	Z-RC/AK-2TE	285385	10/30
4-pole	Z-RC/AK-4MU	101062	10/600

**Specifications | Residual Current Relays PFR, Core Balance Transformers Z-WFR**

**Description**

- Residual Current Relays
- Shape compatible with and suitable for standard busbar connection to other devices of the P-series
- Universal tripping signal switch, also suitable for PLS., PKN., Z-A. can be mounted subsequently
- Auxiliary switch Z-HK can be mounted subsequently
- Contact position indicator red - green
- Delayed types suitable for being used with standard fluorescent tubes with or without electronical ballast (30mA-RCD: 30 units per phase conductor, 100mA-RCD: 90 units per phase conductor).  
Notes: Depending of the fluorescent lamp ballast manufacturer partly more possible. Symmetrical allocation of the fluorescent lamp ballasts on all phases favourably. Shifting references of the fluorescent lamp ballast manufacturer consider.
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- **Type -U:** Suitable for speed-controlled drives with frequency converters in household, trade, and industry. Unwanted tripping is avoided thanks to a tripping characteristic designed particularly for frequency converters. See also explanation "Frequency Converter-Proof RCDs - What for?" Application according to ÖVE/ÖNORM E 8001 and Decision EN 219 (1989), VDE 0100, SEV 1000.

**Accessories:**

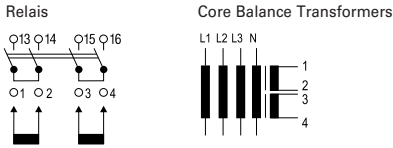
Auxiliary switch for subsequent installation to the left	Z-HK	248432
Tripping signal contact for subsequent installation to the right	Z-NHK	248434
Compact enclosure	KLV-TC-4	276241
Sealing cover set	Z-RC/AK-4MU	101062

**Technical Data**

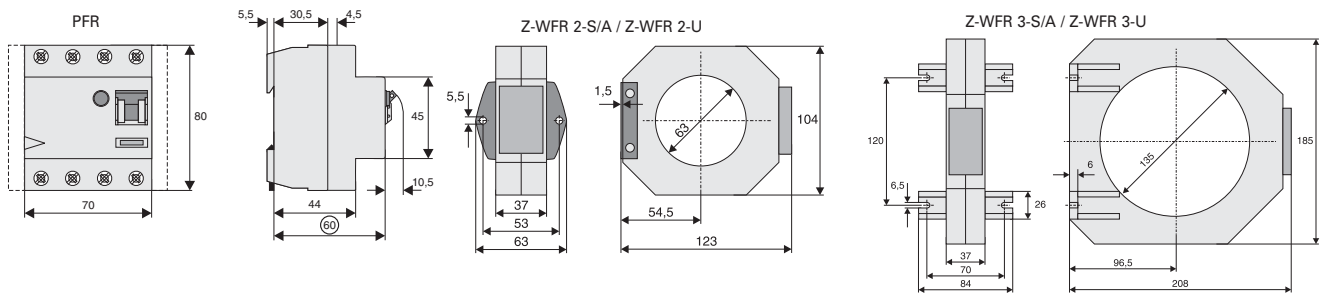
		<b>PFR</b>
<b>Electrical</b>		
Design according to		IEC/EN 61008
Current test marks as printed onto the device		
Tripping		40 ms delay - selective disconnecting function
Rated voltage	$U_n$	230/400 V AC, 50 Hz
Rated tripping current	$I_{\Delta n}$	(0.1) <sup>1)</sup> , 0.3 and 1 A
Rated current of relay contacts		25 A / 400 V~, 16 A / 230 V AC 15
Max. Nennstrom		400 A
Sensitivity		pulsating DC
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Voltage range of test button		184 - 440 V~
Endurance		
electrical components		$\geq$ 4,000 switching operations
mechanical components		$\geq$ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		70 mm (4MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1.5 - 35 mm <sup>2</sup> single wire 2 x 16 mm <sup>2</sup> multi wire
Busbar thickness		0.8 - 2 mm
Control line		1.5 - 2.5 mm <sup>2</sup>
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

<sup>1)</sup> see Important Information for Installation

### Connection diagrams

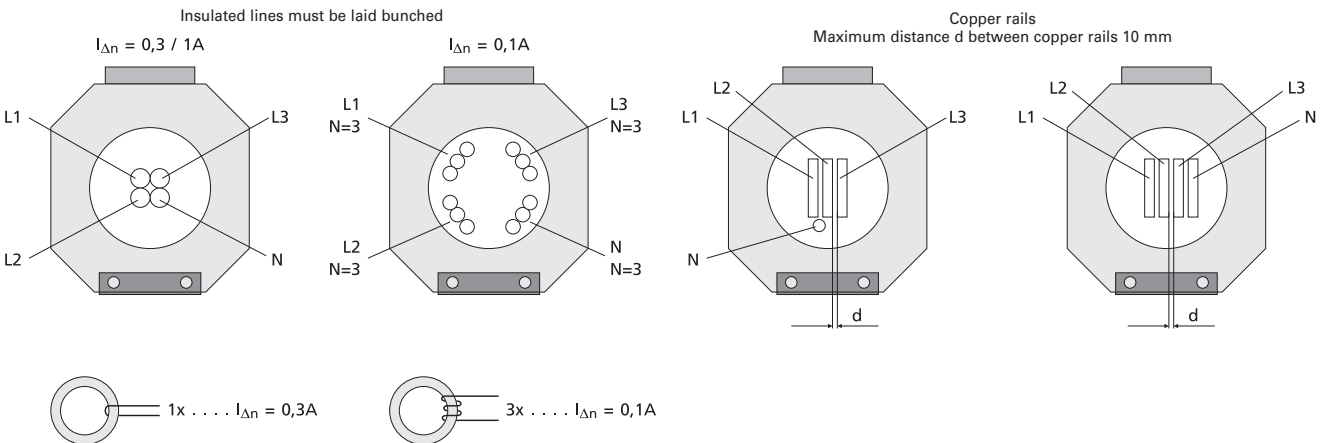


### Dimensions (mm)

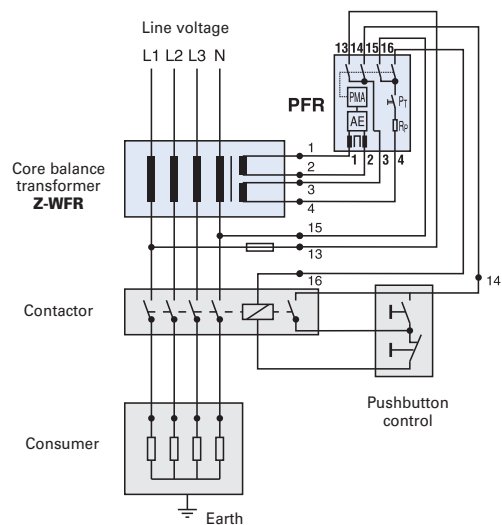


### Important Information for Installation

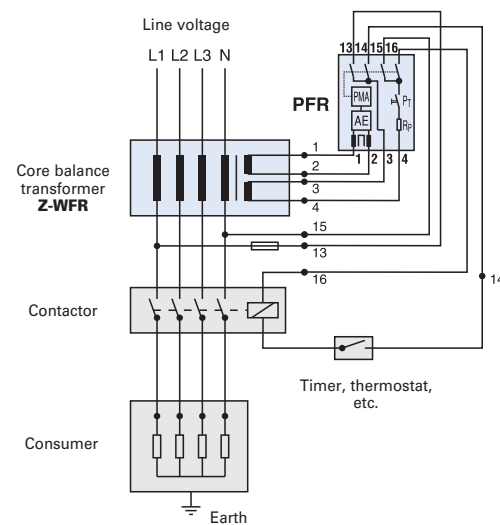
All lines required for operation, L1, L2, and L3 including neutral N, must be routed through the transformer as follows:



### Impulse Contact Control



### Continuous Contact Control



Two possible switching examples.

- Attention:**
- Connect terminals 1-4 of the relay to the terminals 1-4 of the transformer (see switching examples)!
  - 1+2: secondary winding; 3+4: test winding
  - Supply terminals 13 and 15 as shown, so that the test circuit can work correctly!



**Rated Tripping Current Matching**

Matching of the rated tripping current, 0.1 or 0.3 A, is achieved by the number of turns in the primary winding of the transformer (in PFR2-03-S/A, PFR3-03-S/A, PFR2-03-U and PFR3-03-U).

Residual Current Relays	Transformer	Rated tripping current $I_{\Delta N}$ (A)	Number of primary turns	Maximum cable diameter (mm)	Maximum primary current (A)
PFR2-03-U (S/A)	Z-WFR2	0.1	3	60	150
		0.3	1	60	400
PFR3-03-U (S/A)	Z-WFR3	0.1	3	130	100
		0.3	1	130	400
PFR2-1-U (S/A)	Z-WFR2	1.0	1	60	400
PFR3-1-U (S/A)	Z-WFR3	1.0	1	130	400

SG31011



### Description

- Advanced residual current devices for the 125 A nominal current range
- For fault current/residual current protection and additional protection
- Auxiliary switch
- Selective types

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**Conditionally surge current-proof, type AC** 

SG30611



**2-pole**

125/0.03	PFDM-125/2/003	249031	1/60
125/0.30	PFDM-125/2/03	249033	1/60

SG31011



**4-pole**

125/0.03	PFDM-125/4/003	235916	1/30
125/0.10	PFDM-125/4/01	235917	1/30
125/0.30	PFDM-125/4/03	235918	1/30
125/0.50	PFDM-125/4/05	235919	1/30

**Type A**

**Conditionally surge current-proof, type A** 

SG30611



**2-pole**

125/0.03	PFDM-125/2/003-A	249035	1/60
125/0.30	PFDM-125/2/03-A	249037	1/60

SG31011



**4-pole**

125/0.03	PFDM-125/4/003-A	235920	1/30
125/0.10	PFDM-125/4/01-A	235921	1/30
125/0.30	PFDM-125/4/03-A	235922	1/30
125/0.50	PFDM-125/4/05-A	235923	1/30

**Type S/A**

**Selective + surge current-proof, type S/A** 

SG31011



**4-pole**

125/0.30	PFDM-125/4/03-S/A	285639	1/30
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Description	Type Designation	Article No.	Units per package
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**Accessory**

**Auxiliary switch**

SG34412



6 A, 230 V AC	Z-HD	265620	1
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**Specifications | Residual Current Devices PFDM**

**Description**

- Residual Current Devices
- Tripping is line voltage-independent. Consequently, the RCD is suitable for the protection of humans and additional protection (ÖVE/ÖNORM E 8001-1§ 6.1.2)
- Twin-purpose terminal (lift/open-mouthed) above and below
- Not busbar-compatible with other devices of the P-series
- Auxiliary switch Z-HD can be mounted subsequently
- Contact position indicator red - green
- The device functions irrespective of the position of installation
- Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the the meaning of the applicable installation rules
- Mains connection at either side
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed
- **Type -S/A:** Compulsory for systems with surge arresters downstream of the RCD (ÖVE/ÖNORM E 8001-1 § 12.1.5)

**Accessories:**

Auxiliary switch for subsequent installation to the left	Z-HD	265620
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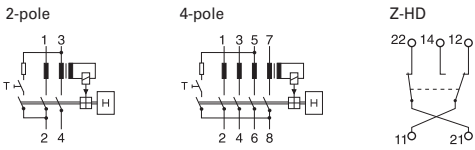
**Technical Data**

		PFDM
<b>Electrical</b>		
Design according to		IEC/EN 61008
Current test marks as printed onto the device		
Tripping		instantaneous
Type S/A		50 ms delay - selective disconnecting function
Rated voltage	$U_n$	230/400 V AC, 50 Hz
Rated tripping current	$I_{\Delta n}$	30, 100, 300, 500 mA
Sensitivity		AC and pulsating DC
Rated short circuit strength	$I_{cn}$	10 kA with back-up fuse
Maximum back-up fuse		short circuit 125 A gG/gL
Rated breaking capacity	$I_m$	1250 A
Rated fault breaking capacity	$I_{\Delta m}$	
Voltage range of test button		
2-pole		100 - 250 V~
4-pole		185 - 440 V~
Endurance		
electrical components		≥ 4,000 switching operations
mechanical components		≥ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		36 mm (2P), 72 mm (4P)
Mounting		quick fastening on DIN rail IEC/EN 60715
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1,5 - 50 mm <sup>2</sup>
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +75°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

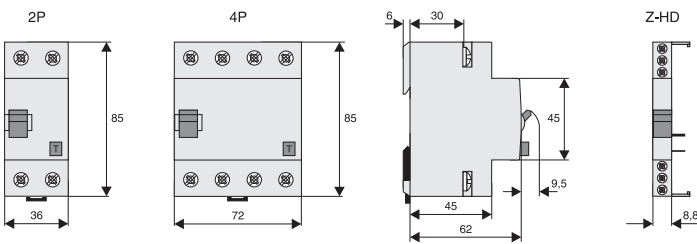
### Technical Data

		Auxiliary switch Z-HD
<b>Electrical</b>		
Subsequent installation to the left onto		PFDM
Contacts		1CO + 1NC
Load rating		
AC11		6 A / 230 V AC
DC11		1 A / 230 V DC
<b>Mechanical</b>		
Terminal capacity		up to 2.5 mm <sup>2</sup>

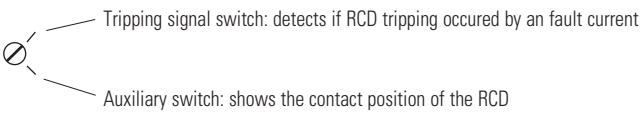
### Connection diagrams



### Dimensions (mm)



### Function Auxiliary Switch Z-HD



sg01018\_r



### Description

- A compact range of residual current devices for a wide range of applications
- For fault current/residual current protection and additional protection
- Selection of nominal currents
- Comprehensive range of accessories
- Real contact position indicator

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type AC

##### Conditionally surge current-proof 250 A, type AC

sg02118\_r



##### 2-pole

25/0.03	HNC-25/2/003	194690	1/60
40/0.03	HNC-40/2/003	194691	1/60
63/0.03	HNC-63/2/003	194692	1/60

sg01018\_r



##### 4-pole

25/0.03	HNC-25/4/003	194693	1/30
40/0.03	HNC-40/4/003	194694	1/30
63/0.03	HNC-63/4/003	194695	1/30

#### Type A

##### Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A

sg02118\_r



##### 2-pole

25/0.03	HNC-25/2/003-A	194684	1/60
40/0.03	HNC-40/2/003-A	194685	1/60
63/0.03	HNC-63/2/003-A	194686	1/60

sg01018\_r



##### 4-pole

25/0.03	HNC-25/4/003-A	194687	1/30
40/0.03	HNC-40/4/003-A	194688	1/30
63/0.03	HNC-63/4/003-A	194689	1/30



**Specifications | Residual Current Devices HNC**

**Description**

- Residual Current Devices
  - Tripping is line voltage-independent. Consequently, the RCD is suitable for fault current/residual current protection and additional protection (ÖVE/ÖNORM E 8001-1 § 6.1.2)
  - Twin-purpose terminal (lift/open-mouthed) above and below
  - Busbar positioning optionally above or below
  - Free terminal space despite installed busbar
  - Universal tripping signal switch can be mounted subsequently
  - Auxiliary switch Z-HK can be mounted subsequently
  - Contact position indicator red - green
  - Suitable for being used with standard fluorescent tubes with or without electronic ballast (typically up to 20 units per phase conductor)
  - The device functions irrespective of the position of installation
  - Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the meaning of the applicable installation rules
  - Mains connection at either side
  - The 4-pole device can also be used for 2- or 3-pole connection. See connection possibilities.
  - The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
  - Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed

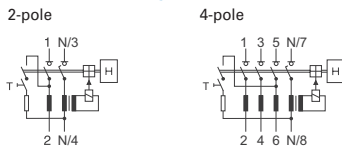
**Accessories:**

Auxiliary switch for subsequent installation to the left	Z-HK	248432
Remote tripping module	Z-FAM	248293

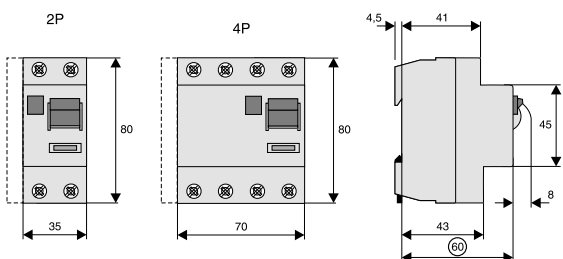
### Technical Data

		<b>HNC</b>
<b>Electrical</b>		
Design according to		IEC/EN 61008
Current test marks as printed onto the device		
Tripping		instantaneous
Rated voltage	$U_n$	230/400 V AC, 50 Hz
Rated tripping current	$I_{\Delta n}$	30 mA
Sensitivity		AC and pulsating DC
Rated insulation voltage	$U_i$	440 V
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Rated short circuit strength	$I_{cn}$	6 kA
Maximum back-up fuse		Short circuit                      Overload
$I_n = 25$ A		63 A gG/gL                      16 A gG/gL
$I_n = 40$ A		63 A gG/gL                      25 A gG/gL
$I_n = 63$ A		63 A gG/gL                      40 A gG/gL
In the case that the maximal possible operating current of the electrical installation don't exceed the rated current of the RCD only short circuit protection must be implemented. Overload protection must be implemented in the case if the maximal possible operating current of the electrical installation can exceed the rated current of the RCD.		
Rated breaking capacity	$I_m$	
Rated fault breaking capacity	$I_{\Delta m}$	
$I_n = 25-40$ A		500 A
$I_n = 63$ A		630 A
Voltage range of test button		
2-pole		196 - 264 V~
4-pole		196 - 264 V~
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU), 70 mm (4MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1.5 - 35 mm <sup>2</sup> single wire 2 x 16 mm <sup>2</sup> multi wire
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

### Connection diagrams

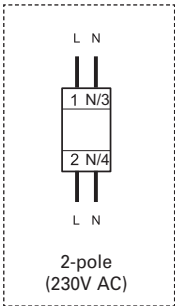


### Dimensions (mm)

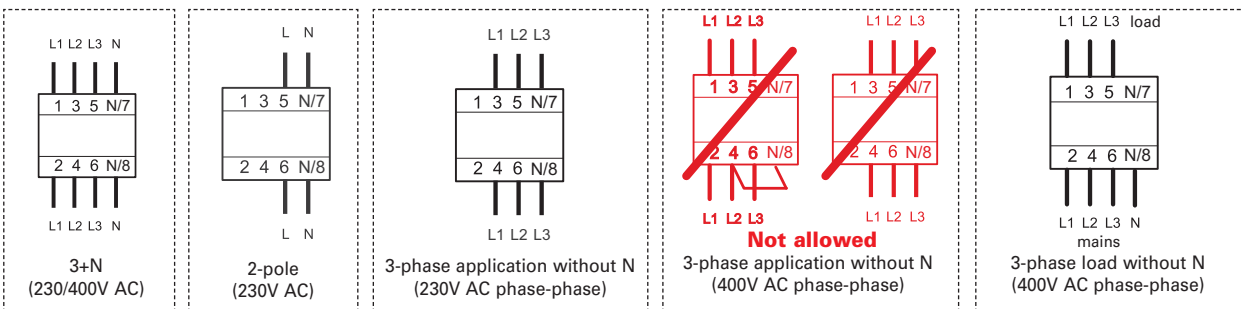


Correct connection

2-pole



4-pole



sg01018\_r



## Description

- A compact range of residual current devices for a wide range of applications
- For fault current/residual current protection and additional protection
- Selection of nominal currents
- Comprehensive range of accessories
- Real contact position indicator

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
---------------------------	---------------------	-------------	----------------------

**Type AC**

**Conditionally surge current-proof 250 A, type AC** 

sg02118\_r



**2-pole**

25/0.03	HNC-25/2/003-HX	194702	1/60
40/0.03	HNC-40/2/003-HX	194703	1/60
63/0.03	HNC-63/2/003-HX	194704	1/60

sg01018\_r



**4-pole**

25/0.03	HNC-25/4/003-HX	194705	1/30
40/0.03	HNC-40/4/003-HX	194706	1/30
63/0.03	HNC-63/4/003-HX	194707	1/30

**Type A**

**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A** 

sg02118\_r



**2-pole**

25/0.03	HNC-25/2/003-A-HX	194696	1/60
40/0.03	HNC-40/2/003-A-HX	194697	1/60
63/0.03	HNC-63/2/003-A-HX	194698	1/60

sg01018\_r



**4-pole**

25/0.03	HNC-25/4/003-A-HX	194699	1/30
40/0.03	HNC-40/4/003-A-HX	194700	1/30
63/0.03	HNC-63/4/003-A-HX	194701	1/30

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**Specifications | Residual Current Devices HNC-HX**


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**Description**

- Residual Current Devices
- Tripping is line voltage-independent. Consequently, the RCD is suitable for fault current/residual current protection and additional protection (ÖVE/ÖNORM E 8001-1 § 6.1.2)
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Universal tripping signal switch can be mounted subsequently
- Auxiliary switch Z-HK can be mounted subsequently
- Contact position indicator red - green
- Suitable for being used with standard fluorescent tubes with or without electronic ballast (typically up to 20 units per phase conductor)
- The device functions irrespective of the position of installation
- Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the meaning of the applicable installation rules
- Mains connection at either side
- The 4-pole device can also be used for 2- or 3-pole connection. See connection possibilities.
- The test key "T" must be pressed every 6 months. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 months is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed

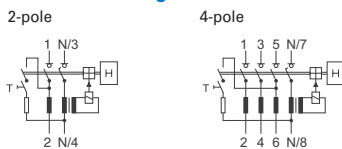
**Accessories:**

Auxiliary switch for subsequent installation to the left	Z-HK	248432
Remote tripping module	Z-FAM	248293

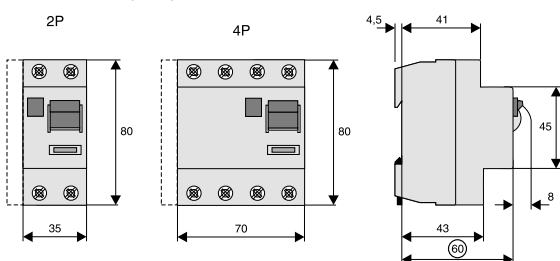
**Technical Data**

		HNC-HX
<b>Electrical</b>		
Design according to		IEC/EN 61008
Current test marks as printed onto the device		
Tripping		instantaneous
Rated voltage	$U_n$	230/400 V AC, 50 Hz
Rated tripping current	$I_{\Delta n}$	30 mA
Sensitivity		AC and pulsating DC
Rated insulation voltage	$U_i$	440 V
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Rated short circuit strength	$I_{cn}$	6 kA
Maximum back-up fuse		Short circuit                      Overload
$I_n = 25$ A		63 A gG/gL                      16 A gG/gL
$I_n = 40$ A		63 A gG/gL                      25 A gG/gL
$I_n = 63$ A		63 A gG/gL                      40 A gG/gL
In the case that the maximal possible operating current of the electrical installation don't exceed the rated current of the RCD only short circuit protection must be implemented. Overload protection must be implemented in the case if the maximal possible operating current of the electrical installation can exceed the rated current of the RCD.		
Rated breaking capacity	$I_m$	
Rated fault breaking capacity	$I_{\Delta m}$	
$I_n = 25-40$ A		500 A
$I_n = 63$ A		630 A
Voltage range of test button		
2-pole		196 - 264 V~
4-pole		196 - 264 V~
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU), 70 mm (4MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1.5 - 35 mm <sup>2</sup> single wire 2 x 16 mm <sup>2</sup> multi wire
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

**Connection diagrams**

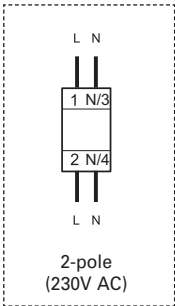


**Dimensions (mm)**

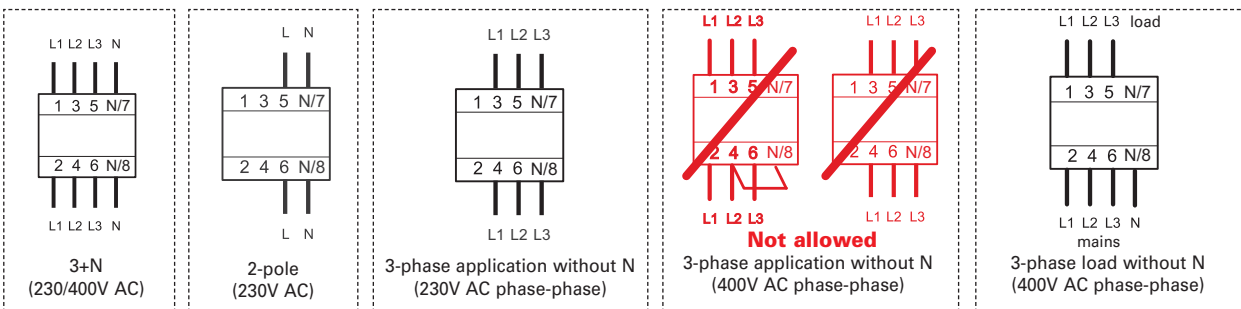


#### Correct connection

##### 2-pole



##### 4-pole





wa\_sg01215



## Description

- A large spectrum of compact residual current devices for a wide range of applications
- For fault current/residual current protection and additional protection
- Wide variety of nominal currents
- Comprehensive range of accessories
- Real contact position indicator

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type AC

#### Conditionally surge current-proof 250 A, type AC

wa\_sg01115



#### 2-pole

25/0.03	CFI6-25/2/003	235753	1/60
25/0.10	CFI6-25/2/01	235754	1/60
25/0.30	CFI6-25/2/03	235755	1/60
25/0.50	CFI6-25/2/05	235756	1/60
40/0.03	CFI6-40/2/003	235760	1/60
40/0.10	CFI6-40/2/01	235761	1/60
40/0.30	CFI6-40/2/03	235762	1/60
40/0.50	CFI6-40/2/05	235763	1/60
63/0.03	CFI6-63/2/003	235768	1/60
63/0.10	CFI6-63/2/01	235769	1/60
63/0.30	CFI6-63/2/03	235770	1/60
63/0.50	CFI6-63/2/05	235771	1/60

wa\_sg01215



#### 4-pole

25/0.03	CFI6-25/4/003	235776	1/30
25/0.10	CFI6-25/4/01	235777	1/30
25/0.30	CFI6-25/4/03	235778	1/30
25/0.50	CFI6-25/4/05	235779	1/30
40/0.03	CFI6-40/4/003	235784	1/30
40/0.10	CFI6-40/4/01	235785	1/30
40/0.30	CFI6-40/4/03	235786	1/30
40/0.50	CFI6-40/4/05	235787	1/30
63/0.03	CFI6-63/4/003	235792	1/30
63/0.10	CFI6-63/4/01	235793	1/30
63/0.30	CFI6-63/4/03	235794	1/30
63/0.50	CFI6-63/4/05	235795	1/30

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A** 

wa\_sg01115



**2-pole**

25/0.03	CFI6-25/2/003-A	235757	1/60
25/0.10	CFI6-25/2/01-A	235758	1/60
25/0.30	CFI6-25/2/03-A	235759	1/60
40/0.03	CFI6-40/2/003-A	235764	1/60
40/0.10	CFI6-40/2/01-A	235765	1/60
40/0.30	CFI6-40/2/03-A	235766	1/60
40/0.50	CFI6-40/2/05-A	235767	1/60
63/0.03	CFI6-63/2/003-A	235772	1/60
63/0.10	CFI6-63/2/01-A	235773	1/60
63/0.30	CFI6-63/2/03-A	235774	1/60
63/0.50	CFI6-63/2/05-A	235775	1/60

wa\_sg01215



**4-pole**

25/0.03	CFI6-25/4/003-A	235780	1/30
25/0.10	CFI6-25/4/01-A	235781	1/30
25/0.30	CFI6-25/4/03-A	235782	1/30
25/0.50	CFI6-25/4/05-A	235783	1/30
40/0.03	CFI6-40/4/003-A	235788	1/30
40/0.10	CFI6-40/4/01-A	235789	1/30
40/0.30	CFI6-40/4/03-A	235790	1/30
40/0.50	CFI6-40/4/05-A	235791	1/30
63/0.03	CFI6-63/4/003-A	235796	1/30
63/0.10	CFI6-63/4/01-A	235797	1/30
63/0.30	CFI6-63/4/03-A	235798	1/30
63/0.50	CFI6-63/4/05-A	235799	1/30

Type	Type Designation	Article No.	Units per package
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**Sealing Cover Set Z-RC/AK**

- for PFIM, PFR, PF6, PF7, CFI6, dRCM (not to use for PFDM)

SG82011



2-pole	Z-RC/AK-2TE	285385	10/30
4-pole	Z-RC/AK-4MU	101062	10/600

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**Specifications | Residual Current Devices CFI6**


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**Description**

- Residual Current Devices
  - Tripping is line voltage-independent. Consequently, the RCD is suitable for fault current/residual current protection and additional protection (ÖVE/ÖNORM E 8001-1 § 6.1.2)
  - Matching with CLS6, CLS4
  - Shape compatible with and suitable for standard busbar connection to other devices of the C-series
  - Twin-purpose terminal (lift/open-mouthed) above and below
  - Busbar positioning optionally above or below
  - Free terminal space despite installed busbar
  - Universal tripping signal switch, also suitable for CLS., CKN., Z-A. can be mounted subsequently
  - Auxiliary switch Z-HK can be mounted subsequently
  - Contact position indicator red - green
  - Suitable for being used with standard fluorescent tubes with or without electronic ballast (typically up to 20 units per phase conductor)
  - The device functions irrespective of the position of installation
  - Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the meaning of the applicable installation rules
  - Mains connection at either side
  - The 4-pole device can also be used for 2- or 3-pole connection. See connection possibilities.
  - The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
  - Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed

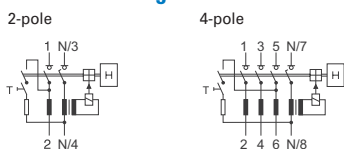
**Accessories:**

Auxiliary switch for subsequent installation to the left	Z-HK	248432
Remote tripping module	Z-FAM	248293

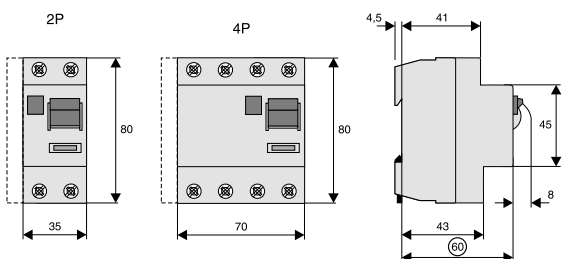
**Technical Data**

		<b>CFI6</b>
<b>Electrical</b>		
Design according to		IEC/EN 61008
Current test marks as printed onto the device		
Tripping		instantaneous
Rated voltage	$U_n$	230/400 V AC, 50 Hz
Rated tripping current	$I_{\Delta n}$	30, 100, 300, 500 mA
Sensitivity		AC and pulsating DC
Rated insulation voltage	$U_i$	440 V
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Rated short circuit strength	$I_{cn}$	6 kA
Maximum back-up fuse		Short circuit                      Overload
$I_n = 16$ A		63 A gG/gL                      10 A gG/gL
$I_n = 25$ A		63 A gG/gL                      16 A gG/gL
$I_n = 40$ A		63 A gG/gL                      25 A gG/gL
$I_n = 63$ A		63 A gG/gL                      40 A gG/gL
$I_n = 80$ A		80 A gG/gL                      50 A gG/gL
In the case that the maximal possible operating current of the electrical installation don't exceed the rated current of the RCD only short circuit protection must be implemented. Overload protection must be implemented in the case if the maximal possible operating current of the electrical installation can exceed the rated current of the RCD.		
Rated breaking capacity	$I_m$	
Rated fault breaking capacity	$I_{\Delta m}$	500 A
$I_n = 25-40$ A		630 A
$I_n = 63$ A		
Voltage range of test button		
2-pole		196 - 264 V~
4-pole 30 mA		196 - 264 V~
4-pole 100, 300, 500 mA		196 - 456 V~
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU), 70 mm (4MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1.5 - 35 mm <sup>2</sup> single wire 2 x 16 mm <sup>2</sup> multi wire
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

**Connection diagrams**



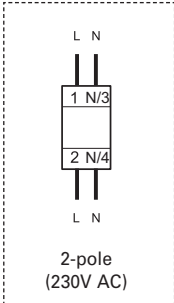
**Dimensions (mm)**



### Correct connection

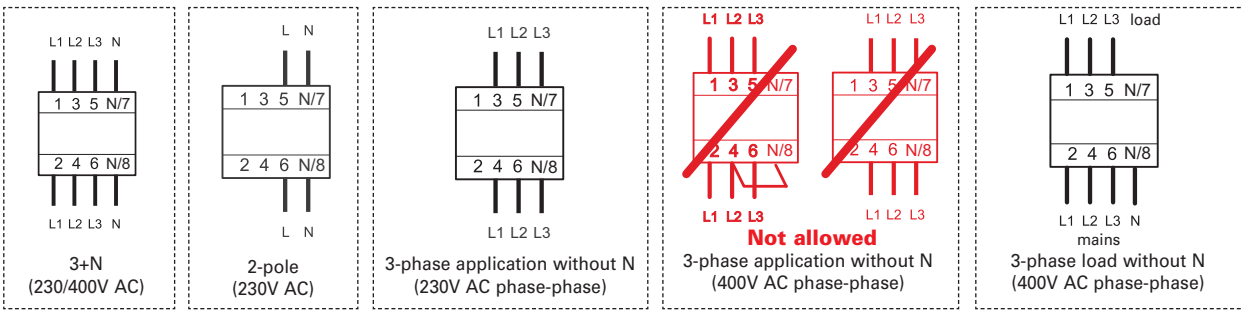
#### 2-pole

30, 100, 300, 500mA types:

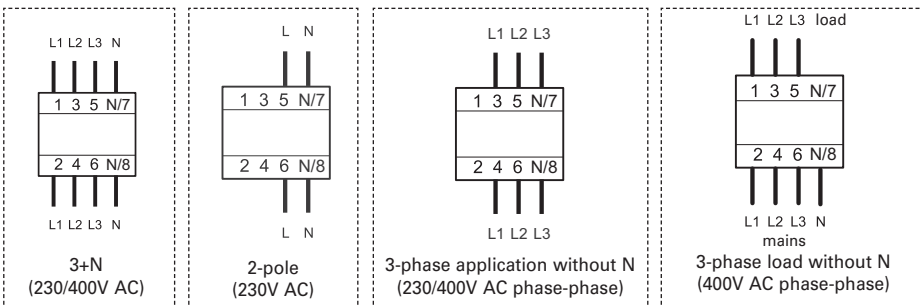


#### 4-pole

30mA types:



100, 300, 500mA types:



SG08310



## Description

- Line voltage independent RCCB for fault or additional protection with additional digital features
- System Monitoring: Preventive information / warning before the RCD trips in case of leakage currents
  - Integrated auxiliary contact(s)
  - Local Indication
- New level of accuracy -> Reduced unwanted tripping
- Local status indication of residual current through 3 LEDs
- No monthly test required
- Comprehensive range of accessories
- Real contact position indicator
- Fault current tripping indicator
- Automatic re-setting possible
- Transparent designation plate

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type G/A

**Surge current-proof 3 kA, sensitive to residual pulsating DC, type G/A (ÖVE E 8601)** 


SG08310



#### 4-pole

25/0.03	dRCM-25/4/003-G/A+	120834	1/30
25/0.30	dRCM-25/4/03-G/A+	120835	1/30
40/0.03	dRCM-40/4/003-G/A+	120836	1/30
40/0.30	dRCM-40/4/03-G/A+	120837	1/30
63/0.03	dRCM-63/4/003-G/A+	120838	1/30
63/0.30	dRCM-63/4/03-G/A+	120839	1/30
80/0.03	dRCM-80/4/003-G/A+	120840	1/30
80/0.30	dRCM-80/4/03-G/A+	120841	1/30

#### Type R

**Surge current-proof 3 kA, X-ray application, type R** 

SG08310



#### 4-pole

63/0.03	dRCM-63/4/003-R+	120842	1/30
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#### Type S/A

**Selective + surge current-proof typ. 5 kA, sensitive to residual pulsating DC, type S/A** 


SG08310



#### 4-pole

40/0.30	dRCM-40/4/03-S/A+	120843	1/30
63/0.30	dRCM-63/4/03-S/A+	120844	1/30
80/0.30	dRCM-80/4/03-S/A+	120845	1/30

#### Type U

**Selective + surge current-proof typ. 5 kA, frequency converter-proof, type U** 

SG08310



#### 4-pole

40/0.03 <sup>*)</sup>	dRCM-40/4/003-U+	120850	1/30
40/0.30	dRCM-40/4/03-U+	120851	1/30
63/0.03 <sup>*)</sup>	dRCM-63/4/003-U+	120846	1/30
63/0.30	dRCM-63/4/03-U+	120847	1/30
80/0.30	dRCM-80/4/03-U+	120848	1/30

<sup>\*)</sup> Short time delayed + surge current-proof 3 kA

Type	Type Designation	Article No.	Units per package
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#### Sealing Cover Set Z-RC/AK

- for PFIM, PFR, PF6, PF7, CF16, dRCM (not to use for PFDM)

SG82011



2-pole	Z-RC/AK-2TE	285385	10/30
4-pole	Z-RC/AK-4MU	101062	10/600



**Specifications | Residual Current Devices dRCM Digital**

**Description**

- Residual Current Devices
- Shape compatible with and suitable for standard busbar connection to other devices of the P-series
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Universal tripping signal switch, also suitable for PLS., PKN., ZP-A. can be mounted subsequently
- Auxiliary switch Z-HK can be mounted subsequently
- Contact position indicator red - green
- Tripping indicator white - blue
- Additional safety
  - possibility to seal
  - possibility to lock in ON and OFF position
- Delayed types suitable for being used with standard fluorescent tubes with or without electronical ballast (30mA-RCD: 30 units per phase conductor).  
Notes: Depending of the fluorescent lamp ballast manufacturer partly more possible. Symmetrical allocation of the fluorescent lamp ballasts on all phases favourably. Shifting references of the fluorescent lamp ballast manufacturer consider.
- The device functions irrespective of the position of installation
- Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the meaning of the applicable installation rules
- Mains connection at either side
- The 4-pole device can also be used for 3- and 2-pole connection. See connection possibilities.
- The test key "T" must be pressed every year. The system operator must be informed of this obligation and his responsibility in a way that can be proven. The yearly test interval is only valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environment), it's precommended to test in shorter intervals (e.g. monthly). A test is further needed if red and yellow LED are on together.
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- Functioning
  - The green LED becomes active at 0-30%  $I_{\Delta n}$
  - The yellow LED becomes active at 30-50%  $I_{\Delta n}$
  - The red LED becomes active at >50%  $I_{\Delta n}$
- Potential-free relay (NO contact, in parallel with the yellow LED, up to 1 A ohmic load / 230 V~) for external prewarning function. Bistabile, means the warning stays on also when the breaker trips, until reset.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed
- **Type -G:** High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE/ÖNORM E 8001-1 § 12.1.6)
- **Type -G/A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed
- **Type -R:** To avoid unwanted tripping due to X-ray devices
- **Type -S:** Selective residual current device sensitive to AC, type -S. Compulsory for systems with surge arresters downstream of the RCD (ÖVE/ÖNORM E 8001-1 § 12.1.5).
- **Type -S/A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed
- **Type -U:** Suitable for speed-controlled drives with frequency converters in household, trade, and industry. Unwanted tripping is avoided thanks to a tripping characteristic designed particularly for frequency converters. See also explanation "Frequency Converter-Proof RCDs - What for?" Application according to ÖVE/ÖNORM E 8001-1 and Decision EN 219 (1989), VDE 0100, SEV 1000.

**Accessories:**

Auxiliary switch for subsequent installation to the left	Z-HK	248432
Tripping signal contact for subsequent installation to the right	Z-NHK	248434
Remote control and automatic switching device	Z-FW/LP	248296
Compact enclosure	KLV-TC-4	276241
Sealing cover set	Z-RC/AK-4MU	101062



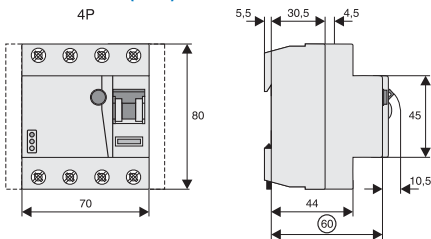
**Local Indication RCCB**

Status indication LED		red / yellow / green
Permanent light green		Normal operation
Permanent light yellow		The measured residual current is bigger than 30% of the nominal tripping value.
Permanent light red		The measured residual current is bigger than 50% of the nominal tripping value.

**Remote Indication**

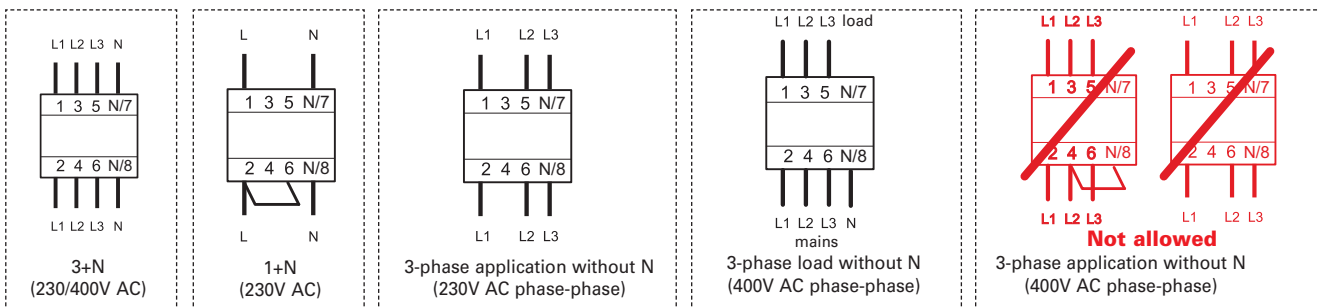
Standard Version	1 contact NO up to 230V AC, 2 terminals, 1 A ohmic load
Optional Version (available upon request)	1 NO + 1 NC up to 110V AC/contact, 2x2 terminals, 1 A ohmic load
Terminal capacity of contacts	0.25 - 1.5 mm <sup>2</sup>

**Dimensions (mm)**



**Correct connection**

30, 300mA types:



Electronic works within 50-254 V AC !

SG18211



### Description

- Combining this device with a top-quality miniature circuit breaker of type PLS. will form a top-quality RCBO unit (combined RCD/MCB device)
- Draw-out connection bar locked in installation position
- For subsequent mounting onto 2-, 3-, 3+N- and 4-pole miniature circuit breakers PLS.
- Rated current 40 and 63 A

Add-on Residual Current Protection Unit PBSM (MW)

Max. nominal current of PLS./I<sub>Δn</sub>  
(A)

Type  
Designation

Article No. Units per  
package

**Type AC**

**Conditionally surge current-proof 250 A, type AC**

SG17811



**2-pole**

40/0.03	PBSM-402/003	262323	1/20
40/0.10	PBSM-402/01	262324	1/20
40/0.30	PBSM-402/03	262325	1/20
40/0.50	PBSM-402/05	262326	1/20
40/1.00	PBSM-402/1	262327	1/20
63/0.03	PBSM-632/003	262426	1/20
63/0.10	PBSM-632/01	262427	1/20
63/0.30	PBSM-632/03	262428	1/20
63/0.50	PBSM-632/05	262429	1/20
63/1.00	PBSM-632/1	262431	1/20

SG18111



**3-pole**

40/0.03	PBSM-403/003	262537	1/20
40/0.10	PBSM-403/01	262538	1/20
40/0.30	PBSM-403/03	262539	1/20
40/0.50	PBSM-403/05	262541	1/20
40/1.00	PBSM-403/1	262542	1/20
63/0.03	PBSM-633/003	262556	1/20
63/0.10	PBSM-633/01	262557	1/20
63/0.30	PBSM-633/03	262558	1/20
63/0.50	PBSM-633/05	262559	1/20
63/1.00	PBSM-633/1	262560	1/20

SG18211



**4-pole**

40/0.03	PBSM-404/003	262568	1/13
40/0.10	PBSM-404/01	262569	1/13
40/0.30	PBSM-404/03	262570	1/13
40/0.50	PBSM-404/05	262571	1/13
40/1.00	PBSM-404/1	262572	1/13
63/0.03	PBSM-634/003	262590	1/13
63/0.10	PBSM-634/01	262591	1/13
63/0.30	PBSM-634/03	262592	1/13
63/0.50	PBSM-634/05	262595	1/13
63/1.00	PBSM-634/1	262596	1/13

### Add-on Residual Current Protection Unit PBSM (MW)

Max. nominal current of PLS./ $I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

#### Type A

#### Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A

SG17811



#### 2-pole

40/0.03	PBSM-402/003-A	262328	1/20
40/0.10	PBSM-402/01-A	262329	1/20
40/0.30	PBSM-402/03-A	262420	1/20
40/1.00	PBSM-402/1-A	262421	1/20
63/0.03	PBSM-632/003-A	262530	1/20
63/0.10	PBSM-632/01-A	262531	1/20
63/0.30	PBSM-632/03-A	262532	1/20
63/1.00	PBSM-632/1-A	262533	1/20

SG18111



#### 3-pole

40/0.03	PBSM-403/003-A	262543	1/20
40/0.03	PBSM-403/003-A-230	180634	1/20
40/0.10	PBSM-403/01-A	262544	1/20
40/0.30	PBSM-403/03-A	262545	1/20
40/1.00	PBSM-403/1-A	262546	1/20
63/0.03	PBSM-633/003-A	262561	1/20
63/0.03	PBSM-633/003-A-230	180635	1/20
63/0.10	PBSM-633/01-A	262562	1/20
63/0.30	PBSM-633/03-A	262563	1/20
63/1.00	PBSM-633/1-A	262564	1/20

SG18211



#### 4-pole

40/0.03	PBSM-404/003-A	262573	1/13
40/0.10	PBSM-404/01-A	262574	1/13
40/0.30	PBSM-404/03-A	262575	1/13
40/1.00	PBSM-404/1-A	262576	1/13
63/0.03	PBSM-634/003-A	262597	1/13
63/0.10	PBSM-634/01-A	262598	1/13
63/0.30	PBSM-634/03-A	262600	1/13
63/1.00	PBSM-634/1-A	262602	1/13

Max. nominal current of PLS./I<sub>Δn</sub>  
(A)

Type  
Designation

Article No. Units per  
package

**Type G**

**Surge current-proof 3 kA, type G (ÖVE E 8601)**

SG17811



**2-pole**

40/0.03	PBSM-402/003-G	262422	1/20
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SG18111



**3-pole**

40/0.03	PBSM-403/003-G	262552	1/20
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SG18211



**4-pole**

40/0.03	PBSM-404/003-G	262577	1/13
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**Type S**

**Selective + surge current-proof 5 kA, type S**

SG17811



**2-pole**

40/0.10	PBSM-402/01-S	262423	1/20
40/0.30	PBSM-402/03-S	262424	1/20
40/1.00	PBSM-402/1-S	262425	1/20
63/0.10	PBSM-632/01-S	262534	1/20
63/0.30	PBSM-632/03-S	262535	1/20
63/1.00	PBSM-632/1-S	262536	1/20

SG18111



**3-pole**

40/0.10	PBSM-403/01-S	262553	1/20
40/0.30	PBSM-403/03-S	262554	1/20
40/1.00	PBSM-403/1-S	262555	1/20
63/0.10	PBSM-633/01-S	262565	1/20
63/0.30	PBSM-633/03-S	262566	1/20
63/1.00	PBSM-633/1-S	262567	1/20

SG18211



**4-pole**

40/0.10	PBSM-404/01-S	262586	1/13
40/0.30	PBSM-404/03-S	262587	1/13
40/1.00	PBSM-404/1-S	262588	1/13
63/0.10	PBSM-634/01-S	262603	1/13
63/0.30	PBSM-634/03-S	262605	1/13
63/1.00	PBSM-634/1-S	262607	1/13

### Add-on Residual Current Protection Unit PBSM (MW)

Max. nominal current of PLS./ $I_{\Delta n}$   
(A)

Type  
Designation

Article No.    Units per  
package

#### Type S/A

**Selective + surge current-proof typ. 5 kA, sensitive to residual pulsating DC, type S/A**

SG17811



#### 2-pole

63/0.30	PBSM-632/03-S/A	167017	1/20
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SG18111



#### 3-pole

63/0.30	PBSM-633/03-S/A	167020	1/20
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SG18211



#### 4-pole

63/0.30	PBSM-634/03-S/A	167023	1/13
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**Specifications | Add-on Residual Current Protection Unit PBSM**

**Description**

- Add-on residual current unit
- Line voltage-independent tripping
- By combining this device with a top-quality miniature circuit breaker type PLS, a top-quality RCBO unit (combined RCD/MCB device) is formed.
- Rated current 40 and 63 A
- Permits combinations with a variety of characteristics thanks to the different rated currents and characteristics of the PLS.-miniature circuit breakers which can be connected
- Comprehensive range of accessories suitable for subsequent installation onto PLS.
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed
- **Type -G:** High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE-EN1, Teil1, §12.14)
- **Type -S:** Selective residual current device, either sensitive to AC, type -S, or sensitive to pulsating DC, type -S/A, for protection against special forms of residual pulsating DC which have not been smoothed. Compulsory for systems with surge arresters downstream of the RCD (ÖVE-EN1, Part 1, § 12.15).

**Accessories:**

Cover cap for busbar mounting bracket	In the scope of delivery
Disposable cylinder head bolt with slot	In the scope of delivery

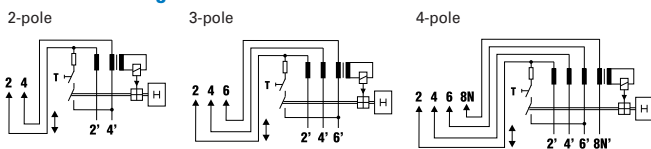
**Accessories (on PLS):**

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal contact for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

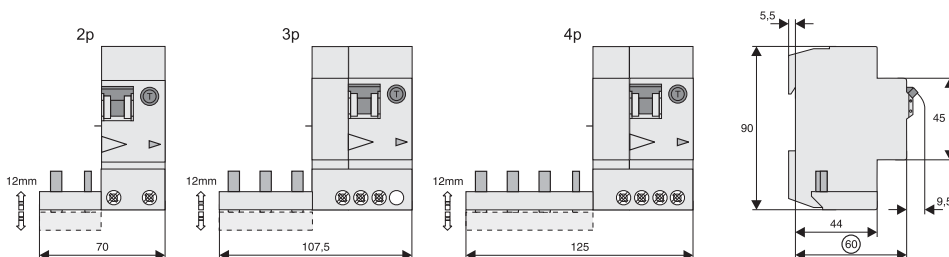
### Technical Data

		PBSM
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Type G		10 ms delay 3 kA (8/20 $\mu$ s), surge current proof
Type S		40 ms delay 6 kA, selective disconnecting function
Rated voltage	$U_n$	230/400 V AC
Limits operation voltage test circuit		
2-pole, 30 mA		196-264 V
2-pole, 100, 300, 500, 1000 mA		196-456 V
3-pole, 30 mA		340-456 V
3-pole, 30 mA-230		196-264 V
3-pole, 100, 300, 500, 1000 mA		196-456 V
4-pole, 30 mA		340-456 V
4-pole, 100, 300, 500, 1000 mA		196-456 V
Rated frequency		50 Hz
Use at 16 $\frac{2}{3}$ Hz		Recesses time between the single switchings increases to 88 s, $I_n$ max. 63 A
Use at 400 Hz		$I_n$ max. 40 A
Rated current	$I_n$	$\leq 40$ A, $\leq 63$ A
Rated tripping current	$I_{\Delta n}$	30, 100, 300, 500, 1000 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_n$
Sensitivity		AC and pulsating DC
Service short circuit breaking capacity	$I_{cs}$	same as connected PLS. (7.5 kA)
Rated breaking capacity	$I_{cn}$	same as connected PLS. (10 kA)
Rated fault breaking capacity	$I_{\Delta m}$	
$U_n = 230$ V		6 kA
$U_n = 400$ V		3 kA
<b>Mechanical</b>		
Frame size		45 mm
Device height		90 mm
Device width		70 mm (2p), 107,5 mm (3p), 125 mm (4p)
Mounting		fix mounted onto PLS.
Degree of protection, built-in		IP40
Fastening screw		M 2.5 (slotted one-way cheese head screw; > 0.6 Nm)
Upper and lower terminals		lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		
Rigid conductors		1 x (1 - 25) mm <sup>2</sup>
Flexible conductors (with wire end sleeve)		1 x (0.75 - 16) mm <sup>2</sup>
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

### Connection diagrams



### Dimensions (mm)



SG17711



## Description

- By combining this device with a top-quality miniature circuit breaker of type PLHT a top-quality RCBO unit (combined RCD/MCB device) is formed.
- Add-on residual current unit (screw connection) for 80 or 125 A (2-pole and 4-pole)
- High flexibility and ease of installation thanks to variable wiring
- Free selection of main power supply
- Auxiliary switch 1 make contact included as standard in all PBHT versions
- Permits combinations with a variety of characteristics thanks to the different rated currents and characteristics of the miniature circuit breakers PLHT which can be connected
- For commercial and industry applications
- For subsequent mounting onto 2, 3, 3+N and 4-pole-miniature circuit breakers PLHT
- The screw connection to the PLHT-device can be unscrewed at any time. Consequently, in case of modifications of the systems to be protected, the installation can be adapted to new requirements at any time.

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type AC

#### AC-sensitive, conditionally surge current-proof 250 A, type AC

SG17611



#### 2-pole

80/0.03	PBHT-80/2/003	248818	1/4
80/0.30	PBHT-80/2/03	248820	1/4
80/0.50	PBHT-80/2/05	248822	1/4
80/1.00	PBHT-80/2/1	248824	1/4
125/0.03	PBHT-125/2/003	248799	1/4
125/0.30	PBHT-125/2/03	248801	1/4
125/0.50	PBHT-125/2/05	248803	1/4
125/1.00	PBHT-125/2/1	248805	1/4

SG17711



#### 4-pole

80/0.03	PBHT-80/4/003	248826	1/4
80/0.30	PBHT-80/4/03	248828	1/4
80/0.50	PBHT-80/4/05	248831	1/4
80/1.00	PBHT-80/4/1	248834	1/4
125/0.03	PBHT-125/4/003	248807	1/4
125/0.30	PBHT-125/4/03	248809	1/4
125/0.50	PBHT-125/4/05	248812	1/4
125/1.00	PBHT-125/4/1	248815	1/4

#### Type A

#### Sensitive to residual pulsating DC, conditionally surge current-proof 250 A, type A

SG17611



#### 2-pole

80/0.03	PBHT-80/2/003-A	248819	1/4
80/0.30	PBHT-80/2/03-A	248821	1/4
80/0.50	PBHT-80/2/05-A	248823	1/4
80/1.00	PBHT-80/2/1-A	248825	1/4
125/0.03	PBHT-125/2/003-A	248800	1/4
125/0.30	PBHT-125/2/03-A	248802	1/4
125/0.50	PBHT-125/2/05-A	248804	1/4
125/1.00	PBHT-125/2/1-A	248806	1/4

SG17711



#### 4-pole

80/0.03	PBHT-80/4/003-A	248827	1/4
80/0.30	PBHT-80/4/03-A	248829	1/4
80/0.50	PBHT-80/4/05-A	248832	1/4
80/1.00	PBHT-80/4/1-A	248835	1/4
125/0.03	PBHT-125/4/003-A	248808	1/4
125/0.30	PBHT-125/4/03-A	248810	1/4
125/0.50	PBHT-125/4/05-A	248813	1/4
125/1.00	PBHT-125/4/1-A	248816	1/4

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type S/A**

**Selective + surge current-proof 5 kA, type S/A**

SG17711



**4-pole**

80/0.30	PBHT-80/4/03-S/A	248830	1/4
80/0.50	PBHT-80/4/05-S/A	248833	1/4
80/1.00	PBHT-80/4/1-S/A	248836	1/4
125/0.30	PBHT-125/4/03-S/A	248811	1/4
125/0.50	PBHT-125/4/05-S/A	248814	1/4
125/1.00	PBHT-125/4/1-S/A	248817	1/4

Operational voltage range V~	Type Designation	Article No.	Units per package
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**Accessory**

**Shunt trip release**

SG09411



110-415	Z-BHASA/230	248445	8
12-60	Z-BHASA/24	248444	8

**Specifications | Add-on Residual Current Protection Unit PBHT**

**Description**

- By combination with miniature circuit breaker PLHT => RCBO-Unit (MCCB)
- Add-on residual current unit (screw connection) for 80 or 125 A (2-pole and 4-pole)
- High flexibility and ease of installation thanks to variable wiring (400 mm flexible connection wires 2p = 2 units, 4p = 4 units included in the set)
- Free selection of main power supply
- Auxiliary switch 1 make contact included as standard in all PBHT versions
- Permits combinations with a variety of characteristics thanks to the different rated currents and characteristics of the miniature circuit breakers PLHT which can be connected
- For commercial and industry applications
- For subsequent mounting onto 2, 3, 3+N and 4-pole-miniature circuit breakers PLHT
- Toggle (serves as switch position- and tripping indicator)
- The screw connection to the PLHT-device can be unscrewed at any time. Consequently, in case of modifications of the systems to be protected, the installation can be adapted to new requirements at any time.
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.

**Accessories:**

Flexible connection wires (connection to PLHT) are included in the standard set:

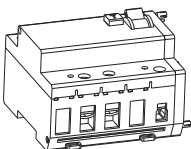
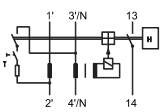
2-pole 80 A	2 x 16 mm <sup>2</sup> (á 400 mm)
4-pole 80 A	4 x 16 mm <sup>2</sup> (á 400 mm)
2-pole 125 A	2 x 35 mm <sup>2</sup> (á 400 mm)
4-pole 125 A	4 x 35 mm <sup>2</sup> (á 400 mm)

### Technical Data

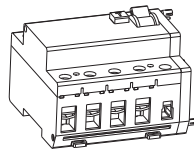
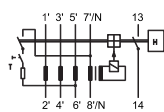
		PBHT
<b>Electrical</b>		
Design according to		IEC/EN 60947-2
Current test marks as printed onto the device		
<b>Strombahnen</b>		
Rated voltage	$U_e$	230/400 V AC
Limits operation voltage test circuit		
2-pole		196-264 V
4-pole, 30mA		196-264 V
4-pole		196-456 V
Rated frequency		50 Hz
Rated current	$I_n$	80 A, 125 A
Rated tripping current	$I_{\Delta n}$	30, 300, 500, 1000 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_n$
Sensitivity		AC and pulsating DC
Tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Type S		40 ms delay 6 kA, selective disconnecting function, surge current proof
Rated service short circuit breaking capacity	$I_{cn}$	same as connected PLHT
Rated ultimate circuit breaking capacity	$I_{cu}$	same as connected PLHT
Rated fault short circuit breaking capacity	$I_{\Delta/n}$	= $I_{cu}$
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance mechanical components		
PBHT-80		>10,000
PBHT-125		>8,000
Endurance electrical components		
PBHT-80		>1,500
PBHT-125		>1,000
<b>Auxiliary Contact</b>		
Utilisation category AC15		
Rated voltage	$U_e$	250 V AC
Rated operational current	$I_e$	16 A AC
<b>Mechanical</b>		
Frame size		45 mm
Device height		90 mm
Device width		95 mm (5.5MU)
Depth of central body		60 mm
Mounting		screwed onto PLHT 2-, 3-, 4-pole; PBHT-ASA
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		
Main conductor		2.5 - 50 mm <sup>2</sup>
Auxiliary switch		1 - 25 mm <sup>2</sup>
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

### Connection diagrams

2-pole

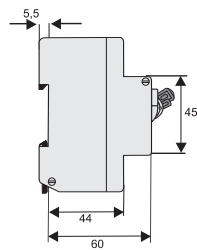
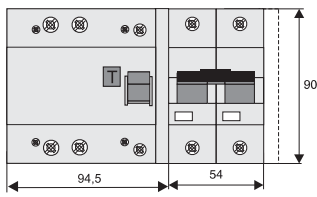


4-pole

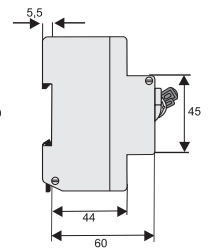
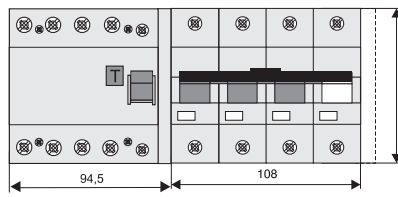


Dimensions (mm)

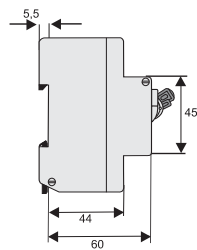
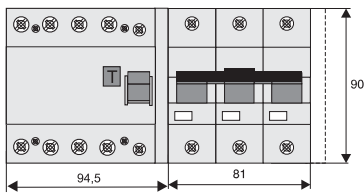
PBHT/2p + PLHT/2p



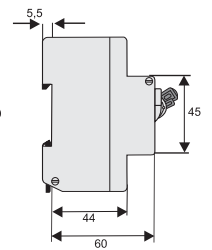
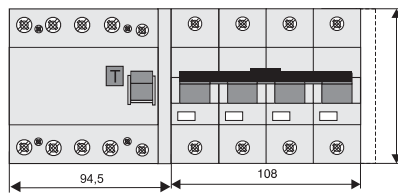
PBHT/4p + PLHT/3p+N



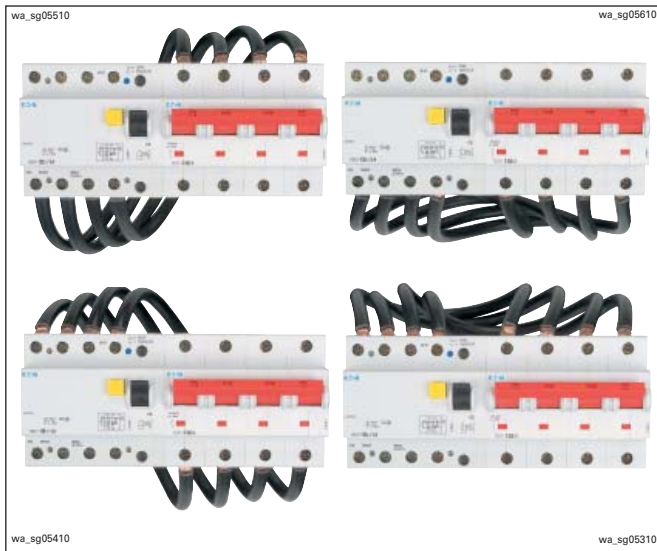
PBHT/4p + PLHT/3p



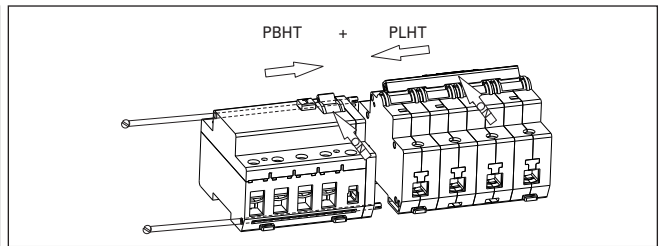
PBHT/4p + PLHT/4p



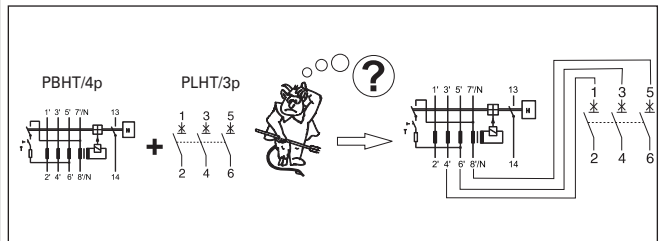
Wiring options



Mounting PBHT + PLHT

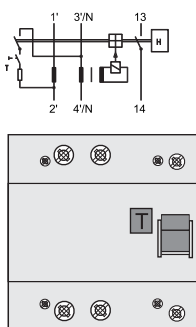


Connection PBHT/4p + PLHT/3p

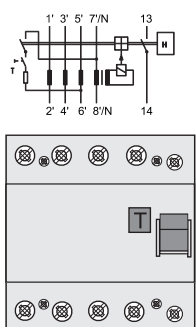


Mounting arrangement residual current protection unit - shunt trip release - miniature circuit breaker - auxiliary contact

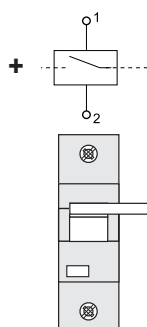
PBHT-2-pole



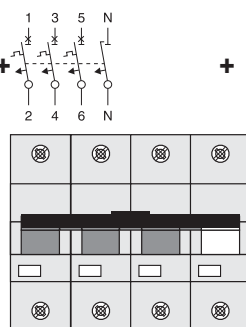
PBHT-4-pole



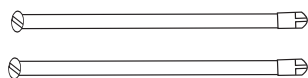
Z-PBHT-ASA



PLHT-3+N-pole



Z-LHK



### Accessories for PBHT

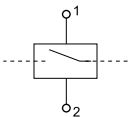
#### Shunt trip release Z-BHASA

- 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  
PBHT-ASA/24: min. 90 VA
- Screws for mounting included PBHT => BHASA => PLHT

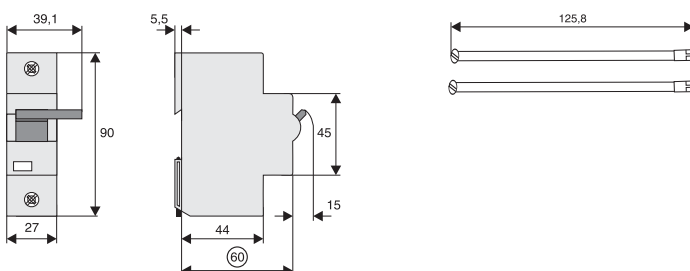
### Technical Data

	Z-BHASA/24	Z-BHASA/230
<b>Electrical</b>		
Minimum pulse duration	15 ms	10 ms
Internal resistance	2 W	130 W
Duty	100%	100%
Tripping time	< 20 ms	< 20 ms
Peak withstand voltage (1.2/50 μs)	2 kV	2 kV
Endurance	>4,000 switching operations	>4,000 switching operations
<b>AC voltage range</b>		
Responding limit	8 V	70 V
Operational voltage range	12-60 V	110-415 V
Maximum current consumption during switch-on	1.4-7 A	3.4 A (at 230 V)
Current flow time at max. current consumption	4.0 ms	4.5 ms
<b>DC voltage range</b>		
Responding limit	11 V	90 V
Operational voltage range	12-60 V	110-230 V
Maximum current consumption during switch-on	1.7 A typ.	1.7 A typ.
Current flow time at max. current consumption	2 ms	4 ms
<b>Mechanical</b>		
Frame size	45 mm	45 mm
Device height	90 mm	90 mm
Device width	27 mm	27 mm
Mounting	quick fastening on DIN rail IEC/EN 60715	
Degree of protection, built-in	IP40	IP40
Upper and lower terminals	lift terminals	lift terminals
Terminal capacity	2.5-30 mm <sup>2</sup>	2.5-30 mm <sup>2</sup>
Terminal torque	4 Nm	4 Nm

### Connection diagram



### Dimensions (mm)







SG31211



## Description

- Reliable, universal monitoring of residual current
- RCD characteristic and sensitivity are freely selectable
- Compact design, with integrated transformer
- DIN mounting, compatible with shapes and standard busbar connections of other Xpole devices
- Local status indication of residual current through 3 LEDs
- 2 potential-free signalling contacts

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

**Leakage Current Monitor PDIM**

+ , instantaneous, **G** , **S** => adjustable

SG31211



**4-pole**

40/0.03; 0.1; 0.3; 0.5; 1	PDIM-40/4	111760	1/30
100/0.03; 0.1; 0.3; 0.5; 1	PDIM-100/4	111761	1/30

**Specifications | Leakage Current Monitor PDIM**

**Description**

- Shape compatible with and suitable for standard busbar connection to other devices of the P-series
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Power supply via 'OR' disjunction of the 4 conductors
- Electronic functioning (line-voltage dependent)
- The device functions irrespective of the position of installation
- Mains connection at either side
- The 4-pole device can also be used for 3-pole connection. For this purpose use terminals 1-2, 3-4, and 5-6.
- The 4-pole switch can also be used as a 2-pole switch. For this purpose use terminals 5-6 and N-N.
- 2 potential-free relays (make contact, in parallel with the yellow and red LED) (up to 10 A / 230 V~)

**Functioning**

- The green LED becomes active at 0-30% of the preset  $I_{\Delta n}$ .  
The yellow LED becomes active at 30-50% of the preset  $I_{\Delta n}$ .  
The red LED becomes active at >50% of the preset  $I_{\Delta n}$ .
- The yellow LED turns off again when the identified residual current is <30% of the preset  $I_{\Delta n}$ .
- The red LED turns off again when the identified residual current is <50% of the preset  $I_{\Delta n}$ .
- Only one LED will be active at a time.
- An output relay will always be switched simultaneously with the yellow or red LED
- Depending on the setting of the type of RCD (instantaneous, G, S), the residual current needs to flow a sufficiently long time before an action is triggered.

**Test function**

- The rotary coding switch for the RCD switch function is to be set to "TEST". The device then alternately simulates residual currents of 30% and 50% of the  $I_{\Delta n}$ . In this process, the yellow and red LED flash alternately (1 Hz), both output relays remain permanently energised.



sg06416



## Description

- Arc Fault Detection Device acc. to IEC/EN-62606
- Detects and quenches arc faults in final circuits
- Fully combined with residual current circuit breaker (RCCB) and miniature circuit breaker (MCB)
- 2-pole: Both clearances between open contacts are protected
- Variable installation of N either left or right
- Rated currents from 10 to 40 A
- Contact position indicator red – green
- Tripped indication: MCB, RCCB or AFDD
- LED indication for arc faults
- Permanent self-monitoring
- Overvoltage and overheat monitoring
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- 10 and 30 mA rated residual currents
- Tripping characteristics B, C
- Rated breaking capacity up to 10 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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### Type A, 10 kA, 2-pole

#### Short-time delayed, sensitive to residual pulsating DC, type A

##### Characteristic B

10/0.01	AFDD-10/2/B/001-Li/A	187166	1/40
13/0.01	AFDD-13/2/B/001-Li/A	187178	1/40
150L/0.01	AFDD-15/2/B/001-Li/A-OL	187190	1/40
16/0.01	AFDD-16/2/B/001-Li/A	187202	1/40
10/0.03	AFDD-10/2/B/003-Li/A	187169	1/40
13/0.03	AFDD-13/2/B/003-Li/A	187181	1/40
150L/0.03	AFDD-15/2/B/003-Li/A-OL	187193	1/40
16/0.03	AFDD-16/2/B/003-Li/A	187205	1/40
200L/0.03	AFDD-20/2/B/003-Li/A-OL	187214	1/40
20/0.03	AFDD-20/2/B/003-Li/A	187220	1/40
25/0.03	AFDD-25/2/B/003-Li/A	187226	1/40

##### Characteristic C

10/0.01	AFDD-10/2/C/001-Li/A	187172	1/40
13/0.01	AFDD-13/2/C/001-Li/A	187184	1/40
150L/0.01	AFDD-15/2/C/001-Li/A-OL	187196	1/40
16/0.01	AFDD-16/2/C/001-Li/A	187208	1/40
10/0.03	AFDD-10/2/C/003-Li/A	187175	1/40
13/0.03	AFDD-13/2/C/003-Li/A	187187	1/40
150L/0.03	AFDD-15/2/C/003-Li/A-OL	187199	1/40
16/0.03	AFDD-16/2/C/003-Li/A	187211	1/40
200L/0.03	AFDD-20/2/C/003-Li/A-OL	187217	1/40
20/0.03	AFDD-20/2/C/003-Li/A	187223	1/40
25/0.03	AFDD-25/2/C/003-Li/A	187229	1/40

### Type A, 6 kA, 2-pole

#### Short-time delayed, sensitive to residual pulsating DC, type A

##### Characteristic B

32/0.03	AFDD-32/2/B/003-Li/A	187232	1/40
40/0.03	AFDD-40/2/B/003-Li/A	187238	1/40

##### Characteristic C

32/0.03	AFDD-32/2/C/003-Li/A	187235	1/40
40/0.03	AFDD-40/2/C/003-Li/A	187241	1/40

sg06416



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A, 10 kA, 2-pole**

**Non-delayed, sensitive to residual pulsating DC, type A**

**Characteristic B**

10/0.01	AFDD-10/2/B/001-A	187165	1/40
13/0.01	AFDD-13/2/B/001-A	187177	1/40
150L/0.01	AFDD-15/2/B/001-A-OL	187189	1/40
16/0.01	AFDD-16/2/B/001-A	187201	1/40
10/0.03	AFDD-10/2/B/003-A	187168	1/40
13/0.03	AFDD-13/2/B/003-A	187180	1/40
150L/0.03	AFDD-15/2/B/003-A-OL	187192	1/40
16/0.03	AFDD-16/2/B/003-A	187204	1/40
200L/0.03	AFDD-20/2/B/003-A-OL	187213	1/40
20/0.03	AFDD-20/2/B/003-A	187219	1/40
25/0.03	AFDD-25/2/B/003-A	187225	1/40

**Characteristic C**

10/0.01	AFDD-10/2/C/001-A	187171	1/40
13/0.01	AFDD-13/2/C/001-A	187183	1/40
150L/0.01	AFDD-15/2/C/001-A-OL	187195	1/40
16/0.01	AFDD-16/2/C/001-A	187207	1/40
10/0.03	AFDD-10/2/C/003-A	187174	1/40
13/0.03	AFDD-13/2/C/003-A	187186	1/40
150L/0.03	AFDD-15/2/C/003-A-OL	187198	1/40
16/0.03	AFDD-16/2/C/003-A	187210	1/40
200L/0.03	AFDD-20/2/C/003-A-OL	187216	1/40
20/0.03	AFDD-20/2/C/003-A	187222	1/40
25/0.03	AFDD-25/2/C/003-A	187228	1/40

**Type A, 6 kA, 2-pole**

**Non-delayed, sensitive to residual pulsating DC, type A**

**Characteristic B**

32/0.03	AFDD-32/2/B/003-A	187231	1/40
40/0.03	AFDD-40/2/B/003-A	187237	1/40

**Characteristic C**

32/0.03	AFDD-32/2/C/003-A	187234	1/40
40/0.03	AFDD-40/2/C/003-A	187240	1/40

sg06416



sg06416



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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### Type AC, 10 kA, 2-pole

#### Non-delayed, alternating-current-sensitive, type AC

##### Characteristic B

10/0.01	AFDD-10/2/B/001	187164	1/40
13/0.01	AFDD-13/2/B/001	187176	1/40
150L/0.01	AFDD-15/2/B/001-OL	187188	1/40
16/0.01	AFDD-16/2/B/001	187200	1/40
10/0.03	AFDD-10/2/B/003	187167	1/40
13/0.03	AFDD-13/2/B/003	187179	1/40
150L/0.03	AFDD-15/2/B/003-OL	187191	1/40
16/0.03	AFDD-16/2/B/003	187203	1/40
200L/0.03	AFDD-20/2/B/003-OL	187212	1/40
20/0.03	AFDD-20/2/B/003	187218	1/40
25/0.03	AFDD-25/2/B/003	187224	1/40

##### Characteristic C

10/0.01	AFDD-10/2/C/001	187170	1/40
13/0.01	AFDD-13/2/C/001	187182	1/40
150L/0.01	AFDD-15/2/C/001-OL	187194	1/40
16/0.01	AFDD-16/2/C/001	187206	1/40
10/0.03	AFDD-10/2/C/003	187173	1/40
13/0.03	AFDD-13/2/C/003	187185	1/40
150L/0.03	AFDD-15/2/C/003-OL	187197	1/40
16/0.03	AFDD-16/2/C/003	187209	1/40
200L/0.03	AFDD-20/2/C/003-OL	187215	1/40
20/0.03	AFDD-20/2/C/003	187221	1/40
25/0.03	AFDD-25/2/C/003	187227	1/40

### Type AC, 6 kA, 2-pole

#### Non-delayed, alternating-current-sensitive, type AC

##### Characteristic B

32/0.03	AFDD-32/2/B/003	187230	1/40
40/0.03	AFDD-40/2/B/003	187236	1/40

##### Characteristic C

32/0.03	AFDD-32/2/C/003	187233	1/40
40/0.03	AFDD-40/2/C/003	187239	1/40



**Specifications | Arc Fault Detection Device AFDD<sup>+</sup>, 2-pole**

**Description**

- Arc Fault Detection Device acc. to IEC/EN-62606
- Line-voltage-independent RCBO (combined switch) acc. to IEC/EN 61009
- 2-pole: Both clearances between open contacts are protected
- Variable installation of N either left or right
- Tripped indication: CB, RCD or AFDD
- LED indication for arc faults
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- The line length (one-way) from the AFDD<sup>+</sup> to the socket outlet should not exceed 70 m. This guarantees that arc faults can be detected reliably.

- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed
- **Type -Li/A:** As Type -A, but in addition it is short-time delayed. Highly reliable against unwanted tripping.

**Error memory:**

The AFDD<sup>+</sup> saves the last reason for tripping at an arc fault. By turning off the device, press and hold the test key "T" and simultaneously turn on the last error can be queried again.

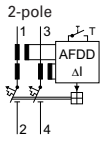
**Accessories:**

Auxiliary switch for subsequent installation	ZP-IHK	286052
Auxiliary switch	ZP-NHK	248437
	ZP-WHK	286053
Shunt trip release	ZP-ASA/..	248438, 248439
Busbars	EVG-2PHAS/4AFDD; ZV-SS; ZV-L1/N; ZV-L2/L3; ZV-ADP; ZV-AEK	

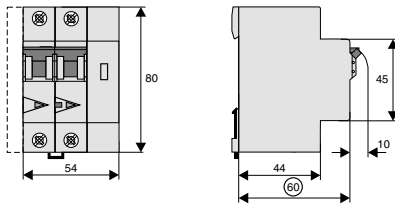
## Technical Data

		AFDD <sup>+</sup>
<b>Electrical</b>		
Design according to		IEC/EN 62606, IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 μs) surge current proof
Rated voltage	$U_n$	240 V AC; 50 Hz
Operational voltage range		180-264 V
Self-consumption		< 0.8 W
Rated tripping current	$I_{\Delta n}$	10, 30 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity		
AFDD 10-25 A		10 kA
AFDD 32-40 A		6 kA
Rated current		10 - 40 A
Rated insulation voltage	$U_i$	440 V
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 μs)
Rated fault breaking capacity	$I_{\Delta m}$	
EN 61009		3 kA
IEC 61009		10-16 A: 3 kA 20-40 A: 500 A
Arc fault tripping times after load current (acc. to IEC/EN62606)		
Load current (A)		Tripping time (s)
2,5		<1
5		<0.5
10		<0.25
16		<0.15
32		<0.12
40		<0.12
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>10 kA)
Endurance		
electrical components		≥ 4,000 switching operations
mechanical components		≥ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		54 mm (3TE)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

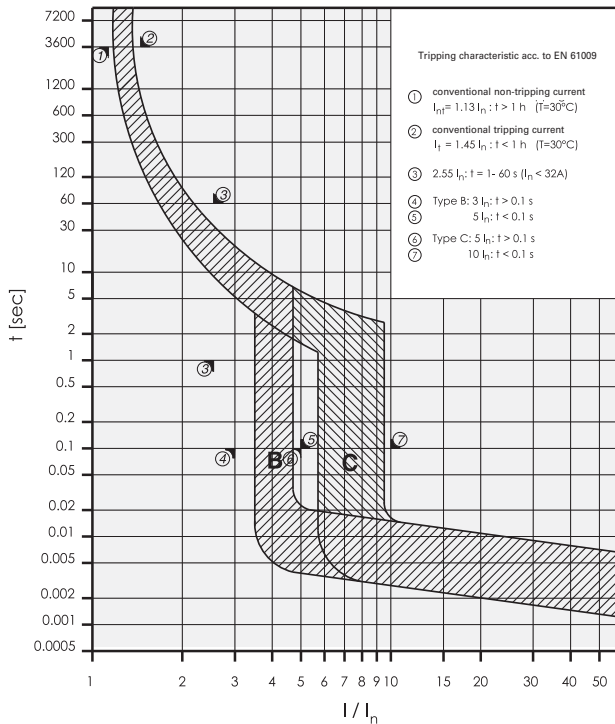
Connection diagram



Dimensions (mm)



Tripping Characteristic AFDD+, Characteristics B and C



Declaration AFDD reason for tripping

After switching on the AFDD is initially a test LED (LED sequence red-yellow-green -> continuous green). Any previous arc tripping reasons are shown only one time after switching on again.

	$I_{\Delta} > I_{\Delta n}$	Green, no arcing as tripping reason
		1x yellow, serial arc
		2x yellow, serial arc of a dimmed load
		3x yellow, parallel arc
	$U > 270\text{ V}$	4x yellow, over voltage > 270V
	$T_j > 115^{\circ}\text{C}$	5x yellow, overtemperature in the device > 115°C
		6x yellow, device error, please check device by an expert

The last AFDD error can be caused by pressing the test key while the device is switched on.

### Short Circuit Selectivity AFDD+ 10-20 A towards Neozed<sup>1)</sup> / Diazed<sup>2)</sup> / NH00<sup>3)</sup>

Short circuit currents in kA, rated currents of fuses in A

Short circuit selectivity **AFDD+** towards **Neozed** <sup>1)</sup>

AFDD+ Neozed <sup>1)</sup>										
I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100
<b>B10</b>	<0.5	0.5	0.9	2	2.3	3.7	8	10	10	10
<b>B13</b>	<0.5	0.5	0.8	1.7	1.9	3	6	10	10	10
<b>B16</b>		0.5	0.7	1.5	1.7	2.4	4.4	6.8	10	10
<b>B20</b>			0.7	1.4	1.5	2.2	3.9	6	9.2	10
<b>C10</b>	<0.5	0.5	0.8	1.7	1.9	3	6.1	10	10	10
<b>C13</b>	<0.5	0.5	0.7	1.6	1.8	2.8	5.5	9.5	10	10
<b>C16</b>		<0.5	0.7	1.3	1.5	2.2	4	6.2	10	10
<b>C20</b>			0.6	1.3	1.4	2.1	3.7	5.6	8.5	10

Short circuit selectivity **AFDD+** towards **Diazed** <sup>2)</sup>

AFDD+ Diazed <sup>2)</sup>										
I <sub>n</sub> [A]	16	20	25	32	35	50	63	80	100	
<b>B10</b>	<0.5	0.5	0.9	1.8	2.9	5.6	10	10	10	
<b>B13</b>	<0.5	0.5	0.8	1.5	2.4	4.5	10	10	10	
<b>B16</b>		0.5	0.8	1.3	2	3.4	8	10	10	
<b>B20</b>			0.7	1.3	1.9	3.1	7.1	10	10	
<b>C10</b>	<0.5	0.5	0.8	1.5	2.4	4.4	10	10	10	
<b>C13</b>	<0.5	0.5	0.8	1.4	2.3	4.2	10	10	10	
<b>C16</b>		<0.5	0.7	1.2	1.9	3.2	7.6	10	10	
<b>C20</b>			0.7	1.2	1.8	2.9	6.5	9.7	10	

Short circuit selectivity **AFDD+** towards **NH00** <sup>3)</sup>

AFDD+ NH00 <sup>3)</sup>												
I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100	125	160
<b>B10</b>	<0.5	<0.5	0.8	1.5	2.3	3.2	5.7	9.1	10	10	10	10
<b>B13</b>	<0.5	<0.5	0.8	1.3	1.9	2.7	4.4	6.5	10	10	10	10
<b>B16</b>		<0.5	0.7	1.1	1.6	2.2	3.4	4.8	8	10	10	10
<b>B20</b>			0.6	1	1.4	2	3.1	4.3	7	10	10	10
<b>C10</b>	<0.5	<0.5	0.7	1.3	1.9	2.7	4.5	6.9	10	10	10	10
<b>C13</b>	<0.5	<0.5	0.7	1.2	1.8	2.5	4.1	6.1	10	10	10	10
<b>C16</b>		<0.5	0.6	1	1.5	2	3.1	4.4	7.5	10	10	10
<b>C20</b>			0.6	0.9	1.4	1.9	2.9	4.1	6.5	10	10	10

Darker areas: no selectivity

<sup>1)</sup> SIEMENS Type 5SE2; Size: D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V

<sup>2)</sup> SIEMENS Type 5SB2, 5SB4, 5SC2; Size: DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V

<sup>3)</sup> SIEMENS Type 3NA3 8, 3NA6 8, 3NA7 8; Size: 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V

### Short Circuit Selectivity AFDD+ 25-40 A towards Neozed<sup>1)</sup> / Diazed<sup>2)</sup> / NH00<sup>3)</sup>

Short circuit currents in kA, rated currents of fuses in A

Short circuit selectivity **AFDD+** towards **Neozed** <sup>1)</sup>

AFDD+ Neozed <sup>1)</sup>										
I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100
<b>B25</b>				1.2	1.3	1.8	3.1	4.7	6	6
<b>B32</b>					1.2	1.7	2.7	3.8	5.5	6
<b>B40</b>						1.3	1.7	2.2	2.7	4.2
<b>C25</b>				1.1	1.3	1.8	2.8	3.9	5.6	6
<b>C32</b>					1.2	1.7	2.6	3.6	5.1	6
<b>C40</b>						1.3	1.9	3.3	3.2	5.8

Short circuit selectivity **AFDD+** towards **Diazed** <sup>1)</sup>

AFDD+ Diazed <sup>2)</sup>										
I <sub>n</sub> [A]	16	20	25	32	35	50	63	80	100	
<b>B25</b>				1.1	1.5	2.4	5.5	6	6	
<b>B32</b>					1.4	2.1	4.3	6	6	
<b>B40</b>						1.4	2.4	2.9	5.1	
<b>C25</b>				1.1	1.5	2.3	4.4	6	6	
<b>C32</b>					1.4	2.2	4.1	5.6	6	
<b>C40</b>						1.6	2.8	3.6	6	

Short circuit selectivity **AFDD+** towards **NH00** <sup>3)</sup>

AFDD+ NH00 <sup>3)</sup>												
I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100	125	160
<b>B25</b>				0.9	1.2	1.6	2.4	3.4	5.5	6	6	6
<b>B32</b>					1.1	1.4	2.1	2.9	4.3	6	6	6
<b>B40</b>						1.4	1.9	2.8	4.1	6	6	6
<b>C25</b>				0.9	1.2	1.6	2.3	3	4.6	6	6	6
<b>C32</b>					1.1	1.5	2.1	2.8	4.3	6	6	6
<b>C40</b>						1.5	2.1	3.1	5.4	6	6	6

Darker areas: no selectivity

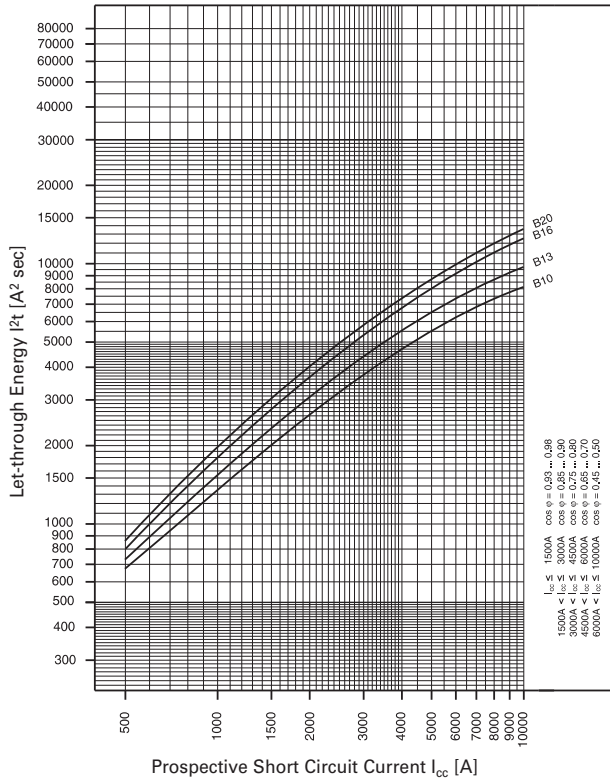
<sup>1)</sup> SIEMENS Type 5SE2; Size: D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V

<sup>2)</sup> SIEMENS Type 5SB2, 5SB4, 5SC2; Size: DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V

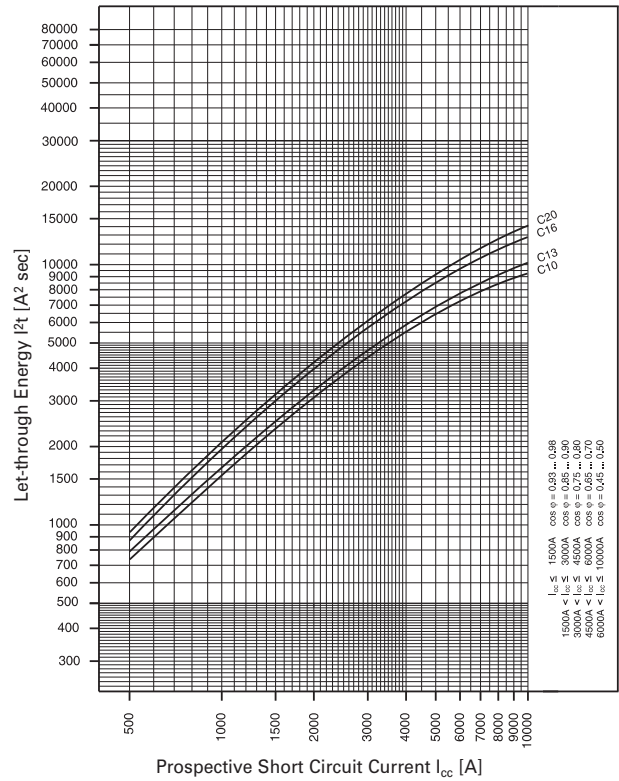
<sup>3)</sup> SIEMENS Type 3NA3 8, 3NA6 8, 3NA7 8; Size: 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V

Let-through Energy AFDD+

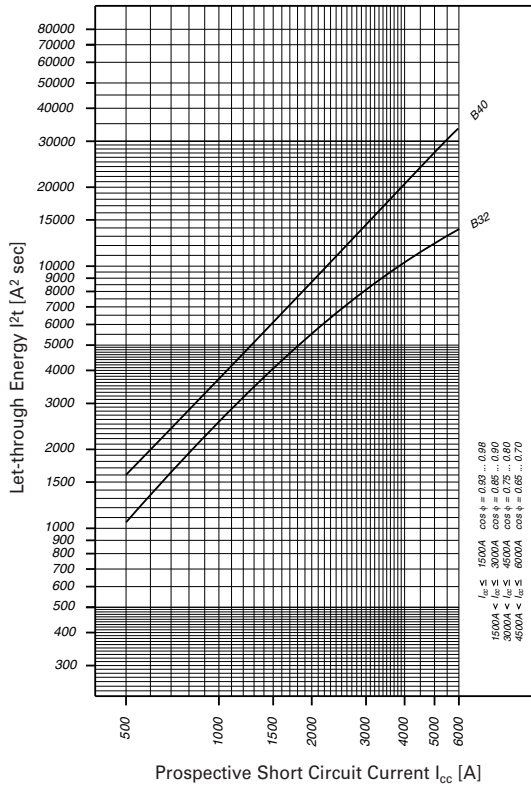
Let-through Energy AFDD+, Characteristic B, 2-pole, 10-20 A



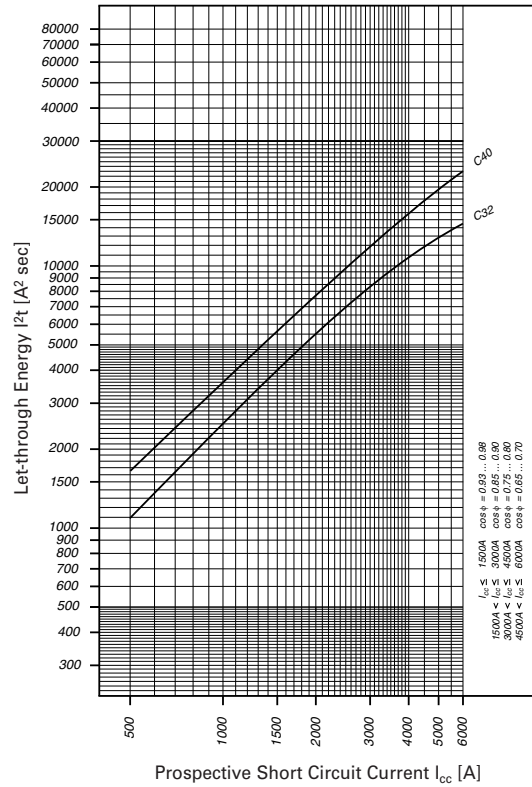
Let-through Energy AFDD+, Characteristic C, 2-pole, 10-20 A



Let-through Energy AFDD+, Characteristic B, 2-pole, 32-40 A



Let-through Energy AFDD+, Characteristic C, 2-pole, 32-40 A



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## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Increased protection in applications with 1-phase frequency converter due to the detection of mixed frequencies (type F)
- Reduction of nuisance tripping (type F, G, or G/A) thanks to
  - time delayed tripping
  - increased current withstand capability > 3 kA
- Higher load rating with DC residual currents up to 10 mA (type F)
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 10 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type F**

**10 kA, 1+N-pole**

**Selective + surge current-proof 3 kA, sensitive to residual pulsating DC, type F**

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**Characteristic B**

13/003	PKNM-13/1N/B/003-F	193572	1/60
16/003	PKNM-16/1N/B/003-F	193573	1/60
20/003	PKNM-20/1N/B/003-F	193574	1/60
25/003	PKNM-25/1N/B/003-F	193581	1/60
32/003	PKNM-32/1N/B/003-F	193582	1/60
40/003	PKNM-40/1N/B/003-F	193583	1/60
13/03	PKNM-13/1N/B/03-F	193587	1/60
16/03	PKNM-16/1N/B/03-F	193588	1/60
20/03	PKNM-20/1N/B/03-F	193589	1/60
25/03	PKNM-25/1N/B/03-F	193596	1/60
32/03	PKNM-32/1N/B/03-F	193597	1/60
40/03	PKNM-40/1N/B/03-F	193598	1/60
13/01	PKNM-13/1N/B/01-F	193602	1/60
16/01	PKNM-16/1N/B/01-F	193603	1/60
20/01	PKNM-20/1N/B/01-F	193604	1/60
25/01	PKNM-25/1N/B/01-F	193611	1/60
32/01	PKNM-32/1N/B/01-F	193612	1/60
40/01	PKNM-40/1N/B/01-F	193613	1/60

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**Characteristic C**

13/003	PKNM-13/1N/C/003-F	193575	1/60
16/003	PKNM-16/1N/C/003-F	193576	1/60
20/003	PKNM-20/1N/C/003-F	193577	1/60
25/003	PKNM-25/1N/C/003-F	193584	1/60
32/003	PKNM-32/1N/C/003-F	193585	1/60
40/003	PKNM-40/1N/C/003-F	193586	1/60
13/03	PKNM-13/1N/C/03-F	193590	1/60
16/03	PKNM-16/1N/C/03-F	193591	1/60
20/03	PKNM-20/1N/C/03-F	193592	1/60
25/03	PKNM-25/1N/C/03-F	193599	1/60
32/03	PKNM-32/1N/C/03-F	193600	1/60
40/03	PKNM-40/1N/C/03-F	193601	1/60
13/01	PKNM-13/1N/C/01-F	193605	1/60
16/01	PKNM-16/1N/C/01-F	193606	1/60
20/01	PKNM-20/1N/C/01-F	193607	1/60
25/01	PKNM-25/1N/C/01-F	193614	1/60
32/01	PKNM-32/1N/C/01-F	193615	1/60
40/01	PKNM-40/1N/C/01-F	193616	1/60

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**Characteristic D**

13/003	PKNM-13/1N/D/003-F	193578	1/60
16/003	PKNM-16/1N/D/003-F	193579	1/60
20/003	PKNM-20/1N/D/003-F	193580	1/60
13/03	PKNM-13/1N/D/03-F	193593	1/60
16/03	PKNM-16/1N/D/03-F	193594	1/60
20/03	PKNM-20/1N/D/03-F	193595	1/60
13/01	PKNM-13/1N/D/01-F	193608	1/60
16/01	PKNM-16/1N/D/01-F	193609	1/60
20/01	PKNM-20/1N/D/01-F	193610	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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### Type G/A

#### 10 kA, 1+N-pole

#### Surge current-proof 3 kA, sensitive to residual pulsating DC, type G/A

##### Characteristic B

13/003	PKNM-13/1N/B/003-G/A	182886	1/60
16/003	PKNM-16/1N/B/003-G/A	182887	1/60
20/003	PKNM-20/1N/B/003-G/A	182888	1/60
25/003	PKNM-25/1N/B/003-G/A	182889	1/60
32/003	PKNM-32/1N/B/003-G/A	182890	1/60

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##### Characteristic C

13/003	PKNM-13/1N/C/003-G/A	182891	1/60
16/003	PKNM-16/1N/C/003-G/A	182892	1/60
20/003	PKNM-20/1N/C/003-G/A	182893	1/60
25/003	PKNM-25/1N/C/003-G/A	182894	1/60
32/003	PKNM-32/1N/C/003-G/A	182895	1/60

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### Type G

#### 10 kA, 1+N-pole

#### Surge current-proof 3 kA, type G (ÖVE E 8601)

##### Characteristic B

13/003	PKNM-13/1N/B/003-G	236137	1/60
16/003	PKNM-16/1N/B/003-G	236209	1/60
20/003	PKNM-20/1N/B/003-G	236243	1/60
25/003	PKNM-25/1N/B/003-G	236273	1/60
32/003	PKNM-32/1N/B/003-G	236303	1/60
40/003	PKNM-40/1N/B/003-G	236332	1/60
13/03	PKNM-13/1N/B/03-G	236138	1/60
16/03	PKNM-16/1N/B/03-G	236210	1/60
20/03	PKNM-20/1N/B/03-G	236244	1/60
25/03	PKNM-25/1N/B/03-G	236274	1/60
32/03	PKNM-32/1N/B/03-G	236304	1/60
40/03	PKNM-40/1N/B/03-G	236333	1/60

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##### Characteristic C

13/003	PKNM-13/1N/C/003-G	236149	1/60
16/003	PKNM-16/1N/C/003-G	236221	1/60
20/003	PKNM-20/1N/C/003-G	236253	1/60
25/003	PKNM-25/1N/C/003-G	236283	1/60
32/003	PKNM-32/1N/C/003-G	236313	1/60
40/003	PKNM-40/1N/C/003-G	236342	1/60
13/03	PKNM-13/1N/C/03-G	236150	1/60
16/03	PKNM-16/1N/C/03-G	236222	1/60
20/03	PKNM-20/1N/C/03-G	236254	1/60
25/03	PKNM-25/1N/C/03-G	236284	1/60
32/03	PKNM-32/1N/C/03-G	236314	1/60
40/03	PKNM-40/1N/C/03-G	236343	1/60

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**10 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

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**Characteristic B**

2/0.01	PKNM-2/1N/B/001-A	235931	1/60
4/0.01	PKNM-4/1N/B/001-A	235961	1/60
6/0.01	PKNM-6/1N/B/001-A	236011	1/60
10/0.01	PKNM-10/1N/B/001-A	236071	1/60
13/0.01	PKNM-13/1N/B/001-A	236132	1/60
16/0.01	PKNM-16/1N/B/001-A	236204	1/60
2/0.03	PKNM-2/1N/B/003-A	235932	1/60
4/0.03	PKNM-4/1N/B/003-A	235962	1/60
6/0.03	PKNM-6/1N/B/003-A	236012	1/60
10/0.03	PKNM-10/1N/B/003-A	236072	1/60
13/0.03	PKNM-13/1N/B/003-A	236133	1/60
16/0.03	PKNM-16/1N/B/003-A	236205	1/60
20/0.03	PKNM-20/1N/B/003-A	236239	1/60
25/0.03	PKNM-25/1N/B/003-A	236269	1/60
32/0.03	PKNM-32/1N/B/003-A	236299	1/60
40/0.03	PKNM-40/1N/B/003-A	236328	1/60
2/0.1	PKNM-2/1N/B/01-A	235933	1/60
4/0.1	PKNM-4/1N/B/01-A	235963	1/60
6/0.1	PKNM-6/1N/B/01-A	236013	1/60
10/0.1	PKNM-10/1N/B/01-A	236073	1/60
13/0.1	PKNM-13/1N/B/01-A	236134	1/60
16/0.1	PKNM-16/1N/B/01-A	236206	1/60
20/0.1	PKNM-20/1N/B/01-A	236240	1/60
25/0.1	PKNM-25/1N/B/01-A	236270	1/60
32/0.1	PKNM-32/1N/B/01-A	236300	1/60
40/0.1	PKNM-40/1N/B/01-A	236329	1/60
2/0.3	PKNM-2/1N/B/03-A	235934	1/60
4/0.3	PKNM-4/1N/B/03-A	235964	1/60
6/0.3	PKNM-6/1N/B/03-A	236014	1/60
10/0.3	PKNM-10/1N/B/03-A	236074	1/60
13/0.3	PKNM-13/1N/B/03-A	236135	1/60
16/0.3	PKNM-16/1N/B/03-A	236207	1/60
20/0.3	PKNM-20/1N/B/03-A	236241	1/60
25/0.3	PKNM-25/1N/B/03-A	236271	1/60
32/0.3	PKNM-32/1N/B/03-A	236301	1/60
40/0.3	PKNM-40/1N/B/03-A	236330	1/60

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PKNM-2/1N/C/001-A	235941	1/60
4/0.01	PKNM-4/1N/C/001-A	235971	1/60
6/0.01	PKNM-6/1N/C/001-A	236021	1/60
10/0.01	PKNM-10/1N/C/001-A	236081	1/60
13/0.01	PKNM-13/1N/C/001-A	236144	1/60
16/0.01	PKNM-16/1N/C/001-A	236216	1/60
2/0.03	PKNM-2/1N/C/003-A	235942	1/60
4/0.03	PKNM-4/1N/C/003-A	235972	1/60
6/0.03	PKNM-6/1N/C/003-A	236022	1/60
10/0.03	PKNM-10/1N/C/003-A	236082	1/60
13/0.03	PKNM-13/1N/C/003-A	236145	1/60
16/0.03	PKNM-16/1N/C/003-A	236217	1/60
20/0.03	PKNM-20/1N/C/003-A	236249	1/60
25/0.03	PKNM-25/1N/C/003-A	236279	1/60
32/0.03	PKNM-32/1N/C/003-A	236309	1/60
40/0.03	PKNM-40/1N/C/003-A	236338	1/60
2/0.1	PKNM-2/1N/C/01-A	235943	1/60
4/0.1	PKNM-4/1N/C/01-A	235973	1/60
6/0.1	PKNM-6/1N/C/01-A	236023	1/60
10/0.1	PKNM-10/1N/C/01-A	236083	1/60
13/0.1	PKNM-13/1N/C/01-A	236146	1/60
16/0.1	PKNM-16/1N/C/01-A	236218	1/60
20/0.1	PKNM-20/1N/C/01-A	236250	1/60
25/0.1	PKNM-25/1N/C/01-A	236280	1/60
32/0.1	PKNM-32/1N/C/01-A	236310	1/60
40/0.1	PKNM-40/1N/C/01-A	236339	1/60
2/0.3	PKNM-2/1N/C/03-A	235944	1/60
4/0.3	PKNM-4/1N/C/03-A	235974	1/60
6/0.3	PKNM-6/1N/C/03-A	236024	1/60
10/0.3	PKNM-10/1N/C/03-A	236084	1/60
13/0.3	PKNM-13/1N/C/03-A	236147	1/60
16/0.3	PKNM-16/1N/C/03-A	236219	1/60
20/0.3	PKNM-20/1N/C/03-A	236251	1/60
25/0.3	PKNM-25/1N/C/03-A	236281	1/60
32/0.3	PKNM-32/1N/C/03-A	236311	1/60
40/0.3	PKNM-40/1N/C/03-A	236340	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**10 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, type AC**

SG13711



**Characteristic B**

2/0.01	PKNM-2/1N/B/001	235926	1/60
4/0.01	PKNM-4/1N/B/001	235957	1/60
6/0.01	PKNM-6/1N/B/001	236006	1/60
10/0.01	PKNM-10/1N/B/001	236066	1/60
13/0.01	PKNM-13/1N/B/001	236127	1/60
16/0.01	PKNM-16/1N/B/001	236199	1/60
2/0.03	PKNM-2/1N/B/003	235927	1/60
4/0.03	PKNM-4/1N/B/003	235956	1/60
6/0.03	PKNM-6/1N/B/003	236007	1/60
10/0.03	PKNM-10/1N/B/003	236067	1/60
13/0.03	PKNM-13/1N/B/003	236128	1/60
16/0.03	PKNM-16/1N/B/003	236200	1/60
20/0.03	PKNM-20/1N/B/003	236235	1/60
25/0.03	PKNM-25/1N/B/003	236265	1/60
32/0.03	PKNM-32/1N/B/003	236295	1/60
40/0.03	PKNM-40/1N/B/003	236324	1/60
2/0.1	PKNM-2/1N/B/01	235928	1/60
4/0.1	PKNM-4/1N/B/01	235958	1/60
6/0.1	PKNM-6/1N/B/01	236008	1/60
10/0.1	PKNM-10/1N/B/01	236068	1/60
13/0.1	PKNM-13/1N/B/01	236129	1/60
16/0.1	PKNM-16/1N/B/01	236201	1/60
20/0.1	PKNM-20/1N/B/01	236236	1/60
25/0.1	PKNM-25/1N/B/01	236266	1/60
32/0.1	PKNM-32/1N/B/01	236296	1/60
40/0.1	PKNM-40/1N/B/01	236325	1/60
2/0.3	PKNM-2/1N/B/03	235929	1/60
4/0.3	PKNM-4/1N/B/03	235959	1/60
6/0.3	PKNM-6/1N/B/03	236009	1/60
10/0.3	PKNM-10/1N/B/03	236069	1/60
13/0.3	PKNM-13/1N/B/03	236130	1/60
16/0.3	PKNM-16/1N/B/03	236202	1/60
20/0.3	PKNM-20/1N/B/03	236237	1/60
25/0.3	PKNM-25/1N/B/03	236267	1/60
32/0.3	PKNM-32/1N/B/03	236297	1/60
40/0.3	PKNM-40/1N/B/03	236326	1/60

SG13711



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PKNM-2/1N/C/001	235936	1/60
4/0.01	PKNM-4/1N/C/001	235966	1/60
6/0.01	PKNM-6/1N/C/001	236016	1/60
10/0.01	PKNM-10/1N/C/001	236076	1/60
13/0.01	PKNM-13/1N/C/001	236139	1/60
16/0.01	PKNM-16/1N/C/001	236211	1/60
2/0.03	PKNM-2/1N/C/003	235937	1/60
4/0.03	PKNM-4/1N/C/003	235967	1/60
6/0.03	PKNM-6/1N/C/003	236017	1/60
10/0.03	PKNM-10/1N/C/003	236077	1/60
13/0.03	PKNM-13/1N/C/003	236140	1/60
16/0.03	PKNM-16/1N/C/003	236212	1/60
20/0.03	PKNM-20/1N/C/003	236245	1/60
25/0.03	PKNM-25/1N/C/003	236275	1/60
32/0.03	PKNM-32/1N/C/003	236305	1/60
40/0.03	PKNM-40/1N/C/003	236334	1/60
2/0.1	PKNM-2/1N/C/01	235938	1/60
4/0.1	PKNM-4/1N/C/01	235968	1/60
6/0.1	PKNM-6/1N/C/01	236018	1/60
10/0.1	PKNM-10/1N/C/01	236078	1/60
13/0.1	PKNM-13/1N/C/01	236141	1/60
16/0.1	PKNM-16/1N/C/01	236213	1/60
20/0.1	PKNM-20/1N/C/01	236246	1/60
25/0.1	PKNM-25/1N/C/01	236276	1/60
32/0.1	PKNM-32/1N/C/01	236306	1/60
40/0.1	PKNM-40/1N/C/01	236335	1/60
2/0.3	PKNM-2/1N/C/03	235939	1/60
4/0.3	PKNM-4/1N/C/03	235969	1/60
6/0.3	PKNM-6/1N/C/03	236019	1/60
10/0.3	PKNM-10/1N/C/03	236079	1/60
13/0.3	PKNM-13/1N/C/03	236142	1/60
16/0.3	PKNM-16/1N/C/03	236214	1/60
20/0.3	PKNM-20/1N/C/03	236247	1/60
25/0.3	PKNM-25/1N/C/03	236277	1/60
32/0.3	PKNM-32/1N/C/03	236307	1/60
40/0.3	PKNM-40/1N/C/03	236336	1/60

**Specifications | Combined RCD/MCB Devices PKNM, 1+N-pole**

**Description**

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed
- **Type -G:** 10 ms time delay in order to avoid unwanted tripping (e.g. during thunderstorms).  
Compulsory in Austria for any circuit where personal injury or damage to property may occur in case of unwanted tripping (§12.1.6 ÖVE/ÖNORM E 8001-1).
- **Type -F:** Increased protection in applications with 1phase frequency converter due to the detection of mixed frequencies, higher load capacity with smooth DC fault currents up to 10 mA.

**Accessories:**

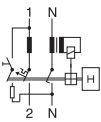
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

### Technical Data

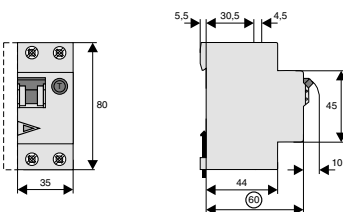
		PKNM, 1+N-pole
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Type G, F		10 ms delay 3 kA (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V AC, 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Rated insulation voltage	$U_i$	440 VAC
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	10 kA
Rated current		2 - 40 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>10 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

### Connection diagram

1+N-pole



### Dimensions (mm)

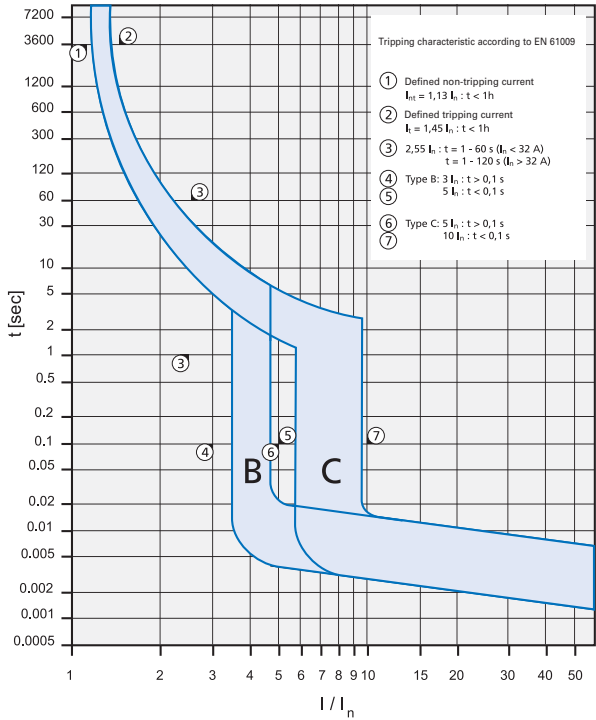


**Load Capacity PKNM-../1N/**

Effect of ambient temperature (MCB component)

I <sub>n</sub> [A]	Ambient temperature T [°C]								
	-25	-20	-10	0	10	20	30	35	40
2	2.5	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9
5	6.2	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
8	9.9	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7
10	12	12	12	11	11	10	10	9.9	9.7
12	15	14	14	13	13	13	12	12	12
13	16	16	15	15	14	14	13	13	13
15	19	18	17	17	16	16	15	15	15
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24
32	40	38	37	36	35	33	32	32	31
40	49	48	47	45	43	42	40	39	39

**Tripping Characteristic PKNM-../1N/, Characteristics B and C**



**Short Circuit Selectivity PKNM-../1N/ towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKNM../1N/ and the upstream fuses up to the specified values of the selectivity limit current I<sub>s</sub> [kA] (i. e. in case of short-circuit currents I<sub>ks</sub> under I<sub>s</sub>, only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

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

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

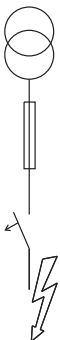
PKNM I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	2.2	8.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	3.7	10.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.7	1.0	2.9	6.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.6	1.0	2.4	5.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			0.6	0.9	1.9	3.3	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13			0.5	0.7	1.6	2.8	5.7	9.0	10.0 <sup>2)</sup>
16				0.7	1.4	2.4	4.4	7.0	10.0 <sup>2)</sup>
20					1.3	2.2	4.0	6.3	10.0 <sup>2)</sup>
25					1.3	2.1	3.8	5.8	10.0 <sup>2)</sup>
32						2.0	3.5	5.2	9.5
40							3.1	4.5	8.1

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

PKNM I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.7	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	4.2	8.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.1	3.6	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.6	1.0	2.9	5.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5	0.9	2.5	4.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			<0.5	0.7	1.5	2.6	5.3	9.0	10.0 <sup>2)</sup>
13					1.4	2.3	4.6	7.6	10.0 <sup>2)</sup>
16					1.2	1.8	3.4	5.5	10.0 <sup>2)</sup>
20					1.2	1.7	3.1	5.0	10.0 <sup>2)</sup>
25						1.6	2.9	4.6	10.0 <sup>2)</sup>
32							2.3	3.4	7.7
40								2.9	6.2

<sup>1)</sup> Selectivity limit current I<sub>s</sub> under 0.5 kA.

<sup>2)</sup> Selectivity limit current I<sub>s</sub> = rated breaking capacity I<sub>cn</sub> of the RCD/MCB device  
Darker areas: no selectivity



### Short Circuit Selectivity PKNM-../1N/ towards D01-D03 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKNM-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

PKNM	D01-D03 gL/gG									
	$I_n$ [A]	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	0.7	1.6	3.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.9	10.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	2.4	8.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8			0.6	0.8	2.0	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			0.5	0.8	1.6	3.7	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13			0.6	0.7	1.4	3.0	4.7	9.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16				0.6	1.2	2.6	3.9	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
20					1.2	2.5	3.6	6.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
25					1.2	2.3	3.3	5.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
32						2.3	3.1	5.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
40							2.8	4.5	9.5	10.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

PKNM	D01-D03 gL/gG									
	$I_n$ [A]	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	0.5	0.5	2.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	3.4	9.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	2.9	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	2.3	6.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8			<0.5	0.7	2.1	5.5	9.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			<0.5	0.6	1.3	2.9	4.5	8.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13					1.2	2.5	3.9	7.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16					1.0	2.1	3.0	5.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
20					1.0	2.0	2.7	5.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
25						1.9	2.6	4.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
32							2.1	3.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
40								3.0	8.7	10.0 <sup>2)</sup>

### Short Circuit Selectivity PKNM-../1N/ towards NH-00 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKNM-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

PKNM	D01-D03 gL/gG													
	$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
2	<0.5 <sup>1)</sup>	1.1	3.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	0.5	0.9	1.6	2.8	4.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	0.5	0.8	1.4	2.2	3.3	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.9	2.8	5.3	7.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
10		<0.5 <sup>1)</sup>	0.7	0.9	1.5	2.1	3.4	4.3	7.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
13		<0.5 <sup>1)</sup>	0.6	0.8	1.4	1.8	2.8	3.6	5.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
16			0.6	0.7	1.2	1.5	2.4	3.0	4.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
20				0.7	1.1	1.5	2.2	2.8	4.2	9.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
25					0.7	1.1	1.4	2.1	2.6	4.0	8.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
32						1.0	1.4	2.0	2.5	3.7	7.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
40								2.3	3.4	6.2	8.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

PKNM	D01-D03 gL/gG													
	$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
2	<0.5 <sup>1)</sup>	0.6	2.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	1.8	3.2	4.8	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	2.7	4.1	7.2	9.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	2.2	3.3	5.9	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.1	1.9	2.8	5.0	6.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
10			0.5	0.8	1.2	1.7	2.7	3.4	5.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
13					1.1	1.5	2.3	2.9	4.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
16					1.0	1.3	1.8	2.3	3.7	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
20						0.9	1.1	1.7	2.2	3.4	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
25							1.6	2.1	3.2	7.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
32								1.7	2.6	5.3	9.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
40									2.4	4.5	7.5	10.0	10.0	

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

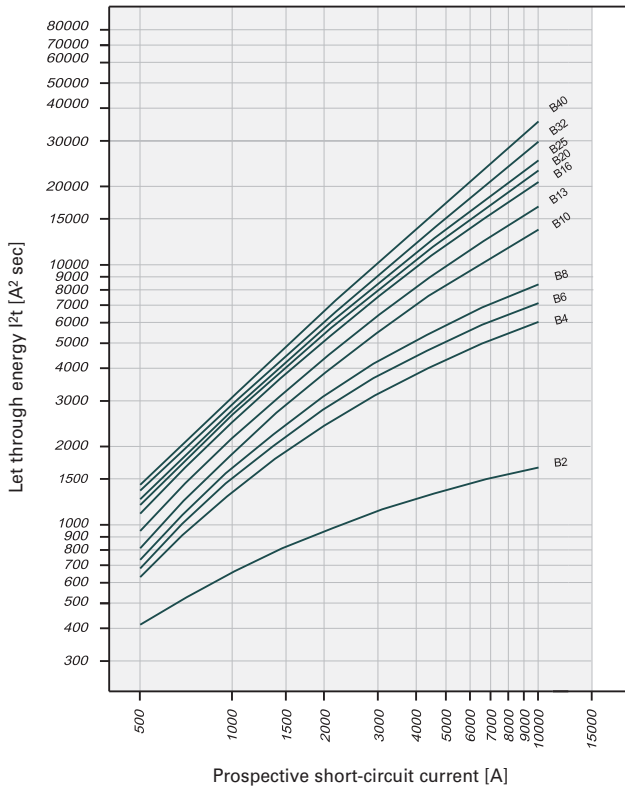
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device  
Darker areas: no selectivity



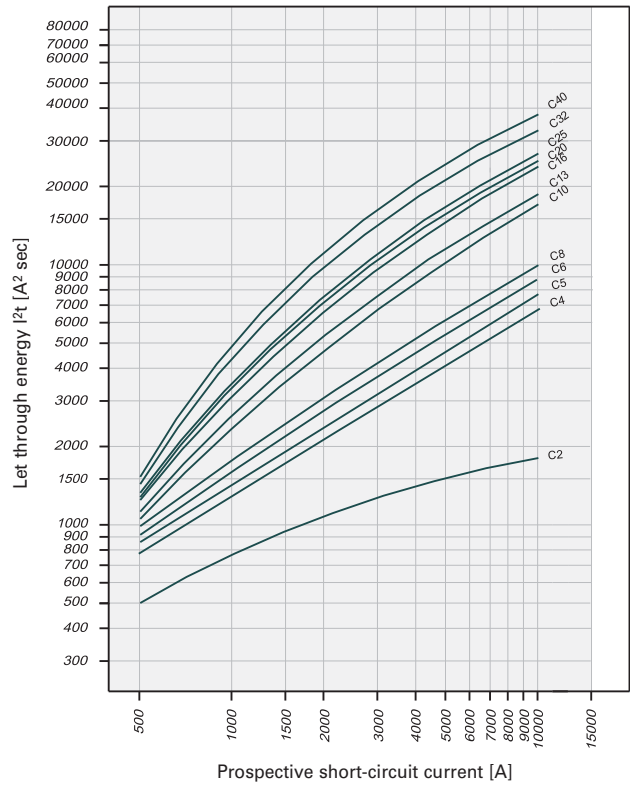


Let-through Energy PKNM-../1N/

Let-through Energy PKNM, Characteristic B, 1+N-pole



Let-through Energy PKNM, Characteristic C, 1+N-pole



# 1.122 Protective Devices

Combined RCD/MCB Devices PKNM-1 10VAC, 1+N-pole

xPole

SG13711



## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents 16, 20 and 32 A
- Tripping Characteristic C
- Rated breaking capacity 10 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**10 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, type AC**

**Characteristic C**

16/0.03	PKNM-16/1N/C/003-110VAC	286385	1/60
20/0.03	PKNM-20/1N/C/003-110VAC	294128	1/60
32/0.03	PKNM-32/1N/C/003-110VAC	286386	1/60
25/003	PKNM-25/1N/B/003-G/A	182889	1/60
32/003	PKNM-32/1N/B/003-G/A	182890	1/60

SG13711



**Specifications | Combined RCD/MCB Devices PKNM-110VAC, 1+N-pole**

**Description**

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.

**Accessories:**

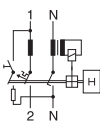
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

### Technical Data

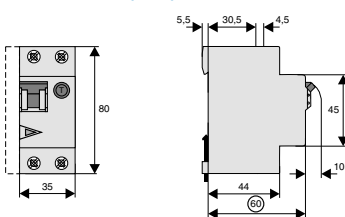
		PKNM-110VAC, 1+N-pole
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	110 V AC; 50 Hz
Operational voltage range		94-121 V
Rated tripping current	$I_{\Delta n}$	30 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Rated insulation voltage	$U_i$	440 VAC
Sensitivity		AC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	10 kA
Rated current		16, 20, 32 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		C
Maximum back-up fuse (short circuit)		100 A gL (>10 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

### Connection diagram

1+N-pole



### Dimensions (mm)



SG14111



## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA

$I_n/I_{\Delta n}$   
(A)Type  
DesignationArticle No.    Units per  
package**Type G****6 kA, 1+N-pole****Surge current-proof 3 kA, type G (ÖVE E 8601)**

SG14111

**Characteristic B**

13/0.03	PKN6-13/1N/B/003-G	236565	1/60
16/0.03	PKN6-16/1N/B/003-G	236637	1/60
20/0.03	PKN6-20/1N/B/003-G	236671	1/60
25/0.03	PKN6-25/1N/B/003-G	236701	1/60
32/0.03	PKN6-32/1N/B/003-G	236731	1/60
40/0.03	PKN6-40/1N/B/003-G	236760	1/60
13/0.3	PKN6-13/1N/B/03-G	236566	1/60
16/0.3	PKN6-16/1N/B/03-G	236638	1/60
20/0.3	PKN6-20/1N/B/03-G	236672	1/60
25/0.3	PKN6-25/1N/B/03-G	236702	1/60
32/0.3	PKN6-32/1N/B/03-G	236732	1/60
40/0.3	PKN6-40/1N/B/03-G	236761	1/60

SG14111

**Characteristic C**

13/0.03	PKN6-13/1N/C/003-G	236577	1/60
16/0.03	PKN6-16/1N/C/003-G	236649	1/60
20/0.03	PKN6-20/1N/C/003-G	236681	1/60
25/0.03	PKN6-25/1N/C/003-G	236711	1/60
32/0.03	PKN6-32/1N/C/003-G	236741	1/60
40/0.03	PKN6-40/1N/C/003-G	236770	1/60
13/0.3	PKN6-13/1N/C/03-G	236578	1/60
16/0.3	PKN6-16/1N/C/03-G	236650	1/60
20/0.3	PKN6-20/1N/C/03-G	236682	1/60
25/0.3	PKN6-25/1N/C/03-G	236712	1/60
32/0.3	PKN6-32/1N/C/03-G	236742	1/60
40/0.3	PKN6-40/1N/C/03-G	236771	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**6 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG14111



**Characteristic B**

2/0.01	PKN6-2/1N/B/001-A	236359	1/60
4/0.01	PKN6-4/1N/B/001-A	236389	1/60
6/0.01	PKN6-6/1N/B/001-A	236439	1/60
10/0.01	PKN6-10/1N/B/001-A	236499	1/60
13/0.01	PKN6-13/1N/B/001-A	236560	1/60
16/0.01	PKN6-16/1N/B/001-A	236632	1/60
2/0.03	PKN6-2/1N/B/003-A	236360	1/60
4/0.03	PKN6-4/1N/B/003-A	236390	1/60
6/0.03	PKN6-6/1N/B/003-A	236440	1/60
10/0.03	PKN6-10/1N/B/003-A	236500	1/60
13/0.03	PKN6-13/1N/B/003-A	236561	1/60
16/0.03	PKN6-16/1N/B/003-A	236633	1/60
20/0.03	PKN6-20/1N/B/003-A	236667	1/60
25/0.03	PKN6-25/1N/B/003-A	236697	1/60
32/0.03	PKN6-32/1N/B/003-A	236727	1/60
40/0.03	PKN6-40/1N/B/003-A	236756	1/60
2/0.1	PKN6-2/1N/B/01-A	236361	1/60
4/0.1	PKN6-4/1N/B/01-A	236391	1/60
6/0.1	PKN6-6/1N/B/01-A	236441	1/60
10/0.1	PKN6-10/1N/B/01-A	236501	1/60
13/0.1	PKN6-13/1N/B/01-A	236562	1/60
16/0.1	PKN6-16/1N/B/01-A	236634	1/60
20/0.1	PKN6-20/1N/B/01-A	236668	1/60
25/0.1	PKN6-25/1N/B/01-A	236698	1/60
32/0.1	PKN6-32/1N/B/01-A	236728	1/60
40/0.1	PKN6-40/1N/B/01-A	236757	1/60
2/0.3	PKN6-2/1N/B/03-A	236362	1/60
4/0.3	PKN6-4/1N/B/03-A	236392	1/60
6/0.3	PKN6-6/1N/B/03-A	236442	1/60
10/0.3	PKN6-10/1N/B/03-A	236502	1/60
13/0.3	PKN6-13/1N/B/03-A	236563	1/60
16/0.3	PKN6-16/1N/B/03-A	236635	1/60
20/0.3	PKN6-20/1N/B/03-A	236669	1/60
25/0.3	PKN6-25/1N/B/03-A	236699	1/60
32/0.3	PKN6-32/1N/B/03-A	236729	1/60
40/0.3	PKN6-40/1N/B/03-A	236758	1/60

# 1.128 Protective Devices

xPole

## Combined RCD/MCB Devices PKN6, 1+N-pole (MW)

SG14111



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PKN6-2/1N/C/001-A	236369	1/60
4/0.01	PKN6-4/1N/C/001-A	236399	1/60
6/0.01	PKN6-6/1N/C/001-A	236449	1/60
10/0.01	PKN6-10/1N/C/001-A	236509	1/60
13/0.01	PKN6-13/1N/C/001-A	236572	1/60
16/0.01	PKN6-16/1N/C/001-A	236644	1/60
2/0.03	PKN6-2/1N/C/003-A	236370	1/60
4/0.03	PKN6-4/1N/C/003-A	236400	1/60
6/0.03	PKN6-6/1N/C/003-A	236450	1/60
10/0.03	PKN6-10/1N/C/003-A	236510	1/60
13/0.03	PKN6-13/1N/C/003-A	236573	1/60
16/0.03	PKN6-16/1N/C/003-A	236645	1/60
20/0.03	PKN6-20/1N/C/003-A	236677	1/60
25/0.03	PKN6-25/1N/C/003-A	236707	1/60
32/0.03	PKN6-32/1N/C/003-A	236737	1/60
40/0.03	PKN6-40/1N/C/003-A	236766	1/60
2/0.1	PKN6-2/1N/C/01-A	236371	1/60
4/0.1	PKN6-4/1N/C/01-A	236401	1/60
6/0.1	PKN6-6/1N/C/01-A	236451	1/60
10/0.1	PKN6-10/1N/C/01-A	236511	1/60
13/0.1	PKN6-13/1N/C/01-A	236574	1/60
16/0.1	PKN6-16/1N/C/01-A	236646	1/60
20/0.1	PKN6-20/1N/C/01-A	236678	1/60
25/0.1	PKN6-25/1N/C/01-A	236708	1/60
32/0.1	PKN6-32/1N/C/01-A	236738	1/60
40/0.1	PKN6-40/1N/C/01-A	236767	1/60
2/0.3	PKN6-2/1N/C/03-A	236372	1/60
4/0.3	PKN6-4/1N/C/03-A	236402	1/60
6/0.3	PKN6-6/1N/C/03-A	236452	1/60
10/0.3	PKN6-10/1N/C/03-A	236512	1/60
13/0.3	PKN6-13/1N/C/03-A	236575	1/60
16/0.3	PKN6-16/1N/C/03-A	236647	1/60
20/0.3	PKN6-20/1N/C/03-A	236679	1/60
25/0.3	PKN6-25/1N/C/03-A	236709	1/60
32/0.3	PKN6-32/1N/C/03-A	236739	1/60
40/0.3	PKN6-40/1N/C/03-A	236768	1/60



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**6 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, type AC**

SG14111



**Characteristic B**

2/0.01	PKN6-2/1N/B/001	236354	1/60
4/0.01	PKN6-4/1N/B/001	236385	1/60
6/0.01	PKN6-6/1N/B/001	236434	1/60
10/0.01	PKN6-10/1N/B/001	236494	1/60
13/0.01	PKN6-13/1N/B/001	236555	1/60
16/0.01	PKN6-16/1N/B/001	236627	1/60
2/0.03	PKN6-2/1N/B/003	236355	1/60
4/0.03	PKN6-4/1N/B/003	236384	1/60
6/0.03	PKN6-6/1N/B/003	236435	1/60
10/0.03	PKN6-10/1N/B/003	236495	1/60
13/0.03	PKN6-13/1N/B/003	236556	1/60
16/0.03	PKN6-16/1N/B/003	236628	1/60
20/0.03	PKN6-20/1N/B/003	236663	1/60
25/0.03	PKN6-25/1N/B/003	236693	1/60
32/0.03	PKN6-32/1N/B/003	236723	1/60
40/0.03	PKN6-40/1N/B/003	236752	1/60
2/0.1	PKN6-2/1N/B/01	236356	1/60
4/0.1	PKN6-4/1N/B/01	236386	1/60
6/0.1	PKN6-6/1N/B/01	236436	1/60
10/0.1	PKN6-10/1N/B/01	236496	1/60
13/0.1	PKN6-13/1N/B/01	236557	1/60
16/0.1	PKN6-16/1N/B/01	236629	1/60
20/0.1	PKN6-20/1N/B/01	236664	1/60
25/0.1	PKN6-25/1N/B/01	236694	1/60
32/0.1	PKN6-32/1N/B/01	236724	1/60
40/0.1	PKN6-40/1N/B/01	236753	1/60
2/0.3	PKN6-2/1N/B/03	236357	1/60
4/0.3	PKN6-4/1N/B/03	236387	1/60
6/0.3	PKN6-6/1N/B/03	236437	1/60
10/0.3	PKN6-10/1N/B/03	236497	1/60
13/0.3	PKN6-13/1N/B/03	236558	1/60
16/0.3	PKN6-16/1N/B/03	236630	1/60
20/0.3	PKN6-20/1N/B/03	236665	1/60
25/0.3	PKN6-25/1N/B/03	236695	1/60
32/0.3	PKN6-32/1N/B/03	236725	1/60
40/0.3	PKN6-40/1N/B/03	236754	1/60

# 1.130 Protective Devices

xPole

Combined RCD/MCB Devices PKN6, 1+N-pole (MW)

SG14111



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PKN6-2/1N/C/001	236364	1/60
4/0.01	PKN6-4/1N/C/001	236394	1/60
6/0.01	PKN6-6/1N/C/001	236444	1/60
10/0.01	PKN6-10/1N/C/001	236504	1/60
13/0.01	PKN6-13/1N/C/001	236567	1/60
16/0.01	PKN6-16/1N/C/001	236639	1/60
2/0.03	PKN6-2/1N/C/003	236365	1/60
4/0.03	PKN6-4/1N/C/003	236395	1/60
6/0.03	PKN6-6/1N/C/003	236445	1/60
10/0.03	PKN6-10/1N/C/003	236505	1/60
13/0.03	PKN6-13/1N/C/003	236568	1/60
16/0.03	PKN6-16/1N/C/003	236640	1/60
20/0.03	PKN6-20/1N/C/003	236673	1/60
25/0.03	PKN6-25/1N/C/003	236703	1/60
32/0.03	PKN6-32/1N/C/003	236733	1/60
40/0.03	PKN6-40/1N/C/003	236762	1/60
2/0.1	PKN6-2/1N/C/01	236366	1/60
4/0.1	PKN6-4/1N/C/01	236396	1/60
6/0.1	PKN6-6/1N/C/01	236446	1/60
10/0.1	PKN6-10/1N/C/01	236506	1/60
13/0.1	PKN6-13/1N/C/01	236569	1/60
16/0.1	PKN6-16/1N/C/01	236641	1/60
20/0.1	PKN6-20/1N/C/01	236674	1/60
25/0.1	PKN6-25/1N/C/01	236704	1/60
32/0.1	PKN6-32/1N/C/01	236734	1/60
40/0.1	PKN6-40/1N/C/01	236763	1/60
2/0.3	PKN6-2/1N/C/03	236367	1/60
4/0.3	PKN6-4/1N/C/03	236397	1/60
6/0.3	PKN6-6/1N/C/03	236447	1/60
10/0.3	PKN6-10/1N/C/03	236507	1/60
13/0.3	PKN6-13/1N/C/03	236570	1/60
16/0.3	PKN6-16/1N/C/03	236642	1/60
20/0.3	PKN6-20/1N/C/03	236675	1/60
25/0.3	PKN6-25/1N/C/03	236705	1/60
32/0.3	PKN6-32/1N/C/03	236735	1/60
40/0.3	PKN6-40/1N/C/03	236764	1/60

**Specifications | Combined RCD/MCB Devices PKN6, 1+N-pole**

**Description**

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have have not been smoothed
- **Type -G:** 10 ms time delay in order to avoid unwanted tripping (e.g. during thunderstorms) according to ÖVE E 8601. Compulsory in Austria for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE-EN1, Part 1, §12.14).

**Accessories:**

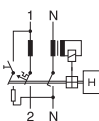
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

## Technical Data

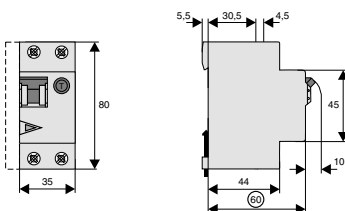
		PKN6, 1+N-pole
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Type G		10 ms delay 3 kA (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Rated insulation voltage	$U_i$	440 VAC
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	6 kA
Rated current		2 - 40 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

## Connection diagram

1+N-pole



## Dimensions (mm)

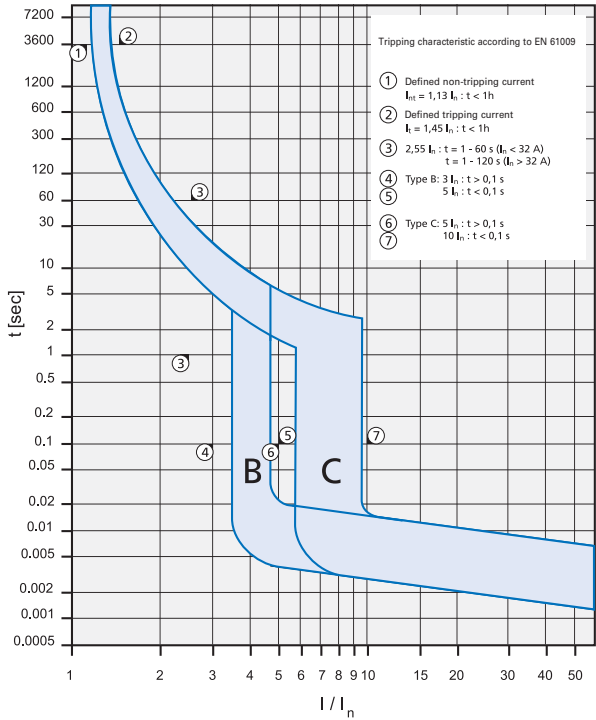


**Load Capacity PKN6-../1N/**

Effect of ambient temperature (MCB component)

I <sub>n</sub> [A]	Ambient temperature T [°C]								
	-25	-20	-10	0	10	20	30	35	40
2	2.5	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9
5	6.2	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
8	9.9	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7
10	12	12	12	11	11	10	10	9.9	9.7
12	15	14	14	13	13	13	12	12	12
13	16	16	15	15	14	14	13	13	13
15	19	18	17	17	16	16	15	15	15
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24
32	40	38	37	36	35	33	32	32	31
40	49	48	47	45	43	42	40	39	39

**Tripping Characteristic PKN6-../1N/, Characteristics B and C**



**Short Circuit Selectivity PKN6-../1N/ towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKN6-../1N/ and the upstream fuses up to the specified values of the selectivity limit current I<sub>s</sub> [kA] (i. e. in case of short-circuit currents I<sub>ks</sub> under I<sub>s</sub>, only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

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

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

PKN6 I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	2.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.7	1.0	2.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.6	1.0	2.4	5.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.6	0.9	1.9	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.5	0.7	1.6	2.8	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				0.7	1.4	2.4	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.3	2.2	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.3	2.1	3.8	5.8	6.0 <sup>2)</sup>
32						2.0	3.5	5.2	6.0 <sup>2)</sup>
40							3.1	4.5	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

PKN6 I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	4.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.1	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.6	1.0	2.9	5.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5	0.9	2.5	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5	0.7	1.5	2.6	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.4	2.3	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.2	1.8	3.4	5.5	6.0 <sup>2)</sup>
20					1.2	1.7	3.1	5.0	6.0 <sup>2)</sup>
25						1.6	2.9	4.6	6.0 <sup>2)</sup>
32							2.3	3.4	6.0 <sup>2)</sup>
40								2.9	6.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current I<sub>s</sub> under 0.5 kA.

<sup>2)</sup> Selectivity limit current I<sub>s</sub> = rated breaking capacity I<sub>cn</sub> of the RCD/MCB device

Darker areas: no selectivity



### Short Circuit Selectivity PKN6-../1N/ towards D01-D03 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKN6-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

PKN6	D01-D03 gL/gG									
$I_n$ [A]	10	16	20	25	35	50	63	80	100	
2	<0.5 <sup>1)</sup>	0.7	1.6	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	2.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			0.6	0.8	2.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.8	1.6	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.6	0.7	1.4	3.0	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				0.6	1.2	2.6	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.2	2.5	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.2	2.3	3.3	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32						2.3	3.1	5.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40							2.8	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

PKN6	D01-D03 gL/gG									
$I_n$ [A]	10	16	20	25	35	50	63	80	100	
2	<0.5 <sup>1)</sup>	0.5	0.5	2.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	2.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	2.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			<0.5	0.7	2.1	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5	0.6	1.3	2.9	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.2	2.5	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.0	2.1	3.0	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.0	2.0	2.7	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25						1.9	2.6	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32							2.1	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40								3.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

### Short Circuit Selectivity PKN6-../1N/ towards NH-00 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKN6-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

PKN6	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5 <sup>1)</sup>	1.1	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	0.5	0.9	1.6	2.8	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	0.5	0.8	1.4	2.2	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.9	2.8	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.7	0.9	1.5	2.1	3.4	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.4	1.8	2.8	3.6	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16			0.6	0.7	1.2	1.5	2.4	3.0	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20				0.7	1.1	1.5	2.2	2.8	4.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25				0.7	1.1	1.4	2.1	2.6	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32					1.0	1.4	2.0	2.5	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40							2.3	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

PKN6	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5 <sup>1)</sup>	0.6	2.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	1.8	3.2	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	2.7	4.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	2.2	3.3	5.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.1	1.9	2.8	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		0.5	0.8	1.2	1.7	2.7	3.4	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13				1.1	1.5	2.3	2.9	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				1.0	1.3	1.8	2.3	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20				0.9	1.1	1.7	2.2	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.6	2.1	3.2	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32						1.7	2.6	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40							2.4	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

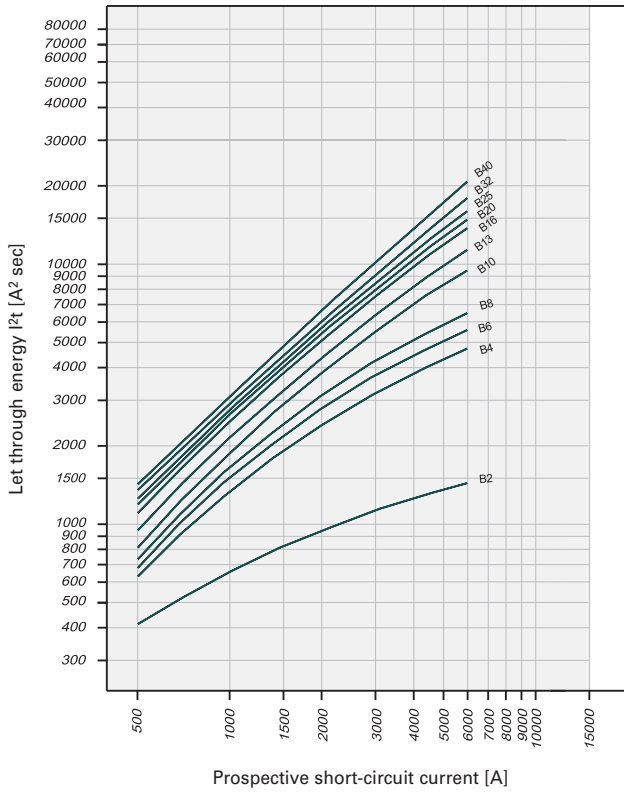
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity

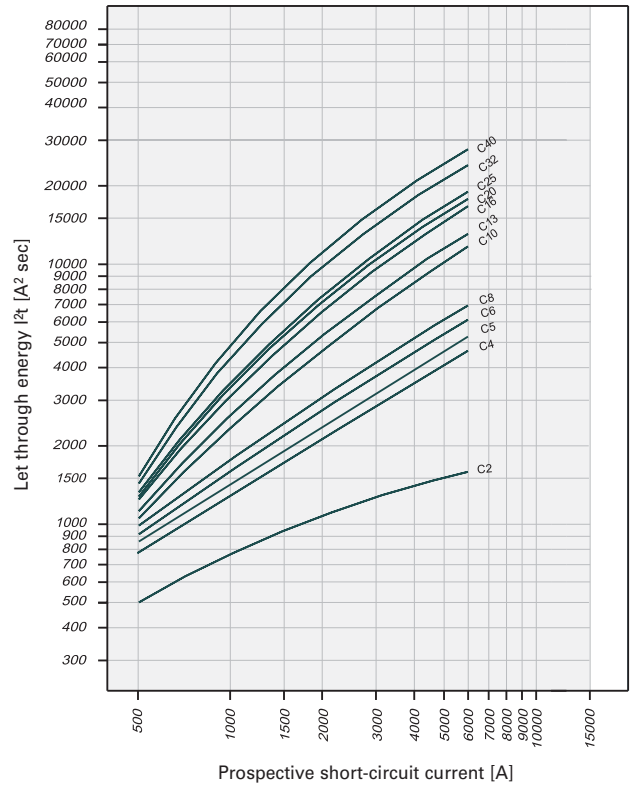


**Let-through Energy PKN6-../1N/**

Let-through Energy PKN6, Characteristic B, 1+N-pole



Let-through Energy PKN6, Characteristic C, 1+N-pole



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## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA



$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

**Type G**

**4.5 kA, 1+N-pole**  
**Surge current-proof 3 kA, type G (ÖVE E 8601)**

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**Characteristic B**

13/0.03	PKN4-13/1N/B/003-G	236993	1/60
16/0.03	PKN4-16/1N/B/003-G	237065	1/60
20/0.03	PKN4-20/1N/B/003-G	237099	1/60
25/0.03	PKN4-25/1N/B/003-G	237129	1/60
32/0.03	PKN4-32/1N/B/003-G	237159	1/60
40/0.03	PKN4-40/1N/B/003-G	237188	1/60
13/0.3	PKN4-13/1N/B/03-G	236994	1/60
16/0.3	PKN4-16/1N/B/03-G	237066	1/60
20/0.3	PKN4-20/1N/B/03-G	237100	1/60
25/0.3	PKN4-25/1N/B/03-G	237130	1/60
32/0.3	PKN4-32/1N/B/03-G	237160	1/60
40/0.3	PKN4-40/1N/B/03-G	237189	1/60

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**Characteristic C**

13/0.03	PKN4-13/1N/C/003-G	237005	1/60
16/0.03	PKN4-16/1N/C/003-G	237077	1/60
20/0.03	PKN4-20/1N/C/003-G	237109	1/60
25/0.03	PKN4-25/1N/C/003-G	237139	1/60
32/0.03	PKN4-32/1N/C/003-G	237169	1/60
40/0.03	PKN4-40/1N/C/003-G	237198	1/60
13/0.3	PKN4-13/1N/C/03-G	237006	1/60
16/0.3	PKN4-16/1N/C/03-G	237078	1/60
20/0.3	PKN4-20/1N/C/03-G	237110	1/60
25/0.3	PKN4-25/1N/C/03-G	237140	1/60
32/0.3	PKN4-32/1N/C/03-G	237170	1/60
40/0.3	PKN4-40/1N/C/03-G	237199	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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### Type A

#### 4.5 kA, 1+N-pole

#### Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A

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#### Characteristic B

2/0.01	PKN4-2/1N/B/001-A	236787	1/60
4/0.01	PKN4-4/1N/B/001-A	236817	1/60
6/0.01	PKN4-6/1N/B/001-A	236867	1/60
10/0.01	PKN4-10/1N/B/001-A	236927	1/60
13/0.01	PKN4-13/1N/B/001-A	236988	1/60
16/0.01	PKN4-16/1N/B/001-A	237060	1/60
2/0.03	PKN4-2/1N/B/003-A	236788	1/60
4/0.03	PKN4-4/1N/B/003-A	236818	1/60
6/0.03	PKN4-6/1N/B/003-A	236868	1/60
10/0.03	PKN4-10/1N/B/003-A	236928	1/60
13/0.03	PKN4-13/1N/B/003-A	236989	1/60
16/0.03	PKN4-16/1N/B/003-A	237061	1/60
20/0.03	PKN4-20/1N/B/003-A	237095	1/60
25/0.03	PKN4-25/1N/B/003-A	237125	1/60
32/0.03	PKN4-32/1N/B/003-A	237155	1/60
40/0.03	PKN4-40/1N/B/003-A	237184	1/60
2/0.1	PKN4-2/1N/B/01-A	236789	1/60
4/0.1	PKN4-4/1N/B/01-A	236819	1/60
6/0.1	PKN4-6/1N/B/01-A	236869	1/60
10/0.1	PKN4-10/1N/B/01-A	236929	1/60
13/0.1	PKN4-13/1N/B/01-A	236990	1/60
16/0.1	PKN4-16/1N/B/01-A	237062	1/60
20/0.1	PKN4-20/1N/B/01-A	237096	1/60
25/0.1	PKN4-25/1N/B/01-A	237126	1/60
32/0.1	PKN4-32/1N/B/01-A	237156	1/60
40/0.1	PKN4-40/1N/B/01-A	237185	1/60
2/0.3	PKN4-2/1N/B/03-A	236790	1/60
4/0.3	PKN4-4/1N/B/03-A	236820	1/60
6/0.3	PKN4-6/1N/B/03-A	236870	1/60
10/0.3	PKN4-10/1N/B/03-A	236930	1/60
13/0.3	PKN4-13/1N/B/03-A	236991	1/60
16/0.3	PKN4-16/1N/B/03-A	237063	1/60
20/0.3	PKN4-20/1N/B/03-A	237097	1/60
25/0.3	PKN4-25/1N/B/03-A	237127	1/60
32/0.3	PKN4-32/1N/B/03-A	237157	1/60
40/0.3	PKN4-40/1N/B/03-A	237186	1/60

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PKN4-2/1N/C/001-A	236797	1/60
4/0.01	PKN4-4/1N/C/001-A	236827	1/60
6/0.01	PKN4-6/1N/C/001-A	236877	1/60
10/0.01	PKN4-10/1N/C/001-A	236937	1/60
13/0.01	PKN4-13/1N/C/001-A	237000	1/60
16/0.01	PKN4-16/1N/C/001-A	237072	1/60
2/0.03	PKN4-2/1N/C/003-A	236798	1/60
4/0.03	PKN4-4/1N/C/003-A	236828	1/60
6/0.03	PKN4-6/1N/C/003-A	236878	1/60
10/0.03	PKN4-10/1N/C/003-A	236938	1/60
13/0.03	PKN4-13/1N/C/003-A	237001	1/60
16/0.03	PKN4-16/1N/C/003-A	237073	1/60
20/0.03	PKN4-20/1N/C/003-A	237105	1/60
25/0.03	PKN4-25/1N/C/003-A	237135	1/60
32/0.03	PKN4-32/1N/C/003-A	237165	1/60
40/0.03	PKN4-40/1N/C/003-A	237194	1/60
2/0.1	PKN4-2/1N/C/01-A	236799	1/60
4/0.1	PKN4-4/1N/C/01-A	236829	1/60
6/0.1	PKN4-6/1N/C/01-A	236879	1/60
10/0.1	PKN4-10/1N/C/01-A	236939	1/60
13/0.1	PKN4-13/1N/C/01-A	237002	1/60
16/0.1	PKN4-16/1N/C/01-A	237074	1/60
20/0.1	PKN4-20/1N/C/01-A	237106	1/60
25/0.1	PKN4-25/1N/C/01-A	237136	1/60
32/0.1	PKN4-32/1N/C/01-A	237166	1/60
40/0.1	PKN4-40/1N/C/01-A	237195	1/60
2/0.3	PKN4-2/1N/C/03-A	236800	1/60
4/0.3	PKN4-4/1N/C/03-A	236830	1/60
6/0.3	PKN4-6/1N/C/03-A	236880	1/60
10/0.3	PKN4-10/1N/C/03-A	236940	1/60
13/0.3	PKN4-13/1N/C/03-A	237003	1/60
16/0.3	PKN4-16/1N/C/03-A	237075	1/60
20/0.3	PKN4-20/1N/C/03-A	237107	1/60
25/0.3	PKN4-25/1N/C/03-A	237137	1/60
32/0.3	PKN4-32/1N/C/03-A	237167	1/60
40/0.3	PKN4-40/1N/C/03-A	237196	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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#### Type AC

#### 4.5 kA, 1+N-pole Conditionally surge current-proof 250 A, type AC

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#### Characteristic B

2/0.01	PKN4-2/1N/B/001	236782	1/60
4/0.01	PKN4-4/1N/B/001	236813	1/60
6/0.01	PKN4-6/1N/B/001	236862	1/60
10/0.01	PKN4-10/1N/B/001	236922	1/60
13/0.01	PKN4-13/1N/B/001	236983	1/60
16/0.01	PKN4-16/1N/B/001	237055	1/60
2/0.03	PKN4-2/1N/B/003	236783	1/60
4/0.03	PKN4-4/1N/B/003	236812	1/60
6/0.03	PKN4-6/1N/B/003	236863	1/60
10/0.03	PKN4-10/1N/B/003	236923	1/60
13/0.03	PKN4-13/1N/B/003	236984	1/60
16/0.03	PKN4-16/1N/B/003	237056	1/60
20/0.03	PKN4-20/1N/B/003	237091	1/60
25/0.03	PKN4-25/1N/B/003	237121	1/60
32/0.03	PKN4-32/1N/B/003	237151	1/60
40/0.03	PKN4-40/1N/B/003	237180	1/60
2/0.1	PKN4-2/1N/B/01	236784	1/60
4/0.1	PKN4-4/1N/B/01	236814	1/60
6/0.1	PKN4-6/1N/B/01	236864	1/60
10/0.1	PKN4-10/1N/B/01	236924	1/60
13/0.1	PKN4-13/1N/B/01	236985	1/60
16/0.1	PKN4-16/1N/B/01	237057	1/60
20/0.1	PKN4-20/1N/B/01	237092	1/60
25/0.1	PKN4-25/1N/B/01	237122	1/60
32/0.1	PKN4-32/1N/B/01	237152	1/60
40/0.1	PKN4-40/1N/B/01	237181	1/60
2/0.3	PKN4-2/1N/B/03	236785	1/60
4/0.3	PKN4-4/1N/B/03	236815	1/60
6/0.3	PKN4-6/1N/B/03	236865	1/60
10/0.3	PKN4-10/1N/B/03	236925	1/60
13/0.3	PKN4-13/1N/B/03	236986	1/60
16/0.3	PKN4-16/1N/B/03	237058	1/60
20/0.3	PKN4-20/1N/B/03	237093	1/60
25/0.3	PKN4-25/1N/B/03	237123	1/60
32/0.3	PKN4-32/1N/B/03	237153	1/60
40/0.3	PKN4-40/1N/B/03	237182	1/60

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PKN4-2/1N/C/001	236792	1/60
4/0.01	PKN4-4/1N/C/001	236822	1/60
6/0.01	PKN4-6/1N/C/001	236872	1/60
10/0.01	PKN4-10/1N/C/001	236932	1/60
13/0.01	PKN4-13/1N/C/001	236995	1/60
16/0.01	PKN4-16/1N/C/001	237067	1/60
2/0.03	PKN4-2/1N/C/003	236793	1/60
4/0.03	PKN4-4/1N/C/003	236823	1/60
6/0.03	PKN4-6/1N/C/003	236873	1/60
10/0.03	PKN4-10/1N/C/003	236933	1/60
13/0.03	PKN4-13/1N/C/003	236996	1/60
16/0.03	PKN4-16/1N/C/003	237068	1/60
20/0.03	PKN4-20/1N/C/003	237101	1/60
25/0.03	PKN4-25/1N/C/003	237131	1/60
32/0.03	PKN4-32/1N/C/003	237161	1/60
40/0.03	PKN4-40/1N/C/003	237190	1/60
2/0.1	PKN4-2/1N/C/01	236794	1/60
4/0.1	PKN4-4/1N/C/01	236824	1/60
6/0.1	PKN4-6/1N/C/01	236874	1/60
10/0.1	PKN4-10/1N/C/01	236934	1/60
13/0.1	PKN4-13/1N/C/01	236997	1/60
16/0.1	PKN4-16/1N/C/01	237069	1/60
20/0.1	PKN4-20/1N/C/01	237102	1/60
25/0.1	PKN4-25/1N/C/01	237132	1/60
32/0.1	PKN4-32/1N/C/01	237162	1/60
40/0.1	PKN4-40/1N/C/01	237191	1/60
2/0.3	PKN4-2/1N/C/03	236795	1/60
4/0.3	PKN4-4/1N/C/03	236825	1/60
6/0.3	PKN4-6/1N/C/03	236875	1/60
10/0.3	PKN4-10/1N/C/03	236935	1/60
13/0.3	PKN4-13/1N/C/03	236998	1/60
16/0.3	PKN4-16/1N/C/03	237070	1/60
20/0.3	PKN4-20/1N/C/03	237103	1/60
25/0.3	PKN4-25/1N/C/03	237133	1/60
32/0.3	PKN4-32/1N/C/03	237163	1/60
40/0.3	PKN4-40/1N/C/03	237192	1/60

## Specifications | Combined RCD/MCB Devices PKN4, 1+N-pole

### Description

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed
- **Type -G:** 10 ms time delay in order to avoid unwanted tripping (e.g. during thunderstorms) according to ÖVE E 8601. Compulsory in Austria for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE-EN1, Part 1, §12.14).

### Accessories:

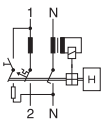
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

**Technical Data**

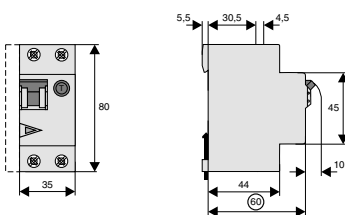
		<b>PKN4, 1+N-pole</b>
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 μs), surge current proof
Type G		10 ms delay 3 kA (8/20 μs), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Rated insulation voltage	$U_i$	440 VAC
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	4.5 kA
Rated current		2 - 40 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 μs)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>4.5 kA)
Endurance		
electrical components		≥ 4,000 switching operations
mechanical components		≥ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

**Connection diagram**

1+N-pole



**Dimensions (mm)**

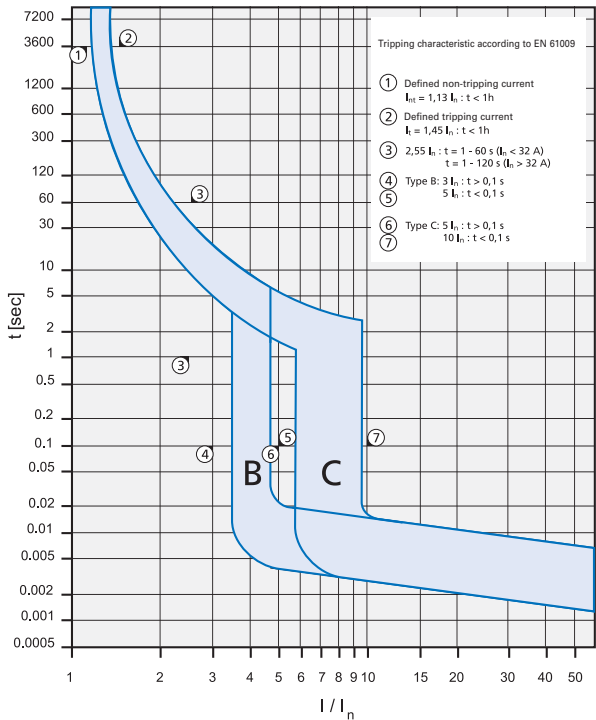


### Load Capacity PKN4-../1N/

Effect of ambient temperature (MCB component)

I <sub>n</sub> [A]	Ambient temperature T [°C]								
	-25	-20	-10	0	10	20	30	35	40
2	2.5	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9
5	6.2	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
8	9.9	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7
10	12	12	12	11	11	10	10	9.9	9.7
12	15	14	14	13	13	13	12	12	12
13	16	16	15	15	14	14	13	13	13
15	19	18	17	17	16	16	15	15	15
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24
32	40	38	37	36	35	33	32	32	31
40	49	48	47	45	43	42	40	39	39

### Tripping Characteristic PKN4-../1N/, Characteristics B and C



### Short Circuit Selectivity PKN4-../1N/ towards DII-DIV fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKN4-../1N/ and the upstream fuses up to the specified values of the selectivity limit current I<sub>s</sub> [kA] (i. e. in case of short-circuit currents I<sub>ks</sub> under I<sub>s</sub>, only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

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

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

PKN4 I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	2.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	3.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.7	1.0	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.6	1.0	2.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.6	0.9	1.9	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			0.5	0.7	1.6	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.7	1.4	2.4	4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.3	2.2	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25						1.3	2.1	3.8	4.5 <sup>2)</sup>
32							2.0	3.5	4.5 <sup>2)</sup>
40								3.1	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

PKN4 I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.1	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.6	1.0	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5	0.9	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5	0.7	1.5	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.4	2.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16						1.2	1.8	3.4	4.5 <sup>2)</sup>
20							1.2	1.7	3.1
25								1.6	2.9
32									2.3
40									2.9

<sup>1)</sup> Selectivity limit current I<sub>s</sub> under 0.5 kA.

<sup>2)</sup> Selectivity limit current I<sub>s</sub> = rated breaking capacity I<sub>cn</sub> of the RCD/MCB device

Darker areas: no selectivity





**Short Circuit Selectivity PKN4-../1N/ towards D01-D03 fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKN4-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

PKN4	D01-D03 gL/gG									
$I_n$ [A]	10	16	20	25	35	50	63	80	100	
2	<0.5 <sup>1)</sup>	0.7	1.6	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	2.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8			0.6	0.8	2.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.8	1.6	3.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			0.6	0.7	1.4	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.6	1.2	2.6	3.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.2	2.5	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25					1.2	2.3	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32						2.3	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40							2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

PKN4	D01-D03 gL/gG									
$I_n$ [A]	10	16	20	25	35	50	63	80	100	
2	<0.5 <sup>1)</sup>	0.5	0.5	2.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	2.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8			<0.5	0.7	2.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5	0.6	1.3	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.2	2.5	3.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					1.0	2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.0	2.0	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25						1.9	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32							2.1	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40								3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

**Short Circuit Selectivity PKN4-../1N/ towards NH-00 fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKN4-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

PKN4	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5 <sup>1)</sup>	1.1	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	0.5	0.9	1.6	2.8	4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	0.5	0.8	1.4	2.2	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.9	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.7	0.9	1.5	2.1	3.4	4.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.4	1.8	2.8	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16			0.6	0.7	1.2	1.5	2.4	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				0.7	1.1	1.5	2.2	2.8	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25				0.7	1.1	1.4	2.1	2.6	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32					1.0	1.4	2.0	2.5	3.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40							2.3	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

PKN4	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5 <sup>1)</sup>	0.6	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	1.8	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	2.7	4.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	2.2	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.1	1.9	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.8	1.2	1.7	2.7	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.1	1.5	2.3	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					1.0	1.3	1.8	2.3	3.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					0.9	1.1	1.7	2.2	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25						1.6	2.1	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32							1.7	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40								2.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

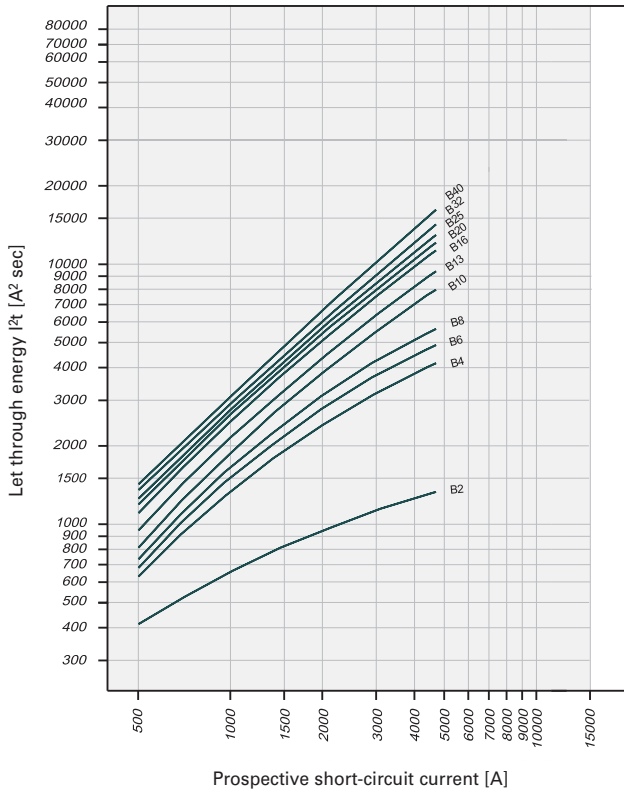
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity

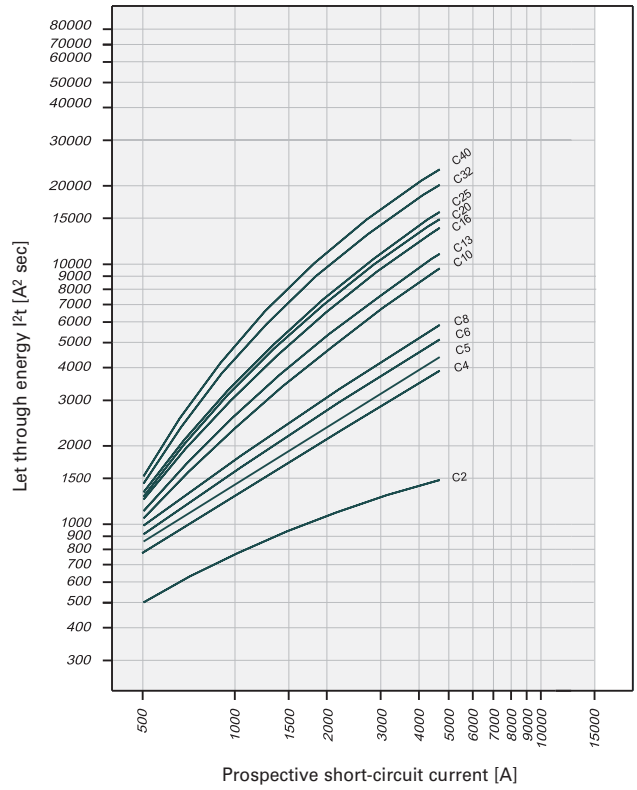


### Let-through Energy PKN4-../1N/

Let-through Energy PKN4, Characteristic B, 1+N-pole




Let-through Energy PKN4, Characteristic C, 1+N-pole



SG61711



## Description

- Residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 10 kA
- Frost resistance 

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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### Type G

**10 kA, 1+N-pole**  
**Surge current-proof 3 kA, type G (ÖVE E 8601)**

SG61711



#### Characteristic B

13/0.03	PFL7-13/1N/B/003-G	263530	1/60
16/0.03	PFL7-16/1N/B/003-G	263536	1/60
20/0.03	PFL7-20/1N/B/003-G	263542	1/60
25/0.03	PFL7-25/1N/B/003-G	263548	1/60
32/0.03	PFL7-32/1N/B/003-G	263554	1/60
40/0.03	PFL7-40/1N/B/003-G	263560	1/60
13/0.3	PFL7-13/1N/B/03-G	165604	1/60
16/0.3	PFL7-16/1N/B/03-G	165618	1/60
20/0.3	PFL7-20/1N/B/03-G	165646	1/60
25/0.3	PFL7-25/1N/B/03-G	165656	1/60
32/0.3	PFL7-32/1N/B/03-G	165667	1/60
40/0.3	PFL7-40/1N/B/03-G	165692	1/60

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#### Characteristic C

13/0.03	PFL7-13/1N/C/003-G	263533	1/60
16/0.03	PFL7-16/1N/C/003-G	263539	1/60
20/0.03	PFL7-20/1N/C/003-G	263545	1/60
25/0.03	PFL7-25/1N/C/003-G	263551	1/60
32/0.03	PFL7-32/1N/C/003-G	263557	1/60
40/0.03	PFL7-40/1N/C/003-G	263563	1/60
13/0.3	PFL7-13/1N/C/03-G	165611	1/60
16/0.3	PFL7-16/1N/C/03-G	165625	1/60
20/0.3	PFL7-20/1N/C/03-G	165651	1/60
25/0.3	PFL7-25/1N/C/03-G	165661	1/60
32/0.3	PFL7-32/1N/C/03-G	165672	1/60
40/0.3	PFL7-40/1N/C/03-G	165697	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**10 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG61711



**Characteristic B**

2/0.01	PFL7-2/1N/B/001-A	165633	1/60
4/0.01	PFL7-4/1N/B/001-A	165674	1/60
6/0.01	PFL7-6/1N/B/001-A	165700	1/60
10/0.01	PFL7-10/1N/B/001-A	165587	1/60
13/0.01	PFL7-13/1N/B/001-A	165599	1/60
16/0.01	PFL7-16/1N/B/001-A	165613	1/60
2/0.03	PFL7-2/1N/B/003-A	165635	1/60
4/0.03	PFL7-4/1N/B/003-A	165676	1/60
6/0.03	PFL7-6/1N/B/003-A	263431	1/60
10/0.03	PFL7-10/1N/B/003-A	263435	1/60
13/0.03	PFL7-13/1N/B/003-A	263519	1/60
16/0.03	PFL7-16/1N/B/003-A	263535	1/60
20/0.03	PFL7-20/1N/B/003-A	263541	1/60
25/0.03	PFL7-25/1N/B/003-A	263547	1/60
32/0.03	PFL7-32/1N/B/003-A	263553	1/60
40/0.03	PFL7-40/1N/B/003-A	263559	1/60
2/0.1	PFL7-2/1N/B/01-A	165637	1/60
4/0.1	PFL7-4/1N/B/01-A	165678	1/60
6/0.1	PFL7-6/1N/B/01-A	165702	1/60
10/0.1	PFL7-10/1N/B/01-A	165589	1/60
13/0.1	PFL7-13/1N/B/01-A	165601	1/60
16/0.1	PFL7-16/1N/B/01-A	165615	1/60
20/0.1	PFL7-20/1N/B/01-A	165643	1/60
25/0.1	PFL7-25/1N/B/01-A	165653	1/60
32/0.1	PFL7-32/1N/B/01-A	165664	1/60
40/0.1	PFL7-40/1N/B/01-A	165689	1/60
2/0.3	PFL7-2/1N/B/03-A	165639	1/60
4/0.3	PFL7-4/1N/B/03-A	165680	1/60
6/0.3	PFL7-6/1N/B/03-A	165704	1/60
10/0.3	PFL7-10/1N/B/03-A	165591	1/60
13/0.3	PFL7-13/1N/B/03-A	165603	1/60
16/0.3	PFL7-16/1N/B/03-A	165617	1/60
20/0.3	PFL7-20/1N/B/03-A	165645	1/60
25/0.3	PFL7-25/1N/B/03-A	165655	1/60
32/0.3	PFL7-32/1N/B/03-A	165666	1/60
40/0.3	PFL7-40/1N/B/03-A	165691	1/60

# 1.150 Protective Devices

xPole

## Combined RCD/MCB Devices PFL7, 1+N-pole

SG61711



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PFL7-2/1N/C/001-A	165627	1/60
4/0.01	PFL7-4/1N/C/001-A	165682	1/60
6/0.01	PFL7-6/1N/C/001-A	165706	1/60
10/0.01	PFL7-10/1N/C/001-A	165593	1/60
13/0.01	PFL7-13/1N/C/001-A	165606	1/60
16/0.01	PFL7-16/1N/C/001-A	165620	1/60
2/0.03	PFL7-2/1N/C/003-A	165628	1/60
4/0.03	PFL7-4/1N/C/003-A	165684	1/60
6/0.03	PFL7-6/1N/C/003-A	263515	1/60
10/0.03	PFL7-10/1N/C/003-A	263517	1/60
13/0.03	PFL7-13/1N/C/003-A	263532	1/60
16/0.03	PFL7-16/1N/C/003-A	263538	1/60
20/0.03	PFL7-20/1N/C/003-A	263544	1/60
25/0.03	PFL7-25/1N/C/003-A	263550	1/60
32/0.03	PFL7-32/1N/C/003-A	263556	1/60
40/0.03	PFL7-40/1N/C/003-A	263562	1/60
2/0.1	PFL7-2/1N/C/01-A	165629	1/60
4/0.1	PFL7-4/1N/C/01-A	165685	1/60
6/0.1	PFL7-6/1N/C/01-A	165708	1/60
10/0.1	PFL7-10/1N/C/01-A	165595	1/60
13/0.1	PFL7-13/1N/C/01-A	165608	1/60
16/0.1	PFL7-16/1N/C/01-A	165622	1/60
20/0.1	PFL7-20/1N/C/01-A	165648	1/60
25/0.1	PFL7-25/1N/C/01-A	165658	1/60
32/0.1	PFL7-32/1N/C/01-A	165669	1/60
40/0.1	PFL7-40/1N/C/01-A	165694	1/60
2/0.3	PFL7-2/1N/C/03-A	165631	1/60
4/0.3	PFL7-4/1N/C/03-A	165687	1/60
6/0.3	PFL7-6/1N/C/03-A	165710	1/60
10/0.3	PFL7-10/1N/C/03-A	165597	1/60
13/0.3	PFL7-13/1N/C/03-A	165610	1/60
16/0.3	PFL7-16/1N/C/03-A	165624	1/60
20/0.3	PFL7-20/1N/C/03-A	165650	1/60
25/0.3	PFL7-25/1N/C/03-A	165660	1/60
32/0.3	PFL7-32/1N/C/03-A	165671	1/60
40/0.3	PFL7-40/1N/C/03-A	165696	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**10 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, type AC**

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**Characteristic B**

2/0.01	PFL7-2/1N/B/001	165634	1/60
4/0.01	PFL7-4/1N/B/001	165675	1/60
6/0.01	PFL7-6/1N/B/001	165701	1/60
10/0.01	PFL7-10/1N/B/001	165588	1/60
13/0.01	PFL7-13/1N/B/001	165600	1/60
16/0.01	PFL7-16/1N/B/001	165614	1/60
2/0.03	PFL7-2/1N/B/003	165636	1/60
4/0.03	PFL7-4/1N/B/003	165677	1/60
6/0.03	PFL7-6/1N/B/003	263430	1/60
10/0.03	PFL7-10/1N/B/003	263434	1/60
13/0.03	PFL7-13/1N/B/003	263518	1/60
16/0.03	PFL7-16/1N/B/003	263534	1/60
20/0.03	PFL7-20/1N/B/003	263540	1/60
25/0.03	PFL7-25/1N/B/003	263546	1/60
32/0.03	PFL7-32/1N/B/003	263552	1/60
40/0.03	PFL7-40/1N/B/003	263558	1/60
2/0.1	PFL7-2/1N/B/01	165638	1/60
4/0.1	PFL7-4/1N/B/01	165679	1/60
6/0.1	PFL7-6/1N/B/01	165703	1/60
10/0.1	PFL7-10/1N/B/01	165590	1/60
13/0.1	PFL7-13/1N/B/01	165602	1/60
16/0.1	PFL7-16/1N/B/01	165616	1/60
20/0.1	PFL7-20/1N/B/01	165644	1/60
25/0.1	PFL7-25/1N/B/01	165654	1/60
32/0.1	PFL7-32/1N/B/01	165665	1/60
40/0.1	PFL7-40/1N/B/01	165690	1/60
2/0.3	PFL7-2/1N/B/03	165640	1/60
4/0.3	PFL7-4/1N/B/03	165681	1/60
6/0.3	PFL7-6/1N/B/03	165705	1/60
10/0.3	PFL7-10/1N/B/03	165592	1/60
13/0.3	PFL7-13/1N/B/03	165605	1/60
16/0.3	PFL7-16/1N/B/03	165619	1/60
20/0.3	PFL7-20/1N/B/03	165647	1/60
25/0.3	PFL7-25/1N/B/03	165657	1/60
32/0.3	PFL7-32/1N/B/03	165668	1/60
40/0.3	PFL7-40/1N/B/03	165693	1/60
2/0.5	PFL7-2/1N/B/05	165641	1/60

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PFL7-2/1N/C/001	165642	1/60
4/0.01	PFL7-4/1N/C/001	165683	1/60
6/0.01	PFL7-6/1N/C/001	165707	1/60
10/0.01	PFL7-10/1N/C/001	165594	1/60
13/0.01	PFL7-13/1N/C/001	165607	1/60
16/0.01	PFL7-16/1N/C/001	165621	1/60
2/0.03	PFL7-2/1N/C/003	263428	1/60
4/0.03	PFL7-4/1N/C/003	263429	1/60
6/0.03	PFL7-6/1N/C/003	263432	1/60
10/0.03	PFL7-10/1N/C/003	263516	1/60
13/0.03	PFL7-13/1N/C/003	263531	1/60
16/0.03	PFL7-16/1N/C/003	263537	1/60
20/0.03	PFL7-20/1N/C/003	263543	1/60
25/0.03	PFL7-25/1N/C/003	263549	1/60
32/0.03	PFL7-32/1N/C/003	263555	1/60
40/0.03	PFL7-40/1N/C/003	263561	1/60
2/0.1	PFL7-2/1N/C/01	165630	1/60
4/0.1	PFL7-4/1N/C/01	165686	1/60
6/0.1	PFL7-6/1N/C/01	165709	1/60
10/0.1	PFL7-10/1N/C/01	165596	1/60
13/0.1	PFL7-13/1N/C/01	165609	1/60
16/0.1	PFL7-16/1N/C/01	165623	1/60
20/0.1	PFL7-20/1N/C/01	165649	1/60
25/0.1	PFL7-25/1N/C/01	165659	1/60
32/0.1	PFL7-32/1N/C/01	165670	1/60
40/0.1	PFL7-40/1N/C/01	165695	1/60
1/0.3	PFL7-1/1N/C/03	165586	1/60
2/0.3	PFL7-2/1N/C/03	165632	1/60
3/0.3	PFL7-3/1N/C/03	165663	1/60
4/0.3	PFL7-4/1N/C/03	165688	1/60
5/0.3	PFL7-5/1N/C/03	165699	1/60
6/0.3	PFL7-6/1N/C/03	165711	1/60
10/0.3	PFL7-10/1N/C/03	165598	1/60
13/0.3	PFL7-13/1N/C/03	165612	1/60
16/0.3	PFL7-16/1N/C/03	165626	1/60
20/0.3	PFL7-20/1N/C/03	165652	1/60
25/0.3	PFL7-25/1N/C/03	165662	1/60
32/0.3	PFL7-32/1N/C/03	165673	1/60
40/0.3	PFL7-40/1N/C/03	165698	1/60



**Specifications | Combined RCD/MCB Devices PFL7, 1+N-pole**

**Description**

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed
- **Type -G:** 10 ms time delay in order to avoid unwanted tripping (e.g. during thunderstorms).  
Compulsory in Austria for any circuit where personal injury or damage to property may occur in case of unwanted tripping (§12.1.6 ÖVE/ÖNORM E 8001-1).

**Accessories:**

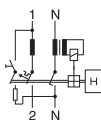
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

### Technical Data

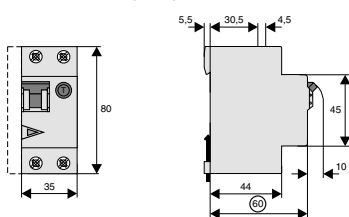
		PFL7, 1+N-pole
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Type G		10 ms delay 3 kA (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300, 500 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Rated insulation voltage	$U_i$	440 VAC
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	10 kA
Rated current		6 - 40 A
Rated impulse withstand voltage	$U_{imp}$	6 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>10 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

### Connection diagram

1+N-pole



### Dimensions (mm)

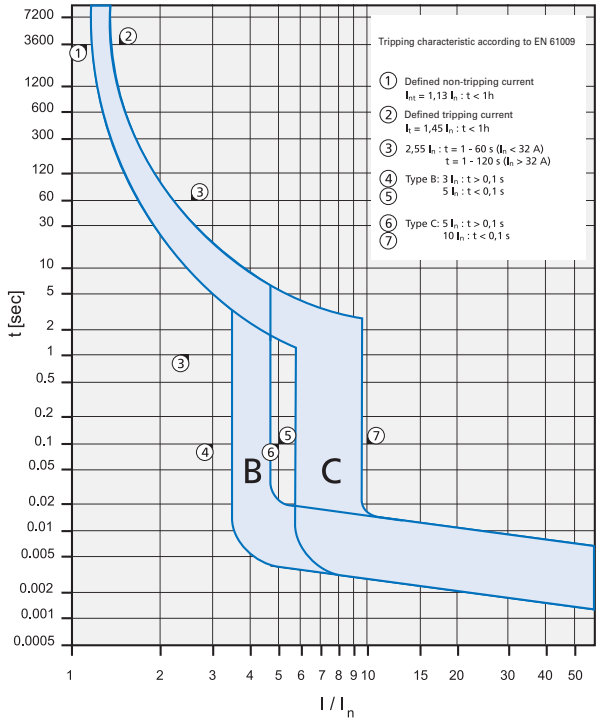


**Load Capacity PFL7-../1N/**

Effect of ambient temperature (MCB component)

I <sub>n</sub> [A]	Ambient temperature T [°C]								
	-25	-20	-10	0	10	20	30	35	40
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
8	9.9	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7
10	12	12	12	11	11	10	10	9.9	9.7
12	15	14	14	13	13	13	12	12	12
13	16	16	15	15	14	14	13	13	13
15	19	18	17	17	16	16	15	15	15
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24
32	40	38	37	36	35	33	32	32	31
40	49	48	47	45	43	42	40	39	39

**Tripping Characteristic PFL7-../1N/, Characteristics B and C**



**Short Circuit Selectivity PFL7-../1N/ towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PFL7-../1N/ and the upstream fuses up to the specified values of the selectivity limit current I<sub>s</sub> [kA] (i. e. in case of short-circuit currents I<sub>sc</sub> under I<sub>s</sub>, only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

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

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

PFL7 I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.7	1.0	2.9	6.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.6	1.0	2.4	5.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			0.6	0.9	1.9	3.3	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13			0.5	0.7	1.6	2.8	5.7	9.0	10.0 <sup>2)</sup>
16				0.7	1.4	2.4	4.4	7.0	10.0 <sup>2)</sup>
20					1.3	2.2	4.0	6.3	10.0 <sup>2)</sup>
25					1.3	2.1	3.8	5.8	10.0 <sup>2)</sup>
32						2.0	3.5	5.2	9.5
40							3.1	4.5	8.1

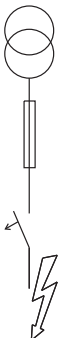
Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

PFL7 I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.6	1.0	2.9	5.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5	0.9	2.5	4.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			<0.5	0.7	1.5	2.6	5.3	9.0	10.0 <sup>2)</sup>
13					1.4	2.3	4.6	7.6	10.0 <sup>2)</sup>
16					1.2	1.8	3.4	5.5	10.0 <sup>2)</sup>
20					1.2	1.7	3.1	5.0	10.0 <sup>2)</sup>
25						1.6	2.9	4.6	10.0 <sup>2)</sup>
32							2.3	3.4	7.7
40								2.9	6.2

1) Selectivity limit current I<sub>s</sub> under 0.5 kA.

2) Selectivity limit current I<sub>s</sub> = rated breaking capacity I<sub>cn</sub> of the RCD/MCB device

Darker areas: no selectivity



### Short Circuit Selectivity PFL7-../1N/ towards D01-D03 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices PFL7-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

PFL7	D01-D03 gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.5	0.8	2.4	8.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8			0.6	0.8	2.0	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			0.5	0.8	1.6	3.7	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13			0.6	0.7	1.4	3.0	4.7	9.0	10.0 <sup>2)</sup>
16				0.6	1.2	2.6	3.9	7.0	10.0 <sup>2)</sup>
20					1.2	2.5	3.6	6.2	10.0 <sup>2)</sup>
25					1.2	2.3	3.3	5.7	10.0 <sup>2)</sup>
32						2.3	3.1	5.1	10.0 <sup>2)</sup>
40							2.8	4.5	9.5

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

PFL7	D01-D03 gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	2.3	6.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8			<0.5	0.7	2.1	5.5	9.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			<0.5	0.6	1.3	2.9	4.5	8.9	10.0 <sup>2)</sup>
13					1.2	2.5	3.9	7.6	10.0 <sup>2)</sup>
16					1.0	2.1	3.0	5.5	10.0 <sup>2)</sup>
20					1.0	2.0	2.7	5.0	10.0 <sup>2)</sup>
25						1.9	2.6	4.5	10.0 <sup>2)</sup>
32							2.1	3.4	10.0 <sup>2)</sup>
40								3.0	8.7

### Short Circuit Selectivity PFL7-../1N/ towards NH-00 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices PFL7-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

PFL7	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	0.5	0.8	1.4	2.2	3.3	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.7	0.9	1.5	2.1	3.4	4.3	7.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.4	1.8	2.8	3.6	5.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16			0.6	0.7	1.2	1.5	2.4	3.0	4.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
20				0.7	1.1	1.5	2.2	2.8	4.2	9.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
25				0.7	1.1	1.4	2.1	2.6	4.0	8.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
32					1.0	1.4	2.0	2.5	3.7	7.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
40							2.3	3.4	6.2	8.8	10.0 <sup>2)</sup>	

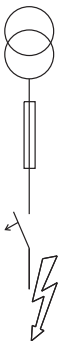
Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

PFL7	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	2.2	3.3	5.9	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			0.5	0.8	1.2	1.7	2.7	3.4	5.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13					1.1	1.5	2.3	2.9	4.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16					1.0	1.3	1.8	2.3	3.7	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
20					0.9	1.1	1.7	2.2	3.4	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
25						1.6	2.1	3.2	7.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
32							1.7	2.6	5.3	9.0	10.0 <sup>2)</sup>	
40								2.4	4.5	7.5	10.0	

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

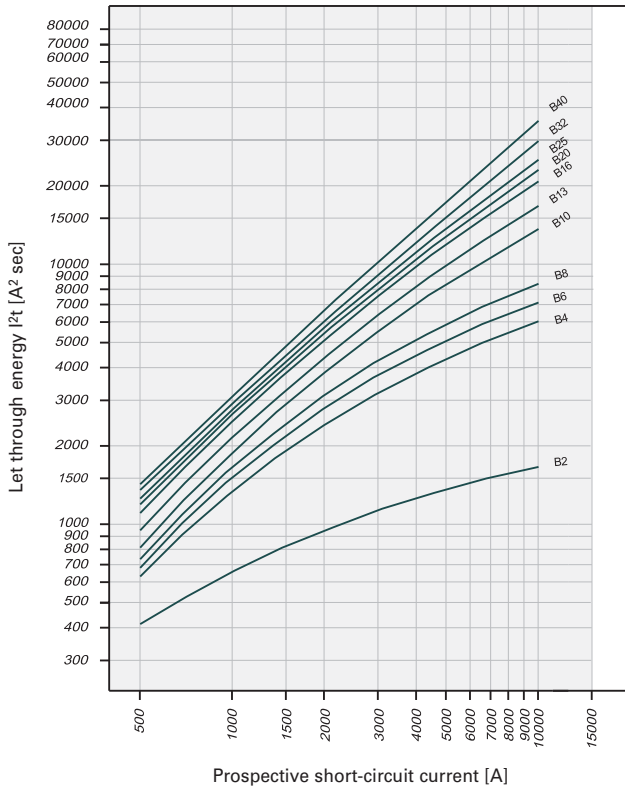
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity

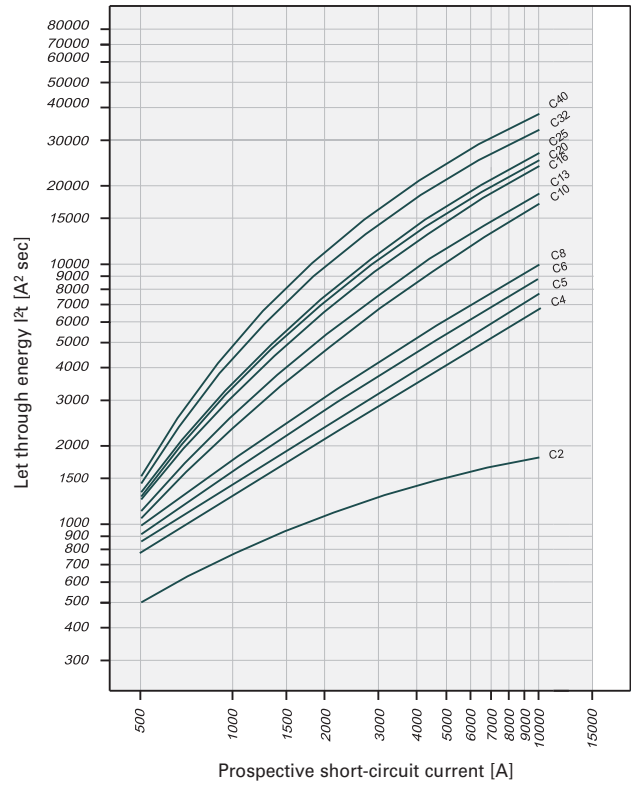


**Let-through Energy PFL7-../1N/**

Let-through Energy PFL7, Characteristic B, 1+N-pole




Let-through Energy PFL7, Characteristic C, 1+N-pole



SG04414



## Description

- Economy series mainly for house installations
- Residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 25 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA
- Frost resistance 

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

**Type AC**

**6 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, type AC**

SG04414



**Characteristic B**

$I_n/I_{\Delta n}$	Type Designation	Article No.	Units per package
6/0.03	PFL6-6/1N/B/003	286428	1/60
10/0.03	PFL6-10/1N/B/003	286429	1/60
13/0.03	PFL6-13/1N/B/003	286430	1/60
16/0.03	PFL6-16/1N/B/003	286431	1/60
20/0.03	PFL6-20/1N/B/003	286432	1/60
25/0.03	PFL6-25/1N/B/003	286433	1/60

SG04414



**Characteristic C**

$I_n/I_{\Delta n}$	Type Designation	Article No.	Units per package
6/0.03	PFL6-6/1N/C/003	286464	1/60
10/0.03	PFL6-10/1N/C/003	286465	1/60
13/0.03	PFL6-13/1N/C/003	286466	1/60
16/0.03	PFL6-16/1N/C/003	286467	1/60
20/0.03	PFL6-20/1N/C/003	286468	1/60
25/0.03	PFL6-25/1N/C/003	286469	1/60

## Specifications | Combined RCD/MCB Devices PFL6, 1+N-pole

### Description

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.

### Accessories:

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

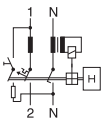


**Technical Data**

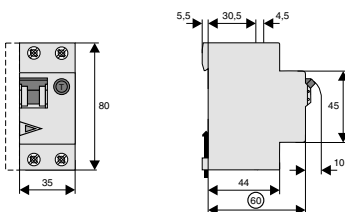
		PFL6, 1+N-pole
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	30 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Rated insulation voltage	$U_i$	440 VAC
Sensitivity		AC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	6 kA
Rated current		6 - 25 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq$ 4,000 switching operations
mechanical components		$\geq$ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

**Connection diagram**

1+N-pole



**Dimensions (mm)**

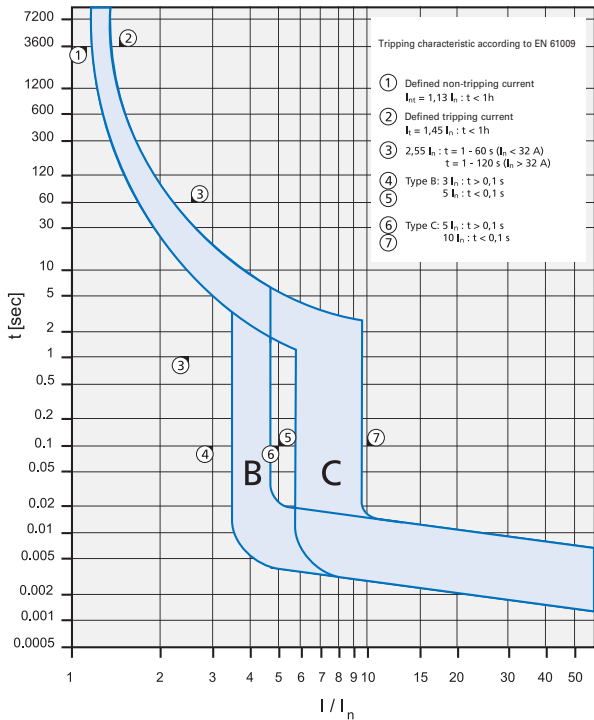


### Load Capacity PFL6-../1N/

Effect of ambient temperature (MCB component)

I <sub>n</sub> [A]	Ambient temperature T [°C]								
	-25	-20	-10	0	10	20	30	35	40
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
8	9.9	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7
10	12	12	12	11	11	10	10	9.9	9.7
12	15	14	14	13	13	13	12	12	12
13	16	16	15	15	14	14	13	13	13
15	19	18	17	17	16	16	15	15	15
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24

### Tripping Characteristic PFL6-../1N/, Characteristics B and C



### Short Circuit Selectivity PFL6-../1N/ towards DII-DIV fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices PFL6-../1N/ and the upstream fuses up to the specified values of the selectivity limit current  $I_s$  [kA] (i. e. in case of short-circuit currents  $I_{sc}$  under  $I_s$ , only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

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

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

PFL6 I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.7	1.0	2.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.6	1.0	2.4	5.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.6	0.9	1.9	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.5	0.7	1.6	2.8	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				0.7	1.4	2.4	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.3	2.2	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.3	2.1	3.8	5.8	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

PFL6 I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.6	1.0	2.9	5.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5	0.9	2.5	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5	0.7	1.5	2.6	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.4	2.3	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.2	1.8	3.4	5.5	6.0 <sup>2)</sup>
20					1.2	1.7	3.1	5.0	6.0 <sup>2)</sup>
25					1.6	2.9	4.6	6.0 <sup>2)</sup>	

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity



**Short Circuit Selectivity PFL6-../1N/ towards D01-D03 fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PFL6-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

PFL6	D01-D03 gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.5	0.8	2.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			0.6	0.8	2.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.8	1.6	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.6	0.7	1.4	3.0	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					0.6	1.2	2.6	3.9	6.0 <sup>2)</sup>
20						1.2	2.5	3.6	6.0 <sup>2)</sup>
25							1.2	2.3	3.3

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

PFL6	D01-D03 gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	2.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			<0.5	0.7	2.1	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5	0.6	1.3	2.9	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.2	2.5	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.0	2.1	3.0	5.5	6.0 <sup>2)</sup>
20					1.0	2.0	2.7	5.0	6.0 <sup>2)</sup>
25						1.9	2.6	4.5	6.0 <sup>2)</sup>

**Short Circuit Selectivity PFL6-../1N/ towards NH-00 fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PFL6-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

PFL6	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	0.5	0.8	1.4	2.2	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.7	0.9	1.5	2.1	3.4	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.6	0.8	1.4	1.8	2.8	3.6	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				0.6	0.7	1.2	1.5	2.4	3.0	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					0.7	1.1	1.5	2.2	2.8	4.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25						0.7	1.1	1.4	2.1	2.6	4.0	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

PFL6	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	2.2	3.3	5.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.8	1.2	1.7	2.7	3.4	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.1	1.5	2.3	2.9	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.0	1.3	1.8	2.3	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					0.9	1.1	1.7	2.2	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25						1.6	2.1	3.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

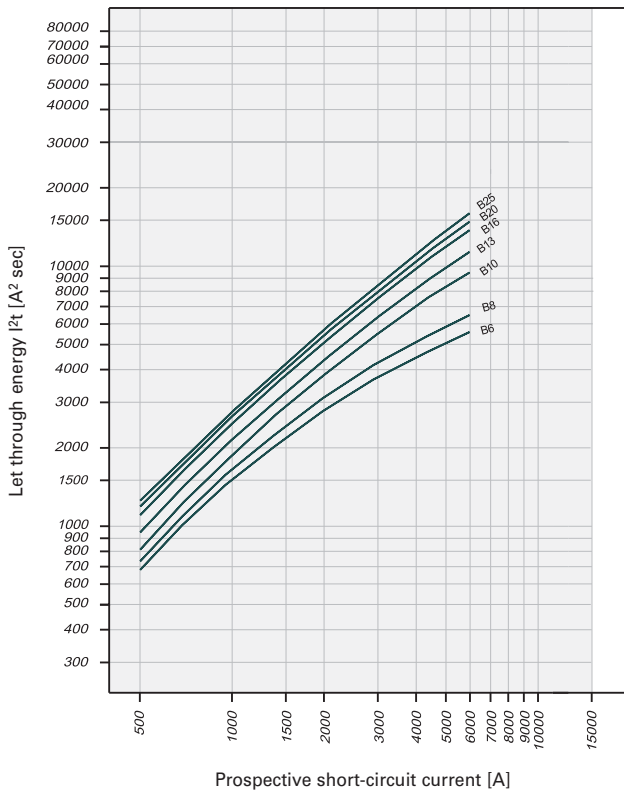
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity

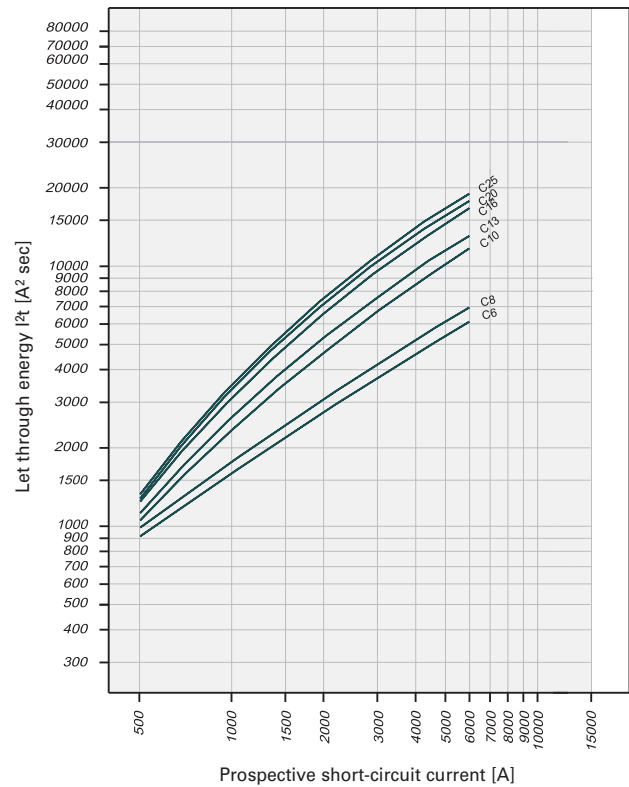


### Let-through Energy PFL6-../1N/

Let-through Energy PFL6, Characteristic B, 1+N-pole




Let-through Energy PFL6, Characteristic C, 1+N-pole



SG67912



## Description

- Residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA
- Frost resistance 

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No.

Units per  
package

#### Type G

**4.5 kA, 1+N-pole**

**Surge current-proof 3 kA, type G (ÖVE E 8601)**

SG67912



#### Characteristic B

13/0.03	PFL4-13/1N/B/003-G	165368	1/60
16/0.03	PFL4-16/1N/B/003-G	165388	1/60
20/0.03	PFL4-20/1N/B/003-G	165420	1/60
25/0.03	PFL4-25/1N/B/003-G	165434	1/60
32/0.03	PFL4-32/1N/B/003-G	165448	1/60
40/0.03	PFL4-40/1N/B/003-G	165478	1/60
13/0.3	PFL4-13/1N/B/03-G	165373	1/60
16/0.3	PFL4-16/1N/B/03-G	165392	1/60
20/0.3	PFL4-20/1N/B/03-G	165424	1/60
25/0.3	PFL4-25/1N/B/03-G	165438	1/60
32/0.3	PFL4-32/1N/B/03-G	165452	1/60
40/0.3	PFL4-40/1N/B/03-G	165482	1/60

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#### Characteristic C

13/0.03	PFL4-13/1N/C/003-G	165378	1/60
16/0.03	PFL4-16/1N/C/003-G	165397	1/60
20/0.03	PFL4-20/1N/C/003-G	165427	1/60
25/0.03	PFL4-25/1N/C/003-G	165441	1/60
32/0.03	PFL4-32/1N/C/003-G	165455	1/60
40/0.03	PFL4-40/1N/C/003-G	165485	1/60
13/0.3	PFL4-13/1N/C/03-G	165383	1/60
16/0.3	PFL4-16/1N/C/03-G	165401	1/60
20/0.3	PFL4-20/1N/C/03-G	165431	1/60
25/0.3	PFL4-25/1N/C/03-G	165445	1/60
32/0.3	PFL4-32/1N/C/03-G	165459	1/60
40/0.3	PFL4-40/1N/C/03-G	165489	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**4.5 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG67912



**Characteristic B**

2/0.01	PFL4-2/1N/B/001-A	165409	1/60
4/0.01	PFL4-4/1N/B/001-A	165461	1/60
6/0.01	PFL4-6/1N/B/001-A	165491	1/60
10/0.01	PFL4-10/1N/B/001-A	165351	1/60
13/0.01	PFL4-13/1N/B/001-A	165365	1/60
16/0.01	PFL4-16/1N/B/001-A	165385	1/60
2/0.03	PFL4-2/1N/B/003-A	165411	1/60
4/0.03	PFL4-4/1N/B/003-A	165463	1/60
6/0.03	PFL4-6/1N/B/003-A	165493	1/60
10/0.03	PFL4-10/1N/B/003-A	165353	1/60
13/0.03	PFL4-13/1N/B/003-A	165367	1/60
16/0.03	PFL4-16/1N/B/003-A	165387	1/60
20/0.03	PFL4-20/1N/B/003-A	165419	1/60
25/0.03	PFL4-25/1N/B/003-A	165433	1/60
32/0.03	PFL4-32/1N/B/003-A	165447	1/60
40/0.03	PFL4-40/1N/B/003-A	165477	1/60
2/0.1	PFL4-2/1N/B/01-A	165413	1/60
4/0.1	PFL4-4/1N/B/01-A	165465	1/60
6/0.1	PFL4-6/1N/B/01-A	165494	1/60
10/0.1	PFL4-10/1N/B/01-A	165354	1/60
13/0.1	PFL4-13/1N/B/01-A	165370	1/60
16/0.1	PFL4-16/1N/B/01-A	165389	1/60
20/0.1	PFL4-20/1N/B/01-A	165421	1/60
25/0.1	PFL4-25/1N/B/01-A	165435	1/60
32/0.1	PFL4-32/1N/B/01-A	165449	1/60
40/0.1	PFL4-40/1N/B/01-A	165479	1/60
2/0.3	PFL4-2/1N/B/03-A	165415	1/60
4/0.3	PFL4-4/1N/B/03-A	165467	1/60
6/0.3	PFL4-6/1N/B/03-A	165496	1/60
10/0.3	PFL4-10/1N/B/03-A	165356	1/60
13/0.3	PFL4-13/1N/B/03-A	165372	1/60
16/0.3	PFL4-16/1N/B/03-A	165391	1/60
20/0.3	PFL4-20/1N/B/03-A	165423	1/60
25/0.3	PFL4-25/1N/B/03-A	165437	1/60
32/0.3	PFL4-32/1N/B/03-A	165451	1/60
40/0.3	PFL4-40/1N/B/03-A	165481	1/60

# 1.168 Protective Devices

xPole

Combined RCD/MCB Devices PFL4, 1+N-pole

SG67912



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PFL4-2/1N/C/001-A	165403	1/60
4/0.01	PFL4-4/1N/C/001-A	165469	1/60
6/0.01	PFL4-6/1N/C/001-A	165498	1/60
10/0.01	PFL4-10/1N/C/001-A	165358	1/60
13/0.01	PFL4-13/1N/C/001-A	165375	1/60
16/0.01	PFL4-16/1N/C/001-A	165394	1/60
2/0.03	PFL4-2/1N/C/003-A	165404	1/60
4/0.03	PFL4-4/1N/C/003-A	165471	1/60
6/0.03	PFL4-6/1N/C/003-A	165500	1/60
10/0.03	PFL4-10/1N/C/003-A	165360	1/60
13/0.03	PFL4-13/1N/C/003-A	165377	1/60
16/0.03	PFL4-16/1N/C/003-A	165396	1/60
20/0.03	PFL4-20/1N/C/003-A	165426	1/60
25/0.03	PFL4-25/1N/C/003-A	165440	1/60
32/0.03	PFL4-32/1N/C/003-A	165454	1/60
40/0.03	PFL4-40/1N/C/003-A	165484	1/60
2/0.1	PFL4-2/1N/C/01-A	165405	1/60
4/0.1	PFL4-4/1N/C/01-A	165473	1/60
6/0.1	PFL4-6/1N/C/01-A	165501	1/60
10/0.1	PFL4-10/1N/C/01-A	165361	1/60
13/0.1	PFL4-13/1N/C/01-A	165380	1/60
16/0.1	PFL4-16/1N/C/01-A	165398	1/60
20/0.1	PFL4-20/1N/C/01-A	165428	1/60
25/0.1	PFL4-25/1N/C/01-A	165442	1/60
32/0.1	PFL4-32/1N/C/01-A	165456	1/60
40/0.1	PFL4-40/1N/C/01-A	165486	1/60
2/0.3	PFL4-2/1N/C/03-A	165407	1/60
4/0.3	PFL4-4/1N/C/03-A	165475	1/60
6/0.3	PFL4-6/1N/C/03-A	165503	1/60
10/0.3	PFL4-10/1N/C/03-A	165363	1/60
13/0.3	PFL4-13/1N/C/03-A	165382	1/60
16/0.3	PFL4-16/1N/C/03-A	165400	1/60
20/0.3	PFL4-20/1N/C/03-A	165430	1/60
25/0.3	PFL4-25/1N/C/03-A	165444	1/60
32/0.3	PFL4-32/1N/C/03-A	165458	1/60
40/0.3	PFL4-40/1N/C/03-A	165488	1/60



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**4.5 kA, 1+N-pole  
Conditionally surge current-proof 250 A, type AC**

SG67912



**Characteristic B**

2/0.01	PFL4-2/1N/B/001	165410	1/60
4/0.01	PFL4-4/1N/B/001	165462	1/60
6/0.01	PFL4-6/1N/B/001	165492	1/60
10/0.01	PFL4-10/1N/B/001	165352	1/60
13/0.01	PFL4-13/1N/B/001	165366	1/60
16/0.01	PFL4-16/1N/B/001	165386	1/60
2/0.03	PFL4-2/1N/B/003	165412	1/60
4/0.03	PFL4-4/1N/B/003	165464	1/60
6/0.03	PFL4-6/1N/B/003	293179	1/60
10/0.03	PFL4-10/1N/B/003	293290	1/60
13/0.03	PFL4-13/1N/B/003	165369	1/60
16/0.03	PFL4-16/1N/B/003	293291	1/60
20/0.03	PFL4-20/1N/B/003	293292	1/60
25/0.03	PFL4-25/1N/B/003	293293	1/60
32/0.03	PFL4-32/1N/B/003	293294	1/60
40/0.03	PFL4-40/1N/B/003	293295	1/60
2/0.1	PFL4-2/1N/B/01	165414	1/60
4/0.1	PFL4-4/1N/B/01	165466	1/60
6/0.1	PFL4-6/1N/B/01	165495	1/60
10/0.1	PFL4-10/1N/B/01	165355	1/60
13/0.1	PFL4-13/1N/B/01	165371	1/60
16/0.1	PFL4-16/1N/B/01	165390	1/60
20/0.1	PFL4-20/1N/B/01	165422	1/60
25/0.1	PFL4-25/1N/B/01	165436	1/60
32/0.1	PFL4-32/1N/B/01	165450	1/60
40/0.1	PFL4-40/1N/B/01	165480	1/60
2/0.3	PFL4-2/1N/B/03	165416	1/60
4/0.3	PFL4-4/1N/B/03	165468	1/60
6/0.3	PFL4-6/1N/B/03	165497	1/60
10/0.3	PFL4-10/1N/B/03	165357	1/60
13/0.3	PFL4-13/1N/B/03	165374	1/60
16/0.3	PFL4-16/1N/B/03	165393	1/60
20/0.3	PFL4-20/1N/B/03	165425	1/60
25/0.3	PFL4-25/1N/B/03	165439	1/60
32/0.3	PFL4-32/1N/B/03	165453	1/60
40/0.3	PFL4-40/1N/B/03	165483	1/60

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	PFL4-2/1N/C/001	165417	1/60
4/0.01	PFL4-4/1N/C/001	165470	1/60
6/0.01	PFL4-6/1N/C/001	165499	1/60
10/0.01	PFL4-10/1N/C/001	165359	1/60
13/0.01	PFL4-13/1N/C/001	165376	1/60
16/0.01	PFL4-16/1N/C/001	165395	1/60
2/0.03	PFL4-2/1N/C/003	165418	1/60
4/0.03	PFL4-4/1N/C/003	165472	1/60
6/0.03	PFL4-6/1N/C/003	293296	1/60
10/0.03	PFL4-10/1N/C/003	293297	1/60
13/0.03	PFL4-13/1N/C/003	165379	1/60
16/0.03	PFL4-16/1N/C/003	293298	1/60
20/0.03	PFL4-20/1N/C/003	293299	1/60
25/0.03	PFL4-25/1N/C/003	293300	1/60
32/0.03	PFL4-32/1N/C/003	293301	1/60
40/0.03	PFL4-40/1N/C/003	293302	1/60
2/0.1	PFL4-2/1N/C/01	165406	1/60
4/0.1	PFL4-4/1N/C/01	165474	1/60
6/0.1	PFL4-6/1N/C/01	165502	1/60
10/0.1	PFL4-10/1N/C/01	165362	1/60
13/0.1	PFL4-13/1N/C/01	165381	1/60
16/0.1	PFL4-16/1N/C/01	165399	1/60
20/0.1	PFL4-20/1N/C/01	165429	1/60
25/0.1	PFL4-25/1N/C/01	165443	1/60
32/0.1	PFL4-32/1N/C/01	165457	1/60
40/0.1	PFL4-40/1N/C/01	165487	1/60
2/0.3	PFL4-2/1N/C/03	165408	1/60
4/0.3	PFL4-4/1N/C/03	165476	1/60
6/0.3	PFL4-6/1N/C/03	165504	1/60
10/0.3	PFL4-10/1N/C/03	165364	1/60
13/0.3	PFL4-13/1N/C/03	165384	1/60
16/0.3	PFL4-16/1N/C/03	165402	1/60
20/0.3	PFL4-20/1N/C/03	165432	1/60
25/0.3	PFL4-25/1N/C/03	165446	1/60
32/0.3	PFL4-32/1N/C/03	165460	1/60
40/0.3	PFL4-40/1N/C/03	165490	1/60

**Specifications | Combined RCD/MCB Devices PFL4, 1+N-pole**

**Description**

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed
- **Type -G:** 10 ms time delay in order to avoid unwanted tripping (e.g. during thunderstorms).  
Compulsory in Austria for any circuit where personal injury or damage to property may occur in case of unwanted tripping (§12.1.6 ÖVE/ÖNORM E 8001-1).

**Accessories:**

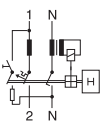
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

### Technical Data

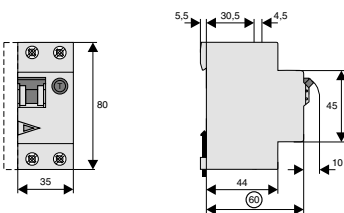
		<b>PFL4, 1+N-pole</b>
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Type G		10 ms delay 3 kA (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Rated insulation voltage	$U_i$	440 VAC
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	4.5 kA
Rated current		2 - 40 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>10 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

### Connection diagram

1+N-pole



### Dimensions (mm)

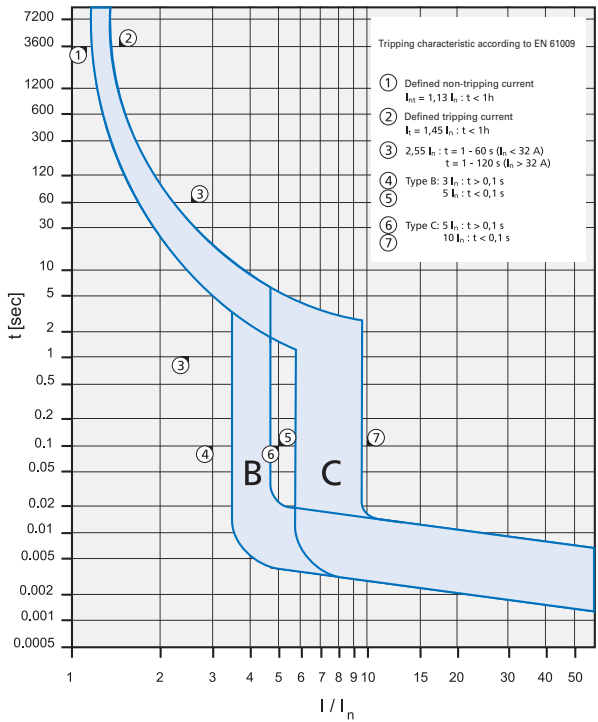


**Load Capacity PFL4-../1N/**

Effect of ambient temperature (MCB component)

I <sub>n</sub> [A]	Ambient temperature T [°C]								
	-25	-20	-10	0	10	20	30	35	40
2	2.5	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9
5	6.2	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
8	9.9	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7
10	12	12	12	11	11	10	10	9.9	9.7
12	15	14	14	13	13	13	12	12	12
13	16	16	15	15	14	14	13	13	13
15	19	18	17	17	16	16	15	15	15
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24
32	40	38	37	36	35	33	32	32	31
40	49	48	47	45	43	42	40	39	39

**Tripping Characteristic PFL4-../1N/, Characteristics B and C**



sg00818\_r



### Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- 3-position DIN rail clip, permits removal from existing busbar system
- Rated currents up to 25 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

**Type A**

**6 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

sg00818\_r



**Characteristic B**

6/0.03	HNB-B6/1N/003-A	195130	1/60
10/0.03	HNB-B10/1N/003-A	195131	1/60
13/0.03	HNB-B13/1N/003-A	195132	1/60
16/0.03	HNB-B16/1N/003-A	195133	1/60
20/0.03	HNB-B20/1N/003-A	195134	1/60
25/0.03	HNB-B25/1N/003-A	195135	1/60

sg00818\_r



**Characteristic C**

6/0.03	HNB-C6/1N/003-A	195136	1/60
10/0.03	HNB-C10/1N/003-A	195137	1/60
13/0.03	HNB-C13/1N/003-A	195138	1/60
16/0.03	HNB-C16/1N/003-A	195139	1/60
20/0.03	HNB-C20/1N/003-A	195140	1/60
25/0.03	HNB-C25/1N/003-A	195141	1/60

**Type AC**

**6 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, type AC**

sg00818\_r



**Characteristic B**

6/0.03	HNB-B6/1N/003	195118	1/60
10/0.03	HNB-B10/1N/003	195119	1/60
13/0.03	HNB-B13/1N/003	195120	1/60
16/0.03	HNB-B16/1N/003	195121	1/60
20/0.03	HNB-B20/1N/003	195122	1/60
25/0.03	HNB-B25/1N/003	195123	1/60

sg00818\_r



**Characteristic C**

6/0.03	HNB-C6/1N/003	195124	1/60
10/0.03	HNB-C10/1N/003	195125	1/60
13/0.03	HNB-C13/1N/003	195126	1/60
16/0.03	HNB-C16/1N/003	195127	1/60
20/0.03	HNB-C20/1N/003	195128	1/60
25/0.03	HNB-C25/1N/003	195129	1/60

## Specifications | RCBO Devices HNB xPole Home

### Description

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement  $R_E$  or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have have not been smoothed

### Accessories:

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

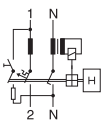


**Technical Data**

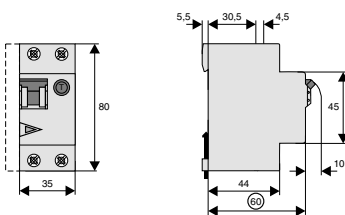
		HNB, 1+N-pole
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 μs), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	30 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	6 kA
Rated current		6 - 25 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 μs)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		≥ 4,000 switching operations
mechanical components		≥ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

**Connection diagram**

1+N-pole



**Dimensions (mm)**

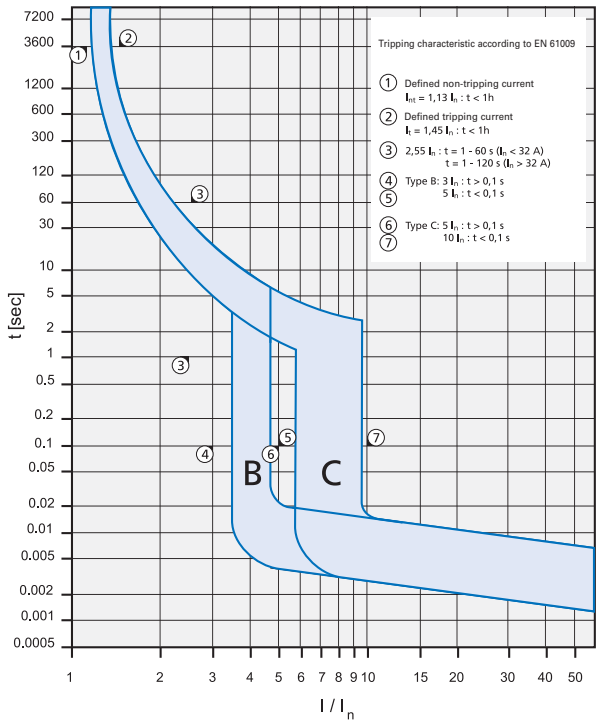


### Load Capacity HNB

Effect of ambient temperature (MCB component)

$I_n$ [A]	Ambient temperature T [°C]								
	-25	-20	-10	0	10	20	30	35	40
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
10	12	12	12	11	11	10	10	9.9	9.7
13	16	16	15	15	14	14	13	13	13
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24

### Tripping Characteristic HNB, Characteristics B and C



### Short Circuit Selectivity HNB towards DII-DIV fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices HNB and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

HNB $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.7	1.0	2.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.6	0.9	1.9	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.5	0.7	1.6	2.8	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				0.7	1.4	2.4	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.3	2.2	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.3	2.1	3.8	5.8	6.0 <sup>2)</sup>

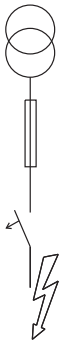
Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

HNB $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.6	1.0	2.9	5.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5	0.7	1.5	2.6	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.4	2.3	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.2	1.8	3.4	5.5	6.0 <sup>2)</sup>
20					1.2	1.7	3.1	5.0	6.0 <sup>2)</sup>
25						1.6	2.9	4.6	6.0 <sup>2)</sup>

1) Selectivity limit current  $I_s$  under 0.5 kA.

2) Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity



**Short Circuit Selectivity HNB towards D01-D03 fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices HNB and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

HNB	D01-D03 gL/gG									
	$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.5	0.8	2.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.8	1.6	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.6	0.7	1.4	3.0	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				0.6	1.2	2.6	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.2	2.5	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.2	2.3	3.3	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

HNB	D01-D03 gL/gG									
	$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	2.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5	0.6	1.3	2.9	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.2	2.5	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.0	2.1	3.0	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.0	2.0	2.7	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25						1.9	2.6	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

**Short Circuit Selectivity HNB towards NH-00 fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices HNB and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

HNB	D01-D03 gL/gG										
	$I_n$ [A]	16	20	25	32	35	40	50	63	80	100
6		<0.5 <sup>1)</sup>	0.5	0.8	1.4	2.2	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.7	0.9	1.5	2.1	3.4	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.6	0.8	1.4	1.8	2.8	3.6	5.7	6.0 <sup>2)</sup>
16				0.6	0.7	1.2	1.5	2.4	3.0	4.5	6.0 <sup>2)</sup>
20					0.7	1.1	1.5	2.2	2.8	4.2	6.0 <sup>2)</sup>
25					0.7	1.1	1.4	2.1	2.6	4.0	6.0 <sup>2)</sup>

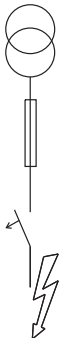
Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

HNB	D01-D03 gL/gG										
	$I_n$ [A]	16	20	25	32	35	40	50	63	80	100
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	2.2	3.3	5.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10				0.5	0.8	1.2	1.7	2.7	3.4	5.5	6.0 <sup>2)</sup>
13						1.1	1.5	2.3	2.9	4.7	6.0 <sup>2)</sup>
16						1.0	1.3	1.8	2.3	3.7	6.0 <sup>2)</sup>
20						0.9	1.1	1.7	2.2	3.4	6.0 <sup>2)</sup>
25							1.6	2.1	3.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

1) Selectivity limit current  $I_s$  under 0.5 kA.

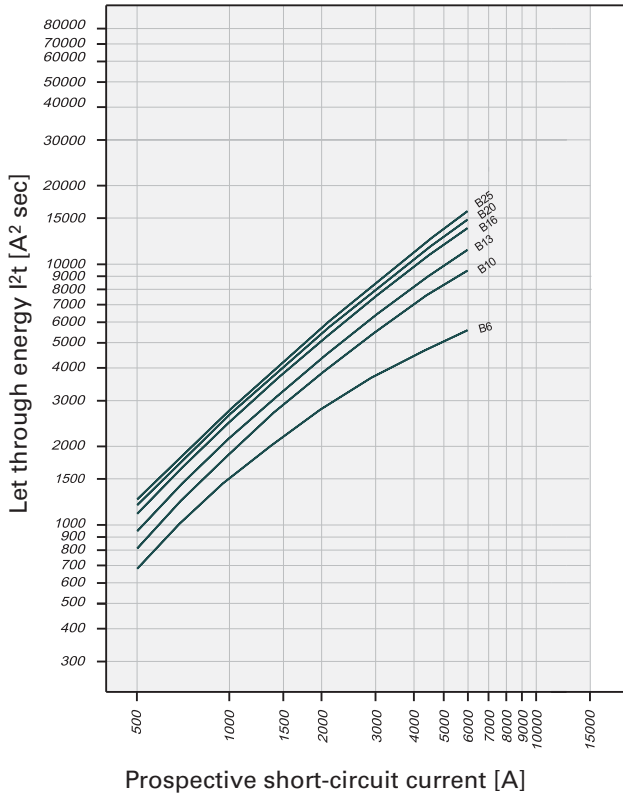
2) Selectivity limit current  $I_s$  = rated breaking capacity  $I_{en}$  of the RCD/MCB device

Darker areas: no selectivity

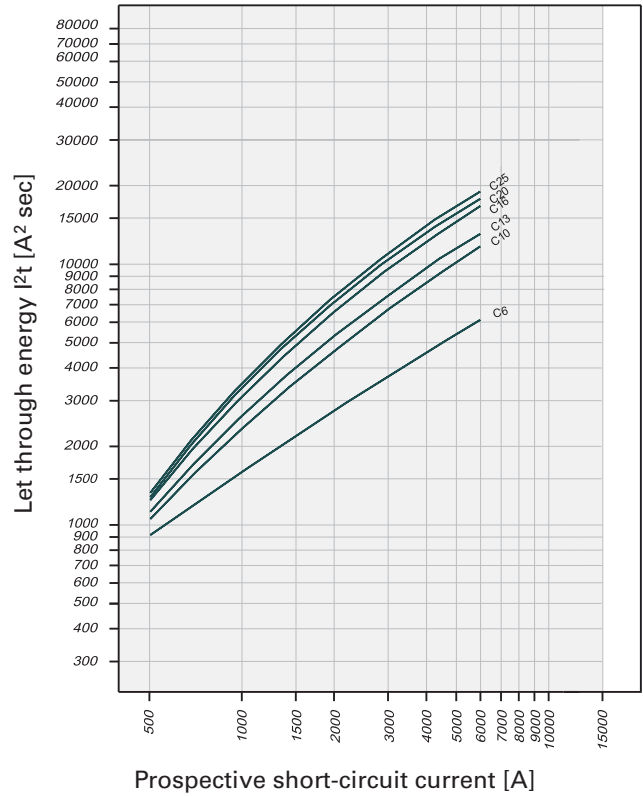


#### Let-through Energy HNB

Let-through Energy HNB, Characteristic B, 1+N-pole



Let-through Energy HNB, Characteristic C, 1+N-pole



sg00818\_r



## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- 3-position DIN rail clip, permits removal from existing busbar system
- Rated currents up to 25 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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### Type A

#### 6 kA, 1+N-pole

#### Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A

sg00818\_r



#### Characteristic B

6/0.03	HNB-B6/1N/003-A-HX	195154	1/60
10/0.03	HNB-B10/1N/003-A-HX	195155	1/60
13/0.03	HNB-B13/1N/003-A-HX	195156	1/60
16/0.03	HNB-B16/1N/003-A-HX	195157	1/60
20/0.03	HNB-B20/1N/003-A-HX	195158	1/60
25/0.03	HNB-B25/1N/003-A-HX	195159	1/60

sg00818\_r



#### Characteristic C

6/0.03	HNB-C6/1N/003-A-HX	195160	1/60
10/0.03	HNB-C10/1N/003-A-HX	195161	1/60
13/0.03	HNB-C13/1N/003-A-HX	195162	1/60
16/0.03	HNB-C16/1N/003-A-HX	195163	1/60
20/0.03	HNB-C20/1N/003-A-HX	195164	1/60
25/0.03	HNB-C25/1N/003-A-HX	195165	1/60

### Type AC

#### 6 kA, 1+N-pole

#### Conditionally surge current-proof 250 A, type AC

sg00818\_r



#### Characteristic B

6/0.03	HNB-B6/1N/003-HX	195142	1/60
10/0.03	HNB-B10/1N/003-HX	195143	1/60
13/0.03	HNB-B13/1N/003-HX	195144	1/60
16/0.03	HNB-B16/1N/003-HX	195145	1/60
20/0.03	HNB-B20/1N/003-HX	195146	1/60
25/0.03	HNB-B25/1N/003-HX	195147	1/60

sg00818\_r



#### Characteristic C

6/0.03	HNB-C6/1N/003-HX	195148	1/60
10/0.03	HNB-C10/1N/003-HX	195149	1/60
13/0.03	HNB-C13/1N/003-HX	195150	1/60
16/0.03	HNB-C16/1N/003-HX	195151	1/60
20/0.03	HNB-C20/1N/003-HX	195152	1/60
25/0.03	HNB-C25/1N/003-HX	195153	1/60

**Specifications | RCBO Devices HNB-HX xPole Home**

**Description**

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement  $R_E$  or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have have not been smoothed

**Accessories:**

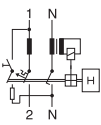
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

### Technical Data

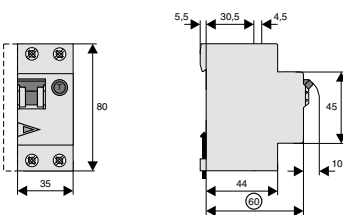
		HNB-HX, 1+N-pole
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	30 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	6 kA
Rated current		6 - 25 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq$ 4,000 switching operations
mechanical components		$\geq$ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

### Connection diagram

1+N-pole



### Dimensions (mm)



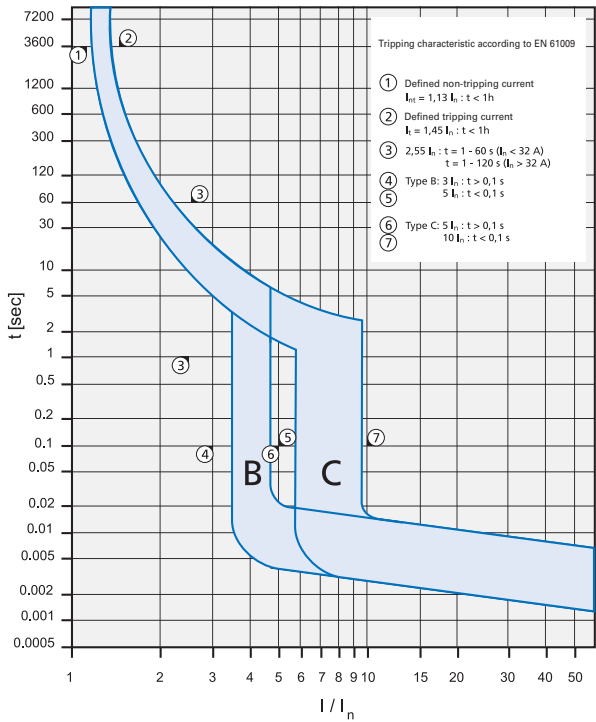


**Load Capacity HNB-HX**

Effect of ambient temperature (MCB component)

I <sub>n</sub> [A]	Ambient temperature T [°C]								
	-25	-20	-10	0	10	20	30	35	40
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
10	12	12	12	11	11	10	10	9.9	9.7
13	16	16	15	15	14	14	13	13	13
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24

**Tripping Characteristic HNB-HX, Characteristics B and C**



**Short Circuit Selectivity HNB-HX towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices HNB-HX and the upstream fuses up to the specified values of the selectivity limit current I<sub>s</sub> [kA] (i. e. in case of short-circuit currents I<sub>ks</sub> under I<sub>s</sub>, only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

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

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

HNB-HX I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.7	1.0	2.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.6	0.9	1.9	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.5	0.7	1.6	2.8	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				0.7	1.4	2.4	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.3	2.2	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.3	2.1	3.8	5.8	6.0 <sup>2)</sup>

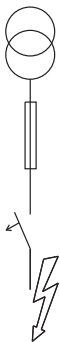
Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

HNB-HX I <sub>n</sub> [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.6	1.0	2.9	5.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5	0.7	1.5	2.6	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.4	2.3	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.2	1.8	3.4	5.5	6.0 <sup>2)</sup>
20					1.2	1.7	3.1	5.0	6.0 <sup>2)</sup>
25						1.6	2.9	4.6	6.0 <sup>2)</sup>

1) Selectivity limit current I<sub>s</sub> under 0.5 kA.

2) Selectivity limit current I<sub>s</sub> = rated breaking capacity I<sub>cn</sub> of the RCD/MCB device

Darker areas: no selectivity



#### Short Circuit Selectivity HNB-HX towards D01-D03 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices HNB-HX and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

HNB-HX	D01-D03 gL/gG									
$I_n$ [A]	10	16	20	25	35	50	63	80	100	
6		<0.5 <sup>1)</sup>	0.5	0.8	2.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
10			0.5	0.8	1.6	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
13			0.6	0.7	1.4	3.0	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
16				0.6	1.2	2.6	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
20					1.2	2.5	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
25					1.2	2.3	3.3	5.7	6.0 <sup>2)</sup>	

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

HNB-HX	D01-D03 gL/gG									
$I_n$ [A]	10	16	20	25	35	50	63	80	100	
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	2.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
10			<0.5	0.6	1.3	2.9	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
13					1.2	2.5	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
16					1.0	2.1	3.0	5.5	6.0 <sup>2)</sup>	
20					1.0	2.0	2.7	5.0	6.0 <sup>2)</sup>	
25						1.9	2.6	4.5	6.0 <sup>2)</sup>	

#### Short Circuit Selectivity HNB-HX towards NH-00 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices HNB-HX and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

HNB-HX	D01-D03 gL/gG									
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100
6	<0.5 <sup>1)</sup>	0.5	0.8	1.4	2.2	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.7	0.9	1.5	2.1	3.4	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.4	1.8	2.8	3.6	5.7	6.0 <sup>2)</sup>
16			0.6	0.7	1.2	1.5	2.4	3.0	4.5	6.0 <sup>2)</sup>
20				0.7	1.1	1.5	2.2	2.8	4.2	6.0 <sup>2)</sup>
25				0.7	1.1	1.4	2.1	2.6	4.0	6.0 <sup>2)</sup>

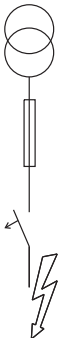
Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

HNB-HX	D01-D03 gL/gG									
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	2.2	3.3	5.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.8	1.2	1.7	2.7	3.4	5.5	6.0 <sup>2)</sup>
13					1.1	1.5	2.3	2.9	4.7	6.0 <sup>2)</sup>
16					1.0	1.3	1.8	2.3	3.7	6.0 <sup>2)</sup>
20					0.9	1.1	1.7	2.2	3.4	6.0 <sup>2)</sup>
25						1.6	2.1	3.2	6.0 <sup>2)</sup>	

1) Selectivity limit current  $I_s$  under 0.5 kA.

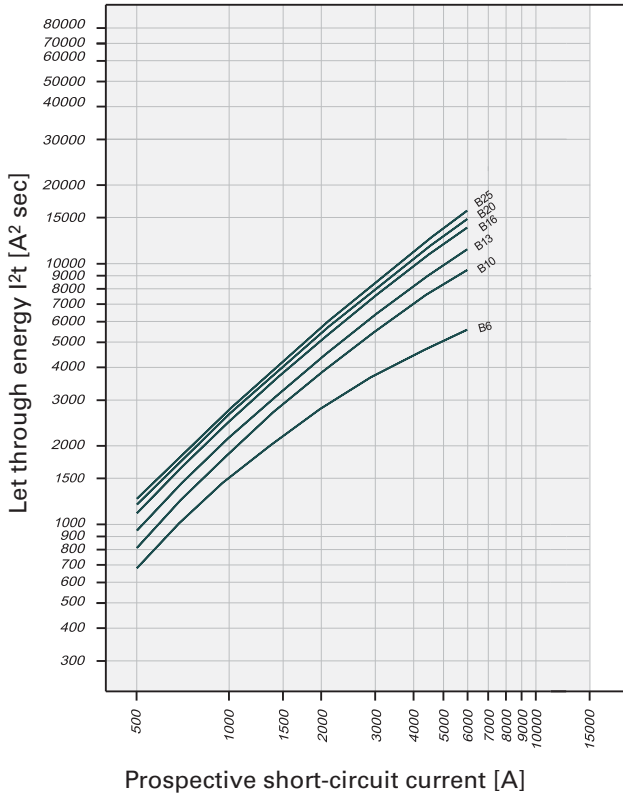
2) Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity

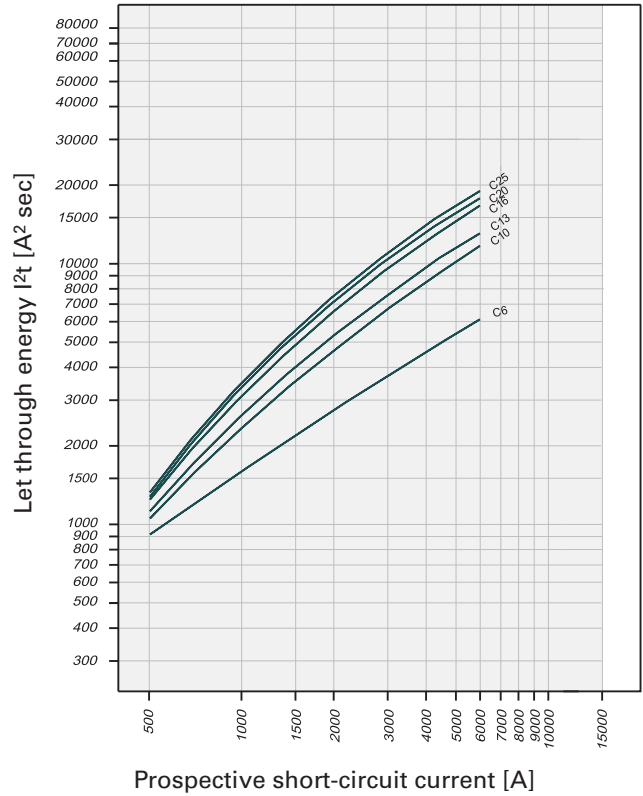


Let-through Energy HNB-HX

Let-through Energy HNB-HX, Characteristic B, 1+N-pole



Let-through Energy HNB-HX, Characteristic C, 1+N-pole



SG30511



## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
---------------------------	---------------------	-------------	----------------------

**Type A**

**6 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG30511



**Characteristic B**

2/0.01	CKN6-2/1N/B/001-A	241243	1/60
4/0.01	CKN6-4/1N/B/001-A	241253	1/60
6/0.01	CKN6-6/1N/B/001-A	241263	1/60
10/0.01	CKN6-10/1N/B/001-A	241273	1/60
13/0.01	CKN6-13/1N/B/001-A	241283	1/60
16/0.01	CKN6-16/1N/B/001-A	241293	1/60
2/0.03	CKN6-2/1N/B/003-A	241244	1/60
4/0.03	CKN6-4/1N/B/003-A	241254	1/60
6/0.03	CKN6-6/1N/B/003-A	241264	1/60
10/0.03	CKN6-10/1N/B/003-A	241274	1/60
13/0.03	CKN6-13/1N/B/003-A	241284	1/60
16/0.03	CKN6-16/1N/B/003-A	241294	1/60
20/0.03	CKN6-20/1N/B/003-A	241525	1/60
25/0.03	CKN6-25/1N/B/003-A	241549	1/60
32/0.03	CKN6-32/1N/B/003-A	241573	1/60
40/0.03	CKN6-40/1N/B/003-A	241597	1/60
2/0.1	CKN6-2/1N/B/01-A	241241	1/60
4/0.1	CKN6-4/1N/B/01-A	241251	1/60
6/0.1	CKN6-6/1N/B/01-A	241261	1/60
10/0.1	CKN6-10/1N/B/01-A	241271	1/60
13/0.1	CKN6-13/1N/B/01-A	241281	1/60
16/0.1	CKN6-16/1N/B/01-A	241291	1/60
20/0.1	CKN6-20/1N/B/01-A	241526	1/60
25/0.1	CKN6-25/1N/B/01-A	241550	1/60
32/0.1	CKN6-32/1N/B/01-A	241574	1/60
40/0.1	CKN6-40/1N/B/01-A	241598	1/60
2/0.3	CKN6-2/1N/B/03-A	241242	1/60
4/0.3	CKN6-4/1N/B/03-A	241252	1/60
6/0.3	CKN6-6/1N/B/03-A	241262	1/60
10/0.3	CKN6-10/1N/B/03-A	241272	1/60
13/0.3	CKN6-13/1N/B/03-A	241282	1/60
16/0.3	CKN6-16/1N/B/03-A	241292	1/60
20/0.3	CKN6-20/1N/B/03-A	241527	1/60
25/0.3	CKN6-25/1N/B/03-A	241551	1/60
32/0.3	CKN6-32/1N/B/03-A	241575	1/60
40/0.3	CKN6-40/1N/B/03-A	241599	1/60

SG30511



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	CKN6-2/1N/C/001-A	241303	1/60
4/0.01	CKN6-4/1N/C/001-A	241313	1/60
6/0.01	CKN6-6/1N/C/001-A	241323	1/60
10/0.01	CKN6-10/1N/C/001-A	241333	1/60
13/0.01	CKN6-13/1N/C/001-A	241343	1/60
16/0.01	CKN6-16/1N/C/001-A	241353	1/60
2/0.03	CKN6-2/1N/C/003-A	241304	1/60
4/0.03	CKN6-4/1N/C/003-A	241314	1/60
6/0.03	CKN6-6/1N/C/003-A	241324	1/60
10/0.03	CKN6-10/1N/C/003-A	241334	1/60
13/0.03	CKN6-13/1N/C/003-A	241344	1/60
16/0.03	CKN6-16/1N/C/003-A	241354	1/60
20/0.03	CKN6-20/1N/C/003-A	241521	1/60
25/0.03	CKN6-25/1N/C/003-A	241545	1/60
32/0.03	CKN6-32/1N/C/003-A	241569	1/60
40/0.03	CKN6-40/1N/C/003-A	241593	1/60
2/0.1	CKN6-2/1N/C/01-A	241301	1/60
4/0.1	CKN6-4/1N/C/01-A	241311	1/60
6/0.1	CKN6-6/1N/C/01-A	241321	1/60
10/0.1	CKN6-10/1N/C/01-A	241331	1/60
13/0.1	CKN6-13/1N/C/01-A	241341	1/60
16/0.1	CKN6-16/1N/C/01-A	241351	1/60
20/0.1	CKN6-20/1N/C/01-A	241522	1/60
25/0.1	CKN6-25/1N/C/01-A	241546	1/60
32/0.1	CKN6-32/1N/C/01-A	241570	1/60
40/0.1	CKN6-40/1N/C/01-A	241594	1/60
2/0.3	CKN6-2/1N/C/03-A	241302	1/60
4/0.3	CKN6-4/1N/C/03-A	241312	1/60
6/0.3	CKN6-6/1N/C/03-A	241322	1/60
10/0.3	CKN6-10/1N/C/03-A	241332	1/60
13/0.3	CKN6-13/1N/C/03-A	241342	1/60
16/0.3	CKN6-16/1N/C/03-A	241352	1/60
20/0.3	CKN6-20/1N/C/03-A	241523	1/60
25/0.3	CKN6-25/1N/C/03-A	241547	1/60
32/0.3	CKN6-32/1N/C/03-A	241571	1/60
40/0.3	CKN6-40/1N/C/03-A	241595	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**6 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, type AC**

SG30511



**Characteristic B**

2/0.01	CKN6-2/1N/B/001	241063	1/60
4/0.01	CKN6-4/1N/B/001	241073	1/60
6/0.01	CKN6-6/1N/B/001	241083	1/60
10/0.01	CKN6-10/1N/B/001	241093	1/60
13/0.01	CKN6-13/1N/B/001	241103	1/60
16/0.01	CKN6-16/1N/B/001	241113	1/60
2/0.03	CKN6-2/1N/B/003	241064	1/60
4/0.03	CKN6-4/1N/B/003	241074	1/60
6/0.03	CKN6-6/1N/B/003	241084	1/60
10/0.03	CKN6-10/1N/B/003	241094	1/60
13/0.03	CKN6-13/1N/B/003	241104	1/60
16/0.03	CKN6-16/1N/B/003	241114	1/60
20/0.03	CKN6-20/1N/B/003	241429	1/60
25/0.03	CKN6-25/1N/B/003	241453	1/60
32/0.03	CKN6-32/1N/B/003	241477	1/60
40/0.03	CKN6-40/1N/B/003	241501	1/60
2/0.1	CKN6-2/1N/B/01	241061	1/60
4/0.1	CKN6-4/1N/B/01	241071	1/60
6/0.1	CKN6-6/1N/B/01	241081	1/60
10/0.1	CKN6-10/1N/B/01	241091	1/60
13/0.1	CKN6-13/1N/B/01	241101	1/60
16/0.1	CKN6-16/1N/B/01	241111	1/60
20/0.1	CKN6-20/1N/B/01	241430	1/60
25/0.1	CKN6-25/1N/B/01	241454	1/60
32/0.1	CKN6-32/1N/B/01	241478	1/60
40/0.1	CKN6-40/1N/B/01	241502	1/60
2/0.3	CKN6-2/1N/B/03	241062	1/60
4/0.3	CKN6-4/1N/B/03	241072	1/60
6/0.3	CKN6-6/1N/B/03	241082	1/60
10/0.3	CKN6-10/1N/B/03	241092	1/60
13/0.3	CKN6-13/1N/B/03	241102	1/60
16/0.3	CKN6-16/1N/B/03	241112	1/60
20/0.3	CKN6-20/1N/B/03	241431	1/60
25/0.3	CKN6-25/1N/B/03	241455	1/60
32/0.3	CKN6-32/1N/B/03	241479	1/60
40/0.3	CKN6-40/1N/B/03	241503	1/60

# 1.192 Protective Devices

xClear

Combined RCD/MCB Devices CKN6, 1+N-pole (DE)

SG30511



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	CKN6-2/1N/C/001	241123	1/60
4/0.01	CKN6-4/1N/C/001	241133	1/60
6/0.01	CKN6-6/1N/C/001	241143	1/60
10/0.01	CKN6-10/1N/C/001	241153	1/60
13/0.01	CKN6-13/1N/C/001	241163	1/60
16/0.01	CKN6-16/1N/C/001	241173	1/60
2/0.03	CKN6-2/1N/C/003	241124	1/60
4/0.03	CKN6-4/1N/C/003	241134	1/60
6/0.03	CKN6-6/1N/C/003	241144	1/60
10/0.03	CKN6-10/1N/C/003	241154	1/60
13/0.03	CKN6-13/1N/C/003	241164	1/60
16/0.03	CKN6-16/1N/C/003	241174	1/60
20/0.03	CKN6-20/1N/C/003	241425	1/60
25/0.03	CKN6-25/1N/C/003	241449	1/60
32/0.03	CKN6-32/1N/C/003	241473	1/60
40/0.03	CKN6-40/1N/C/003	241497	1/60
2/0.1	CKN6-2/1N/C/01	241121	1/60
4/0.1	CKN6-4/1N/C/01	241131	1/60
6/0.1	CKN6-6/1N/C/01	241141	1/60
10/0.1	CKN6-10/1N/C/01	241151	1/60
13/0.1	CKN6-13/1N/C/01	241161	1/60
16/0.1	CKN6-16/1N/C/01	241171	1/60
20/0.1	CKN6-20/1N/C/01	241426	1/60
25/0.1	CKN6-25/1N/C/01	241450	1/60
32/0.1	CKN6-32/1N/C/01	241474	1/60
40/0.1	CKN6-40/1N/C/01	241498	1/60
2/0.3	CKN6-2/1N/C/03	241122	1/60
4/0.3	CKN6-4/1N/C/03	241132	1/60
6/0.3	CKN6-6/1N/C/03	241142	1/60
10/0.3	CKN6-10/1N/C/03	241152	1/60
13/0.3	CKN6-13/1N/C/03	241162	1/60
16/0.3	CKN6-16/1N/C/03	241172	1/60
20/0.3	CKN6-20/1N/C/03	241427	1/60
25/0.3	CKN6-25/1N/C/03	241451	1/60
32/0.3	CKN6-32/1N/C/03	241475	1/60
40/0.3	CKN6-40/1N/C/03	241499	1/60



**Specifications | Combined RCD/MCB Devices CKN6, 1+N-pole**

**Description**

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement (RE), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have have not been smoothed

**Accessories:**

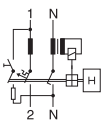
Auxiliary switch for subsequent installation	Z-AHK	248433
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

### Technical Data

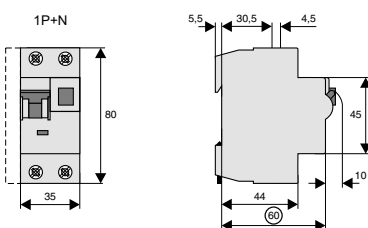
		<b>CKN6, 1+N-pole</b>
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	6 kA
Rated current		2 - 40 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq$ 4,000 switching operations
mechanical components		$\geq$ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

### Connection diagram

1+N-pole

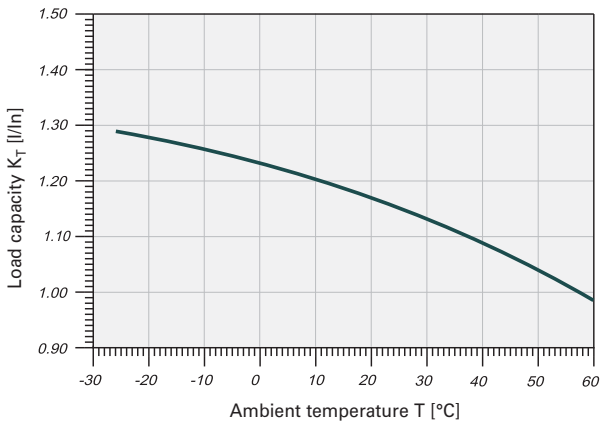


### Dimensions (mm)



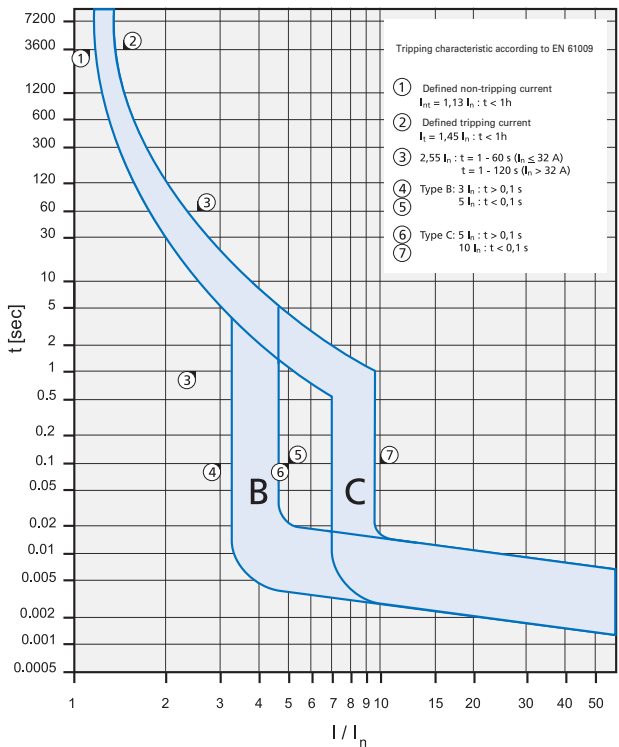
**Load Capacity**

Effect of ambient temperature (MCB component)



Valid for combined RCD/MCB devices 1+N-pole

**Tripping Characteristic CKN6-../1N/, Characteristics B and C**



**Short Circuit Selectivity CKN6-../1N/ towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices CKN6-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

CKN6 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	0.5	0.6	1.2	2.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.7	1.4	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.7	1.3	2.5	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.5	0.7	1.3	2.5	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				0.6	1.3	2.4	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.2	2.2	3.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.1	2.0	3.8	5.8	6.0 <sup>2)</sup>
32						1.8	3.4	4.8	6.0 <sup>2)</sup>
40							2.8	4.2	6.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity



### Short Circuit Selectivity CKN6-./1N/ towards D01-D03 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices CKN6-./1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

CKN6 $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	0.6	1.1	1.9	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.6	1.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.2	3.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.6	1.2	2.7	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.6	1.1	2.5	4.0	5.5	6.0 <sup>2)</sup>
16				0.6	1.1	2.4	3.6	5.0	6.0 <sup>2)</sup>
20					1.0	2.2	3.3	4.7	6.0 <sup>2)</sup>
25					1.0	2.0	3.0	4.2	6.0 <sup>2)</sup>
32						1.9	2.7	3.7	6.0 <sup>2)</sup>
40							2.5	3.3	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

CKN6 $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	0.5	0.8	1.4	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.2	3.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10				0.5	1.0	2.0	3.3	5.5	6.0 <sup>2)</sup>
13					1.0	1.9	3.0	4.5	6.0 <sup>2)</sup>
16					0.9	1.7	2.6	3.8	6.0 <sup>2)</sup>
20					0.9	1.7	2.5	3.7	6.0 <sup>2)</sup>
25						1.6	2.3	3.1	6.0 <sup>2)</sup>
32							2.1	2.8	6.0 <sup>2)</sup>
40								2.6	5.5

### Short Circuit Selectivity CKN6-./1N/ towards NH-00

In case of short circuit, there is selectivity between the combined RCD/MCB devices CKN6-./1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

CKN6 $I_n$ [A]	NH-00 gL/gG											
	16	20	25	32	35	40	50	63	80	100	125	160
2	0.5	0.8	1.5	3.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	1.7	2.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.3	1.8	3.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.8	2.5	3.9	5.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.6	2.4	3.6	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16			0.5	0.8	1.2	1.6	2.4	3.3	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20				0.8	1.1	1.4	2.1	3.1	4.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25				0.7	1.0	1.4	1.9	2.7	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32							1.8	2.5	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40								2.3	3.2	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

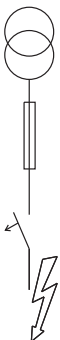
Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

CKN6 $I_n$ [A]	NH-00 gL/gG											
	16	20	25	32	35	40	50	63	80	100	125	160
2	0.5	0.6	0.8	2.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.0	1.6	2.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.7	3.0	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.7	1.0	1.3	2.0	3.0	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					0.9	1.2	1.8	2.6	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					0.8	1.1	1.6	2.4	3.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					0.8	1.1	1.5	2.3	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25							1.4	2.1	3.0	5.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32								1.9	2.7	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40									2.6	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

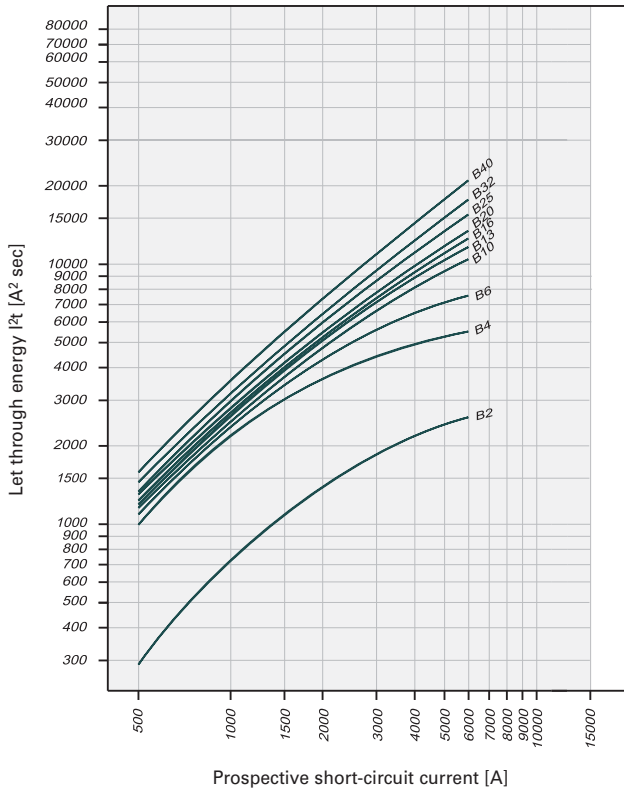
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity

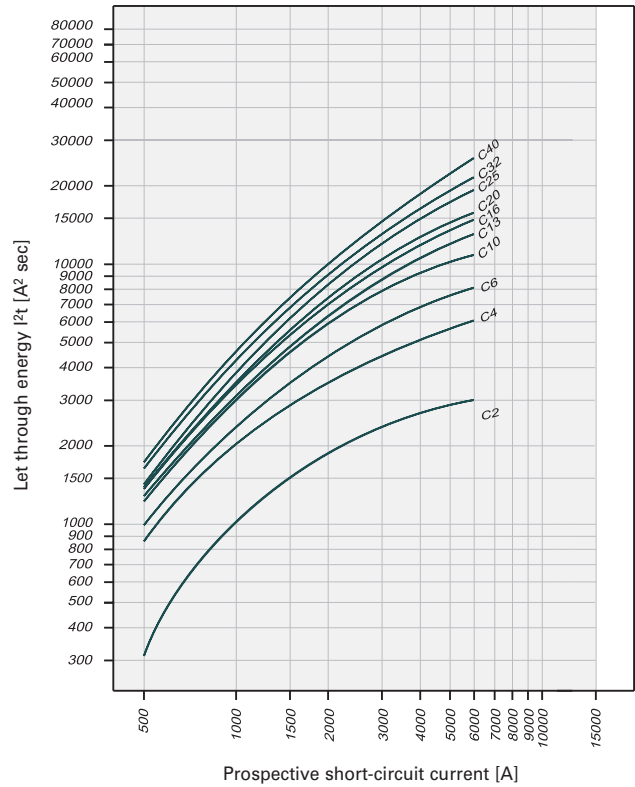


Let-through Energy CKN6-../1N/

Let-through Energy CKN6, Characteristic B, 1+N-pole



Let-through Energy CKN6, Characteristic C, 1+N-pole



SG30411



## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**4.5 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG30411



**Characteristic B**

2/0.01	CKN4-2/1N/B/001-A	241795	1/60
4/0.01	CKN4-4/1N/B/001-A	241805	1/60
6/0.01	CKN4-6/1N/B/001-A	241815	1/60
10/0.01	CKN4-10/1N/B/001-A	241825	1/60
13/0.01	CKN4-13/1N/B/001-A	241835	1/60
16/0.01	CKN4-16/1N/B/001-A	241845	1/60
2/0.03	CKN4-2/1N/B/003-A	241796	1/60
4/0.03	CKN4-4/1N/B/003-A	241806	1/60
6/0.03	CKN4-6/1N/B/003-A	241816	1/60
10/0.03	CKN4-10/1N/B/003-A	241826	1/60
13/0.03	CKN4-13/1N/B/003-A	241836	1/60
16/0.03	CKN4-16/1N/B/003-A	241846	1/60
20/0.03	CKN4-20/1N/B/003-A	242077	1/60
25/0.03	CKN4-25/1N/B/003-A	242101	1/60
32/0.03	CKN4-32/1N/B/003-A	242125	1/60
40/0.03	CKN4-40/1N/B/003-A	242149	1/60
2/0.1	CKN4-2/1N/B/01-A	241793	1/60
4/0.1	CKN4-4/1N/B/01-A	241803	1/60
6/0.1	CKN4-6/1N/B/01-A	241813	1/60
10/0.1	CKN4-10/1N/B/01-A	241823	1/60
13/0.1	CKN4-13/1N/B/01-A	241833	1/60
16/0.1	CKN4-16/1N/B/01-A	241843	1/60
20/0.1	CKN4-20/1N/B/01-A	242078	1/60
25/0.1	CKN4-25/1N/B/01-A	242102	1/60
32/0.1	CKN4-32/1N/B/01-A	242126	1/60
40/0.1	CKN4-40/1N/B/01-A	242150	1/60
2/0.3	CKN4-2/1N/B/03-A	241794	1/60
4/0.3	CKN4-4/1N/B/03-A	241804	1/60
6/0.3	CKN4-6/1N/B/03-A	241814	1/60
10/0.3	CKN4-10/1N/B/03-A	241824	1/60
13/0.3	CKN4-13/1N/B/03-A	241834	1/60
16/0.3	CKN4-16/1N/B/03-A	241844	1/60
20/0.3	CKN4-20/1N/B/03-A	242079	1/60
25/0.3	CKN4-25/1N/B/03-A	242103	1/60
32/0.3	CKN4-32/1N/B/03-A	242127	1/60
40/0.3	CKN4-40/1N/B/03-A	242151	1/60

# 1.200 Protective Devices

xClear

## Combined RCD/MCB Devices CKN4, 1+N-pole (DE)

SG30411



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	CKN4-2/1N/C/001-A	241855	1/60
4/0.01	CKN4-4/1N/C/001-A	241865	1/60
6/0.01	CKN4-6/1N/C/001-A	241875	1/60
10/0.01	CKN4-10/1N/C/001-A	241885	1/60
13/0.01	CKN4-13/1N/C/001-A	241895	1/60
16/0.01	CKN4-16/1N/C/001-A	241905	1/60
2/0.03	CKN4-2/1N/C/003-A	241856	1/60
4/0.03	CKN4-4/1N/C/003-A	241866	1/60
6/0.03	CKN4-6/1N/C/003-A	241876	1/60
10/0.03	CKN4-10/1N/C/003-A	241886	1/60
13/0.03	CKN4-13/1N/C/003-A	241896	1/60
16/0.03	CKN4-16/1N/C/003-A	241906	1/60
20/0.03	CKN4-20/1N/C/003-A	242073	1/60
25/0.03	CKN4-25/1N/C/003-A	242097	1/60
32/0.03	CKN4-32/1N/C/003-A	242121	1/60
40/0.03	CKN4-40/1N/C/003-A	242145	1/60
2/0.1	CKN4-2/1N/C/01-A	241853	1/60
4/0.1	CKN4-4/1N/C/01-A	241863	1/60
6/0.1	CKN4-6/1N/C/01-A	241873	1/60
10/0.1	CKN4-10/1N/C/01-A	241883	1/60
13/0.1	CKN4-13/1N/C/01-A	241893	1/60
16/0.1	CKN4-16/1N/C/01-A	241903	1/60
20/0.1	CKN4-20/1N/C/01-A	242074	1/60
25/0.1	CKN4-25/1N/C/01-A	242098	1/60
32/0.1	CKN4-32/1N/C/01-A	242122	1/60
40/0.1	CKN4-40/1N/C/01-A	242146	1/60
2/0.3	CKN4-2/1N/C/03-A	241854	1/60
4/0.3	CKN4-4/1N/C/03-A	241864	1/60
6/0.3	CKN4-6/1N/C/03-A	241874	1/60
10/0.3	CKN4-10/1N/C/03-A	241884	1/60
13/0.3	CKN4-13/1N/C/03-A	241894	1/60
16/0.3	CKN4-16/1N/C/03-A	241904	1/60
20/0.3	CKN4-20/1N/C/03-A	242075	1/60
25/0.3	CKN4-25/1N/C/03-A	242099	1/60
32/0.3	CKN4-32/1N/C/03-A	242123	1/60
40/0.3	CKN4-40/1N/C/03-A	242147	1/60



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**4.5 kA, 1+N-pole  
 Conditionally surge current-proof 250 A, type AC**

SG30411



**Characteristic B**

2/0.01	CKN4-2/1N/B/001	241615	1/60
4/0.01	CKN4-4/1N/B/001	241625	1/60
6/0.01	CKN4-6/1N/B/001	241635	1/60
10/0.01	CKN4-10/1N/B/001	241645	1/60
13/0.01	CKN4-13/1N/B/001	241655	1/60
16/0.01	CKN4-16/1N/B/001	241665	1/60
2/0.03	CKN4-2/1N/B/003	241616	1/60
4/0.03	CKN4-4/1N/B/003	241626	1/60
6/0.03	CKN4-6/1N/B/003	241636	1/60
10/0.03	CKN4-10/1N/B/003	241646	1/60
13/0.03	CKN4-13/1N/B/003	241656	1/60
16/0.03	CKN4-16/1N/B/003	241666	1/60
20/0.03	CKN4-20/1N/B/003	241981	1/60
25/0.03	CKN4-25/1N/B/003	242005	1/60
32/0.03	CKN4-32/1N/B/003	242029	1/60
40/0.03	CKN4-40/1N/B/003	242053	1/60
2/0.1	CKN4-2/1N/B/01	241613	1/60
4/0.1	CKN4-4/1N/B/01	241623	1/60
6/0.1	CKN4-6/1N/B/01	241633	1/60
10/0.1	CKN4-10/1N/B/01	241643	1/60
13/0.1	CKN4-13/1N/B/01	241653	1/60
16/0.1	CKN4-16/1N/B/01	241663	1/60
20/0.1	CKN4-20/1N/B/01	241982	1/60
25/0.1	CKN4-25/1N/B/01	242006	1/60
32/0.1	CKN4-32/1N/B/01	242030	1/60
40/0.1	CKN4-40/1N/B/01	242054	1/60
2/0.3	CKN4-2/1N/B/03	241614	1/60
4/0.3	CKN4-4/1N/B/03	241624	1/60
6/0.3	CKN4-6/1N/B/03	241634	1/60
10/0.3	CKN4-10/1N/B/03	241644	1/60
13/0.3	CKN4-13/1N/B/03	241654	1/60
16/0.3	CKN4-16/1N/B/03	241664	1/60
20/0.3	CKN4-20/1N/B/03	241983	1/60
25/0.3	CKN4-25/1N/B/03	242007	1/60
32/0.3	CKN4-32/1N/B/03	242031	1/60
40/0.3	CKN4-40/1N/B/03	242055	1/60

# 1.202 Protective Devices

xClear

## Combined RCD/MCB Devices CKN4, 1+N-pole (DE)

SG30411



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
2/0.01	CKN4-2/1N/C/001	241675	1/60
4/0.01	CKN4-4/1N/C/001	241685	1/60
6/0.01	CKN4-6/1N/C/001	241695	1/60
10/0.01	CKN4-10/1N/C/001	241705	1/60
13/0.01	CKN4-13/1N/C/001	241715	1/60
16/0.01	CKN4-16/1N/C/001	241725	1/60
2/0.03	CKN4-2/1N/C/003	241676	1/60
4/0.03	CKN4-4/1N/C/003	241686	1/60
6/0.03	CKN4-6/1N/C/003	241696	1/60
10/0.03	CKN4-10/1N/C/003	241706	1/60
13/0.03	CKN4-13/1N/C/003	241716	1/60
16/0.03	CKN4-16/1N/C/003	241726	1/60
20/0.03	CKN4-20/1N/C/003	241977	1/60
25/0.03	CKN4-25/1N/C/003	242001	1/60
32/0.03	CKN4-32/1N/C/003	242025	1/60
40/0.03	CKN4-40/1N/C/003	242049	1/60
2/0.1	CKN4-2/1N/C/01	241673	1/60
4/0.1	CKN4-4/1N/C/01	241683	1/60
6/0.1	CKN4-6/1N/C/01	241693	1/60
10/0.1	CKN4-10/1N/C/01	241703	1/60
13/0.1	CKN4-13/1N/C/01	241713	1/60
16/0.1	CKN4-16/1N/C/01	241723	1/60
20/0.1	CKN4-20/1N/C/01	241978	1/60
25/0.1	CKN4-25/1N/C/01	242002	1/60
32/0.1	CKN4-32/1N/C/01	242026	1/60
40/0.1	CKN4-40/1N/C/01	242050	1/60
2/0.3	CKN4-2/1N/C/03	241674	1/60
4/0.3	CKN4-4/1N/C/03	241684	1/60
6/0.3	CKN4-6/1N/C/03	241694	1/60
10/0.3	CKN4-10/1N/C/03	241704	1/60
13/0.3	CKN4-13/1N/C/03	241714	1/60
16/0.3	CKN4-16/1N/C/03	241724	1/60
20/0.3	CKN4-20/1N/C/03	241979	1/60
25/0.3	CKN4-25/1N/C/03	242003	1/60
32/0.3	CKN4-32/1N/C/03	242027	1/60
40/0.3	CKN4-40/1N/C/03	242051	1/60

**Specifications | Combined RCD/MCB Devices CKN4, 1+N-pole**

**Description**

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have have not been smoothed

**Accessories:**

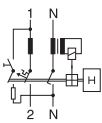
Auxiliary switch for subsequent installation	Z-AHK	248433
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

#### Technical Data

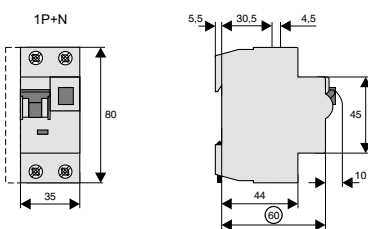
		CKN4, 1+N-pole
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	4.5 kA
Rated current		2 - 40 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>4.5 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGVV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

#### Connection diagram

1+N-pole

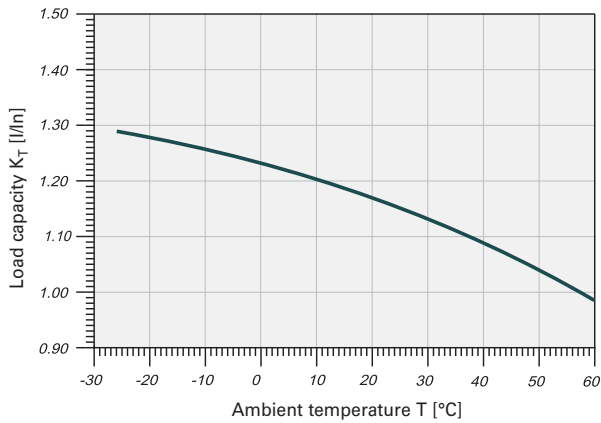


#### Dimensions (mm)



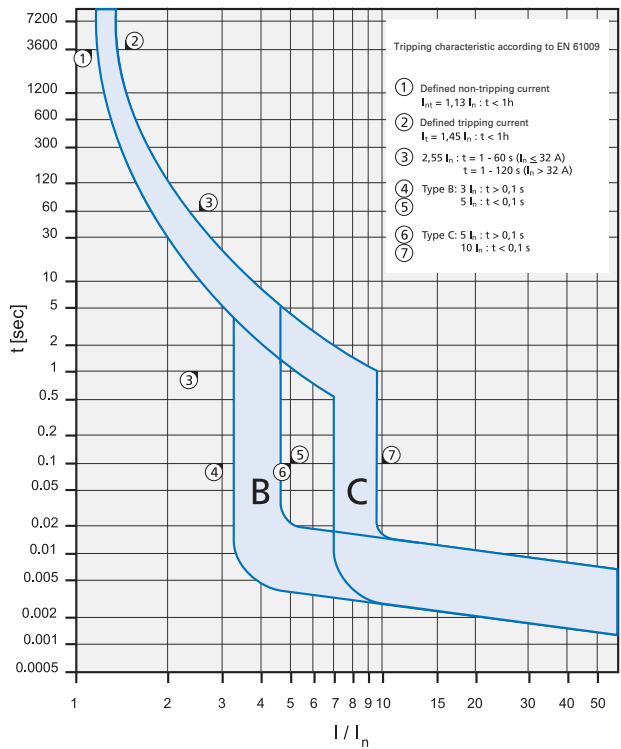
**Load Capacity**

Effect of ambient temperature (MCB component)



Valid for combined RCD/MCB devices 1+N-pole

**Tripping Characteristic CKN4-../1N/, Characteristics B and C**



**Short Circuit Selectivity CKN4-../1N/ towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices CKN4../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV**\*)

CKN4	DII-DIV gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
2	0.5	0.6	1.2	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.7	1.4	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.7	1.3	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			0.5	0.7	1.3	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.6	1.3	2.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.2	2.2	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25					1.1	2.0	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32						1.8	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40							2.8	4.2	4.5 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity



### Short Circuit Selectivity CKN4-../1N/ towards D01-D03 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices CKN4-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

CKN4 $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	0.6	1.1	1.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.6	1.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.2	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.6	1.2	2.7	4.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.6	1.1	2.5	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.6	1.1	2.4	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.0	2.2	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25					1.0	2.0	3.0	4.2	4.5 <sup>2)</sup>
32						1.9	2.7	3.7	4.5 <sup>2)</sup>
40							2.5	3.3	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

CKN4 $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	0.5	0.8	1.4	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.2	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10				0.5	1.0	2.0	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.0	1.9	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					0.9	1.7	2.6	3.8	4.5 <sup>2)</sup>
20					0.9	1.7	2.5	3.7	4.5 <sup>2)</sup>
25						1.6	2.3	3.1	4.5 <sup>2)</sup>
32							2.1	2.8	4.5 <sup>2)</sup>
40								2.6	4.5 <sup>2)</sup>

### Short Circuit Selectivity CKN4-../1N/ towards NH-00

In case of short circuit, there is selectivity between the combined RCD/MCB devices CKN4-../1N/ and the upstream fuses 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).

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

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

CKN4 $I_n$ [A]	NH-00 gL/gG											
	16	20	25	32	35	40	50	63	80	100	125	160
2	0.5	0.8	1.5	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	1.7	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.3	1.8	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.8	2.5	3.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.6	2.4	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16			0.5	0.8	1.2	1.6	2.4	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				0.8	1.1	1.4	2.1	3.1	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25				0.7	1.0	1.4	1.9	2.7	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32						1.8	2.5	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40							2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

CKN4 $I_n$ [A]	NH-00 gL/gG											
	16	20	25	32	35	40	50	63	80	100	125	160
2	0.5	0.6	0.8	2.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.0	1.6	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.7	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.7	1.0	1.3	2.0	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					0.9	1.2	1.8	2.6	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					0.8	1.1	1.6	2.4	3.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					0.8	1.1	1.5	2.3	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25						1.4	2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32							1.9	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40								2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA.

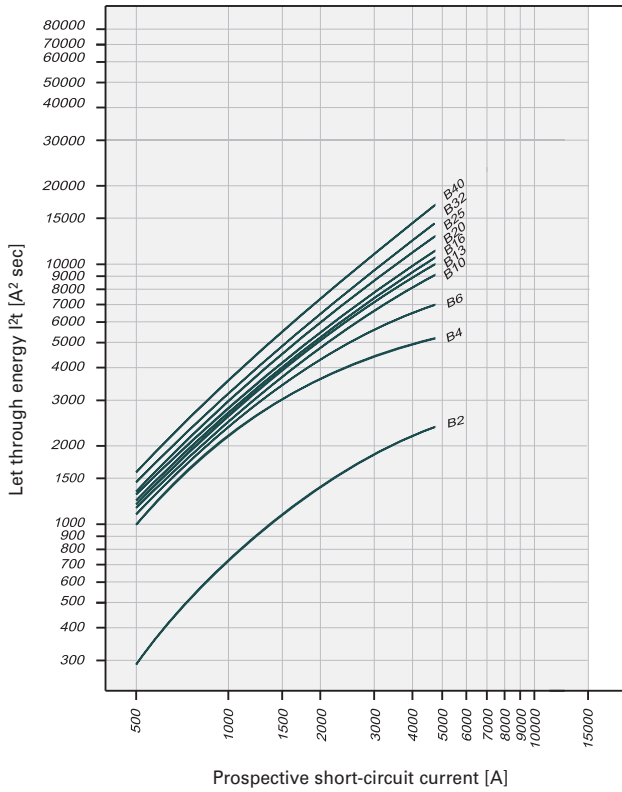
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity

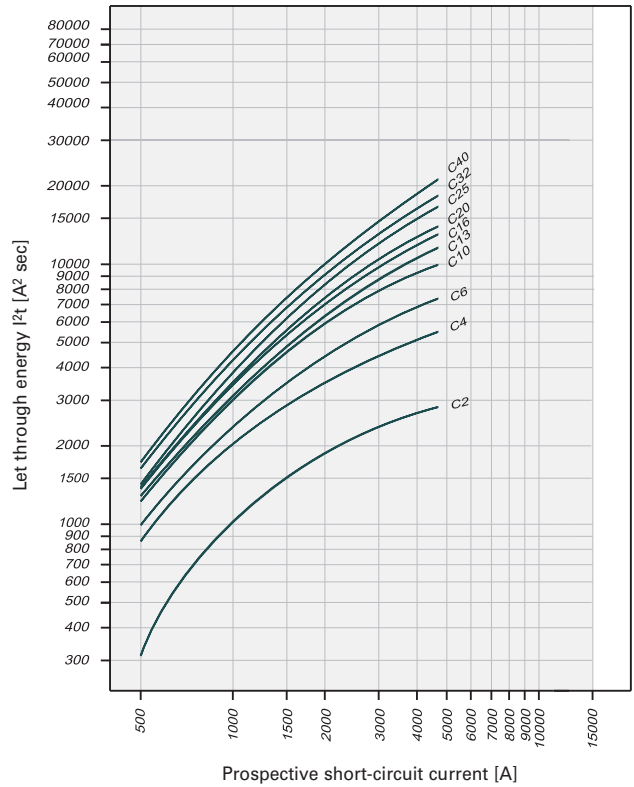


**Let-through Energy CKN4-../1N/**

Let-through Energy CKN4, Characteristic B, 1+N-pole



Let-through Energy CKN4, Characteristic C, 1+N-pole



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## Description

- Innovative, high-quality residual current device / miniature circuit breaker combination, line voltage-dependent
- Design width of one module unit only
- Specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Guide for secure terminal connection
- Wide variety of rated tripping currents
- Rated currents up to 45 A
- Tripping characteristics B, C
- Rated breaking capacity 10 kA



$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**10 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

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**Characteristic B**

6/0.01	eRBM-6/1/B/001-A	152065	1/30
8/0.01	eRBM-8/1/B/001-A	152066	1/30
10/0.01	eRBM-10/1/B/001-A	152067	1/30
13/0.01	eRBM-13/1/B/001-A	152068	1/30
16/0.01	eRBM-16/1/B/001-A	152069	1/30
20/0.01	eRBM-20/1/B/001-A	152070	1/30
25/0.01	eRBM-25/1/B/001-A	152071	1/30
32/0.01	eRBM-32/1/B/001-A	152072	1/30
40/0.01	eRBM-40/1/B/001-A	152073	1/30
45/0.01	eRBM-45/1/B/001-A	152074	1/30
6/0.03	eRBM-6/1/B/003-A	152075	1/30
8/0.03	eRBM-8/1/B/003-A	152076	1/30
10/0.03	eRBM-10/1/B/003-A	152077	1/30
13/0.03	eRBM-13/1/B/003-A	152078	1/30
16/0.03	eRBM-16/1/B/003-A	152079	1/30
20/0.03	eRBM-20/1/B/003-A	152080	1/30
25/0.03	eRBM-25/1/B/003-A	152081	1/30
32/0.03	eRBM-32/1/B/003-A	152082	1/30
40/0.03	eRBM-40/1/B/003-A	152083	1/30
45/0.03	eRBM-45/1/B/003-A	152084	1/30
6/0.1	eRBM-6/1/B/01-A	153066	1/30
8/0.1	eRBM-8/1/B/01-A	153067	1/30
10/0.1	eRBM-10/1/B/01-A	153068	1/30
13/0.1	eRBM-13/1/B/01-A	153069	1/30
16/0.1	eRBM-16/1/B/01-A	153070	1/30
20/0.1	eRBM-20/1/B/01-A	153071	1/30
25/0.1	eRBM-25/1/B/01-A	153072	1/30
32/0.1	eRBM-32/1/B/01-A	153073	1/30
40/0.1	eRBM-40/1/B/01-A	153074	1/30
45/0.1	eRBM-45/1/B/01-A	153075	1/30
6/0.3	eRBM-6/1/B/03-A	152085	1/30
8/0.3	eRBM-8/1/B/03-A	152086	1/30
10/0.3	eRBM-10/1/B/03-A	152087	1/30
13/0.3	eRBM-13/1/B/03-A	152088	1/30
16/0.3	eRBM-16/1/B/03-A	152089	1/30
20/0.3	eRBM-20/1/B/03-A	152090	1/30
25/0.3	eRBM-25/1/B/03-A	152091	1/30
32/0.3	eRBM-32/1/B/03-A	152092	1/30
40/0.3	eRBM-40/1/B/03-A	152093	1/30
45/0.3	eRBM-45/1/B/03-A	152094	1/30

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
6/0.01	eRBM-6/1/C/001-A	152175	1/30
8/0.01	eRBM-8/1/C/001-A	152176	1/30
10/0.01	eRBM-10/1/C/001-A	152177	1/30
13/0.01	eRBM-13/1/C/001-A	152178	1/30
16/0.01	eRBM-16/1/C/001-A	152179	1/30
20/0.01	eRBM-20/1/C/001-A	152180	1/30
25/0.01	eRBM-25/1/C/001-A	152181	1/30
32/0.01	eRBM-32/1/C/001-A	152182	1/30
40/0.01	eRBM-40/1/C/001-A	152183	1/30
45/0.01	eRBM-45/1/C/001-A	152184	1/30
6/0.03	eRBM-6/1/C/003-A	152185	1/30
8/0.03	eRBM-8/1/C/003-A	152186	1/30
10/0.03	eRBM-10/1/C/003-A	152187	1/30
13/0.03	eRBM-13/1/C/003-A	152188	1/30
16/0.03	eRBM-16/1/C/003-A	152189	1/30
20/0.03	eRBM-20/1/C/003-A	152190	1/30
25/0.03	eRBM-25/1/C/003-A	152191	1/30
32/0.03	eRBM-32/1/C/003-A	152192	1/30
40/0.03	eRBM-40/1/C/003-A	152193	1/30
45/0.03	eRBM-45/1/C/003-A	152194	1/30
6/0.1	eRBM-6/1/C/01-A	153106	1/30
8/0.1	eRBM-8/1/C/01-A	153107	1/30
10/0.1	eRBM-10/1/C/01-A	153108	1/30
13/0.1	eRBM-13/1/C/01-A	153109	1/30
16/0.1	eRBM-16/1/C/01-A	153110	1/30
20/0.1	eRBM-20/1/C/01-A	153111	1/30
25/0.1	eRBM-25/1/C/01-A	153112	1/30
32/0.1	eRBM-32/1/C/01-A	153113	1/30
40/0.1	eRBM-40/1/C/01-A	153114	1/30
45/0.1	eRBM-45/1/C/01-A	153115	1/30
6/0.3	eRBM-6/1/C/03-A	152195	1/30
8/0.3	eRBM-8/1/C/03-A	152196	1/30
10/0.3	eRBM-10/1/C/03-A	152197	1/30
13/0.3	eRBM-13/1/C/03-A	152198	1/30
16/0.3	eRBM-16/1/C/03-A	152199	1/30
20/0.3	eRBM-20/1/C/03-A	152200	1/30
25/0.3	eRBM-25/1/C/03-A	152201	1/30
32/0.3	eRBM-32/1/C/03-A	152202	1/30
40/0.3	eRBM-40/1/C/03-A	152203	1/30
45/0.3	eRBM-45/1/C/03-A	152204	1/30

**Specifications | Electronic Combined RCD/MCB Devices eRBM, 1+N-pole, 1MU****Description**

- Electronic residual current device / miniature circuit breaker combination in only 1MU
- Tripping line voltage dependent
- Contact position indicator red - green
- Can be sealed with leads in the ON and OFF position
- Colour coded switching toggle (designating the rated current)
- Permanently connected neutral conductor (950 mm long, blue)
- Special application in British-Standard-Distribution Boxes
- Can be connected to standard busbar (at the lower side)
- Comprehensive range of accessories can be mounted subsequently

**Accessories:**

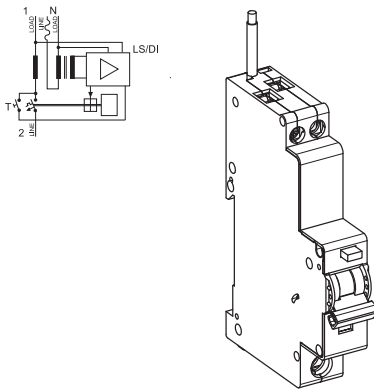
Auxiliary switch for subsequent installation	Z-AHK	248433
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Tripping module	Z-KAM	248294

**Technical Data**

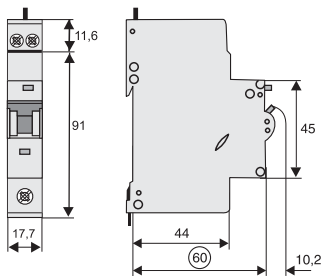
		eRBM, 1+N-pole, 1MU
<b>Electrical</b>		
Design according to		BS/EN 61009
Current test marks as printed onto the device		
Number of poles		1+N-pole, pole switched, N led through (solid neutral)
Rated voltage	$U_n$	240 VAC
Rated frequency		50 Hz
Rated current	$I_n$	6 - 45 A
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Sensitivity		pulsating DC
<b>Tripping Characteristic RCD component</b>		
Tripping line voltage dependent		instantaneous
Peak withstand current		250 A (8/20 $\mu$ s)
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Voltage range for protective function		184 - 264 V~
<b>Tripping Characteristic MCB component</b>		
Conventional non-tripping current		1.13 $I_n$
Conventional tripping current		1.45 $I_n$
Reference temperature		30°C
Characteristic		B, C
Rated breaking capacity		10 kA
Selectivity class		3
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		102.6 mm
Device width		17.7 mm (1MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper terminals		lift terminals
Lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

## Connection diagram

1+N-pole



## Dimensions (mm)



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## Description

- Innovative, high-quality residual current device / miniature circuit breaker combination, line voltage-dependent
- Design width of one module unit only
- Specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Guide for secure terminal connection
- Wide variety of rated tripping currents
- Rated currents up to 45 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC****6 kA, 1+N-pole****Conditionally surge current-proof 250 A, type AC****Characteristic B**

6/0.01	eRB6-6/1/B/001	151975	1/30
8/0.01	eRB6-8/1/B/001	151976	1/30
10/0.01	eRB6-10/1/B/001	151977	1/30
13/0.01	eRB6-13/1/B/001	151978	1/30
16/0.01	eRB6-16/1/B/001	151979	1/30
20/0.01	eRB6-20/1/B/001	151990	1/30
25/0.01	eRB6-25/1/B/001	151991	1/30
32/0.01	eRB6-32/1/B/001	151992	1/30
40/0.01	eRB6-40/1/B/001	151993	1/30
45/0.01	eRB6-45/1/B/001	151994	1/30
6/0.03	eRB6-6/1/B/003	151995	1/30
6/0.03	eRB6-6/1/B/003-PT3	152277	1/30
8/0.03	eRB6-8/1/B/003	151996	1/30
10/0.03	eRB6-10/1/B/003	151997	1/30
13/0.03	eRB6-13/1/B/003	151998	1/30
16/0.03	eRB6-16/1/B/003	151999	1/30
20/0.03	eRB6-20/1/B/003	152000	1/30
25/0.03	eRB6-25/1/B/003	152001	1/30
32/0.03	eRB6-32/1/B/003	152002	1/30
32/0.03	eRB6-32/1/B/003-PT3	152278	1/30
40/0.03	eRB6-40/1/B/003	152003	1/30
45/0.03	eRB6-45/1/B/003	152004	1/30
6/0.1	eRB6-6/1/B/01	153036	1/30
8/0.1	eRB6-8/1/B/01	153037	1/30
10/0.1	eRB6-10/1/B/01	153038	1/30
13/0.1	eRB6-13/1/B/01	153039	1/30
16/0.1	eRB6-16/1/B/01	153040	1/30
20/0.1	eRB6-20/1/B/01	153041	1/30
25/0.1	eRB6-25/1/B/01	153042	1/30
32/0.1	eRB6-32/1/B/01	153043	1/30
40/0.1	eRB6-40/1/B/01	153044	1/30
45/0.1	eRB6-45/1/B/01	153045	1/30
6/0.3	eRB6-6/1/B/03	152005	1/30
8/0.3	eRB6-8/1/B/03	152006	1/30
10/0.3	eRB6-10/1/B/03	152007	1/30
13/0.3	eRB6-13/1/B/03	152008	1/30
16/0.3	eRB6-16/1/B/03	152009	1/30
20/0.3	eRB6-20/1/B/03	152010	1/30
25/0.3	eRB6-25/1/B/03	152011	1/30
32/0.3	eRB6-32/1/B/03	152012	1/30
40/0.3	eRB6-40/1/B/03	152013	1/30
45/0.3	eRB6-45/1/B/03	152014	1/30

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
6/0.01	eRB6-6/1/C/001	152095	1/30
8/0.01	eRB6-8/1/C/001	152096	1/30
10/0.01	eRB6-10/1/C/001	152097	1/30
13/0.01	eRB6-13/1/C/001	152098	1/30
16/0.01	eRB6-16/1/C/001	152099	1/30
20/0.01	eRB6-20/1/C/001	152100	1/30
25/0.01	eRB6-25/1/C/001	152101	1/30
32/0.01	eRB6-32/1/C/001	152102	1/30
40/0.01	eRB6-40/1/C/001	152103	1/30
45/0.01	eRB6-45/1/C/001	152104	1/30
6/0.03	eRB6-6/1/C/003	152105	1/30
8/0.03	eRB6-8/1/C/003	152106	1/30
10/0.03	eRB6-10/1/C/003	152107	1/30
13/0.03	eRB6-13/1/C/003	152108	1/30
16/0.03	eRB6-16/1/C/003	152109	1/30
20/0.03	eRB6-20/1/C/003	152110	1/30
25/0.03	eRB6-25/1/C/003	152111	1/30
32/0.03	eRB6-32/1/C/003	152112	1/30
40/0.03	eRB6-40/1/C/003	152113	1/30
45/0.03	eRB6-45/1/C/003	152114	1/30
6/0.1	eRB6-6/1/C/01	153076	1/30
8/0.1	eRB6-8/1/C/01	153077	1/30
10/0.1	eRB6-10/1/C/01	153078	1/30
13/0.1	eRB6-13/1/C/01	153079	1/30
16/0.1	eRB6-16/1/C/01	153080	1/30
20/0.1	eRB6-20/1/C/01	153081	1/30
25/0.1	eRB6-25/1/C/01	153082	1/30
32/0.1	eRB6-32/1/C/01	153083	1/30
40/0.1	eRB6-40/1/C/01	153084	1/30
45/0.1	eRB6-45/1/C/01	153085	1/30
6/0.3	eRB6-6/1/C/03	152115	1/30
8/0.3	eRB6-8/1/C/03	152116	1/30
10/0.3	eRB6-10/1/C/03	152117	1/30
13/0.3	eRB6-13/1/C/03	152118	1/30
16/0.3	eRB6-16/1/C/03	152119	1/30
20/0.3	eRB6-20/1/C/03	152120	1/30
25/0.3	eRB6-25/1/C/03	152121	1/30
32/0.3	eRB6-32/1/C/03	152122	1/30
40/0.3	eRB6-40/1/C/03	152123	1/30
45/0.3	eRB6-45/1/C/03	152124	1/30

## Specifications | Electronic Combined RCD/MCB Devices eRB6, 1+N-pole, 1MU

### Description

- Electronic residual current device / miniature circuit breaker combination in only 1MU
- Tripping line voltage dependent
- Contact position indicator red - green
- Can be sealed with leads in the ON and OFF position
- Colour coded switching toggle (designating the rated current)
- Permanently connected neutral conductor  
Standard version: 600 mm long, blue  
PT3 version: 300 mm long, blue
- Special application in British-Standard-Distribution Boxes
- Can be connected to standard busbar (at the lower side)
- Comprehensive range of accessories can be mounted subsequently

### Accessories:

Auxiliary switch for subsequent installation	Z-AHK	248433
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Tripping module	Z-KAM	248294

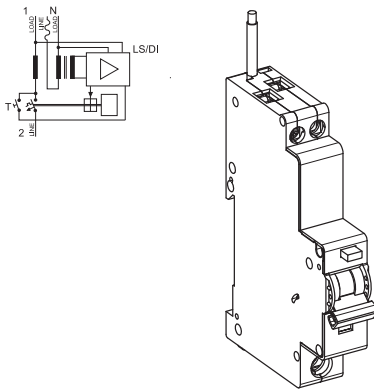
## Technical Data

		eRB6, 1+N-pole, 1MU
<b>Electrical</b>		
Design according to		BS/EN 61009
Current test marks as printed onto the device		
Number of poles		1+N-pole, pole switched, N led through (solid neutral)
Rated voltage	$U_n$	240 VAC
Rated frequency		50 Hz
Rated current	$I_n$	6 - 45 A
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Sensitivity		AC
<b>Tripping Characteristic RCD component</b>		
Tripping line voltage dependent		instantaneous
Peak withstand current		250 A (8/20 $\mu$ s)
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Voltage range for protective function		184 - 264 V~
<b>Tripping Characteristic MCB component</b>		
Conventional non-tripping current		1.13 $I_n$
Conventional tripping current		1.45 $I_n$
Reference temperature		30°C
Characteristic		B, C
Rated breaking capacity		6 kA
Selectivity class		3
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		102.6 mm
Device width		17.7 mm (1MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper terminals		lift terminals
Lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

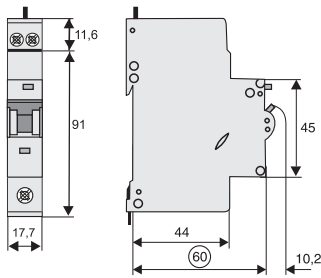


Connection diagram

1+N-pole



Dimensions (mm)



SG07911



## Description

- Innovative, high-quality residual current device / miniature circuit breaker combination, line voltage-dependent
- Design width of one module unit only
- Specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Guide for secure terminal connection
- Wide variety of rated tripping currents
- Rated currents up to 45 A
- Tripping Characteristic C
- Rated breaking capacity 10 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**10 kA, 1+N-pole  
Conditionally surge current-proof 250 A, type AC**

SG07911



**Characteristic C**

6/0.01	eRBM-6/1/C/001-ME	153230	1/30
8/0.01	eRBM-8/1/C/001-ME	153231	1/30
10/0.01	eRBM-10/1/C/001-ME	153232	1/30
13/0.01	eRBM-13/1/C/001-ME	153233	1/30
16/0.01	eRBM-16/1/C/001-ME	153234	1/30
20/0.01	eRBM-20/1/C/001-ME	153235	1/30
25/0.01	eRBM-25/1/C/001-ME	153236	1/30
32/0.01	eRBM-32/1/C/001-ME	153237	1/30
40/0.01	eRBM-40/1/C/001-ME	153238	1/30
45/0.01	eRBM-45/1/C/001-ME	153239	1/30
6/0.03	eRBM-6/1/C/003-ME	153240	1/30
8/0.03	eRBM-8/1/C/003-ME	153241	1/30
10/0.03	eRBM-10/1/C/003-ME	153242	1/30
13/0.03	eRBM-13/1/C/003-ME	153243	1/30
16/0.03	eRBM-16/1/C/003-ME	153244	1/30
20/0.03	eRBM-20/1/C/003-ME	153245	1/30
25/0.03	eRBM-25/1/C/003-ME	153246	1/30
32/0.03	eRBM-32/1/C/003-ME	153247	1/30
40/0.03	eRBM-40/1/C/003-ME	153248	1/30
45/0.03	eRBM-45/1/C/003-ME	153249	1/30
6/0.1	eRBM-6/1/C/01-ME	153250	1/30
8/0.1	eRBM-8/1/C/01-ME	153251	1/30
10/0.1	eRBM-10/1/C/01-ME	153252	1/30
13/0.1	eRBM-13/1/C/01-ME	153253	1/30
16/0.1	eRBM-16/1/C/01-ME	153254	1/30
20/0.1	eRBM-20/1/C/01-ME	153255	1/30
25/0.1	eRBM-25/1/C/01-ME	153256	1/30
32/0.1	eRBM-32/1/C/01-ME	153257	1/30
40/0.1	eRBM-40/1/C/01-ME	153258	1/30
45/0.1	eRBM-45/1/C/01-ME	153259	1/30
6/0.3	eRBM-6/1/C/03-ME	153260	1/30
8/0.3	eRBM-8/1/C/03-ME	153261	1/30
10/0.3	eRBM-10/1/C/03-ME	153262	1/30
13/0.3	eRBM-13/1/C/03-ME	153263	1/30
16/0.3	eRBM-16/1/C/03-ME	153264	1/30
20/0.3	eRBM-20/1/C/03-ME	153265	1/30
25/0.3	eRBM-25/1/C/03-ME	153266	1/30
32/0.3	eRBM-32/1/C/03-ME	153267	1/30
40/0.3	eRBM-40/1/C/03-ME	153268	1/30
45/0.3	eRBM-45/1/C/03-ME	153269	1/30

## Specifications | Electronic Combined RCD/MCB Devices eRBM-ME, 1+N-pole, 1MU

### Description

- Electronic residual current device / miniature circuit breaker combination in only 1MU
- Tripping line voltage dependent
- Contact position indicator red - green
- Can be sealed with leads in the ON and OFF position
- Colour coded switching toggle (designating the rated current)
- Permanently connected neutral conductor (950 mm long, black)
- Special application in British-Standard-Distribution Boxes
- Can be connected to standard busbar (at the lower side)
- Comprehensive range of accessories can be mounted subsequently

### Accessories:

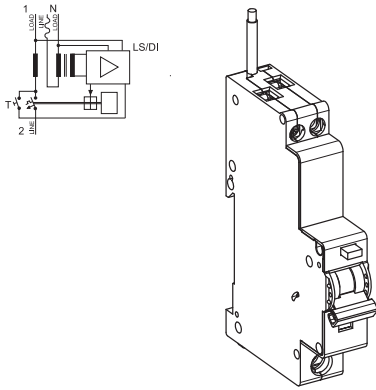
Auxiliary switch for subsequent installation	Z-AHK	248433
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Tripping module	Z-KAM	248294

## Technical Data

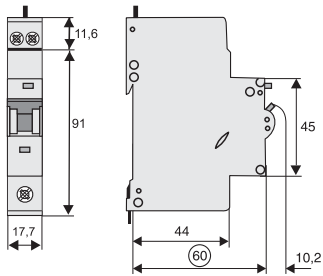
		eRBM-ME, 1+N-pole, 1MU
<b>Electrical</b>		
Design according to		BS/EN 61009
Current test marks as printed onto the device		
Number of poles		1+N-pole, pole switched, N led through (solid neutral)
Rated voltage	$U_n$	240 VAC
Rated frequency		50 Hz
Rated current	$I_n$	6 - 45 A
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Sensitivity		AC
<b>Tripping Characteristic RCD component</b>		
Tripping line voltage dependent		instantaneous
Peak withstand current		250 A (8/20 $\mu$ s)
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Voltage range for protective function		184 - 264 V~
<b>Tripping Characteristic MCB component</b>		
Conventional non-tripping current		1.13 $I_n$
Conventional tripping current		1.45 $I_n$
Reference temperature		30°C
Characteristic		C
Rated breaking capacity		10 kA
Selectivity class		3
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq$ 4,000 switching operations
mechanical components		$\geq$ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		102.6 mm
Device width		17.7 mm (1MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper terminals		lift terminals
Lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

Connection diagram

1+N-pole



Dimensions (mm)



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## Description

- Innovative, high-quality residual current device / miniature circuit breaker combination, line voltage-dependent
- Design width of one module unit only
- Specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Guide for secure terminal connection
- Wide variety of rated tripping currents
- Rated currents up to 45 A
- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**10 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

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**Characteristic B**

6/0.01	eRBM-6/1/B/001-A-AU	151445	1/30
8/0.01	eRBM-8/1/B/001-A-AU	151446	1/30
10/0.01	eRBM-10/1/B/001-A-AU	151447	1/30
13/0.01	eRBM-13/1/B/001-A-AU	151448	1/30
16/0.01	eRBM-16/1/B/001-A-AU	151449	1/30
20/0.01	eRBM-20/1/B/001-A-AU	151450	1/30
25/0.01	eRBM-25/1/B/001-A-AU	151451	1/30
32/0.01	eRBM-32/1/B/001-A-AU	151452	1/30
40/0.01	eRBM-40/1/B/001-A-AU	151453	1/30
45/0.01	eRBM-45/1/B/001-A-AU	151454	1/30
6/0.03	eRBM-6/1/B/003-A-AU	151455	1/30
8/0.03	eRBM-8/1/B/003-A-AU	151456	1/30
10/0.03	eRBM-10/1/B/003-A-AU	151457	1/30
13/0.03	eRBM-13/1/B/003-A-AU	151458	1/30
16/0.03	eRBM-16/1/B/003-A-AU	151459	1/30
20/0.03	eRBM-20/1/B/003-A-AU	151460	1/30
25/0.03	eRBM-25/1/B/003-A-AU	151461	1/30
32/0.03	eRBM-32/1/B/003-A-AU	151462	1/30
40/0.03	eRBM-40/1/B/003-A-AU	151463	1/30
45/0.03	eRBM-45/1/B/003-A-AU	151464	1/30
6/0.1	eRBM-6/1/B/01-A-AU	153300	1/30
8/0.1	eRBM-8/1/B/01-A-AU	153301	1/30
10/0.1	eRBM-10/1/B/01-A-AU	153302	1/30
13/0.1	eRBM-13/1/B/01-A-AU	153303	1/30
16/0.1	eRBM-16/1/B/01-A-AU	153304	1/30
20/0.1	eRBM-20/1/B/01-A-AU	153305	1/30
25/0.1	eRBM-25/1/B/01-A-AU	153306	1/30
32/0.1	eRBM-32/1/B/01-A-AU	153307	1/30
40/0.1	eRBM-40/1/B/01-A-AU	153308	1/30
45/0.1	eRBM-45/1/B/01-A-AU	153309	1/30
6/0.3	eRBM-6/1/B/03-A-AU	151465	1/30
8/0.3	eRBM-8/1/B/03-A-AU	151466	1/30
10/0.3	eRBM-10/1/B/03-A-AU	151467	1/30
13/0.3	eRBM-13/1/B/03-A-AU	151468	1/30
16/0.3	eRBM-16/1/B/03-A-AU	151469	1/30
20/0.3	eRBM-20/1/B/03-A-AU	151470	1/30
25/0.3	eRBM-25/1/B/03-A-AU	151471	1/30
32/0.3	eRBM-32/1/B/03-A-AU	151472	1/30
40/0.3	eRBM-40/1/B/03-A-AU	151473	1/30
45/0.3	eRBM-45/1/B/03-A-AU	151474	1/30

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
6/0.01	eRBM-6/1/C/001-A-AU	151565	1/30
8/0.01	eRBM-8/1/C/001-A-AU	151566	1/30
10/0.01	eRBM-10/1/C/001-A-AU	151567	1/30
13/0.01	eRBM-13/1/C/001-A-AU	151568	1/30
16/0.01	eRBM-16/1/C/001-A-AU	151569	1/30
20/0.01	eRBM-20/1/C/001-A-AU	151570	1/30
25/0.01	eRBM-25/1/C/001-A-AU	151571	1/30
32/0.01	eRBM-32/1/C/001-A-AU	151572	1/30
40/0.01	eRBM-40/1/C/001-A-AU	151573	1/30
45/0.01	eRBM-45/1/C/001-A-AU	151574	1/30
6/0.03	eRBM-6/1/C/003-A-AU	151575	1/30
8/0.03	eRBM-8/1/C/003-A-AU	151576	1/30
10/0.03	eRBM-10/1/C/003-A-AU	151577	1/30
13/0.03	eRBM-13/1/C/003-A-AU	151578	1/30
16/0.03	eRBM-16/1/C/003-A-AU	151579	1/30
20/0.03	eRBM-20/1/C/003-A-AU	151580	1/30
25/0.03	eRBM-25/1/C/003-A-AU	151581	1/30
32/0.03	eRBM-32/1/C/003-A-AU	151582	1/30
40/0.03	eRBM-40/1/C/003-A-AU	151583	1/30
45/0.03	eRBM-45/1/C/003-A-AU	151584	1/30
6/0.1	eRBM-6/1/C/01-A-AU	153340	1/30
8/0.1	eRBM-8/1/C/01-A-AU	153341	1/30
10/0.1	eRBM-10/1/C/01-A-AU	153342	1/30
13/0.1	eRBM-13/1/C/01-A-AU	153343	1/30
16/0.1	eRBM-16/1/C/01-A-AU	153344	1/30
20/0.1	eRBM-20/1/C/01-A-AU	153345	1/30
25/0.1	eRBM-25/1/C/01-A-AU	153346	1/30
32/0.1	eRBM-32/1/C/01-A-AU	153347	1/30
40/0.1	eRBM-40/1/C/01-A-AU	153348	1/30
45/0.1	eRBM-45/1/C/01-A-AU	153349	1/30
6/0.3	eRBM-6/1/C/03-A-AU	151585	1/30
8/0.3	eRBM-8/1/C/03-A-AU	151586	1/30
10/0.3	eRBM-10/1/C/03-A-AU	151587	1/30
13/0.3	eRBM-13/1/C/03-A-AU	151588	1/30
16/0.3	eRBM-16/1/C/03-A-AU	151589	1/30
20/0.3	eRBM-20/1/C/03-A-AU	151590	1/30
25/0.3	eRBM-25/1/C/03-A-AU	151591	1/30
32/0.3	eRBM-32/1/C/03-A-AU	151592	1/30
40/0.3	eRBM-40/1/C/03-A-AU	151593	1/30
45/0.3	eRBM-45/1/C/03-A-AU	151594	1/30



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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic D</b>			
6/0.01	eRBM-6/1/D/001-A-AU	151649	1/30
8/0.01	eRBM-8/1/D/001-A-AU	151650	1/30
10/0.01	eRBM-10/1/D/001-A-AU	151651	1/30
13/0.01	eRBM-13/1/D/001-A-AU	151652	1/30
16/0.01	eRBM-16/1/D/001-A-AU	151653	1/30
20/0.01	eRBM-20/1/D/001-A-AU	151654	1/30
6/0.03	eRBM-6/1/D/003-A-AU	151655	1/30
8/0.03	eRBM-8/1/D/003-A-AU	151656	1/30
10/0.03	eRBM-10/1/D/003-A-AU	151657	1/30
13/0.03	eRBM-13/1/D/003-A-AU	151658	1/30
16/0.03	eRBM-16/1/D/003-A-AU	151659	1/30
20/0.03	eRBM-20/1/D/003-A-AU	151660	1/30
6/0.1	eRBM-6/1/D/01-A-AU	153368	1/30
8/0.1	eRBM-8/1/D/01-A-AU	153369	1/30
10/0.1	eRBM-10/1/D/01-A-AU	153370	1/30
13/0.1	eRBM-13/1/D/01-A-AU	153371	1/30
16/0.1	eRBM-16/1/D/01-A-AU	153372	1/30
20/0.1	eRBM-20/1/D/01-A-AU	153373	1/30
6/0.3	eRBM-6/1/D/03-A-AU	151661	1/30
8/0.3	eRBM-8/1/D/03-A-AU	151662	1/30
10/0.3	eRBM-10/1/D/03-A-AU	151663	1/30
13/0.3	eRBM-13/1/D/03-A-AU	151664	1/30
16/0.3	eRBM-16/1/D/03-A-AU	151665	1/30
20/0.3	eRBM-20/1/D/03-A-AU	151666	1/30

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC****10 kA, 1+N-pole****Conditionally surge current-proof 250 A, type AC****Characteristic B**

6/0.01	eRBM-6/1/B/001-AU	151415	1/30
8/0.01	eRBM-8/1/B/001-AU	151416	1/30
10/0.01	eRBM-10/1/B/001-AU	151417	1/30
13/0.01	eRBM-13/1/B/001-AU	151418	1/30
16/0.01	eRBM-16/1/B/001-AU	151419	1/30
20/0.01	eRBM-20/1/B/001-AU	151420	1/30
25/0.01	eRBM-25/1/B/001-AU	151421	1/30
32/0.01	eRBM-32/1/B/001-AU	151422	1/30
40/0.01	eRBM-40/1/B/001-AU	151423	1/30
45/0.01	eRBM-45/1/B/001-AU	151424	1/30
6/0.03	eRBM-6/1/B/003-AU	151425	1/30
8/0.03	eRBM-8/1/B/003-AU	151426	1/30
10/0.03	eRBM-10/1/B/003-AU	151427	1/30
13/0.03	eRBM-13/1/B/003-AU	151428	1/30
16/0.03	eRBM-16/1/B/003-AU	151429	1/30
20/0.03	eRBM-20/1/B/003-AU	151430	1/30
25/0.03	eRBM-25/1/B/003-AU	151431	1/30
32/0.03	eRBM-32/1/B/003-AU	151432	1/30
40/0.03	eRBM-40/1/B/003-AU	151433	1/30
45/0.03	eRBM-45/1/B/003-AU	151434	1/30
6/0.1	eRBM-6/1/B/01-AU	153290	1/30
8/0.1	eRBM-8/1/B/01-AU	153291	1/30
10/0.1	eRBM-10/1/B/01-AU	153292	1/30
13/0.1	eRBM-13/1/B/01-AU	153293	1/30
16/0.1	eRBM-16/1/B/01-AU	153294	1/30
20/0.1	eRBM-20/1/B/01-AU	153295	1/30
25/0.1	eRBM-25/1/B/01-AU	153296	1/30
32/0.1	eRBM-32/1/B/01-AU	153297	1/30
40/0.1	eRBM-40/1/B/01-AU	153298	1/30
45/0.1	eRBM-45/1/B/01-AU	153299	1/30
6/0.3	eRBM-6/1/B/03-AU	151435	1/30
8/0.3	eRBM-8/1/B/03-AU	151436	1/30
10/0.3	eRBM-10/1/B/03-AU	151437	1/30
13/0.3	eRBM-13/1/B/03-AU	151438	1/30
16/0.3	eRBM-16/1/B/03-AU	151439	1/30
20/0.3	eRBM-20/1/B/03-AU	151440	1/30
25/0.3	eRBM-25/1/B/03-AU	151441	1/30
32/0.3	eRBM-32/1/B/03-AU	151442	1/30
40/0.3	eRBM-40/1/B/03-AU	151443	1/30
45/0.3	eRBM-45/1/B/03-AU	151444	1/30

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
6/0.01	eRBM-6/1/C/001-AU	151535	1/30
8/0.01	eRBM-8/1/C/001-AU	151536	1/30
10/0.01	eRBM-10/1/C/001-AU	151537	1/30
13/0.01	eRBM-13/1/C/001-AU	151538	1/30
16/0.01	eRBM-16/1/C/001-AU	151539	1/30
20/0.01	eRBM-20/1/C/001-AU	151540	1/30
25/0.01	eRBM-25/1/C/001-AU	151541	1/30
32/0.01	eRBM-32/1/C/001-AU	151542	1/30
40/0.01	eRBM-40/1/C/001-AU	151543	1/30
45/0.01	eRBM-45/1/C/001-AU	151544	1/30
6/0.03	eRBM-6/1/C/003-AU	151545	1/30
8/0.03	eRBM-8/1/C/003-AU	151546	1/30
10/0.03	eRBM-10/1/C/003-AU	151547	1/30
13/0.03	eRBM-13/1/C/003-AU	151548	1/30
16/0.03	eRBM-16/1/C/003-AU	151549	1/30
20/0.03	eRBM-20/1/C/003-AU	151550	1/30
25/0.03	eRBM-25/1/C/003-AU	151551	1/30
32/0.03	eRBM-32/1/C/003-AU	151552	1/30
40/0.03	eRBM-40/1/C/003-AU	151553	1/30
45/0.03	eRBM-45/1/C/003-AU	151554	1/30
6/0.1	eRBM-6/1/C/01-AU	153330	1/30
8/0.1	eRBM-8/1/C/01-AU	153331	1/30
10/0.1	eRBM-10/1/C/01-AU	153332	1/30
13/0.1	eRBM-13/1/C/01-AU	153333	1/30
16/0.1	eRBM-16/1/C/01-AU	153334	1/30
20/0.1	eRBM-20/1/C/01-AU	153335	1/30
25/0.1	eRBM-25/1/C/01-AU	153336	1/30
32/0.1	eRBM-32/1/C/01-AU	153337	1/30
40/0.1	eRBM-40/1/C/01-AU	153338	1/30
45/0.1	eRBM-45/1/C/01-AU	153339	1/30
6/0.3	eRBM-6/1/C/03-AU	151555	1/30
8/0.3	eRBM-8/1/C/03-AU	151556	1/30
10/0.3	eRBM-10/1/C/03-AU	151557	1/30
13/0.3	eRBM-13/1/C/03-AU	151558	1/30
16/0.3	eRBM-16/1/C/03-AU	151559	1/30
20/0.3	eRBM-20/1/C/03-AU	151560	1/30
25/0.3	eRBM-25/1/C/03-AU	151561	1/30
32/0.3	eRBM-32/1/C/03-AU	151562	1/30
40/0.3	eRBM-40/1/C/03-AU	151563	1/30
45/0.3	eRBM-45/1/C/03-AU	151564	1/30

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic D</b>			
6/0.01	eRBM-6/1/D/001-AU	151613	1/30
8/0.01	eRBM-8/1/D/001-AU	151614	1/30
10/0.01	eRBM-10/1/D/001-AU	151615	1/30
13/0.01	eRBM-13/1/D/001-AU	151616	1/30
16/0.01	eRBM-16/1/D/001-AU	151617	1/30
20/0.01	eRBM-20/1/D/001-AU	151618	1/30
6/0.03	eRBM-6/1/D/003-AU	151619	1/30
8/0.03	eRBM-8/1/D/003-AU	151620	1/30
10/0.03	eRBM-10/1/D/003-AU	151621	1/30
13/0.03	eRBM-13/1/D/003-AU	151622	1/30
16/0.03	eRBM-16/1/D/003-AU	151623	1/30
20/0.03	eRBM-20/1/D/003-AU	151624	1/30
6/0.1	eRBM-6/1/D/01-AU	151625	1/30
8/0.1	eRBM-8/1/D/01-AU	151626	1/30
10/0.1	eRBM-10/1/D/01-AU	151627	1/30
13/0.1	eRBM-13/1/D/01-AU	151628	1/30
16/0.1	eRBM-16/1/D/01-AU	151629	1/30
20/0.1	eRBM-20/1/D/01-AU	151630	1/30
6/0.3	eRBM-6/1/D/03-AU	153362	1/30
8/0.3	eRBM-8/1/D/03-AU	153363	1/30
10/0.3	eRBM-10/1/D/03-AU	153364	1/30
13/0.3	eRBM-13/1/D/03-AU	153365	1/30
16/0.3	eRBM-16/1/D/03-AU	153366	1/30
20/0.3	eRBM-20/1/D/03-AU	153367	1/30

**Specifications | Electronic Combined RCD/MCB Devices eRBM-AU, 1+N-pole, 1MU**

**Description**

- Electronic residual current device / miniature circuit breaker combination in only 1MU
- Tripping line voltage dependent
- Contact position indicator red - green
- Can be sealed with leads in the ON and OFF position
- Colour coded switching toggle (designating the rated current)
- Permanently connected neutral conductor (950 mm long, black)
- Special application in British-Standard-Distribution Boxes
- Can be connected to standard busbar (at the lower side)
- Comprehensive range of accessories can be mounted subsequently

**Accessories:**

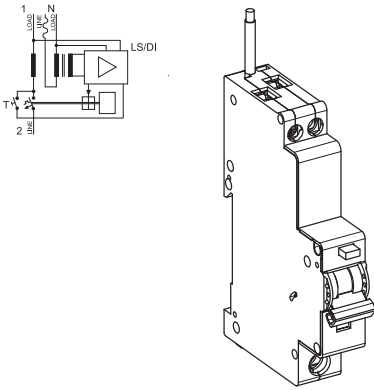
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Tripping module	Z-KAM	248294

**Technical Data**

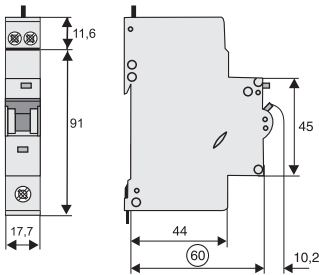
		<b>eRBM-AU, 1+N-pole, 1MU</b>
<b>Electrical</b>		
Design according to		BS/EN 61009
Current test marks as printed onto the device		
Number of poles		1+N-pole, pole switched, N led through (solid neutral)
Rated voltage	$U_n$	240 VAC
Rated frequency		50 Hz
Rated current	$I_n$	6 - 45 A
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Sensitivity		AC and pulsating DC
<b>Tripping Characteristic RCD component</b>		
Tripping line voltage dependent		instantaneous
Peak withstand current		250 A (8/20 $\mu$ s)
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Voltage range for protective function		184 - 264 V~
<b>Tripping Characteristic MCB component</b>		
Conventional non-tripping current		1.13 $I_n$
Conventional tripping current		1.45 $I_n$
Reference temperature		30°C
Characteristic		B, C, D
Rated breaking capacity		10 kA
Selectivity class		3
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq$ 4,000 switching operations
mechanical components		$\geq$ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		102.6 mm
Device width		17.7 mm (1MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper terminals		lift terminals
Lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

## Connection diagram

1+N-pole



## Dimensions (mm)



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## Description

- Innovative, high-quality residual current device / miniature circuit breaker combination, line voltage-dependent
- Design width of one module unit only
- Specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Guide for secure terminal connection
- Wide variety of rated tripping currents
- Rated currents up to 45 A
- Tripping characteristics B, C, D
- Rated breaking capacity 6 kA

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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### Type A

#### 6 kA, 1+N-pole

#### Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A

#### Characteristic B

6/0.01	eRB6-6/1/B/001-A-AU	151385	1/30
8/0.01	eRB6-8/1/B/001-A-AU	151386	1/30
10/0.01	eRB6-10/1/B/001-A-AU	151387	1/30
13/0.01	eRB6-13/1/B/001-A-AU	151388	1/30
16/0.01	eRB6-16/1/B/001-A-AU	151389	1/30
20/0.01	eRB6-20/1/B/001-A-AU	151390	1/30
25/0.01	eRB6-25/1/B/001-A-AU	151391	1/30
32/0.01	eRB6-32/1/B/001-A-AU	151392	1/30
40/0.01	eRB6-40/1/B/001-A-AU	151393	1/30
45/0.01	eRB6-45/1/B/001-A-AU	151394	1/30
6/0.03	eRB6-6/1/B/003-A-AU	151395	1/30
8/0.03	eRB6-8/1/B/003-A-AU	151396	1/30
10/0.03	eRB6-10/1/B/003-A-AU	151397	1/30
13/0.03	eRB6-13/1/B/003-A-AU	151398	1/30
16/0.03	eRB6-16/1/B/003-A-AU	151399	1/30
20/0.03	eRB6-20/1/B/003-A-AU	151400	1/30
25/0.03	eRB6-25/1/B/003-A-AU	151401	1/30
32/0.03	eRB6-32/1/B/003-A-AU	151402	1/30
40/0.03	eRB6-40/1/B/003-A-AU	151403	1/30
45/0.03	eRB6-45/1/B/003-A-AU	151404	1/30
6/0.1	eRB6-6/1/B/01-A-AU	153280	1/30
8/0.1	eRB6-8/1/B/01-A-AU	153281	1/30
10/0.1	eRB6-10/1/B/01-A-AU	153282	1/30
13/0.1	eRB6-13/1/B/01-A-AU	153283	1/30
16/0.1	eRB6-16/1/B/01-A-AU	153284	1/30
20/0.1	eRB6-20/1/B/01-A-AU	153285	1/30
25/0.1	eRB6-25/1/B/01-A-AU	153286	1/30
32/0.1	eRB6-32/1/B/01-A-AU	153287	1/30
40/0.1	eRB6-40/1/B/01-A-AU	153288	1/30
45/0.1	eRB6-45/1/B/01-A-AU	153289	1/30
6/0.3	eRB6-6/1/B/03-A-AU	151405	1/30
8/0.3	eRB6-8/1/B/03-A-AU	151406	1/30
10/0.3	eRB6-10/1/B/03-A-AU	151407	1/30
13/0.3	eRB6-13/1/B/03-A-AU	151408	1/30
16/0.3	eRB6-16/1/B/03-A-AU	151409	1/30
20/0.3	eRB6-20/1/B/03-A-AU	151410	1/30
25/0.3	eRB6-25/1/B/03-A-AU	151411	1/30
32/0.3	eRB6-32/1/B/03-A-AU	151412	1/30
40/0.3	eRB6-40/1/B/03-A-AU	151413	1/30
45/0.3	eRB6-45/1/B/03-A-AU	151414	1/30



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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
6/0.01	eRB6-6/1/C/001-A-AU	151505	1/30
8/0.01	eRB6-8/1/C/001-A-AU	151506	1/30
10/0.01	eRB6-10/1/C/001-A-AU	151507	1/30
13/0.01	eRB6-13/1/C/001-A-AU	151508	1/30
16/0.01	eRB6-16/1/C/001-A-AU	151509	1/30
20/0.01	eRB6-20/1/C/001-A-AU	151510	1/30
25/0.01	eRB6-25/1/C/001-A-AU	151511	1/30
32/0.01	eRB6-32/1/C/001-A-AU	151512	1/30
40/0.01	eRB6-40/1/C/001-A-AU	151513	1/30
45/0.01	eRB6-45/1/C/001-A-AU	151514	1/30
6/0.03	eRB6-6/1/C/003-A-AU	151515	1/30
8/0.03	eRB6-8/1/C/003-A-AU	151516	1/30
10/0.03	eRB6-10/1/C/003-A-AU	151517	1/30
13/0.03	eRB6-13/1/C/003-A-AU	151518	1/30
16/0.03	eRB6-16/1/C/003-A-AU	151519	1/30
20/0.03	eRB6-20/1/C/003-A-AU	151520	1/30
25/0.03	eRB6-25/1/C/003-A-AU	151521	1/30
32/0.03	eRB6-32/1/C/003-A-AU	151522	1/30
40/0.03	eRB6-40/1/C/003-A-AU	151523	1/30
45/0.03	eRB6-45/1/C/003-A-AU	151524	1/30
6/0.1	eRB6-6/1/C/01-A-AU	153320	1/30
8/0.1	eRB6-8/1/C/01-A-AU	153321	1/30
10/0.1	eRB6-10/1/C/01-A-AU	153322	1/30
13/0.1	eRB6-13/1/C/01-A-AU	153323	1/30
16/0.1	eRB6-16/1/C/01-A-AU	153324	1/30
20/0.1	eRB6-20/1/C/01-A-AU	153325	1/30
25/0.1	eRB6-25/1/C/01-A-AU	153326	1/30
32/0.1	eRB6-32/1/C/01-A-AU	153327	1/30
40/0.1	eRB6-40/1/C/01-A-AU	153328	1/30
45/0.1	eRB6-45/1/C/01-A-AU	153329	1/30
6/0.3	eRB6-6/1/C/03-A-AU	151525	1/30
8/0.3	eRB6-8/1/C/03-A-AU	151526	1/30
10/0.3	eRB6-10/1/C/03-A-AU	151527	1/30
13/0.3	eRB6-13/1/C/03-A-AU	151528	1/30
16/0.3	eRB6-16/1/C/03-A-AU	151529	1/30
20/0.3	eRB6-20/1/C/03-A-AU	151530	1/30
25/0.3	eRB6-25/1/C/03-A-AU	151531	1/30
32/0.3	eRB6-32/1/C/03-A-AU	151532	1/30
40/0.3	eRB6-40/1/C/03-A-AU	151533	1/30
45/0.3	eRB6-45/1/C/03-A-AU	151534	1/30

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic D</b>			
6/0.01	eRB6-6/1/D/001-A-AU	151631	1/30
8/0.01	eRB6-8/1/D/001-A-AU	151632	1/30
10/0.01	eRB6-10/1/D/001-A-AU	151633	1/30
13/0.01	eRB6-13/1/D/001-A-AU	151634	1/30
16/0.01	eRB6-16/1/D/001-A-AU	151635	1/30
20/0.01	eRB6-20/1/D/001-A-AU	151636	1/30
6/0.03	eRB6-6/1/D/003-A-AU	151637	1/30
8/0.03	eRB6-8/1/D/003-A-AU	151638	1/30
10/0.03	eRB6-10/1/D/003-A-AU	151639	1/30
13/0.03	eRB6-13/1/D/003-A-AU	151640	1/30
16/0.03	eRB6-16/1/D/003-A-AU	151641	1/30
20/0.03	eRB6-20/1/D/003-A-AU	151642	1/30
6/0.1	eRB6-6/1/D/01-A-AU	153356	1/30
8/0.1	eRB6-8/1/D/01-A-AU	153357	1/30
10/0.1	eRB6-10/1/D/01-A-AU	153358	1/30
13/0.1	eRB6-13/1/D/01-A-AU	153359	1/30
16/0.1	eRB6-16/1/D/01-A-AU	153360	1/30
20/0.1	eRB6-20/1/D/01-A-AU	153361	1/30
6/0.3	eRB6-6/1/D/03-A-AU	151643	1/30
8/0.3	eRB6-8/1/D/03-A-AU	151644	1/30
10/0.3	eRB6-10/1/D/03-A-AU	151645	1/30
13/0.3	eRB6-13/1/D/03-A-AU	151646	1/30
16/0.3	eRB6-16/1/D/03-A-AU	151647	1/30
20/0.3	eRB6-20/1/D/03-A-AU	151648	1/30

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**6 kA, 1+N-pole**  
**Conditionally surge current-proof 250 A, type AC**

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**Characteristic B**

6/0.01	eRB6-6/1/B/001-AU	151245	1/30
8/0.01	eRB6-8/1/B/001-AU	151246	1/30
10/0.01	eRB6-10/1/B/001-AU	151247	1/30
13/0.01	eRB6-13/1/B/001-AU	151248	1/30
16/0.01	eRB6-16/1/B/001-AU	151249	1/30
20/0.01	eRB6-20/1/B/001-AU	151360	1/30
25/0.01	eRB6-25/1/B/001-AU	151361	1/30
32/0.01	eRB6-32/1/B/001-AU	151362	1/30
40/0.01	eRB6-40/1/B/001-AU	151363	1/30
45/0.01	eRB6-45/1/B/001-AU	151364	1/30
6/0.03	eRB6-6/1/B/003-AU	151365	1/30
8/0.03	eRB6-8/1/B/003-AU	151366	1/30
10/0.03	eRB6-10/1/B/003-AU	151367	1/30
13/0.03	eRB6-13/1/B/003-AU	151368	1/30
16/0.03	eRB6-16/1/B/003-AU	151369	1/30
20/0.03	eRB6-20/1/B/003-AU	151370	1/30
25/0.03	eRB6-25/1/B/003-AU	151371	1/30
32/0.03	eRB6-32/1/B/003-AU	151372	1/30
40/0.03	eRB6-40/1/B/003-AU	151373	1/30
45/0.03	eRB6-45/1/B/003-AU	151374	1/30
6/0.1	eRB6-6/1/B/01-AU	153270	1/30
8/0.1	eRB6-8/1/B/01-AU	153271	1/30
10/0.1	eRB6-10/1/B/01-AU	153272	1/30
13/0.1	eRB6-13/1/B/01-AU	153273	1/30
16/0.1	eRB6-16/1/B/01-AU	153274	1/30
20/0.1	eRB6-20/1/B/01-AU	153275	1/30
25/0.1	eRB6-25/1/B/01-AU	153276	1/30
32/0.1	eRB6-32/1/B/01-AU	153277	1/30
40/0.1	eRB6-40/1/B/01-AU	153278	1/30
45/0.1	eRB6-45/1/B/01-AU	153279	1/30
6/0.3	eRB6-6/1/B/03-AU	151375	1/30
8/0.3	eRB6-8/1/B/03-AU	151376	1/30
10/0.3	eRB6-10/1/B/03-AU	151377	1/30
13/0.3	eRB6-13/1/B/03-AU	151378	1/30
16/0.3	eRB6-16/1/B/03-AU	151379	1/30
20/0.3	eRB6-20/1/B/03-AU	151380	1/30
25/0.3	eRB6-25/1/B/03-AU	151381	1/30
32/0.3	eRB6-32/1/B/03-AU	151382	1/30
40/0.3	eRB6-40/1/B/03-AU	151383	1/30
45/0.3	eRB6-45/1/B/03-AU	151384	1/30

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic C</b>			
6/0.01	eRB6-6/1/C/001-AU	151475	1/30
8/0.01	eRB6-8/1/C/001-AU	151476	1/30
10/0.01	eRB6-10/1/C/001-AU	151477	1/30
13/0.01	eRB6-13/1/C/001-AU	151478	1/30
16/0.01	eRB6-16/1/C/001-AU	151479	1/30
20/0.01	eRB6-20/1/C/001-AU	151480	1/30
25/0.01	eRB6-25/1/C/001-AU	151481	1/30
32/0.01	eRB6-32/1/C/001-AU	151482	1/30
40/0.01	eRB6-40/1/C/001-AU	151483	1/30
45/0.01	eRB6-45/1/C/001-AU	151484	1/30
6/0.03	eRB6-6/1/C/003-AU	151485	1/30
8/0.03	eRB6-8/1/C/003-AU	151486	1/30
10/0.03	eRB6-10/1/C/003-AU	151487	1/30
13/0.03	eRB6-13/1/C/003-AU	151488	1/30
16/0.03	eRB6-16/1/C/003-AU	151489	1/30
20/0.03	eRB6-20/1/C/003-AU	151490	1/30
25/0.03	eRB6-25/1/C/003-AU	151491	1/30
32/0.03	eRB6-32/1/C/003-AU	151492	1/30
40/0.03	eRB6-40/1/C/003-AU	151493	1/30
45/0.03	eRB6-45/1/C/003-AU	151494	1/30
6/0.1	eRB6-6/1/C/01-AU	153310	1/30
8/0.1	eRB6-8/1/C/01-AU	153311	1/30
10/0.1	eRB6-10/1/C/01-AU	153312	1/30
13/0.1	eRB6-13/1/C/01-AU	153313	1/30
16/0.1	eRB6-16/1/C/01-AU	153314	1/30
20/0.1	eRB6-20/1/C/01-AU	153315	1/30
25/0.1	eRB6-25/1/C/01-AU	153316	1/30
32/0.1	eRB6-32/1/C/01-AU	153317	1/30
40/0.1	eRB6-40/1/C/01-AU	153318	1/30
45/0.1	eRB6-45/1/C/01-AU	153319	1/30
6/0.3	eRB6-6/1/C/03-AU	151495	1/30
8/0.3	eRB6-8/1/C/03-AU	151496	1/30
10/0.3	eRB6-10/1/C/03-AU	151497	1/30
13/0.3	eRB6-13/1/C/03-AU	151498	1/30
16/0.3	eRB6-16/1/C/03-AU	151499	1/30
20/0.3	eRB6-20/1/C/03-AU	151500	1/30
25/0.3	eRB6-25/1/C/03-AU	151501	1/30
32/0.3	eRB6-32/1/C/03-AU	151502	1/30
40/0.3	eRB6-40/1/C/03-AU	151503	1/30
45/0.3	eRB6-45/1/C/03-AU	151504	1/30

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic D</b>			
6/0.01	eRB6-6/1/D/001-AU	151595	1/30
8/0.01	eRB6-8/1/D/001-AU	151596	1/30
10/0.01	eRB6-10/1/D/001-AU	151597	1/30
13/0.01	eRB6-13/1/D/001-AU	151598	1/30
16/0.01	eRB6-16/1/D/001-AU	151599	1/30
20/0.01	eRB6-20/1/D/001-AU	151600	1/30
6/0.03	eRB6-6/1/D/003-AU	151601	1/30
8/0.03	eRB6-8/1/D/003-AU	151602	1/30
10/0.03	eRB6-10/1/D/003-AU	151603	1/30
13/0.03	eRB6-13/1/D/003-AU	151604	1/30
16/0.03	eRB6-16/1/D/003-AU	151605	1/30
20/0.03	eRB6-20/1/D/003-AU	151606	1/30
6/0.1	eRB6-6/1/D/01-AU	153350	1/30
8/0.1	eRB6-8/1/D/01-AU	153351	1/30
10/0.1	eRB6-10/1/D/01-AU	153352	1/30
13/0.1	eRB6-13/1/D/01-AU	153353	1/30
16/0.1	eRB6-16/1/D/01-AU	153354	1/30
20/0.1	eRB6-20/1/D/01-AU	153355	1/30
6/0.3	eRB6-6/1/D/03-AU	151607	1/30
8/0.3	eRB6-8/1/D/03-AU	151608	1/30
10/0.3	eRB6-10/1/D/03-AU	151609	1/30
13/0.3	eRB6-13/1/D/03-AU	151610	1/30
16/0.3	eRB6-16/1/D/03-AU	151611	1/30
20/0.3	eRB6-20/1/D/03-AU	151612	1/30

## Specifications | Electronic Combined RCD/MCB Devices eRB6-AU, 1+N-pole, 1MU

### Description

- Electronic residual current device / miniature circuit breaker combination in only 1MU
- Tripping line voltage dependent
- Contact position indicator red - green
- Can be sealed with leads in the ON and OFF position
- Colour coded switching toggle (designating the rated current)
- Permanently connected neutral conductor (950 mm long, black)
- Special application in British-Standard-Distribution Boxes
- Can be connected to standard busbar (at the lower side)
- Comprehensive range of accessories can be mounted subsequently

### Accessories:

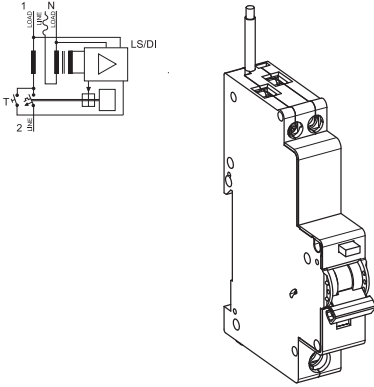
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Tripping module	Z-KAM	248294

## Technical Data

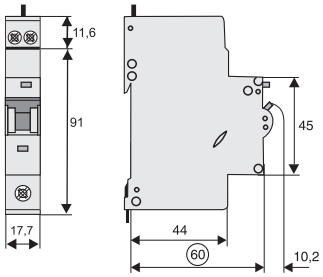
		eRB6-AU, 1+N-pole, 1MU
<b>Electrical</b>		
Design according to		BS/EN 61009
Current test marks as printed onto the device		
Number of poles		1+N-pole, pole switched, N led through (solid neutral)
Rated voltage	$U_n$	240 VAC
Rated frequency		50 Hz
Rated current	$I_n$	6 - 45 A
Rated tripping current	$I_{\Delta n}$	10, 30, 100, 300 mA
Sensitivity		AC and pulsating DC
<b>Tripping Characteristic RCD component</b>		
Tripping line voltage dependent		instantaneous
Peak withstand current		250 A (8/20 $\mu$ s)
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Voltage range for protective function		184 - 264 V~
<b>Tripping Characteristic MCB component</b>		
Conventional non-tripping current		1.13 $I_n$
Conventional tripping current		1.45 $I_n$
Reference temperature		30°C
Characteristic		B, C, D
Rated breaking capacity		6 kA
Selectivity class		3
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		102.6 mm
Device width		17.7 mm (1MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper terminals		lift terminals
Lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2

Connection diagram

1+N-pole



Dimensions (mm)



SG14011



## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 20 A
- Tripping characteristics B, C
- Rated breaking capacity 10 kA



$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

**Type A**

**10 kA, 2-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG14011



**Characteristic B**

10/0.03	PKPM2-10/2/B/003-A	108105	1/60
13/0.03	PKPM2-13/2/B/003-A	108106	1/60
16/0.03	PKPM2-16/2/B/003-A	108107	1/60
20/0.03	PKPM2-20/2/B/003-A	108108	1/60
10/0.1	PKPM2-10/2/B/01-A	108113	1/60
13/0.1	PKPM2-13/2/B/01-A	108114	1/60
16/0.1	PKPM2-16/2/B/01-A	108115	1/60
20/0.1	PKPM2-20/2/B/01-A	108116	1/60
10/0.3	PKPM2-10/2/B/03-A	111634	1/60
13/0.3	PKPM2-13/2/B/03-A	111635	1/60
16/0.3	PKPM2-16/2/B/03-A	111636	1/60
20/0.3	PKPM2-20/2/B/03-A	111637	1/60

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**Characteristic C**

6/0.03	PKPM2-6/2/C/003-A	111638	1/60
10/0.03	PKPM2-10/2/C/003-A	108109	1/60
13/0.03	PKPM2-13/2/C/003-A	108110	1/60
16/0.03	PKPM2-16/2/C/003-A	108111	1/60
20/0.03	PKPM2-20/2/C/003-A	108112	1/60
10/0.1	PKPM2-10/2/C/01-A	108117	1/60
13/0.1	PKPM2-13/2/C/01-A	108118	1/60
16/0.1	PKPM2-16/2/C/01-A	108119	1/60
20/0.1	PKPM2-20/2/C/01-A	108120	1/60
6/0.3	PKPM2-6/2/C/03-A	111639	1/60
10/0.3	PKPM2-10/2/C/03-A	111640	1/60
13/0.3	PKPM2-13/2/C/03-A	111641	1/60
16/0.3	PKPM2-16/2/C/03-A	111642	1/60
20/0.3	PKPM2-20/2/C/03-A	111643	1/60

**Type AC**

**10 kA, 2-pole**  
**Conditionally surge current-proof 250 A, type AC**

SG14011



**Characteristic B**

10/0.03	PKPM2-10/2/B/003	111597	1/60
13/0.03	PKPM2-13/2/B/003	111598	1/60
16/0.03	PKPM2-16/2/B/003	111599	1/60
20/0.03	PKPM2-20/2/B/003	111600	1/60
10/0.3	PKPM2-10/2/B/03	111602	1/60
13/0.3	PKPM2-13/2/B/03	111603	1/60
16/0.3	PKPM2-16/2/B/03	111604	1/60
20/0.3	PKPM2-20/2/B/03	111605	1/60

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**Characteristic C**

6/0.03	PKPM2-6/2/C/003	111622	1/60
10/0.03	PKPM2-10/2/C/003	111623	1/60
13/0.03	PKPM2-13/2/C/003	111624	1/60
16/0.03	PKPM2-16/2/C/003	111625	1/60
20/0.03	PKPM2-20/2/C/003	111626	1/60
6/0.3	PKPM2-6/2/C/03	111627	1/60
10/0.3	PKPM2-10/2/C/03	111628	1/60
13/0.3	PKPM2-13/2/C/03	111629	1/60
16/0.3	PKPM2-16/2/C/03	111630	1/60
20/0.3	PKPM2-20/2/C/03	111631	1/60

SG13811



### Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type A**

**6 kA, 2-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG13811



**Characteristic B**

25/0.03	PKP62-25/2/B/003-A	113889	1/60
32/0.03	PKP62-32/2/B/003-A	113940	1/60
40/0.03	PKP62-40/2/B/003-A	113941	1/60
25/0.01	PKP62-25/2/B/01-A	113945	1/60
32/0.01	PKP62-32/2/B/01-A	113946	1/60
40/0.01	PKP62-40/2/B/01-A	113947	1/60

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**Characteristic C**

25/0.03	PKP62-25/2/C/003-A	113942	1/60
32/0.03	PKP62-32/2/C/003-A	113943	1/60
40/0.03	PKP62-40/2/C/003-A	113944	1/60
25/0.01	PKP62-25/2/C/01-A	113948	1/60
32/0.01	PKP62-32/2/C/01-A	113949	1/60
40/0.01	PKP62-40/2/C/01-A	113950	1/60

**Type AC**

**6 kA, 2-pole**  
**Conditionally surge current-proof 250 A, type AC**

SG13811



**Characteristic B**

10/0.03	PKP62-10/2/B/003	111589	1/60
13/0.03	PKP62-13/2/B/003	111590	1/60
16/0.03	PKP62-16/2/B/003	111591	1/60
20/0.03	PKP62-20/2/B/003	111592	1/60
25/0.03	PKP62-25/2/B/003	111593	1/60
32/0.03	PKP62-32/2/B/003	111594	1/60
40/0.03	PKP62-40/2/B/003	111595	1/60

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**Characteristic C**

6/0.03	PKP62-6/2/C/003	111614	1/60
10/0.03	PKP62-10/2/C/003	111615	1/60
13/0.03	PKP62-13/2/C/003	111616	1/60
16/0.03	PKP62-16/2/C/003	111617	1/60
20/0.03	PKP62-20/2/C/003	111618	1/60
25/0.03	PKP62-25/2/C/003	111619	1/60
32/0.03	PKP62-32/2/C/003	111620	1/60
40/0.03	PKP62-40/2/C/003	111621	1/60

SG69511



### Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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**Type AC**

**4.5 kA, 2-pole**  
**Conditionally surge current-proof 250 A, type AC**

SG69511



**Characteristic B**

10/0.03	PKP42-10/2/B/003	111581	1/60
13/0.03	PKP42-13/2/B/003	111582	1/60
16/0.03	PKP42-16/2/B/003	111583	1/60
20/0.03	PKP42-20/2/B/003	111584	1/60
25/0.03	PKP42-25/2/B/003	111585	1/60
32/0.03	PKP42-32/2/B/003	111586	1/60
40/0.03	PKP42-40/2/B/003	111587	1/60

SG69511



**Characteristic C**

6/0.03	PKP42-6/2/C/003	111606	1/60
10/0.03	PKP42-10/2/C/003	111607	1/60
13/0.03	PKP42-13/2/C/003	111608	1/60
16/0.03	PKP42-16/2/C/003	111609	1/60
20/0.03	PKP42-20/2/C/003	111610	1/60
25/0.03	PKP42-25/2/C/003	111611	1/60
32/0.03	PKP42-32/2/C/003	111612	1/60
40/0.03	PKP42-40/2/C/003	111613	1/60

## Specifications | Combined RCD/MCB Devices PKP.2, 2-pole

### Description

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have have not been smoothed

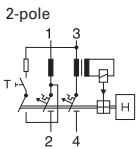
### Accessories:

Tripping signal switch for subsequent installation	ZP-IHK	286052
Shunt trip release	ZP-ASA/..	248438, 248439

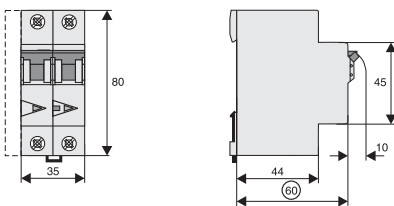
**Technical Data**

		<b>PKP.2, 2-pole</b>
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V AC; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	
PKPM2		10 kA
PKP62		6 kA
PKP42		4.5 kA
Rated current		6 - 40 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>10 kA)
Endurance		
electrical components		$\geq$ 4,000 switching operations
mechanical components		$\geq$ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

**Connection diagram**



**Dimensions (mm)**



### PKPM2: Influence of ambient temperature on load carrying capacity

- Values = max. allowed current in Ampere at the specific temperature
- Temperature factor (%/K) = 0.5

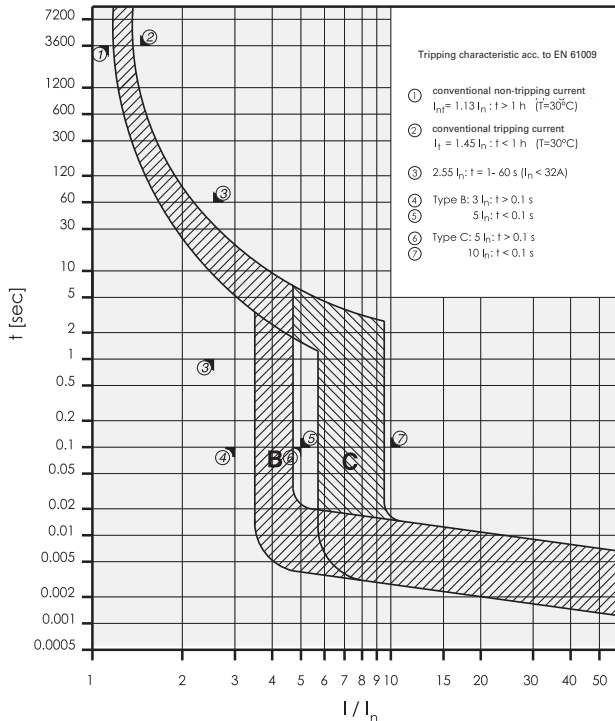
$I_n$ [A]	Ambient temperature / °C									
	-40	-30	-25	-20	-10	0	10	20	30	40
6	8.1	7.8	7.7	7.5	7.2	6.9	6.6	6.3	6.0	5.7
10	13.5	13.0	12.8	12.5	12.0	11.5	11.0	10.5	10.0	9.5
13	17.6	16.9	16.6	16.3	15.6	15.0	14.3	13.7	13.0	12.4
16	21.6	20.8	20.4	20.0	19.2	18.4	17.6	16.8	16.0	15.2
20	27.0	26.0	25.5	25.0	24.0	23.0	22.0	21.0	20.0	19.0

### PKP62, PKP42: Influence of ambient temperature on load carrying capacity

- Values = max. allowed current in Ampere at the specific temperature
- Temperature factor (%/K) = 0.5

$I_n$ [A]	Ambient temperature / °C									
	-40	-30	-25	-20	-10	0	10	20	30	40
6	8.1	7.8	7.7	7.5	7.2	6.9	6.6	6.3	6.0	5.7
10	13.5	13.0	12.8	12.5	12.0	11.5	11.0	10.5	10.0	9.5
13	17.6	16.9	16.6	16.3	15.6	15.0	14.3	13.7	13.0	12.4
16	21.6	20.8	20.4	20.0	19.2	18.4	17.6	16.8	16.0	15.2
20	27.0	26.0	25.5	25.0	24.0	23.0	22.0	21.0	20.0	19.0
25	33.8	32.5	31.9	31.3	30.0	28.8	27.5	26.3	25.0	23.8
32	43.2	41.6	40.8	40.0	38.4	36.8	35.2	33.6	32.0	30.4
40	54.0	52.0	51.0	50.0	48.0	46.0	44.0	42.0	40.0	38.0

### Tripping Characteristic PKP.2, Characteristics B and C





**Short Circuit Selectivity PKPM2 towards Neozed<sup>1)</sup> / Diazed<sup>2)</sup> / NH00<sup>3)</sup>**

Short circuit currents in kA, rated currents of fuses in A

Short circuit selectivity **PKPM2** towards **Neozed<sup>1)</sup>**

PKPM2 Neozed <sup>1)</sup>											
I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100	
<b>B10</b>	<0.5	0.5	0.9	2	2.3	3.7	8	10	10	10	
<b>B13</b>	<0.5	0.5	0.8	1.7	1.9	3	6	10	10	10	
<b>B16</b>		0.5	0.7	1.5	1.7	2.4	4.4	6.8	10	10	
<b>B20</b>			0.7	1.4	1.5	2.2	3.9	6	9.2	10	
<b>C10</b>	<0.5	0.5	0.8	1.7	1.9	3	6.1	10	10	10	
<b>C13</b>	<0.5	0.5	0.7	1.6	1.8	2.8	5.5	9.5	10	10	
<b>C16</b>		<0.5	0.7	1.3	1.5	2.2	4	6.2	10	10	
<b>C20</b>			0.6	1.3	1.4	2.1	3.7	5.6	8.5	10	

Short circuit selectivity **PKPM2** towards **Diazed<sup>2)</sup>**

PKPM2 Diazed <sup>2)</sup>											
I <sub>n</sub> [A]	16	20	25	32	35	50	63	80	100		
<b>B10</b>	<0.5	0.5	0.9	1.8	2.9	5.6	10	10	10		
<b>B13</b>	<0.5	0.5	0.8	1.5	2.4	4.5	10	10	10		
<b>B16</b>		0.5	0.8	1.3	2	3.4	8	10	10		
<b>B20</b>			0.7	1.3	1.9	3.1	7.1	10	10		
<b>C10</b>	<0.5	0.5	0.8	1.5	2.4	4.4	10	10	10		
<b>C13</b>	<0.5	0.5	0.8	1.4	2.3	4.2	10	10	10		
<b>C16</b>		<0.5	0.7	1.2	1.9	3.2	7.6	10	10		
<b>C20</b>			0.7	1.2	1.8	2.9	6.5	9.7	10		

Short circuit selectivity **PKPM2** towards **NH00<sup>3)</sup>**

PKPM2 NH00 <sup>3)</sup>															
I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100	125	160			
<b>B10</b>	<0.5	<0.5	0.8	1.5	2.3	3.2	5.7	9.1	10	10	10	10			
<b>B13</b>	<0.5	<0.5	0.8	1.3	1.9	2.7	4.4	6.5	10	10	10	10			
<b>B16</b>		<0.5	0.7	1.1	1.6	2.2	3.4	4.8	8	10	10	10			
<b>B20</b>			0.6	1	1.4	2	3.1	4.3	7	10	10	10			
<b>C10</b>	<0.5	<0.5	0.7	1.3	1.9	2.7	4.5	6.9	10	10	10	10			
<b>C13</b>	<0.5	<0.5	0.7	1.2	1.8	2.5	4.1	6.1	10	10	10	10			
<b>C16</b>		<0.5	0.6	1	1.5	2	3.1	4.4	7.5	10	10	10			
<b>C20</b>			0.6	0.9	1.4	1.9	2.9	4.1	6.5	10	10	10			

Darker areas: no selectivity

- <sup>1)</sup> SIEMENS Type 5SE2; Size: D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V
- <sup>2)</sup> SIEMENS Type 5SB2, 5SB4, 5SC2; Size: DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V
- <sup>3)</sup> SIEMENS Type 3NA3 8, 3NA6 8, 3NA7 8; Size: 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V

### Short Circuit Selectivity PKP62 towards Neozed<sup>1)</sup> / Diazed<sup>2)</sup> / NH00<sup>3)</sup>

Short circuit currents in kA, rated currents of fuses in A

Short circuit selectivity **PKP62** towards **Neozed** <sup>1)</sup>

PKP62	Neozed <sup>1)</sup>										
	I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100
B10	<0.5	0.5	0.9	2	2.3	3.7	6	6	6	6	6
B13	<0.5	0.5	0.8	1.7	1.9	3	6	6	6	6	6
B16		0.5	0.7	1.5	1.7	2.4	4.4	6	6	6	6
B20			0.7	1.4	1.5	2.2	4	6	6	6	6
B25				1.2	1.3	1.8	3.1	4.7	6	6	6
B32					1.2	1.7	2.7	3.8	5.5	6	6
B40						1.3	1.7	2.2	2.7	4.2	6
C10	<0.5	0.5	0.8	1.7	1.9	3	6	6	6	6	6
C13	<0.5	0.5	0.7	1.6	1.8	2.8	5.5	6	6	6	6
C16		<0.5	0.7	1.3	1.5	2.2	4	6	6	6	6
C20			0.6	1.3	1.4	2.1	3.7	5.6	6	6	6
C25				1.1	1.3	1.8	2.8	3.9	5.6	6	6
C32					1.2	1.7	2.6	3.6	5.1	6	6
C40						1.3	1.9	3.3	3.2	5.8	6

Short circuit selectivity **PKP62** towards **Diazed** <sup>1)</sup>

PKP62	Diazed <sup>2)</sup>									
	I <sub>n</sub> [A]	16	20	25	32	35	50	63	80	100
B10	<0.5	0.5	0.9	1.8	2.9	5.6	6	6	6	6
B13	<0.5	0.5	0.8	1.5	2.4	4.5	6	6	6	6
B16		0.5	0.8	1.3	2	3.4	6	6	6	6
B20			0.7	1.3	1.9	3.1	6	6	6	6
B25				1.1	1.5	2.4	5.5	6	6	6
B32					1.4	2.1	4.3	6	6	6
B40						1.4	2.4	2.9	5.1	6
C10	<0.5	0.5	0.8	1.5	2.4	4.4	6	6	6	6
C13	<0.5	0.5	0.8	1.4	2.3	4.2	6	6	6	6
C16		<0.5	0.7	1.2	1.9	3.2	6	6	6	6
C20			0.7	1.2	1.8	2.9	6	6	6	6
C25				1.1	1.5	2.3	4.4	6	6	6
C32					1.4	2.2	4.1	5.6	6	6
C40						1.6	2.8	3.6	6	6

Short circuit selectivity **PKP62** towards **NH00** <sup>3)</sup>

PKP62	NH00 <sup>3)</sup>												
	I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100	125	160
B10	<0.5	<0.5	0.8	1.5	2.3	3.2	5.7	6	6	6	6	6	6
B13	<0.5	<0.5	0.8	1.3	1.9	2.7	4.4	6	6	6	6	6	6
B16		<0.5	0.7	1.1	1.6	2.2	3.4	4.8	6	6	6	6	6
B20			0.6	1	1.4	2	3.1	4.3	6	6	6	6	6
B25				0.9	1.2	1.6	2.4	3.4	5.5	6	6	6	6
B32					1.1	1.4	2.1	2.9	4.3	6	6	6	6
B40							1.4	1.9	2.8	4.1	6	6	6
C10	<0.5	<0.5	0.7	1.3	1.9	2.7	4.5	6	6	6	6	6	6
C13	<0.5	<0.5	0.7	1.2	1.8	2.5	4.1	6	6	6	6	6	6
C16		<0.5	0.6	1	1.5	2	3.1	4.4	6	6	6	6	6
C20			0.6	0.9	1.4	1.9	2.9	4.1	6	6	6	6	6
C25				0.9	1.2	1.6	2.3	3	4.6	6	6	6	6
C32					1.1	1.5	2.1	2.8	4.3	6	6	6	6
C40							1.5	2.1	3.1	5.4	6	6	6

Darker areas: no selectivity

<sup>1)</sup> SIEMENS Type 5SE2; Size: D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V

<sup>2)</sup> SIEMENS Type 5SB2, 5SB4, 5SC2; Size: DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V

<sup>3)</sup> SIEMENS Type 3NA3 8, 3NA6 8, 3NA7 8; Size: 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V

**Short Circuit Selectivity PKP42 towards Neozed<sup>1)</sup> / Diazed<sup>2)</sup> / NH00<sup>3)</sup>**

Short circuit currents in kA, rated currents of fuses in A

Short circuit selectivity **PKP42** towards **Neozed<sup>1)</sup>**

PKP42	Neozed <sup>1)</sup>										
	I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100
B10	<0.5	0.5	0.9	2	2.3	3.7	4.5	4.5	4.5	4.5	4.5
B13	<0.5	0.5	0.8	1.7	1.9	3	4.5	4.5	4.5	4.5	4.5
B16		0.5	0.7	1.5	1.7	2.4	4.4	4.5	4.5	4.5	4.5
B20			0.7	1.4	1.5	2.2	4	4.5	4.5	4.5	4.5
B25				1.2	1.3	1.8	3.1	4.7	4.5	4.5	4.5
B32					1.2	1.7	2.7	3.8	4.5	4.5	4.5
B40						1.3	1.7	2.2	2.7	4.2	4.5
C10	<0.5	0.5	0.8	1.7	1.9	3	4.5	4.5	4.5	4.5	4.5
C13	<0.5	0.5	0.7	1.6	1.8	2.8	4.5	4.5	4.5	4.5	4.5
C16		<0.5	0.7	1.3	1.5	2.2	4	4.5	4.5	4.5	4.5
C20			0.6	1.3	1.4	2.1	3.7	4.5	4.5	4.5	4.5
C25				1.1	1.3	1.8	2.8	3.9	4.5	4.5	4.5
C32					1.2	1.7	2.6	3.6	4.5	4.5	4.5
C40						1.3	1.9	3.3	3.2	4.5	4.5

Short circuit selectivity **PKP42** towards **Diazed<sup>1)</sup>**

PKP42	Diazed <sup>2)</sup>									
	I <sub>n</sub> [A]	16	20	25	32	35	50	63	80	100
B10	<0.5	0.5	0.9	1.8	2.9	4.5	4.5	4.5	4.5	4.5
B13	<0.5	0.5	0.8	1.5	2.4	4.5	4.5	4.5	4.5	4.5
B16		0.5	0.8	1.3	2	3.4	4.5	4.5	4.5	4.5
B20			0.7	1.3	1.9	3.1	4.5	4.5	4.5	4.5
B25				1.1	1.5	2.4	4.5	4.5	4.5	4.5
B32					1.4	2.1	4.3	4.5	4.5	4.5
B40						1.4	2.4	2.9	4.5	4.5
C10	<0.5	0.5	0.8	1.5	2.4	4.4	4.5	4.5	4.5	4.5
C13	<0.5	0.5	0.8	1.4	2.3	4.2	4.5	4.5	4.5	4.5
C16		<0.5	0.7	1.2	1.9	3.2	4.5	4.5	4.5	4.5
C20			0.7	1.2	1.8	2.9	4.5	4.5	4.5	4.5
C25				1.1	1.5	2.3	4.4	4.5	4.5	4.5
C32					1.4	2.2	4.1	4.5	4.5	4.5
C40						1.6	2.8	3.6	4.5	4.5

Short circuit selectivity **PKP42** towards **NH00<sup>3)</sup>**

PKP42	NH00 <sup>3)</sup>												
	I <sub>n</sub> [A]	16	20	25	32	35	40	50	63	80	100	125	160
B10	<0.5	<0.5	0.8	1.5	2.3	3.2	4.5	4.5	4.5	4.5	4.5	4.5	4.5
B13	<0.5	<0.5	0.8	1.3	1.9	2.7	4.4	4.5	4.5	4.5	4.5	4.5	4.5
B16		<0.5	0.7	1.1	1.6	2.2	3.4	4.5	4.5	4.5	4.5	4.5	4.5
B20			0.6	1	1.4	2	3.1	4.3	4.5	4.5	4.5	4.5	4.5
B25				0.9	1.2	1.6	2.4	3.4	4.5	4.5	4.5	4.5	4.5
B32					1.1	1.4	2.1	2.9	4.3	4.5	4.5	4.5	4.5
B40						1.4	1.9	2.8	4.1	4.5	4.5	4.5	4.5
C10	<0.5	<0.5	0.7	1.3	1.9	2.7	4.5	4.5	4.5	4.5	4.5	4.5	4.5
C13	<0.5	<0.5	0.7	1.2	1.8	2.5	4.1	4.5	4.5	4.5	4.5	4.5	4.5
C16		<0.5	0.6	1	1.5	2	3.1	4.4	4.5	4.5	4.5	4.5	4.5
C20			0.6	0.9	1.4	1.9	2.9	4.1	4.5	4.5	4.5	4.5	4.5

Darker areas: no selectivity

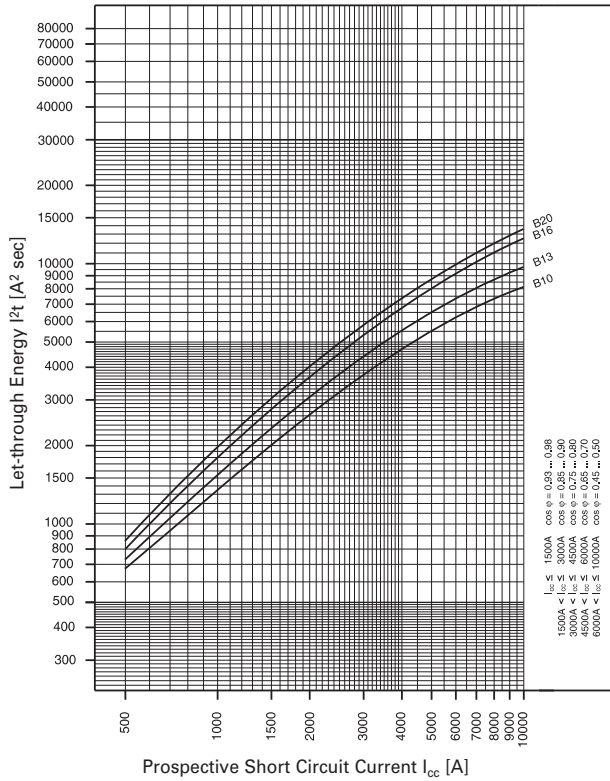
<sup>1)</sup> SIEMENS Type 5SE2; Size: D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V

<sup>2)</sup> SIEMENS Type 5SB2, 5SB4, 5SC2; Size: DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V

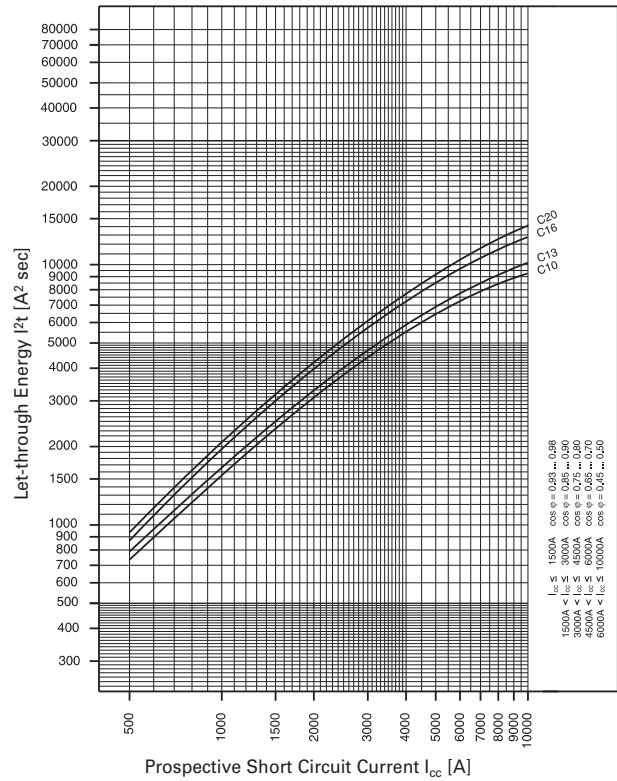
<sup>3)</sup> SIEMENS Type 3NA3 8, 3NA6 8, 3NA7 8; Size: 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V

#### Let-through Energy PKP.2-../2/

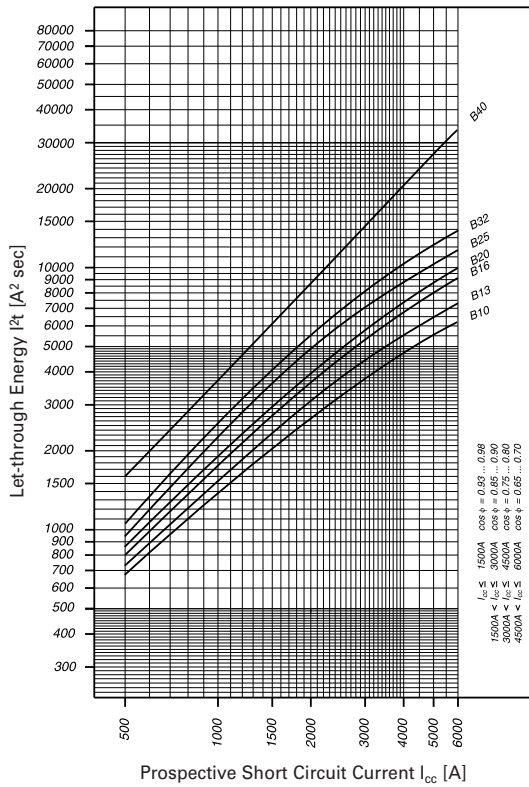
Let-through Energy PKPM2, Characteristic B, 2-pole



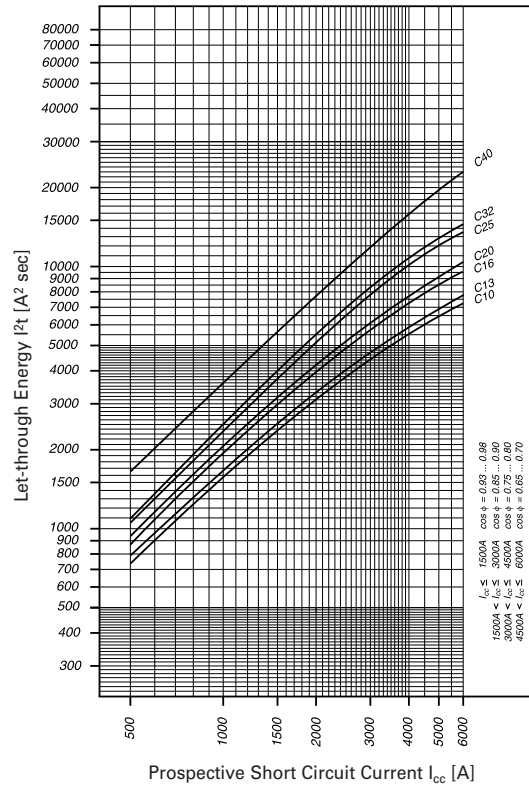
Let-through Energy PKPM2, Characteristic C, 2-pole



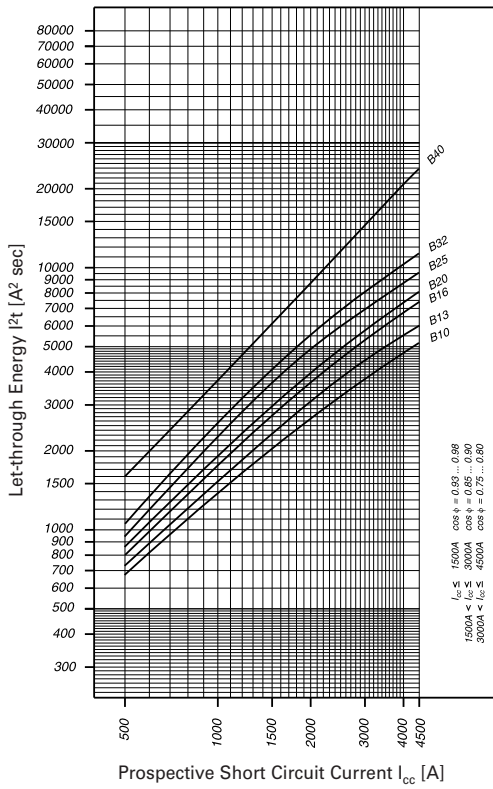
Let-through Energy PKP62, Characteristic B, 2-pole



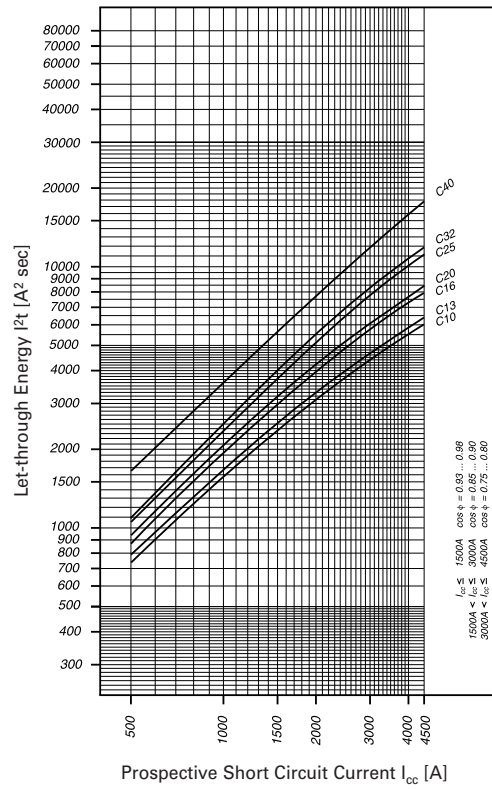
Let-through Energy PKP62, Characteristic C, 2-pole



Let-through Energy PKP42, Characteristic B, 2-pole



Let-through Energy PKP42, Characteristic C, 2-pole



SG48512



### Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to towards 20 A
- Tripping characteristics B, C
- Rated breaking capacity 10 kA

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

**Type Li/A**

**10 kA, 3-pole**

**increased surge current proofness, sensitive to residual pulsating DC**

SG49512



**Characteristic B**

10/0.03	PKPM3-10/3/B/003-Li/A	196651	1/30
13/0.03	PKPM3-13/3/B/003-Li/A	196655	1/30
16/0.03	PKPM3-16/3/B/003-Li/A	196658	1/30
20/0.03	PKPM3-20/3/B/003-Li/A	196663	1/30
10/0.1	PKPM3-10/3/B/01-Li/A	196650	1/30
13/0.1	PKPM3-13/3/B/01-Li/A	196654	1/30
16/0.1	PKPM3-16/3/B/01-Li/A	196659	1/30
20/0.1	PKPM3-20/3/B/01-Li/A	196662	1/30

SG49512



**Characteristic C**

10/0.03	PKPM3-10/3/C/003-Li/A	196652	1/30
13/0.03	PKPM3-13/3/C/003-Li/A	196656	1/30
16/0.03	PKPM3-16/3/C/003-Li/A	196660	1/30
20/0.03	PKPM3-20/3/C/003-Li/A	196664	1/30
32/0.03	PKPM3-32/3/C/003-Li/A	196668	1/30
10/0.1	PKPM3-10/3/C/01-Li/A	196653	1/30
13/0.1	PKPM3-13/3/C/01-Li/A	196657	1/30
16/0.1	PKPM3-16/3/C/01-Li/A	196661	1/30
20/0.1	PKPM3-20/3/C/01-Li/A	196665	1/30
32/0.1	PKPM3-32/3/C/01-Li/A	196669	1/30

**Type A**

**10 kA, 3-pole**

**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG49512



**Characteristic B**

10/0.03	PKPM3-10/3/B/003-A	108322	1/30
13/0.03	PKPM3-13/3/B/003-A	108323	1/30
16/0.03	PKPM3-16/3/B/003-A	108324	1/30
20/0.03	PKPM3-20/3/B/003-A	108325	1/30
10/0.1	PKPM3-10/3/B/01-A	108129	1/30
13/0.1	PKPM3-13/3/B/01-A	108130	1/30
16/0.1	PKPM3-16/3/B/01-A	108131	1/30
20/0.1	PKPM3-20/3/B/01-A	108132	1/30

SG49512



**Characteristic C**

10/0.03	PKPM3-10/3/C/003-A	108326	1/30
13/0.03	PKPM3-13/3/C/003-A	108327	1/30
16/0.03	PKPM3-16/3/C/003-A	108328	1/30
20/0.03	PKPM3-20/3/C/003-A	108329	1/30
32/0.03	PKPM3-32/3/C/003-A	136564	1/30
10/0.1	PKPM3-10/3/C/01-A	108133	1/30
13/0.1	PKPM3-13/3/C/01-A	108134	1/30
16/0.1	PKPM3-16/3/C/01-A	108135	1/30
20/0.1	PKPM3-20/3/C/01-A	108136	1/30
32/0.1	PKPM3-32/3/C/01-A	136567	1/30

## Specifications | Combined RCD/MCB Devices PKPM3, 3-pole

### Description

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed
- **Type -Li/A:** Protects against special forms of residual pulsating DC which have not been smoothed.  
10 ms time delay in order to avoid unwanted tripping (e.g. during thunderstorms).

### Accessories:

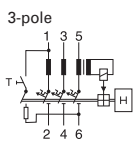
Tripping signal switch for subsequent installation	ZP-IHK	286052
	ZP-NHK	248437
	ZP-WHK	286053
Shunt trip release	ZP-ASA/..	248438, 248439



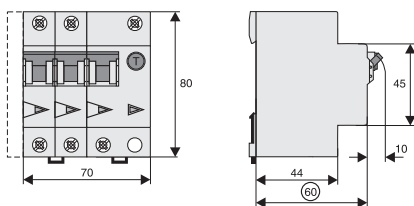
**Technical Data**

		<b>PKPM3, 3-pole</b>
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230/400V; 50 Hz
Rated tripping current	$I_{\Delta n}$	30, 100 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	10 kA
Rated current		10 - 20 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>10 kA)
Endurance		
electrical components		$\geq 2,000$ switching operations
mechanical components		$\geq 10,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		70 mm (4MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGVV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

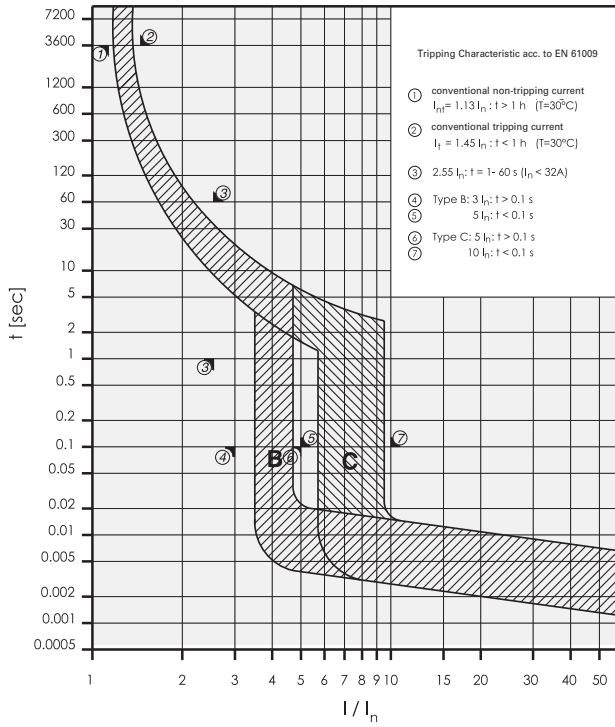
**Connection diagram**



**Dimensions (mm)**



### Tripping Characteristic PKPM3, Characteristics B and C



SG14211



## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 25 A
- Tripping characteristics B, C, D
- Rated breaking capacity 6 kA or 4.5 kA

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No.

Units per  
package

### Type A

#### 6 kA, 3+N-pole

#### Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A

SG14211



#### Characteristic B

$I_n/I_{\Delta n}$	Type Designation	Article No.	Units per package
13/0.03	mRB6-13/3N/B/003-A	120651	1/30
16/0.03	mRB6-16/3N/B/003-A	120652	1/30
13/0.1	mRB6-13/3N/B/01-A	120653	1/30
16/0.1	mRB6-16/3N/B/01-A	120654	1/30
13/0.3	mRB6-13/3N/B/03-A	120655	1/30
16/0.3	mRB6-16/3N/B/03-A	120656	1/30

SG14211



#### Characteristic C

$I_n/I_{\Delta n}$	Type Designation	Article No.	Units per package
6/0.03	mRB6-6/3N/C/003-A	120657	1/30
10/0.03	mRB6-10/3N/C/003-A	120658	1/30
13/0.03	mRB6-13/3N/C/003-A	120659	1/30
16/0.03	mRB6-16/3N/C/003-A	120660	1/30
6/0.1	mRB6-6/3N/C/01-A	120661	1/30
10/0.1	mRB6-10/3N/C/01-A	120662	1/30
13/0.1	mRB6-13/3N/C/01-A	120663	1/30
16/0.1	mRB6-16/3N/C/01-A	120664	1/30
6/0.3	mRB6-6/3N/C/03-A	120665	1/30
10/0.3	mRB6-10/3N/C/03-A	120666	1/30
13/0.3	mRB6-13/3N/C/03-A	120667	1/30
16/0.3	mRB6-16/3N/C/03-A	120668	1/30

SG14211



#### Characteristic D

$I_n/I_{\Delta n}$	Type Designation	Article No.	Units per package
6/0.03	mRB6-6/3N/D/003-A	120669	1/30
10/0.03	mRB6-10/3N/D/003-A	120670	1/30
13/0.03	mRB6-13/3N/D/003-A	120671	1/30
16/0.03	mRB6-16/3N/D/003-A	120672	1/30
6/0.1	mRB6-6/3N/D/01-A	120673	1/30
10/0.1	mRB6-10/3N/D/01-A	120674	1/30
13/0.1	mRB6-13/3N/D/01-A	120675	1/30
16/0.1	mRB6-16/3N/D/01-A	120676	1/30

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No.    Units per  
package

**Type A**

**4.5 kA, 3+N-pole**

**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG14211



**Characteristic C**

20/0.03	mRB4-20/3N/C/003-A	120677	1/30
25/0.03	mRB4-25/3N/C/003-A	120678	1/30
32/0.03	mRB4-32/3N/C/003-A	167508	1/30
20/0.1	mRB4-20/3N/C/01-A	120679	1/30
25/0.1	mRB4-25/3N/C/01-A	120680	1/30
32/0.1	mRB4-32/3N/C/01-A	167509	1/30
20/0.3	mRB4-20/3N/C/03-A	120681	1/30
25/0.3	mRB4-25/3N/C/03-A	120682	1/30
32/0.3	mRB4-32/3N/C/03-A	167510	1/30

SG14211



**Characteristic D**

20/0.03	mRB4-20/3N/D/003-A	120683	1/30
20/0.1	mRB4-20/3N/D/01-A	120684	1/30

## Specifications | Combined RCD/MCB Devices mRB., 3+N-pole

### Description

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have have not been smoothed

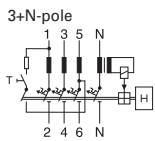
### Accessories:

Tripping signal switch for subsequent installation	ZP-IHK	286052
	ZP-NHK	248437
	ZP-WHK	286053
Shunt trip release	ZP-ASA/..	248438, 248439

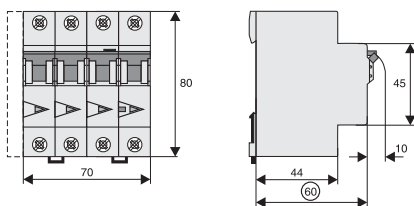
**Technical Data**

		<b>mRB, 3+N-pole</b>
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230/400V; 50 Hz
Rated tripping current	$I_{\Delta n}$	30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	
mRB6		6 kA
mRB4		4.5 kA
Rated current		6 - 32 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C, D
Maximum back-up fuse (short circuit)		100 A gL/gG
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		70 mm (4MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

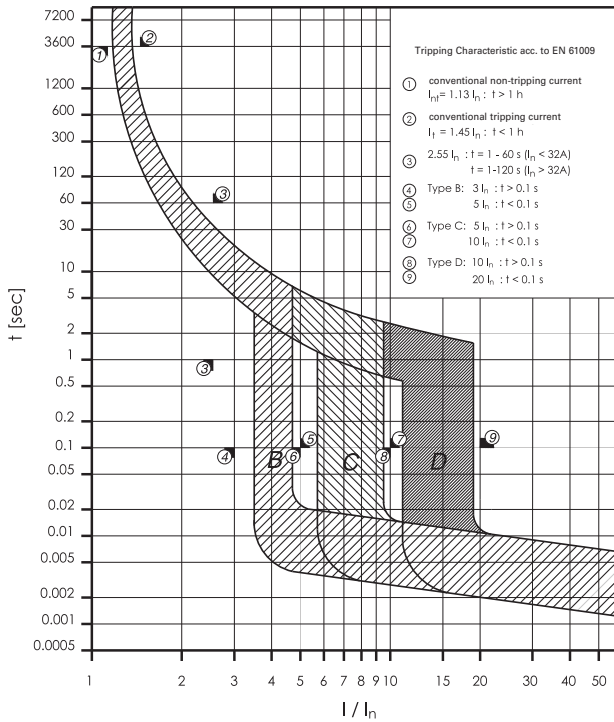
**Connection diagram**



**Dimensions (mm)**



### Tripping Characteristic mRB., Characteristics B, C and D



### Back-up Protection between mRB. and NZM1

Short circuit currents in kA.

mRB4/mRB6	NZMB1(C1)(N1)(H1)-A...		
	$U_e = 415$ V		
	B	C	D
6	-	20	20
10	-	20	20
13	20	20	20
16	20	20	20
20	-	20	20
25	-	20	-

$U_e = 415$  V:  $I_{cn}$  (mRB4) = 4.5 kA (acc. to IEC/EN 61009)  
 $U_e = 415$  V:  $I_{cn}$  (mRB6) = 6 kA (acc. to IEC/EN 61009)  
 $U_e = 400/415$  V:  $I_{cu}$  (NZMB1) = 25 kA (acc. to IEC/EN 60947-2)  
 $U_e = 400/415$  V:  $I_{cu}$  (NZMC1) = 36 kA (acc. to IEC/EN 60947-2)  
 $U_e = 400/415$  V:  $I_{cu}$  (NZMN1) = 50 kA (acc. to IEC/EN 60947-2)  
 $U_e = 400/415$  V:  $I_{cu}$  (NZMH1) = 100 kA (acc. to IEC/EN 60947-2)

### Back-up Protection between mRB. and NZM2

Short circuit currents in kA.

mRB4/mRB6	NZMB2(C2)(N2)(H2)-A...		
	$U_e = 415$ V		
	B	C	D
6	-	20	20
10	-	20	20
13	20	20	20
16	20	20	20
20	-	20	20
25	-	20	-

$U_e = 415$  V:  $I_{cn}$  (mRB4) = 4.5 kA (acc. to IEC/EN 61009)  
 $U_e = 415$  V:  $I_{cn}$  (mRB6) = 6 kA (acc. to IEC/EN 61009)  
 $U_e = 400/415$  V:  $I_{cu}$  (NZMB2) = 25 kA (acc. to IEC/EN 60947-2)  
 $U_e = 400/415$  V:  $I_{cu}$  (NZMC2) = 36 kA (acc. to IEC/EN 60947-2)  
 $U_e = 400/415$  V:  $I_{cu}$  (NZMN2) = 50 kA (acc. to IEC/EN 60947-2)  
 $U_e = 400/415$  V:  $I_{cu}$  (NZMH2) = 150 kA (acc. to IEC/EN 60947-2)

### Back-up Protection between mRB. and PLSM-OV63

Short circuit currents in kA.

mRB4/mRB6	PLSM-OV63		
	$U_e = 400$ V		
	B	C	D
6	-	10	10
10	-	10	10
13	10	10	10
16	10	10	10
20	-	10	10
25	-	10	-

$U_e = 415$  V:  $I_{cn}$  (mRB4) = 4.5 kA (acc. to IEC/EN 61009)  
 $U_e = 415$  V:  $I_{cn}$  (mRB6) = 6 kA (acc. to IEC/EN 61009)  
 $U_e = 400$  V:  $I_{cu}$  (PLSM-OV) = 10 kA (acc. to IEC/EN 60947-2)

### Back-up Protection between mRB. and PLHT-OV80

Short circuit currents in kA.

mRB4/mRB6	PLHT-OV80		
	$U_e = 400$ V		
	B	C	D
6	-	20	20
10	-	20	20
13	20	20	20
16	20	20	20
20	-	20	20
25	-	20	-

$U_e = 415$  V:  $I_{cn}$  (mRB4) = 4.5 kA (acc. to IEC/EN 61009)  
 $U_e = 415$  V:  $I_{cn}$  (mRB6) = 6 kA (acc. to IEC/EN 61009)  
 $U_e = 400$  V:  $I_{cu}$  (PLHT-80) = 20 kA (acc. to IEC/EN 60947-2)



SG08210



## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Version -PT specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 32 A
- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No.

Units per  
package

#### Type A

#### 10 kA, 3+N-pole

#### Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A

SG08210



#### Characteristic B

10/0.03	mRBM4-10/3/B/003-A-PT	149465	1/24
13/0.03	mRBM4-13/3/B/003-A-PT	149466	1/24
16/0.03	mRBM4-16/3/B/003-A-PT	149467	1/24
20/0.03	mRBM4-20/3/B/003-A-PT	149468	1/24
10/0.1	mRBM4-10/3/B/01-A-PT	149499	1/24
13/0.1	mRBM4-13/3/B/01-A-PT	149500	1/24
16/0.1	mRBM4-16/3/B/01-A-PT	149501	1/24
20/0.1	mRBM4-20/3/B/01-A-PT	149502	1/24
10/0.3	mRBM4-10/3/B/03-A-PT	149533	1/24
13/0.3	mRBM4-13/3/B/03-A-PT	149534	1/24
16/0.3	mRBM4-16/3/B/03-A-PT	149535	1/24
20/0.3	mRBM4-20/3/B/03-A-PT	149536	1/24

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#### Characteristic C

6/0.03	mRBM4-6/3/C/003-A-PT	149469	1/24
10/0.03	mRBM4-10/3/C/003-A-PT	149470	1/24
13/0.03	mRBM4-13/3/C/003-A-PT	149471	1/24
16/0.03	mRBM4-16/3/C/003-A-PT	149472	1/24
20/0.03	mRBM4-20/3/C/003-A-PT	149473	1/24
25/0.03	mRBM4-25/3/C/003-A-PT	149474	1/24
32/0.03	mRBM4-32/3/C/003-A-PT	149475	1/24
6/0.1	mRBM4-6/3/C/01-A-PT	149503	1/24
10/0.1	mRBM4-10/3/C/01-A-PT	149504	1/24
13/0.1	mRBM4-13/3/C/01-A-PT	149505	1/24
16/0.1	mRBM4-16/3/C/01-A-PT	149506	1/24
20/0.1	mRBM4-20/3/C/01-A-PT	149507	1/24
25/0.1	mRBM4-25/3/C/01-A-PT	149508	1/24
32/0.1	mRBM4-32/3/C/01-A-PT	149509	1/24
6/0.3	mRBM4-6/3/C/03-A-PT	149537	1/24
10/0.3	mRBM4-10/3/C/03-A-PT	149538	1/24
13/0.3	mRBM4-13/3/C/03-A-PT	149539	1/24
16/0.3	mRBM4-16/3/C/03-A-PT	149540	1/24
20/0.3	mRBM4-20/3/C/03-A-PT	149541	1/24
25/0.3	mRBM4-25/3/C/03-A-PT	149542	1/24
32/0.3	mRBM4-32/3/C/03-A-PT	149543	1/24

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#### Characteristic D

6/0.03	mRBM4-6/3/D/003-A-PT	149476	1/24
10/0.03	mRBM4-10/3/D/003-A-PT	149477	1/24
13/0.03	mRBM4-13/3/D/003-A-PT	149478	1/24
16/0.03	mRBM4-16/3/D/003-A-PT	149479	1/24
20/0.03	mRBM4-20/3/D/003-A-PT	149480	1/24
25/0.03	mRBM4-25/3/D/003-A-PT	149481	1/24
6/0.1	mRBM4-6/3/D/01-A-PT	149510	1/24
10/0.1	mRBM4-10/3/D/01-A-PT	149511	1/24
13/0.1	mRBM4-13/3/D/01-A-PT	149512	1/24
16/0.1	mRBM4-16/3/D/01-A-PT	149513	1/24
20/0.1	mRBM4-20/3/D/01-A-PT	149514	1/24
25/0.1	mRBM4-25/3/D/01-A-PT	149515	1/24
6/0.3	mRBM4-6/3/D/03-A-PT	149544	1/24
10/0.3	mRBM4-10/3/D/03-A-PT	149545	1/24
13/0.3	mRBM4-13/3/D/03-A-PT	149546	1/24
16/0.3	mRBM4-16/3/D/03-A-PT	149547	1/24
20/0.3	mRBM4-20/3/D/03-A-PT	149548	1/24
25/0.3	mRBM4-25/3/D/03-A-PT	149549	1/24

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

**Type AC**

**10 kA, 3+N-pole  
Conditionally surge current-proof 250 A, type AC**

SG08210



**Characteristic B**

10/0.03	mRBM4-10/3/B/003-PT	149482	1/24
13/0.03	mRBM4-13/3/B/003-PT	149483	1/24
16/0.03	mRBM4-16/3/B/003-PT	149484	1/24
20/0.03	mRBM4-20/3/B/003-PT	149485	1/24
10/0.1	mRBM4-10/3/B/01-PT	149516	1/24
13/0.1	mRBM4-13/3/B/01-PT	149517	1/24
16/0.1	mRBM4-16/3/B/01-PT	149518	1/24
20/0.1	mRBM4-20/3/B/01-PT	149519	1/24
10/0.3	mRBM4-10/3/B/03-PT	149550	1/24
13/0.3	mRBM4-13/3/B/03-PT	149551	1/24
16/0.3	mRBM4-16/3/B/03-PT	149552	1/24
20/0.3	mRBM4-20/3/B/03-PT	149553	1/24

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**Characteristic C**

6/0.03	mRBM4-6/3/C/003-PT	149486	1/24
10/0.03	mRBM4-10/3/C/003-PT	149487	1/24
13/0.03	mRBM4-13/3/C/003-PT	149488	1/24
16/0.03	mRBM4-16/3/C/003-PT	149489	1/24
20/0.03	mRBM4-20/3/C/003-PT	149490	1/24
25/0.03	mRBM4-25/3/C/003-PT	149491	1/24
32/0.03	mRBM4-32/3/C/003-PT	149492	1/24
6/0.1	mRBM4-6/3/C/01-PT	149520	1/24
10/0.1	mRBM4-10/3/C/01-PT	149521	1/24
13/0.1	mRBM4-13/3/C/01-PT	149522	1/24
16/0.1	mRBM4-16/3/C/01-PT	149523	1/24
20/0.1	mRBM4-20/3/C/01-PT	149524	1/24
25/0.1	mRBM4-25/3/C/01-PT	149525	1/24
32/0.1	mRBM4-32/3/C/01-PT	149526	1/24
6/0.3	mRBM4-6/3/C/03-PT	149554	1/24
10/0.3	mRBM4-10/3/C/03-PT	149555	1/24
13/0.3	mRBM4-13/3/C/03-PT	149556	1/24
16/0.3	mRBM4-16/3/C/03-PT	149557	1/24
20/0.3	mRBM4-20/3/C/03-PT	149558	1/24
25/0.3	mRBM4-25/3/C/03-PT	149559	1/24
32/0.3	mRBM4-32/3/C/03-PT	149560	1/24

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**Characteristic D**

6/0.03	mRBM4-6/3/D/003-PT	149493	1/24
10/0.03	mRBM4-10/3/D/003-PT	149494	1/24
13/0.03	mRBM4-13/3/D/003-PT	149495	1/24
16/0.03	mRBM4-16/3/D/003-PT	149496	1/24
20/0.03	mRBM4-20/3/D/003-PT	149497	1/24
25/0.03	mRBM4-25/3/D/003-PT	149498	1/24
6/0.1	mRBM4-6/3/D/01-PT	149527	1/24
10/0.1	mRBM4-10/3/D/01-PT	149528	1/24
13/0.1	mRBM4-13/3/D/01-PT	149529	1/24
16/0.1	mRBM4-16/3/D/01-PT	149530	1/24
20/0.1	mRBM4-20/3/D/01-PT	149531	1/24
25/0.1	mRBM4-25/3/D/01-PT	149532	1/24
6/0.3	mRBM4-6/3/D/03-PT	149561	1/24
10/0.3	mRBM4-10/3/D/03-PT	149562	1/24
13/0.3	mRBM4-13/3/D/03-PT	149563	1/24
16/0.3	mRBM4-16/3/D/03-PT	149564	1/24
20/0.3	mRBM4-20/3/D/03-PT	149565	1/24
25/0.3	mRBM4-25/3/D/03-PT	149566	1/24

SG08210



### Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Version -PT specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 32 A
- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No.

Units per  
package

**Type A**

**10 kA, 3+N-pole**  
**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG08210



**Characteristic B**

10/0.03	mRBM4-10/3/B/003-A-UK-PT	169636	1/24
13/0.03	mRBM4-13/3/B/003-A-UK-PT	169637	1/24
16/0.03	mRBM4-16/3/B/003-A-UK-PT	169638	1/24
20/0.03	mRBM4-20/3/B/003-A-UK-PT	169639	1/24
10/0.1	mRBM4-10/3/B/01-A-UK-PT	169670	1/24
13/0.1	mRBM4-13/3/B/01-A-UK-PT	169671	1/24
16/0.1	mRBM4-16/3/B/01-A-UK-PT	169584	1/24
20/0.1	mRBM4-20/3/B/01-A-UK-PT	169585	1/24
10/0.3	mRBM4-10/3/B/03-A-UK-PT	169598	1/24
13/0.3	mRBM4-13/3/B/03-A-UK-PT	169599	1/24
16/0.3	mRBM4-16/3/B/03-A-UK-PT	169600	1/24
20/0.3	mRBM4-20/3/B/03-A-UK-PT	169601	1/24

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**Characteristic C**

6/0.03	mRBM4-6/3/C/003-A-UK-PT	169640	1/24
10/0.03	mRBM4-10/3/C/003-A-UK-PT	169641	1/24
13/0.03	mRBM4-13/3/C/003-A-UK-PT	169642	1/24
16/0.03	mRBM4-16/3/C/003-A-UK-PT	169643	1/24
20/0.03	mRBM4-20/3/C/003-A-UK-PT	169644	1/24
25/0.03	mRBM4-25/3/C/003-A-UK-PT	169645	1/24
32/0.03	mRBM4-32/3/C/003-A-UK-PT	169646	1/24
6/0.1	mRBM4-6/3/C/01-A-UK-PT	169586	1/24
10/0.1	mRBM4-10/3/C/01-A-UK-PT	169587	1/24
13/0.1	mRBM4-13/3/C/01-A-UK-PT	169588	1/24
16/0.1	mRBM4-16/3/C/01-A-UK-PT	169589	1/24
20/0.1	mRBM4-20/3/C/01-A-UK-PT	169590	1/24
25/0.1	mRBM4-25/3/C/01-A-UK-PT	169591	1/24
32/0.1	mRBM4-32/3/C/01-A-UK-PT	169592	1/24
6/0.3	mRBM4-6/3/C/03-A-UK-PT	169602	1/24
10/0.3	mRBM4-10/3/C/03-A-UK-PT	169603	1/24
13/0.3	mRBM4-13/3/C/03-A-UK-PT	169604	1/24
16/0.3	mRBM4-16/3/C/03-A-UK-PT	169605	1/24
20/0.3	mRBM4-20/3/C/03-A-UK-PT	169606	1/24
25/0.3	mRBM4-25/3/C/03-A-UK-PT	169607	1/24
32/0.3	mRBM4-32/3/C/03-A-UK-PT	169608	1/24

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**Characteristic D**

6/0.03	mRBM4-6/3/D/003-A-UK-PT	169647	1/24
10/0.03	mRBM4-10/3/D/003-A-UK-PT	169648	1/24
13/0.03	mRBM4-13/3/D/003-A-UK-PT	169649	1/24
16/0.03	mRBM4-16/3/D/003-A-UK-PT	169650	1/24
20/0.03	mRBM4-20/3/D/003-A-UK-PT	169651	1/24
25/0.03	mRBM4-25/3/D/003-A-UK-PT	169652	1/24
6/0.1	mRBM4-6/3/D/01-A-UK-PT	169593	1/24
10/0.1	mRBM4-10/3/D/01-A-UK-PT	169594	1/24
13/0.1	mRBM4-13/3/D/01-A-UK-PT	169618	1/24
16/0.1	mRBM4-16/3/D/01-A-UK-PT	169619	1/24
20/0.1	mRBM4-20/3/D/01-A-UK-PT	169620	1/24
25/0.1	mRBM4-25/3/D/01-A-UK-PT	169621	1/24
6/0.3	mRBM4-6/3/D/03-A-UK-PT	169609	1/24
10/0.3	mRBM4-10/3/D/03-A-UK-PT	169610	1/24
13/0.3	mRBM4-13/3/D/03-A-UK-PT	169611	1/24
16/0.3	mRBM4-16/3/D/03-A-UK-PT	169612	1/24
20/0.3	mRBM4-20/3/D/03-A-UK-PT	169613	1/24
25/0.3	mRBM4-25/3/D/03-A-UK-PT	169614	1/24

# 1.270 Protective Devices

Combined RCD/MCB Devices mRBM4-UK-PT, 3+N-pole

xPole

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

## Type AC

**10 kA, 3+N-pole**  
**Conditionally surge current-proof 250 A, type AC**

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### Characteristic B

10/0.03	mRBM4-10/3/B/003-UK-PT	169653	1/24
13/0.03	mRBM4-13/3/B/003-UK-PT	169654	1/24
16/0.03	mRBM4-16/3/B/003-UK-PT	169655	1/24
20/0.03	mRBM4-20/3/B/003-UK-PT	169656	1/24
10/0.1	mRBM4-10/3/B/01-UK-PT	169622	1/24
13/0.1	mRBM4-13/3/B/01-UK-PT	169623	1/24
16/0.1	mRBM4-16/3/B/01-UK-PT	169624	1/24
20/0.1	mRBM4-20/3/B/01-UK-PT	169625	1/24
10/0.3	mRBM4-10/3/B/03-UK-PT	169615	1/24
13/0.3	mRBM4-13/3/B/03-UK-PT	169616	1/24
16/0.3	mRBM4-16/3/B/03-UK-PT	169617	1/24
20/0.3	mRBM4-20/3/B/03-UK-PT	169672	1/24

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### Characteristic C

6/0.03	mRBM4-6/3/C/003-UK-PT	169657	1/24
10/0.03	mRBM4-10/3/C/003-UK-PT	169658	1/24
13/0.03	mRBM4-13/3/C/003-UK-PT	169659	1/24
16/0.03	mRBM4-16/3/C/003-UK-PT	169660	1/24
20/0.03	mRBM4-20/3/C/003-UK-PT	169661	1/24
25/0.03	mRBM4-25/3/C/003-UK-PT	169662	1/24
32/0.03	mRBM4-32/3/C/003-UK-PT	169663	1/24
6/0.1	mRBM4-6/3/C/01-UK-PT	169626	1/24
10/0.1	mRBM4-10/3/C/01-UK-PT	169627	1/24
13/0.1	mRBM4-13/3/C/01-UK-PT	169628	1/24
16/0.1	mRBM4-16/3/C/01-UK-PT	169629	1/24
20/0.1	mRBM4-20/3/C/01-UK-PT	169630	1/24
25/0.1	mRBM4-25/3/C/01-UK-PT	169631	1/24
32/0.1	mRBM4-32/3/C/01-UK-PT	169632	1/24
6/0.3	mRBM4-6/3/C/03-UK-PT	169673	1/24
10/0.3	mRBM4-10/3/C/03-UK-PT	169674	1/24
13/0.3	mRBM4-13/3/C/03-UK-PT	169675	1/24
16/0.3	mRBM4-16/3/C/03-UK-PT	169676	1/24
20/0.3	mRBM4-20/3/C/03-UK-PT	169677	1/24
25/0.3	mRBM4-25/3/C/03-UK-PT	169678	1/24
32/0.3	mRBM4-32/3/C/03-UK-PT	169679	1/24

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### Characteristic D

6/0.03	mRBM4-6/3/D/003-UK-PT	169664	1/24
10/0.03	mRBM4-10/3/D/003-UK-PT	169665	1/24
13/0.03	mRBM4-13/3/D/003-UK-PT	169666	1/24
16/0.03	mRBM4-16/3/D/003-UK-PT	169667	1/24
20/0.03	mRBM4-20/3/D/003-UK-PT	169668	1/24
25/0.03	mRBM4-25/3/D/003-UK-PT	169669	1/24
6/0.1	mRBM4-6/3/D/01-UK-PT	169633	1/24
10/0.1	mRBM4-10/3/D/01-UK-PT	169634	1/24
13/0.1	mRBM4-13/3/D/01-UK-PT	169635	1/24
16/0.1	mRBM4-16/3/D/01-UK-PT	169595	1/24
20/0.1	mRBM4-20/3/D/01-UK-PT	169596	1/24
25/0.1	mRBM4-25/3/D/01-UK-PT	169597	1/24
6/0.3	mRBM4-6/3/D/03-UK-PT	169680	1/24
10/0.3	mRBM4-10/3/D/03-UK-PT	169681	1/24
13/0.3	mRBM4-13/3/D/03-UK-PT	169682	1/24
16/0.3	mRBM4-16/3/D/03-UK-PT	169683	1/24
20/0.3	mRBM4-20/3/D/03-UK-PT	169684	1/24
25/0.3	mRBM4-25/3/D/03-UK-PT	169685	1/24

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## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Version -PT specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 32 A
- Tripping characteristics B, C, D
- Rated breaking capacity 6 kA



$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

### Type A

#### 6 kA, 3+N-pole

#### Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A

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#### Characteristic B

10/0.03	mRB64-10/3/B/003-A-PT	149567	1/24
13/0.03	mRB64-13/3/B/003-A-PT	149568	1/24
16/0.03	mRB64-16/3/B/003-A-PT	149569	1/24
20/0.03	mRB64-20/3/B/003-A-PT	149570	1/24
10/0.1	mRB64-10/3/B/01-A-PT	149601	1/24
13/0.1	mRB64-13/3/B/01-A-PT	149602	1/24
16/0.1	mRB64-16/3/B/01-A-PT	149603	1/24
20/0.1	mRB64-20/3/B/01-A-PT	149604	1/24
10/0.3	mRB64-10/3/B/03-A-PT	149635	1/24
13/0.3	mRB64-13/3/B/03-A-PT	149636	1/24
16/0.3	mRB64-16/3/B/03-A-PT	149637	1/24
20/0.3	mRB64-20/3/B/03-A-PT	149638	1/24

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#### Characteristic C

6/0.03	mRB64-6/3/C/003-A-PT	149571	1/24
10/0.03	mRB64-10/3/C/003-A-PT	149572	1/24
13/0.03	mRB64-13/3/C/003-A-PT	149573	1/24
16/0.03	mRB64-16/3/C/003-A-PT	149574	1/24
20/0.03	mRB64-20/3/C/003-A-PT	149575	1/24
25/0.03	mRB64-25/3/C/003-A-PT	149576	1/24
32/0.03	mRB64-32/3/C/003-A-PT	149577	1/24
6/0.1	mRB64-6/3/C/01-A-PT	149605	1/24
10/0.1	mRB64-10/3/C/01-A-PT	149606	1/24
13/0.1	mRB64-13/3/C/01-A-PT	149607	1/24
16/0.1	mRB64-16/3/C/01-A-PT	149608	1/24
20/0.1	mRB64-20/3/C/01-A-PT	149609	1/24
25/0.1	mRB64-25/3/C/01-A-PT	149610	1/24
32/0.1	mRB64-32/3/C/01-A-PT	149611	1/24
6/0.3	mRB64-6/3/C/03-A-PT	149639	1/24
10/0.3	mRB64-10/3/C/03-A-PT	149640	1/24
13/0.3	mRB64-13/3/C/03-A-PT	149641	1/24
16/0.3	mRB64-16/3/C/03-A-PT	149642	1/24
20/0.3	mRB64-20/3/C/03-A-PT	149643	1/24
25/0.3	mRB64-25/3/C/03-A-PT	149644	1/24
32/0.3	mRB64-32/3/C/03-A-PT	149645	1/24

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#### Characteristic D

6/0.03	mRB64-6/3/D/003-A-PT	149578	1/24
10/0.03	mRB64-10/3/D/003-A-PT	149579	1/24
13/0.03	mRB64-13/3/D/003-A-PT	149580	1/24
16/0.03	mRB64-16/3/D/003-A-PT	149581	1/24
20/0.03	mRB64-20/3/D/003-A-PT	149582	1/24
25/0.03	mRB64-25/3/D/003-A-PT	149583	1/24
6/0.1	mRB64-6/3/D/01-A-PT	149612	1/24
10/0.1	mRB64-10/3/D/01-A-PT	149613	1/24
13/0.1	mRB64-13/3/D/01-A-PT	149614	1/24
16/0.1	mRB64-16/3/D/01-A-PT	149615	1/24
20/0.1	mRB64-20/3/D/01-A-PT	149616	1/24
25/0.1	mRB64-25/3/D/01-A-PT	149617	1/24
6/0.3	mRB64-6/3/D/03-A-PT	149646	1/24
10/0.3	mRB64-10/3/D/03-A-PT	149647	1/24
13/0.3	mRB64-13/3/D/03-A-PT	149648	1/24
16/0.3	mRB64-16/3/D/03-A-PT	149649	1/24
20/0.3	mRB64-20/3/D/03-A-PT	149650	1/24
25/0.3	mRB64-25/3/D/03-A-PT	149651	1/24



$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No.

Units per  
package

**Type AC**

**6 kA, 3+N-pole  
Conditionally surge current-proof 250 A, type AC**

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**Characteristic B**

10/0.03	mRB64-10/3/B/003-PT	149584	1/24
13/0.03	mRB64-13/3/B/003-PT	149585	1/24
16/0.03	mRB64-16/3/B/003-PT	149586	1/24
20/0.03	mRB64-20/3/B/003-PT	149587	1/24
10/0.1	mRB64-10/3/B/01-PT	149618	1/24
13/0.1	mRB64-13/3/B/01-PT	149619	1/24
16/0.1	mRB64-16/3/B/01-PT	149620	1/24
20/0.1	mRB64-20/3/B/01-PT	149621	1/24
10/0.3	mRB64-10/3/B/03-PT	149652	1/24
13/0.3	mRB64-13/3/B/03-PT	149653	1/24
16/0.3	mRB64-16/3/B/03-PT	149654	1/24
20/0.3	mRB64-20/3/B/03-PT	149655	1/24

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**Characteristic C**

6/0.03	mRB64-6/3/C/003-PT	149588	1/24
10/0.03	mRB64-10/3/C/003-PT	149589	1/24
13/0.03	mRB64-13/3/C/003-PT	149590	1/24
16/0.03	mRB64-16/3/C/003-PT	149591	1/24
20/0.03	mRB64-20/3/C/003-PT	149592	1/24
25/0.03	mRB64-25/3/C/003-PT	149593	1/24
32/0.03	mRB64-32/3/C/003-PT	149594	1/24
6/0.1	mRB64-6/3/C/01-PT	149622	1/24
10/0.1	mRB64-10/3/C/01-PT	149623	1/24
13/0.1	mRB64-13/3/C/01-PT	149624	1/24
16/0.1	mRB64-16/3/C/01-PT	149625	1/24
20/0.1	mRB64-20/3/C/01-PT	149626	1/24
25/0.1	mRB64-25/3/C/01-PT	149627	1/24
32/0.1	mRB64-32/3/C/01-PT	149628	1/24
6/0.3	mRB64-6/3/C/03-PT	149656	1/24
10/0.3	mRB64-10/3/C/03-PT	149657	1/24
13/0.3	mRB64-13/3/C/03-PT	149658	1/24
16/0.3	mRB64-16/3/C/03-PT	149659	1/24
20/0.3	mRB64-20/3/C/03-PT	149660	1/24
25/0.3	mRB64-25/3/C/03-PT	149661	1/24
32/0.3	mRB64-32/3/C/03-PT	149662	1/24

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**Characteristic D**

6/0.03	mRB64-6/3/D/003-PT	149595	1/24
10/0.03	mRB64-10/3/D/003-PT	149596	1/24
13/0.03	mRB64-13/3/D/003-PT	149597	1/24
16/0.03	mRB64-16/3/D/003-PT	149598	1/24
20/0.03	mRB64-20/3/D/003-PT	149599	1/24
25/0.03	mRB64-25/3/D/003-PT	149600	1/24
6/0.1	mRB64-6/3/D/01-PT	149629	1/24
10/0.1	mRB64-10/3/D/01-PT	149630	1/24
13/0.1	mRB64-13/3/D/01-PT	149631	1/24
16/0.1	mRB64-16/3/D/01-PT	149632	1/24
20/0.1	mRB64-20/3/D/01-PT	149633	1/24
25/0.1	mRB64-25/3/D/01-PT	149634	1/24
6/0.3	mRB64-6/3/D/03-PT	149663	1/24
10/0.3	mRB64-10/3/D/03-PT	149664	1/24
13/0.3	mRB64-13/3/D/03-PT	149665	1/24
16/0.3	mRB64-16/3/D/03-PT	149666	1/24
20/0.3	mRB64-20/3/D/03-PT	149667	1/24
25/0.3	mRB64-25/3/D/03-PT	149668	1/24

## Specifications | Combined RCD/MCB Devices mRBM4-PT, mRBM4-UK-PT, mRB64-PT, 3+N-pole

### Description

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Comprehensive range of accessories can be mounted subsequently
- This compact protective device is specific for applications in the BS-distribution produced. Permanently connected neutral conductors (I = 950 mm, Ø = 6 mm<sup>2</sup>)
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement ( $R_E$ ), or proper checking of the earth conductor condition redundant, which must be performed separately.

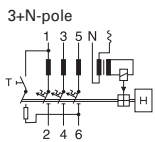
### Accessories:

Tripping signal switch for subsequent installation	ZP-IHK	286052
	ZP-NHK	248437
	ZP-WHK	286053
Shunt trip release	ZP-ASA/..	248438, 248439

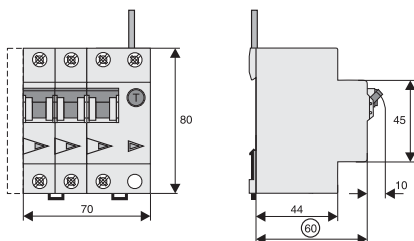
**Technical Data**

<b>mRBM4-PT, mRBM4-UK-PT, mRB64-PT, 3+N-pole</b>	
<b>Electrical</b>	
Design according to	IEC/EN 61009
Current test marks as printed onto the device	
Line voltage-independent tripping	instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$ 230/400V; 50 Hz
Rated tripping current	$I_{\Delta n}$ 30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$ 0.5 $I_{\Delta n}$
Sensitivity	AC and pulsating DC
Selectivity class	3
Rated breaking capacity	$I_{cn}$
mRBM4-PT	10 kA
mRBM4-UK-PT	10 kA
mRB64-PT	6 kA
Rated current	6 - 32 A
Rated impulse withstand voltage	$U_{imp}$ 4 kV (1.2/50 $\mu$ s)
Characteristic	B, C, D
Maximum back-up fuse (short circuit)	100 A gL/gG
Endurance	
electrical components	$\geq$ 4,000 switching operations
mechanical components	$\geq$ 20,000 switching operations
<b>Mechanical</b>	
Frame size	45 mm
Device height	80 mm
Device width	70 mm (4MU)
Mounting	3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch	IP20
Degree of protection, built-in	IP40
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity	1 - 25 mm <sup>2</sup>
Terminal torque	2 - 2.4 Nm
Busbar thickness	0.8 - 2 mm
Tripping temperature	-25°C to +40°C
Storage- and transport temperature	-35°C to +60°C
Resistance to climatic conditions	according to IEC/EN 61009

**Connection diagram**



**Dimensions (mm)**



SG16411



## Description

- Innovative, high-quality residual current device / miniature circuit breaker combination, line voltage-dependent
- Contact position indicator red - green
- Colour code for rated tripping currents
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No. Units per  
package

**Type A**

**10 kA, 1+N-pole**

**Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG16411



**Characteristic B**

2/0.01	PKDM-2/1N/B/001-A	248718	1/60
4/0.01	PKDM-4/1N/B/001-A	248719	1/60
6/0.01	PKDM-6/1N/B/001-A	248720	1/60
10/0.01	PKDM-10/1N/B/001-A	248721	1/60
13/0.01	PKDM-13/1N/B/001-A	248722	1/60
16/0.01	PKDM-16/1N/B/001-A	248723	1/60
20/0.01	PKDM-20/1N/B/001-A	248724	1/60
25/0.01	PKDM-25/1N/B/001-A	248725	1/60
32/0.01	PKDM-32/1N/B/001-A	248726	1/60
40/0.01	PKDM-40/1N/B/001-A	248727	1/60
2/0.03	PKDM-2/1N/B/003-A	248745	1/60
4/0.03	PKDM-4/1N/B/003-A	248746	1/60
6/0.03	PKDM-6/1N/B/003-A	248747	1/60
10/0.03	PKDM-10/1N/B/003-A	248748	1/60
13/0.03	PKDM-13/1N/B/003-A	248749	1/60
16/0.03	PKDM-16/1N/B/003-A	248750	1/60
20/0.03	PKDM-20/1N/B/003-A	248751	1/60
25/0.03	PKDM-25/1N/B/003-A	248752	1/60
32/0.03	PKDM-32/1N/B/003-A	248753	1/60
40/0.03	PKDM-40/1N/B/003-A	248754	1/60
2/0.3	PKDM-2/1N/B/03-A	248772	1/60
4/0.3	PKDM-4/1N/B/03-A	248773	1/60
6/0.3	PKDM-6/1N/B/03-A	248774	1/60
10/0.3	PKDM-10/1N/B/03-A	248775	1/60
13/0.3	PKDM-13/1N/B/03-A	248776	1/60
16/0.3	PKDM-16/1N/B/03-A	248777	1/60
20/0.3	PKDM-20/1N/B/03-A	248778	1/60
25/0.3	PKDM-25/1N/B/03-A	248779	1/60
32/0.3	PKDM-32/1N/B/03-A	248780	1/60
40/0.3	PKDM-40/1N/B/03-A	248781	1/60

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**Characteristic C**

2/0.01	PKDM-2/1N/C/001-A	248735	1/60
4/0.01	PKDM-4/1N/C/001-A	248736	1/60
6/0.01	PKDM-6/1N/C/001-A	248737	1/60
10/0.01	PKDM-10/1N/C/001-A	248738	1/60
13/0.01	PKDM-13/1N/C/001-A	248739	1/60
16/0.01	PKDM-16/1N/C/001-A	248740	1/60
20/0.01	PKDM-20/1N/C/001-A	248741	1/60
25/0.01	PKDM-25/1N/C/001-A	248742	1/60
32/0.01	PKDM-32/1N/C/001-A	248743	1/60
40/0.01	PKDM-40/1N/C/001-A	248744	1/60
2/0.03	PKDM-2/1N/C/003-A	248762	1/60
4/0.03	PKDM-4/1N/C/003-A	248763	1/60
6/0.03	PKDM-6/1N/C/003-A	248764	1/60
10/0.03	PKDM-10/1N/C/003-A	248765	1/60
13/0.03	PKDM-13/1N/C/003-A	248766	1/60
16/0.03	PKDM-16/1N/C/003-A	248767	1/60
20/0.03	PKDM-20/1N/C/003-A	248768	1/60
25/0.03	PKDM-25/1N/C/003-A	248769	1/60
32/0.03	PKDM-32/1N/C/003-A	248770	1/60
40/0.03	PKDM-40/1N/C/003-A	248771	1/60
2/0.3	PKDM-2/1N/C/03-A	248789	1/60
4/0.3	PKDM-4/1N/C/03-A	248790	1/60
6/0.3	PKDM-6/1N/C/03-A	248791	1/60
10/0.3	PKDM-10/1N/C/03-A	248792	1/60
13/0.3	PKDM-13/1N/C/03-A	248793	1/60
16/0.3	PKDM-16/1N/C/03-A	248794	1/60
20/0.3	PKDM-20/1N/C/03-A	248795	1/60
25/0.3	PKDM-25/1N/C/03-A	248796	1/60
32/0.3	PKDM-32/1N/C/03-A	248797	1/60
40/0.3	PKDM-40/1N/C/03-A	248798	1/60

# 1.278 Protective Devices

xPole

Electronic Combined RCD/MCB Devices PKDM, 1+N-pole 2MU

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic D</b>			
2/0.01	PKDM-2/1N/D/001-A	248728	1/60
4/0.01	PKDM-4/1N/D/001-A	248729	1/60
6/0.01	PKDM-6/1N/D/001-A	248730	1/60
10/0.01	PKDM-10/1N/D/001-A	248731	1/60
13/0.01	PKDM-13/1N/D/001-A	248732	1/60
16/0.01	PKDM-16/1N/D/001-A	248733	1/60
20/0.01	PKDM-20/1N/D/001-A	248734	1/60
2/0.03	PKDM-2/1N/D/003-A	248755	1/60
4/0.03	PKDM-4/1N/D/003-A	248756	1/60
6/0.03	PKDM-6/1N/D/003-A	248757	1/60
10/0.03	PKDM-10/1N/D/003-A	248758	1/60
13/0.03	PKDM-13/1N/D/003-A	248759	1/60
16/0.03	PKDM-16/1N/D/003-A	248760	1/60
20/0.03	PKDM-20/1N/D/003-A	248761	1/60
2/0.3	PKDM-2/1N/D/03-A	248782	1/60
4/0.3	PKDM-4/1N/D/03-A	248783	1/60
6/0.3	PKDM-6/1N/D/03-A	248784	1/60
10/0.3	PKDM-10/1N/D/03-A	248785	1/60
13/0.3	PKDM-13/1N/D/03-A	248786	1/60
16/0.3	PKDM-16/1N/D/03-A	248787	1/60
20/0.3	PKDM-20/1N/D/03-A	248788	1/60

**Specifications | Electronic Combined RCD/MCB Devices PKDM, 1+N-pole 2MU**

**Description**

- Electronic residual current device / miniature circuit breaker combination
- Tripping line voltage dependent
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Contact position indicator red - green
- Protects against special forms of residual pulsating DC which have not been smoothed
- Comprehensive range of accessories can be mounted subsequently

**Accessories:**

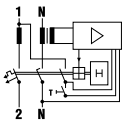
Auxiliary switch for subsequent installation	Z-AHK	248433
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

**Technical Data**

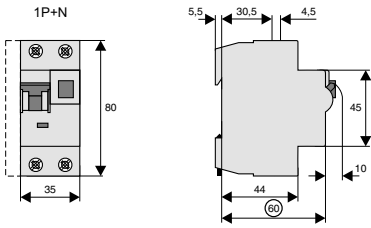
		<b>PKDM, 1+N-pole 2MU</b>
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Tripping line voltage dependent		instantaneous 250 A (8/20 μs), surge current proof
Rated voltage	$U_e$	230 V; 50 Hz
Voltage range for protective function		60 - 250 V~
Rated tripping current	$I_{\Delta n}$	30, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		pulsating DC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	10 kA
Rated current		2 - 40 A
Characteristic		B, C, D
Maximum back-up fuse (short circuit)		100 A gL (>10 kA)
Ultimate short circuit breaking capacity	$I_{cn}$	10 kA
Rated short circuit breaking capacity	$I_{cq}$	7.5 kA
Rated fault breaking capacity	$I_{\Delta m}$	10 kA
Endurance		
electrical components		≥ 4,000 switching operations
mechanical components		≥ 20,000 switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

## Connection diagram

1+N-pole



## Dimensions (mm)





SG13711



## Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Version -PT specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 10 kA

$I_n/I_{\Delta n}$   
(A)

Type  
Designation

Article No.    Units per  
package

#### Type AC

**10 kA, 1+N-pole** (permanently connected neutral conductor, 550 mm long)

**Conditionally surge current-proof 250 A, type AC**

SG13711



#### Characteristic B

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
6/0.03	PKNM-6/1N/B/003-PT	235980	1/40
10/0.03	PKNM-10/1N/B/003-PT	235981	1/40
13/0.03	PKNM-13/1N/B/003-PT	235982	1/40
16/0.03	PKNM-16/1N/B/003-PT	235983	1/40
20/0.03	PKNM-20/1N/B/003-PT	235984	1/40
25/0.03	PKNM-25/1N/B/003-PT	235985	1/40
32/0.03	PKNM-32/1N/B/003-PT	235986	1/40
40/0.03	PKNM-40/1N/B/003-PT	235987	1/40

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#### Characteristic C

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
6/0.03	PKNM-6/1N/C/003-PT	235960	1/40
10/0.03	PKNM-10/1N/C/003-PT	235965	1/40
13/0.03	PKNM-13/1N/C/003-PT	235970	1/40
16/0.03	PKNM-16/1N/C/003-PT	235975	1/40
20/0.03	PKNM-20/1N/C/003-PT	235976	1/40
25/0.03	PKNM-25/1N/C/003-PT	235977	1/40
32/0.03	PKNM-32/1N/C/003-PT	235978	1/40
40/0.03	PKNM-40/1N/C/003-PT	235979	1/40

**Specifications | Combined RCD/MCB Devices PKNM-PT, 1+N-pole**

**Description**

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above
- Free terminal space despite installed busbar
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- This compact protective device is specific for applications in the BS-distributor produced. Permanently connected neutral conductors (l = 550 mm, Ø = 6 mm<sup>2</sup>).
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement (R<sub>E</sub>), or proper checking of the earth conductor condition redundant, which must be performed separately.

**Accessories:**

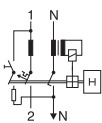
Auxiliary switch for subsequent installation	Z-AHK	248433
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

### Technical Data

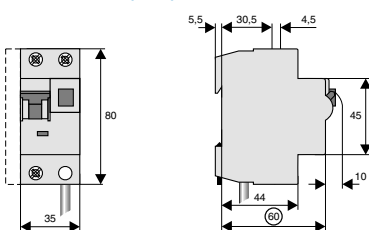
		PKNM-PT, 1+N-pole
<b>Electrical</b>		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Line voltage-independent tripping		instantaneous 250 A (8/20 $\mu$ s), surge current proof
Rated voltage	$U_e$	230 V; 50 Hz
Operational voltage range		196-253 V
Rated tripping current	$I_{\Delta n}$	30 mA
Rated non-tripping current	$I_{\Delta no}$	$0.5 I_{\Delta n}$
Sensitivity		AC
Selectivity class		3
Rated breaking capacity	$I_{cn}$	10 kA
Rated current		6 - 40 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic		B, C
Maximum back-up fuse (short circuit)		100 A gL (>6 kA)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper terminals		2 x open mouthed/lift terminals
Lower terminals		1 x open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm <sup>2</sup>
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

### Connection diagram

1+N-pole

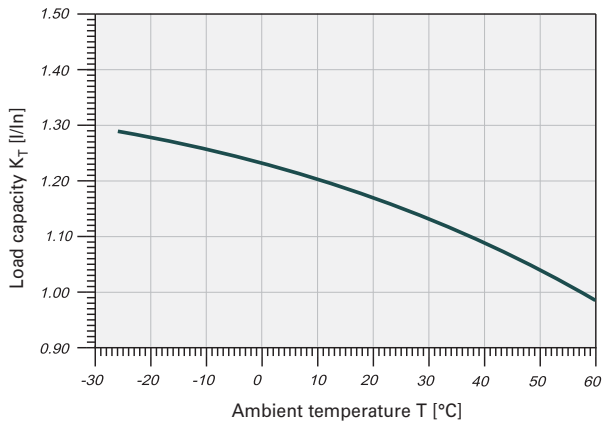


### Dimensions (mm)



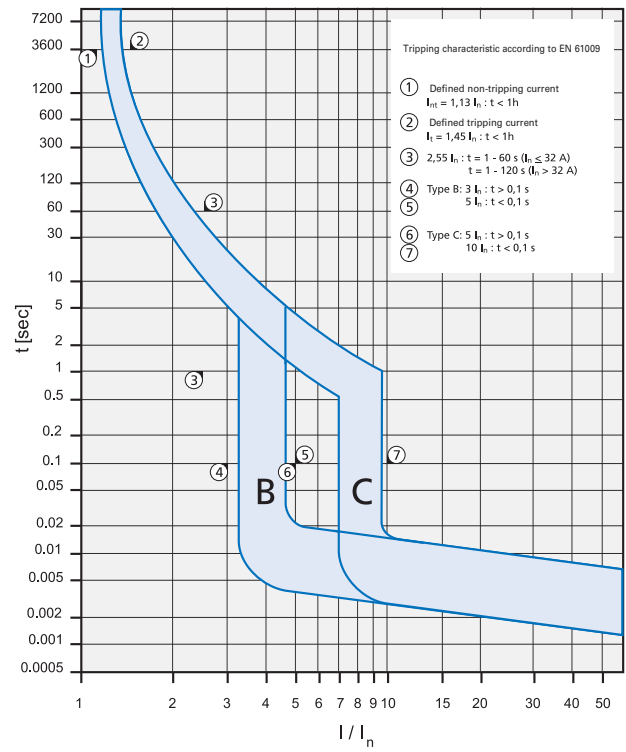
**Load Capacity**

Effect of ambient temperature (MCB component)



Valid for combined RCD/MCB devices 1+N-pole

**Tripping Characteristic PKNM-../1N/..-PT, Characteristics B and C**



SG67811



### Description

- High-quality miniature circuit breakers for commercial and residential applications
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 63 A
- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA according to IEC/EN 60898-1

SG48411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>10 kA, Characteristic B</b>			
<b>1-pole</b>			
1	PLSM-B1	242165	12/120
1.5	PLSM-B1,5	242166	12/120
1.6	PLSM-B1,6	242167	12/120
2	PLSM-B2	242168	12/120
2.5	PLSM-B2,5	242169	12/120
3	PLSM-B3	242170	12/120
3.5	PLSM-B3,5	242171	12/120
4	PLSM-B4	242172	12/120
5	PLSM-B5	242173	12/120
6	PLSM-B6	242174	12/120
8	PLSM-B8	242175	12/120
10	PLSM-B10	242176	12/120
12	PLSM-B12	242177	12/120
13	PLSM-B13	242178	12/120
15	PLSM-B15	242179	12/120
16	PLSM-B16	242180	12/120
20	PLSM-B20	242181	12/120
25	PLSM-B25	242182	12/120
32	PLSM-B32	242183	12/120
40	PLSM-B40	242184	12/120
50	PLSM-B50	242185	12/120
63	PLSM-B63	242186	12/120

SG49211



<b>1+N-pole 1.5MU</b>			
1	PLSM-B1/1N	242234	8/80
1.5	PLSM-B1,5/1N	242235	8/80
1.6	PLSM-B1,6/1N	242236	8/80
2	PLSM-B2/1N	242237	8/80
2.5	PLSM-B2,5/1N	242238	8/80
3	PLSM-B3/1N	242239	8/80
3.5	PLSM-B3,5/1N	242240	8/80
4	PLSM-B4/1N	242241	8/80
5	PLSM-B5/1N	242242	8/80
6	PLSM-B6/1N	242243	8/80
8	PLSM-B8/1N	242244	8/80
10	PLSM-B10/1N	242245	8/80
12	PLSM-B12/1N	242246	8/80
13	PLSM-B13/1N	242247	8/80
15	PLSM-B15/1N	242248	8/80
16	PLSM-B16/1N	242249	8/80
20	PLSM-B20/1N	242250	8/80
25	PLSM-B25/1N	242251	8/80
32	PLSM-B32/1N	242252	8/80

SG52711



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>1+N-pole 2MU</b>			
1	PLZM-B1/1N	242295	1/60
1.5	PLZM-B1,5/1N	242296	1/60
1.6	PLZM-B1,6/1N	242297	1/60
2	PLZM-B2/1N	242298	1/60
2.5	PLZM-B2,5/1N	242299	1/60
3	PLZM-B3/1N	242300	1/60
3.5	PLZM-B3,5/1N	242301	1/60
4	PLZM-B4/1N	242302	1/60
5	PLZM-B5/1N	242303	1/60
6	PLZM-B6/1N	242304	1/60
8	PLZM-B8/1N	242305	1/60
10	PLZM-B10/1N	242306	1/60
12	PLZM-B12/1N	242307	1/60
13	PLZM-B13/1N	242308	1/60
15	PLZM-B15/1N	242309	1/60
16	PLZM-B16/1N	242310	1/60
20	PLZM-B20/1N	242311	1/60
25	PLZM-B25/1N	242312	1/60
32	PLZM-B32/1N	242313	1/60
40	PLZM-B40/1N	242314	1/60
50	PLZM-B50/1N	242315	1/60
63	PLZM-B63/1N	242316	1/60

SG54811



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
1	PLSM-B1/2	242364	1/60
1.5	PLSM-B1,5/2	242365	1/60
1.6	PLSM-B1,6/2	242366	1/60
2	PLSM-B2/2	242367	1/60
2.5	PLSM-B2,5/2	242368	1/60
3	PLSM-B3/2	242369	1/60
3.5	PLSM-B3,5/2	242370	1/60
4	PLSM-B4/2	242371	1/60
5	PLSM-B5/2	242372	1/60
6	PLSM-B6/2	242373	1/60
8	PLSM-B8/2	242374	1/60
10	PLSM-B10/2	242375	1/60
12	PLSM-B12/2	242376	1/60
13	PLSM-B13/2	242377	1/60
15	PLSM-B15/2	242378	1/60
16	PLSM-B16/2	242379	1/60
20	PLSM-B20/2	242380	1/60
25	PLSM-B25/2	242381	1/60
32	PLSM-B32/2	242382	1/60
40	PLSM-B40/2	242383	1/60
50	PLSM-B50/2	242384	1/60
63	PLSM-B63/2	242385	1/60



SG63111



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
1	PLSM-B1/3	242433	1/40
1.5	PLSM-B1,5/3	242434	1/40
1.6	PLSM-B1,6/3	242435	1/40
2	PLSM-B2/3	242436	1/40
2.5	PLSM-B2,5/3	242437	1/40
3	PLSM-B3/3	242438	1/40
3.5	PLSM-B3,5/3	242439	1/40
4	PLSM-B4/3	242440	1/40
5	PLSM-B5/3	242441	1/40
6	PLSM-B6/3	242442	1/40
8	PLSM-B8/3	242443	1/40
10	PLSM-B10/3	242444	1/40
12	PLSM-B12/3	242445	1/40
13	PLSM-B13/3	242446	1/40
15	PLSM-B15/3	242447	1/40
16	PLSM-B16/3	242448	1/40
20	PLSM-B20/3	242449	1/40
25	PLSM-B25/3	242450	1/40
32	PLSM-B32/3	242451	1/40
40	PLSM-B40/3	242452	1/40
50	PLSM-B50/3	242453	1/40
63	PLSM-B63/3	242454	1/40

SG65611



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
1	PLSM-B1/3N	242502	1/30
1.5	PLSM-B1,5/3N	242503	1/30
1.6	PLSM-B1,6/3N	242504	1/30
2	PLSM-B2/3N	242505	1/30
2.5	PLSM-B2,5/3N	242506	1/30
3	PLSM-B3/3N	242507	1/30
3.5	PLSM-B3,5/3N	242508	1/30
4	PLSM-B4/3N	242509	1/30
5	PLSM-B5/3N	242510	1/30
6	PLSM-B6/3N	242511	1/30
8	PLSM-B8/3N	242512	1/30
10	PLSM-B10/3N	242513	1/30
12	PLSM-B12/3N	242514	1/30
13	PLSM-B13/3N	242515	1/30
15	PLSM-B15/3N	242516	1/30
16	PLSM-B16/3N	242517	1/30
20	PLSM-B20/3N	242518	1/30
25	PLSM-B25/3N	242519	1/30
32	PLSM-B32/3N	242520	1/30
40	PLSM-B40/3N	242521	1/30
50	PLSM-B50/3N	242522	1/30
63	PLSM-B63/3N	242523	1/30

# 1.290 Protective Devices

xPole

## Miniature Circuit Breakers PLSM, PLZM (MW)

SG67811



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
1	PLSM-B1/4	242571	1/30
1.5	PLSM-B1,5/4	242572	1/30
1.6	PLSM-B1,6/4	242573	1/30
2	PLSM-B2/4	242574	1/30
2.5	PLSM-B2,5/4	242575	1/30
3	PLSM-B3/4	242576	1/30
3.5	PLSM-B3,5/4	242577	1/30
4	PLSM-B4/4	242578	1/30
5	PLSM-B5/4	242579	1/30
6	PLSM-B6/4	242580	1/30
8	PLSM-B8/4	242581	1/30
10	PLSM-B10/4	242582	1/30
12	PLSM-B12/4	242583	1/30
13	PLSM-B13/4	242584	1/30
15	PLSM-B15/4	242585	1/30
16	PLSM-B16/4	242586	1/30
20	PLSM-B20/4	242587	1/30
25	PLSM-B25/4	242588	1/30
32	PLSM-B32/4	242589	1/30
40	PLSM-B40/4	242590	1/30
50	PLSM-B50/4	242591	1/30
63	PLSM-B63/4	242592	1/30

SG48411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>10 kA, Characteristic C</b>			
<b>1-pole</b>			
0.16	PLSM-C0.16	242187	12/120
0.25	PLSM-C0,25	242188	12/120
0.5	PLSM-C0,5	242190	12/120
0.75	PLSM-C0,75	242189	12/120
1	PLSM-C1	242191	12/120
1.5	PLSM-C1,5	242192	12/120
1.6	PLSM-C1,6	242193	12/120
2	PLSM-C2	242194	12/120
2.5	PLSM-C2,5	242195	12/120
3	PLSM-C3	242196	12/120
3.5	PLSM-C3,5	242197	12/120
4	PLSM-C4	242198	12/120
5	PLSM-C5	242199	12/120
6	PLSM-C6	242200	12/120
8	PLSM-C8	242201	12/120
10	PLSM-C10	242202	12/120
12	PLSM-C12	242203	12/120
13	PLSM-C13	242204	12/120
15	PLSM-C15	242205	12/120
16	PLSM-C16	242206	12/120
20	PLSM-C20	242207	12/120
25	PLSM-C25	242208	12/120
32	PLSM-C32	242209	12/120
40	PLSM-C40	242210	12/120
50	PLSM-C50	242211	12/120
63	PLSM-C63	242212	12/120

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<b>1+N-pole 1.5MU</b>			
0.16	PLSM-C0.16/1N	242253	8/80
0.25	PLSM-C0,25/1N	242254	8/80
0.5	PLSM-C0,5/1N	242256	8/80
0.75	PLSM-C0,75/1N	242255	8/80
1	PLSM-C1/1N	242257	8/80
1.5	PLSM-C1,5/1N	242258	8/80
1.6	PLSM-C1,6/1N	242259	8/80
2	PLSM-C2/1N	242260	8/80
2.5	PLSM-C2,5/1N	242261	8/80
3	PLSM-C3/1N	242262	8/80
3.5	PLSM-C3,5/1N	242263	8/80
4	PLSM-C4/1N	242264	8/80
5	PLSM-C5/1N	242265	8/80
6	PLSM-C6/1N	242266	8/80
8	PLSM-C8/1N	242267	8/80
10	PLSM-C10/1N	242268	8/80
12	PLSM-C12/1N	242269	8/80
13	PLSM-C13/1N	242270	8/80
15	PLSM-C15/1N	242271	8/80
16	PLSM-C16/1N	242272	8/80
20	PLSM-C20/1N	242273	8/80
25	PLSM-C25/1N	242274	8/80
32	PLSM-C32/1N	242275	8/80

SG52711



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>1+N-pole 2MU</b>			
0.16	PLZM-C0.16/1N	242317	1/60
0.25	PLZM-C0,25/1N	242318	1/60
0.5	PLZM-C0,5/1N	242320	1/60
0.75	PLZM-C0,75/1N	242319	1/60
1	PLZM-C1/1N	242321	1/60
1.5	PLZM-C1,5/1N	242322	1/60
1.6	PLZM-C1,6/1N	242323	1/60
2	PLZM-C2/1N	242324	1/60
2.5	PLZM-C2,5/1N	242325	1/60
3	PLZM-C3/1N	242326	1/60
3.5	PLZM-C3,5/1N	242327	1/60
4	PLZM-C4/1N	242328	1/60
5	PLZM-C5/1N	242329	1/60
6	PLZM-C6/1N	242330	1/60
8	PLZM-C8/1N	242331	1/60
10	PLZM-C10/1N	242332	1/60
12	PLZM-C12/1N	242333	1/60
13	PLZM-C13/1N	242334	1/60
15	PLZM-C15/1N	242335	1/60
16	PLZM-C16/1N	242336	1/60
20	PLZM-C20/1N	242337	1/60
25	PLZM-C25/1N	242338	1/60
32	PLZM-C32/1N	242339	1/60
40	PLZM-C40/1N	242340	1/60
50	PLZM-C50/1N	242341	1/60
63	PLZM-C63/1N	242342	1/60

SG54811



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.16	PLSM-C0.16/2	242386	1/60
0.25	PLSM-C0,25/2	242387	1/60
0.5	PLSM-C0,5/2	242389	1/60
0.75	PLSM-C0,75/2	242388	1/60
1	PLSM-C1/2	242390	1/60
1.5	PLSM-C1,5/2	242391	1/60
1.6	PLSM-C1,6/2	242392	1/60
2	PLSM-C2/2	242393	1/60
2.5	PLSM-C2,5/2	242394	1/60
3	PLSM-C3/2	242395	1/60
3.5	PLSM-C3,5/2	242396	1/60
4	PLSM-C4/2	242397	1/60
5	PLSM-C5/2	242398	1/60
6	PLSM-C6/2	242399	1/60
8	PLSM-C8/2	242400	1/60
10	PLSM-C10/2	242401	1/60
12	PLSM-C12/2	242402	1/60
13	PLSM-C13/2	242403	1/60
15	PLSM-C15/2	242404	1/60
16	PLSM-C16/2	242405	1/60
20	PLSM-C20/2	242406	1/60
25	PLSM-C25/2	242407	1/60
32	PLSM-C32/2	242408	1/60
40	PLSM-C40/2	242409	1/60
50	PLSM-C50/2	242410	1/60
63	PLSM-C63/2	242411	1/60

SG63111



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
0.16	PLSM-C0.16/3	242455	1/40
0.25	PLSM-C0,25/3	242456	1/40
0.5	PLSM-C0,5/3	242458	1/40
0.75	PLSM-C0,75/3	242457	1/40
1	PLSM-C1/3	242459	1/40
1.5	PLSM-C1,5/3	242460	1/40
1.6	PLSM-C1,6/3	242461	1/40
2	PLSM-C2/3	242462	1/40
2.5	PLSM-C2,5/3	242463	1/40
3	PLSM-C3/3	242464	1/40
3.5	PLSM-C3,5/3	242465	1/40
4	PLSM-C4/3	242466	1/40
5	PLSM-C5/3	242467	1/40
6	PLSM-C6/3	242468	1/40
8	PLSM-C8/3	242469	1/40
10	PLSM-C10/3	242470	1/40
12	PLSM-C12/3	242471	1/40
13	PLSM-C13/3	242472	1/40
15	PLSM-C15/3	242473	1/40
16	PLSM-C16/3	242474	1/40
20	PLSM-C20/3	242475	1/40
25	PLSM-C25/3	242476	1/40
32	PLSM-C32/3	242477	1/40
40	PLSM-C40/3	242478	1/40
50	PLSM-C50/3	242479	1/40
63	PLSM-C63/3	242480	1/40

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
0.16	PLSM-C0.16/3N	242524	1/30
0.25	PLSM-C0,25/3N	242525	1/30
0.5	PLSM-C0,5/3N	242527	1/30
0.75	PLSM-C0,75/3N	242526	1/30
1	PLSM-C1/3N	242528	1/30
1.5	PLSM-C1,5/3N	242529	1/30
1.6	PLSM-C1,6/3N	242530	1/30
2	PLSM-C2/3N	242531	1/30
2.5	PLSM-C2,5/3N	242532	1/30
3	PLSM-C3/3N	242533	1/30
3.5	PLSM-C3,5/3N	242534	1/30
4	PLSM-C4/3N	242535	1/30
5	PLSM-C5/3N	242536	1/30
6	PLSM-C6/3N	242537	1/30
8	PLSM-C8/3N	242538	1/30
10	PLSM-C10/3N	242539	1/30
12	PLSM-C12/3N	242540	1/30
13	PLSM-C13/3N	242541	1/30
15	PLSM-C15/3N	242542	1/30
16	PLSM-C16/3N	242543	1/30
20	PLSM-C20/3N	242544	1/30
25	PLSM-C25/3N	242545	1/30
32	PLSM-C32/3N	242546	1/30
40	PLSM-C40/3N	242547	1/30
50	PLSM-C50/3N	242548	1/30
63	PLSM-C63/3N	242549	1/30

# 1.294 Protective Devices

xPole

## Miniature Circuit Breakers PLSM, PLZM (MW)

SG67811



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.16	PLSM-C0.16/4	242593	1/30
0.25	PLSM-C0,25/4	242594	1/30
0.5	PLSM-C0,5/4	242596	1/30
0.75	PLSM-C0,75/4	242595	1/30
1	PLSM-C1/4	242597	1/30
1.5	PLSM-C1,5/4	242598	1/30
1.6	PLSM-C1,6/4	242599	1/30
2	PLSM-C2/4	242600	1/30
2.5	PLSM-C2,5/4	242601	1/30
3	PLSM-C3/4	242602	1/30
3.5	PLSM-C3,5/4	242603	1/30
4	PLSM-C4/4	242604	1/30
5	PLSM-C5/4	242605	1/30
6	PLSM-C6/4	242606	1/30
8	PLSM-C8/4	242607	1/30
10	PLSM-C10/4	242608	1/30
12	PLSM-C12/4	242609	1/30
13	PLSM-C13/4	242610	1/30
15	PLSM-C15/4	242611	1/30
16	PLSM-C16/4	242612	1/30
20	PLSM-C20/4	242613	1/30
25	PLSM-C25/4	242614	1/30
32	PLSM-C32/4	242615	1/30
40	PLSM-C40/4	242616	1/30
50	PLSM-C50/4	242617	1/30
63	PLSM-C63/4	242618	1/30

SG48411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>10 kA, Characteristic D</b>			
<b>1-pole</b>			
0.5	PLSM-D0,5	242213	12/120
1	PLSM-D1	242214	12/120
1.5	PLSM-D1,5	242215	12/120
1.6	PLSM-D1,6	242216	12/120
2	PLSM-D2	242217	12/120
2.5	PLSM-D2,5	242218	12/120
3	PLSM-D3	242219	12/120
3.5	PLSM-D3,5	242220	12/120
4	PLSM-D4	242221	12/120
5	PLSM-D5	242222	12/120
6	PLSM-D6	242223	12/120
8	PLSM-D8	242224	12/120
10	PLSM-D10	242225	12/120
12	PLSM-D12	242226	12/120
13	PLSM-D13	242227	12/120
15	PLSM-D15	242228	12/120
16	PLSM-D16	242229	12/120
20	PLSM-D20	242230	12/120
25	PLSM-D25	242231	12/120
32	PLSM-D32	242232	12/120
40	PLSM-D40	242233	12/120

SG49211



<b>1+N-pole 1.5MU</b>			
0.5	PLSM-D0,5/1N	242276	8/80
1	PLSM-D1/1N	242277	8/80
1.5	PLSM-D1,5/1N	242278	8/80
1.6	PLSM-D1,6/1N	242279	8/80
2	PLSM-D2/1N	242280	8/80
2.5	PLSM-D2,5/1N	242281	8/80
3	PLSM-D3/1N	242282	8/80
3.5	PLSM-D3,5/1N	242283	8/80
4	PLSM-D4/1N	242284	8/80
5	PLSM-D5/1N	242285	8/80
6	PLSM-D6/1N	242286	8/80
8	PLSM-D8/1N	242287	8/80
10	PLSM-D10/1N	242288	8/80
12	PLSM-D12/1N	242289	8/80
13	PLSM-D13/1N	242290	8/80
15	PLSM-D15/1N	242291	8/80
16	PLSM-D16/1N	242292	8/80
20	PLSM-D20/1N	242293	8/80
25	PLSM-D25/1N	242294	8/80

SG52711



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>1+N-pole 2MU</b>			
0.5	PLZM-D0,5/1N	242343	1/60
1	PLZM-D1/1N	242344	1/60
1.5	PLZM-D1,5/1N	242345	1/60
1.6	PLZM-D1,6/1N	242346	1/60
2	PLZM-D2/1N	242347	1/60
2.5	PLZM-D2,5/1N	242348	1/60
3	PLZM-D3/1N	242349	1/60
3.5	PLZM-D3,5/1N	242350	1/60
4	PLZM-D4/1N	242351	1/60
5	PLZM-D5/1N	242352	1/60
6	PLZM-D6/1N	242353	1/60
8	PLZM-D8/1N	242354	1/60
10	PLZM-D10/1N	242355	1/60
12	PLZM-D12/1N	242356	1/60
13	PLZM-D13/1N	242357	1/60
15	PLZM-D15/1N	242358	1/60
16	PLZM-D16/1N	242359	1/60
20	PLZM-D20/1N	242360	1/60
25	PLZM-D25/1N	242361	1/60
32	PLZM-D32/1N	242362	1/60
40	PLZM-D40/1N	242363	1/60

SG54811



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.5	PLSM-D0,5/2	242412	1/60
1	PLSM-D1/2	242413	1/60
1.5	PLSM-D1,5/2	242414	1/60
1.6	PLSM-D1,6/2	242415	1/60
2	PLSM-D2/2	242416	1/60
2.5	PLSM-D2,5/2	242417	1/60
3	PLSM-D3/2	242418	1/60
3.5	PLSM-D3,5/2	242419	1/60
4	PLSM-D4/2	242420	1/60
5	PLSM-D5/2	242421	1/60
6	PLSM-D6/2	242422	1/60
8	PLSM-D8/2	242423	1/60
10	PLSM-D10/2	242424	1/60
12	PLSM-D12/2	242425	1/60
13	PLSM-D13/2	242426	1/60
15	PLSM-D15/2	242427	1/60
16	PLSM-D16/2	242428	1/60
20	PLSM-D20/2	242429	1/60
25	PLSM-D25/2	242430	1/60
32	PLSM-D32/2	242431	1/60
40	PLSM-D40/2	242432	1/60



SG63111



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
0.5	PLSM-D0,5/3	242481	1/40
1	PLSM-D1/3	242482	1/40
1.5	PLSM-D1,5/3	242483	1/40
1.6	PLSM-D1,6/3	242484	1/40
2	PLSM-D2/3	242485	1/40
2.5	PLSM-D2,5/3	242486	1/40
3	PLSM-D3/3	242487	1/40
3.5	PLSM-D3,5/3	242488	1/40
4	PLSM-D4/3	242489	1/40
5	PLSM-D5/3	242490	1/40
6	PLSM-D6/3	242491	1/40
8	PLSM-D8/3	242492	1/40
10	PLSM-D10/3	242493	1/40
12	PLSM-D12/3	242494	1/40
13	PLSM-D13/3	242495	1/40
15	PLSM-D15/3	242496	1/40
16	PLSM-D16/3	242497	1/40
20	PLSM-D20/3	242498	1/40
25	PLSM-D25/3	242499	1/40
32	PLSM-D32/3	242500	1/40
40	PLSM-D40/3	242501	1/40

SG65611



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
0.5	PLSM-D0,5/3N	242550	1/30
1	PLSM-D1/3N	242551	1/30
1.5	PLSM-D1,5/3N	242552	1/30
1.6	PLSM-D1,6/3N	242553	1/30
2	PLSM-D2/3N	242554	1/30
2.5	PLSM-D2,5/3N	242555	1/30
3	PLSM-D3/3N	242556	1/30
3.5	PLSM-D3,5/3N	242557	1/30
4	PLSM-D4/3N	242558	1/30
5	PLSM-D5/3N	242559	1/30
6	PLSM-D6/3N	242560	1/30
8	PLSM-D8/3N	242561	1/30
10	PLSM-D10/3N	242562	1/30
12	PLSM-D12/3N	242563	1/30
13	PLSM-D13/3N	242564	1/30
15	PLSM-D15/3N	242565	1/30
16	PLSM-D16/3N	242566	1/30
20	PLSM-D20/3N	242567	1/30
25	PLSM-D25/3N	242568	1/30
32	PLSM-D32/3N	242569	1/30
40	PLSM-D40/3N	242570	1/30

SG67811



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.5	PLSM-D0,5/4	242619	1/30
1	PLSM-D1/4	242620	1/30
1.5	PLSM-D1,5/4	242621	1/30
1.6	PLSM-D1,6/4	242622	1/30
2	PLSM-D2/4	242623	1/30
2.5	PLSM-D2,5/4	242624	1/30
3	PLSM-D3/4	242625	1/30
3.5	PLSM-D3,5/4	242626	1/30
4	PLSM-D4/4	242627	1/30
5	PLSM-D5/4	242628	1/30
6	PLSM-D6/4	242629	1/30
8	PLSM-D8/4	242630	1/30
10	PLSM-D10/4	242631	1/30
12	PLSM-D12/4	242632	1/30
13	PLSM-D13/4	242633	1/30
15	PLSM-D15/4	242634	1/30
16	PLSM-D16/4	242635	1/30
20	PLSM-D20/4	242636	1/30
25	PLSM-D25/4	242637	1/30
32	PLSM-D32/4	242638	1/30
40	PLSM-D40/4	242639	1/30

SG72911



## Description

- High-quality miniature circuit breakers for commercial and residential applications
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 63 A
- Tripping characteristics B, C, D
- Rated breaking capacity 6 kA according to IEC/EN 60898-1

SG28911



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>6 kA, Characteristic B</b>			
<b>1-pole</b>			
1	PLS6-B1	242640	12/120
1.5	PLS6-B1,5	242641	12/120
1.6	PLS6-B1,6	242642	12/120
2	PLS6-B2	242643	12/120
2.5	PLS6-B2,5	242644	12/120
3	PLS6-B3	242645	12/120
3.5	PLS6-B3,5	242646	12/120
4	PLS6-B4	242647	12/120
5	PLS6-B5	242648	12/120
6	PLS6-B6	242649	12/120
8	PLS6-B8	242650	12/120
10	PLS6-B10	242651	12/120
12	PLS6-B12	242652	12/120
13	PLS6-B13	242653	12/120
15	PLS6-B15	242654	12/120
16	PLS6-B16	242655	12/120
20	PLS6-B20	242656	12/120
25	PLS6-B25	242657	12/120
32	PLS6-B32	242658	12/120
40	PLS6-B40	242659	12/120
50	PLS6-B50	242660	12/120
63	PLS6-B63	242661	12/120

SG40111



<b>1+N-pole 1.5MU</b>			
1	PLS6-B1/1N	242709	8/80
1.5	PLS6-B1,5/1N	242710	8/80
1.6	PLS6-B1,6/1N	242711	8/80
2	PLS6-B2/1N	242712	8/80
2.5	PLS6-B2,5/1N	242713	8/80
3	PLS6-B3/1N	242714	8/80
3.5	PLS6-B3,5/1N	242715	8/80
4	PLS6-B4/1N	242716	8/80
5	PLS6-B5/1N	242717	8/80
6	PLS6-B6/1N	242718	8/80
8	PLS6-B8/1N	242719	8/80
10	PLS6-B10/1N	242720	8/80
12	PLS6-B12/1N	242721	8/80
13	PLS6-B13/1N	242722	8/80
15	PLS6-B15/1N	242723	8/80
16	PLS6-B16/1N	242724	8/80
20	PLS6-B20/1N	242725	8/80
25	PLS6-B25/1N	242726	8/80
32	PLS6-B32/1N	242727	8/80

SG58211



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>1+N-pole 2MU</b>			
1	PLZ6-B1/1N	242770	1/60
1.5	PLZ6-B1,5/1N	242771	1/60
1.6	PLZ6-B1,6/1N	242772	1/60
2	PLZ6-B2/1N	242773	1/60
2.5	PLZ6-B2,5/1N	242774	1/60
3	PLZ6-B3/1N	242775	1/60
3.5	PLZ6-B3,5/1N	242776	1/60
4	PLZ6-B4/1N	242777	1/60
5	PLZ6-B5/1N	242778	1/60
6	PLZ6-B6/1N	242779	1/60
8	PLZ6-B8/1N	242780	1/60
10	PLZ6-B10/1N	242781	1/60
12	PLZ6-B12/1N	242782	1/60
13	PLZ6-B13/1N	242783	1/60
15	PLZ6-B15/1N	242784	1/60
16	PLZ6-B16/1N	242785	1/60
20	PLZ6-B20/1N	242786	1/60
25	PLZ6-B25/1N	242787	1/60
32	PLZ6-B32/1N	242788	1/60
40	PLZ6-B40/1N	242789	1/60
50	PLZ6-B50/1N	242790	1/60
63	PLZ6-B63/1N	242791	1/60

SG77911



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
1	PLS6-B1/2	242839	1/60
1.5	PLS6-B1,5/2	242840	1/60
1.6	PLS6-B1,6/2	242841	1/60
2	PLS6-B2/2	242842	1/60
2.5	PLS6-B2,5/2	242843	1/60
3	PLS6-B3/2	242844	1/60
3.5	PLS6-B3,5/2	242845	1/60
4	PLS6-B4/2	242846	1/60
5	PLS6-B5/2	242847	1/60
6	PLS6-B6/2	242848	1/60
8	PLS6-B8/2	242849	1/60
10	PLS6-B10/2	242850	1/60
12	PLS6-B12/2	242851	1/60
13	PLS6-B13/2	242852	1/60
15	PLS6-B15/2	242853	1/60
16	PLS6-B16/2	242854	1/60
20	PLS6-B20/2	242855	1/60
25	PLS6-B25/2	242856	1/60
32	PLS6-B32/2	242857	1/60
40	PLS6-B40/2	242858	1/60
50	PLS6-B50/2	242859	1/60
63	PLS6-B63/2	242860	1/60

# 1.302 Protective Devices

## Miniature Circuit Breakers PLS6, PLZ6 (MW)

xPole

SG74311



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
1	PLS6-B1/3	242908	1/40
1.5	PLS6-B1,5/3	242909	1/40
1.6	PLS6-B1,6/3	242910	1/40
2	PLS6-B2/3	242911	1/40
2.5	PLS6-B2,5/3	242912	1/40
3	PLS6-B3/3	242913	1/40
3.5	PLS6-B3,5/3	242914	1/40
4	PLS6-B4/3	242915	1/40
5	PLS6-B5/3	242916	1/40
6	PLS6-B6/3	242917	1/40
8	PLS6-B8/3	242918	1/40
10	PLS6-B10/3	242919	1/40
12	PLS6-B12/3	242920	1/40
13	PLS6-B13/3	242921	1/40
15	PLS6-B15/3	242922	1/40
16	PLS6-B16/3	242923	1/40
20	PLS6-B20/3	242924	1/40
25	PLS6-B25/3	242925	1/40
32	PLS6-B32/3	242926	1/40
40	PLS6-B40/3	242927	1/40
50	PLS6-B50/3	242928	1/40
63	PLS6-B63/3	242929	1/40

SG73811



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
1	PLS6-B1/3N	242977	1/30
1.5	PLS6-B1,5/3N	242978	1/30
1.6	PLS6-B1,6/3N	242979	1/30
2	PLS6-B2/3N	242980	1/30
2.5	PLS6-B2,5/3N	242981	1/30
3	PLS6-B3/3N	242982	1/30
3.5	PLS6-B3,5/3N	242983	1/30
4	PLS6-B4/3N	242984	1/30
5	PLS6-B5/3N	242985	1/30
6	PLS6-B6/3N	242986	1/30
8	PLS6-B8/3N	242987	1/30
10	PLS6-B10/3N	242988	1/30
12	PLS6-B12/3N	242989	1/30
13	PLS6-B13/3N	242990	1/30
15	PLS6-B15/3N	242991	1/30
16	PLS6-B16/3N	242992	1/30
20	PLS6-B20/3N	242993	1/30
25	PLS6-B25/3N	242994	1/30
32	PLS6-B32/3N	242995	1/30
40	PLS6-B40/3N	242996	1/30
52	PLS6-B50/3N	242997	1/30
63	PLS6-B63/3N	242998	1/30

SG70011



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
1	PLS6-B1/4	243046	1/30
1.5	PLS6-B1,5/4	243047	1/30
1.6	PLS6-B1,6/4	243048	1/30
2	PLS6-B2/4	243049	1/30
2.5	PLS6-B2,5/4	243050	1/30
3	PLS6-B3/4	243051	1/30
3.5	PLS6-B3,5/4	243052	1/30
4	PLS6-B4/4	243053	1/30
5	PLS6-B5/4	243054	1/30
6	PLS6-B6/4	243055	1/30
8	PLS6-B8/4	243056	1/30
10	PLS6-B10/4	243057	1/30
12	PLS6-B12/4	243058	1/30
13	PLS6-B13/4	243059	1/30
15	PLS6-B15/4	243060	1/30
16	PLS6-B16/4	243061	1/30
20	PLS6-B20/4	243062	1/30
25	PLS6-B25/4	243063	1/30
32	PLS6-B32/4	243064	1/30
40	PLS6-B40/4	243065	1/30
50	PLS6-B50/4	243066	1/30
63	PLS6-B63/4	243067	1/30

SG28911



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>6 kA, Characteristic C</b>			
<b>1-pole</b>			
0.16	PLS6-C0.16	242662	12/120
0.25	PLS6-C0,25	242663	12/120
0.5	PLS6-C0,5	242665	12/120
0.75	PLS6-C0,75	242664	12/120
1	PLS6-C1	242666	12/120
1.5	PLS6-C1,5	242667	12/120
1.6	PLS6-C1,6	242668	12/120
2	PLS6-C2	242669	12/120
2.5	PLS6-C2,5	242670	12/120
3	PLS6-C3	242671	12/120
3.5	PLS6-C3,5	242672	12/120
4	PLS6-C4	242673	12/120
5	PLS6-C5	242674	12/120
6	PLS6-C6	242675	12/120
8	PLS6-C8	242676	12/120
10	PLS6-C10	242677	12/120
12	PLS6-C12	242678	12/120
13	PLS6-C13	242679	12/120
15	PLS6-C15	242680	12/120
16	PLS6-C16	242681	12/120
20	PLS6-C20	242682	12/120
25	PLS6-C25	242683	12/120
32	PLS6-C32	242684	12/120
40	PLS6-C40	242685	12/120
50	PLS6-C50	242686	12/120
63	PLS6-C63	242687	12/120

SG40111



<b>1+N-pole 1.5MU</b>			
0.16	PLS6-C0.16/1N	242728	8/80
0.25	PLS6-C0,25/1N	242729	8/80
0.5	PLS6-C0,5/1N	242731	8/80
0.75	PLS6-C0,75/1N	242730	8/80
1	PLS6-C1/1N	242732	8/80
1.5	PLS6-C1,5/1N	242733	8/80
1.6	PLS6-C1,6/1N	242734	8/80
2	PLS6-C2/1N	242735	8/80
2.5	PLS6-C2,5/1N	242736	8/80
3	PLS6-C3/1N	242737	8/80
3.5	PLS6-C3,5/1N	242738	8/80
4	PLS6-C4/1N	242739	8/80
5	PLS6-C5/1N	242740	8/80
6	PLS6-C6/1N	242741	8/80
8	PLS6-C8/1N	242742	8/80
10	PLS6-C10/1N	242743	8/80
12	PLS6-C12/1N	242744	8/80
13	PLS6-C13/1N	242745	8/80
15	PLS6-C15/1N	242746	8/80
16	PLS6-C16/1N	242747	8/80
20	PLS6-C20/1N	242748	8/80
25	PLS6-C25/1N	242749	8/80
32	PLS6-C32/1N	242750	8/80



SG58211



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>1+N-pole 2MU</b>			
0.16	PLZ6-C0.16/1N	242792	1/60
0.25	PLZ6-C0,25/1N	242793	1/60
0.5	PLZ6-C0,5/1N	242795	1/60
0.75	PLZ6-C0,75/1N	242794	1/60
1	PLZ6-C1/1N	242796	1/60
1.5	PLZ6-C1,5/1N	242797	1/60
1.6	PLZ6-C1,6/1N	242798	1/60
2	PLZ6-C2/1N	242799	1/60
2.5	PLZ6-C2,5/1N	242800	1/60
3	PLZ6-C3/1N	242801	1/60
3.5	PLZ6-C3,5/1N	242802	1/60
4	PLZ6-C4/1N	242803	1/60
5	PLZ6-C5/1N	242804	1/60
6	PLZ6-C6/1N	242805	1/60
8	PLZ6-C8/1N	242806	1/60
10	PLZ6-C10/1N	242807	1/60
12	PLZ6-C12/1N	242808	1/60
13	PLZ6-C13/1N	242809	1/60
15	PLZ6-C15/1N	242810	1/60
16	PLZ6-C16/1N	242811	1/60
20	PLZ6-C20/1N	242812	1/60
25	PLZ6-C25/1N	242813	1/60
32	PLZ6-C32/1N	242814	1/60
40	PLZ6-C40/1N	242815	1/60
50	PLZ6-C50/1N	242816	1/60
63	PLZ6-C63/1N	242817	1/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.16	PLS6-C0.16/2	242861	1/60
0.25	PLS6-C0,25/2	242862	1/60
0.5	PLS6-C0,5/2	242864	1/60
0.75	PLS6-C0,75/2	242863	1/60
1	PLS6-C1/2	242865	1/60
1.5	PLS6-C1,5/2	242866	1/60
1.6	PLS6-C1,6/2	242867	1/60
2	PLS6-C2/2	242868	1/60
2.5	PLS6-C2,5/2	242869	1/60
3	PLS6-C3/2	242870	1/60
3.5	PLS6-C3,5/2	242871	1/60
4	PLS6-C4/2	242872	1/60
5	PLS6-C5/2	242873	1/60
6	PLS6-C6/2	242874	1/60
8	PLS6-C8/2	242875	1/60
10	PLS6-C10/2	242876	1/60
12	PLS6-C12/2	242877	1/60
13	PLS6-C13/2	242878	1/60
15	PLS6-C15/2	242879	1/60
16	PLS6-C16/2	242880	1/60
20	PLS6-C20/2	242881	1/60
25	PLS6-C25/2	242882	1/60
32	PLS6-C32/2	242883	1/60
40	PLS6-C40/2	242884	1/60
50	PLS6-C50/2	242885	1/60
63	PLS6-C63/2	242886	1/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
0.16	PLS6-C0.16/3	242930	1/40
0.25	PLS6-C0,25/3	242931	1/40
0.5	PLS6-C0,5/3	242933	1/40
0.75	PLS6-C0,75/3	242932	1/40
1	PLS6-C1/3	242934	1/40
1.5	PLS6-C1,5/3	242935	1/40
1.6	PLS6-C1,6/3	242936	1/40
2	PLS6-C2/3	242937	1/40
2.5	PLS6-C2,5/3	242938	1/40
3	PLS6-C3/3	242939	1/40
3.5	PLS6-C3,5/3	242940	1/40
4	PLS6-C4/3	242941	1/40
5	PLS6-C5/3	242942	1/40
6	PLS6-C6/3	242943	1/40
8	PLS6-C8/3	242944	1/40
10	PLS6-C10/3	242945	1/40
12	PLS6-C12/3	242946	1/40
13	PLS6-C13/3	242947	1/40
15	PLS6-C15/3	242948	1/40
16	PLS6-C16/3	242949	1/40
20	PLS6-C20/3	242950	1/40
25	PLS6-C25/3	242951	1/40
32	PLS6-C32/3	242952	1/40
40	PLS6-C40/3	242953	1/40
50	PLS6-C50/3	242954	1/40
63	PLS6-C63/3	242955	1/40

SG73911



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
0.16	PLS6-C0.16/3N	242999	1/30
0.25	PLS6-C0,25/3N	243000	1/30
0.5	PLS6-C0,5/3N	243002	1/30
0.75	PLS6-C0,75/3N	243001	1/30
1	PLS6-C1/3N	243003	1/30
1.5	PLS6-C1,5/3N	243004	1/30
1.6	PLS6-C1,6/3N	243005	1/30
2	PLS6-C2/3N	243006	1/30
2.5	PLS6-C2,5/3N	243007	1/30
3	PLS6-C3/3N	243008	1/30
3.5	PLS6-C3,5/3N	243009	1/30
4	PLS6-C4/3N	243010	1/30
5	PLS6-C5/3N	243011	1/30
6	PLS6-C6/3N	243012	1/30
8	PLS6-C8/3N	243013	1/30
10	PLS6-C10/3N	243014	1/30
12	PLS6-C12/3N	243015	1/30
13	PLS6-C13/3N	243016	1/30
15	PLS6-C15/3N	243017	1/30
16	PLS6-C16/3N	243018	1/30
20	PLS6-C20/3N	243019	1/30
25	PLS6-C25/3N	243020	1/30
32	PLS6-C32/3N	243021	1/30
40	PLS6-C40/3N	243022	1/30
50	PLS6-C50/3N	243023	1/30
63	PLS6-C63/3N	243024	1/30

SG70011



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.16	PLS6-C0.16/4	243068	1/30
0.25	PLS6-C0,25/4	243069	1/30
0.5	PLS6-C0,5/4	243071	1/30
0.75	PLS6-C0,75/4	243070	1/30
1	PLS6-C1/4	243072	1/30
1.5	PLS6-C1,5/4	243073	1/30
1.6	PLS6-C1,6/4	243074	1/30
2	PLS6-C2/4	243075	1/30
2.5	PLS6-C2,5/4	243076	1/30
3	PLS6-C3/4	243077	1/30
3.5	PLS6-C3,5/4	243078	1/30
4	PLS6-C4/4	243079	1/30
5	PLS6-C5/4	243080	1/30
6	PLS6-C6/4	243081	1/30
8	PLS6-C8/4	243082	1/30
10	PLS6-C10/4	243083	1/30
12	PLS6-C12/4	243084	1/30
13	PLS6-C13/4	243085	1/30
15	PLS6-C15/4	243086	1/30
16	PLS6-C16/4	243087	1/30
20	PLS6-C20/4	243088	1/30
25	PLS6-C25/4	243089	1/30
32	PLS6-C32/4	243090	1/30
40	PLS6-C40/4	243091	1/30
50	PLS6-C50/4	243092	1/30
63	PLS6-C63/4	243093	1/30

SG28911



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>6 kA, Characteristic D</b>			
<b>1-pole</b>			
1	PLS6-D1	242689	12/120
1.5	PLS6-D1,5	242690	12/120
1.6	PLS6-D1,6	242691	12/120
2	PLS6-D2	242692	12/120
2.5	PLS6-D2,5	242693	12/120
3	PLS6-D3	242694	12/120
3.5	PLS6-D3,5	242695	12/120
4	PLS6-D4	242696	12/120
5	PLS6-D5	242697	12/120
6	PLS6-D6	242698	12/120
8	PLS6-D8	242699	12/120
10	PLS6-D10	242700	12/120
12	PLS6-D12	242701	12/120
13	PLS6-D13	242702	12/120
15	PLS6-D15	242703	12/120
16	PLS6-D16	242704	12/120
20	PLS6-D20	242705	12/120
25	PLS6-D25	242706	12/120
32	PLS6-D32	242707	12/120
40	PLS6-D40	242708	12/120

SG40111



<b>1+N-pole 1.5MU</b>			
0.5	PLS6-D0,5/1N	242751	8/80
1	PLS6-D1/1N	242752	8/80
1.5	PLS6-D1,5/1N	242753	8/80
1.6	PLS6-D1,6/1N	242754	8/80
2	PLS6-D2/1N	242755	8/80
2.5	PLS6-D2,5/1N	242756	8/80
3	PLS6-D3/1N	242757	8/80
3.5	PLS6-D3,5/1N	242758	8/80
4	PLS6-D4/1N	242759	8/80
5	PLS6-D5/1N	242760	8/80
6	PLS6-D6/1N	242761	8/80
8	PLS6-D8/1N	242762	8/80
10	PLS6-D10/1N	242763	8/80
12	PLS6-D12/1N	242764	8/80
13	PLS6-D13/1N	242765	8/80
15	PLS6-D15/1N	242766	8/80
16	PLS6-D16/1N	242767	8/80
20	PLS6-D20/1N	242768	8/80
25	PLS6-D25/1N	242769	8/80

SG58211



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>1+N-pole 2MU</b>			
0.5	PLZ6-D0,5/1N	242818	1/60
1	PLZ6-D1/1N	242819	1/60
1.5	PLZ6-D1,5/1N	242820	1/60
1.6	PLZ6-D1,6/1N	242821	1/60
2	PLZ6-D2/1N	242822	1/60
2.5	PLZ6-D2,5/1N	242823	1/60
3	PLZ6-D3/1N	242824	1/60
3.5	PLZ6-D3,5/1N	242825	1/60
4	PLZ6-D4/1N	242826	1/60
5	PLZ6-D5/1N	242827	1/60
6	PLZ6-D6/1N	242828	1/60
8	PLZ6-D8/1N	242829	1/60
10	PLZ6-D10/1N	242830	1/60
12	PLZ6-D12/1N	242831	1/60
13	PLZ6-D13/1N	242832	1/60
15	PLZ6-D15/1N	242833	1/60
16	PLZ6-D16/1N	242834	1/60
20	PLZ6-D20/1N	242835	1/60
25	PLZ6-D25/1N	242836	1/60
32	PLZ6-D32/1N	242837	1/60
40	PLZ6-D40/1N	242838	1/60

SG77911



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.5	PLS6-D0,5/2	242887	1/60
1	PLS6-D1/2	242888	1/60
1.5	PLS6-D1,5/2	242889	1/60
1.6	PLS6-D1,6/2	242890	1/60
2	PLS6-D2/2	242891	1/60
2.5	PLS6-D2,5/2	242892	1/60
3	PLS6-D3/2	242893	1/60
3.5	PLS6-D3,5/2	242894	1/60
4	PLS6-D4/2	242895	1/60
5	PLS6-D5/2	242896	1/60
6	PLS6-D6/2	242897	1/60
8	PLS6-D8/2	242898	1/60
10	PLS6-D10/2	242899	1/60
12	PLS6-D12/2	242900	1/60
13	PLS6-D13/2	242901	1/60
15	PLS6-D15/2	242902	1/60
16	PLS6-D16/2	242903	1/60
20	PLS6-D20/2	242904	1/60
25	PLS6-D25/2	242905	1/60
32	PLS6-D32/2	242906	1/60
40	PLS6-D40/2	242907	1/60

SG74311



#### 3-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
0.5	PLS6-D0,5/3	242956	1/40
1	PLS6-D1/3	242957	1/40
1.5	PLS6-D1,5/3	242958	1/40
1.6	PLS6-D1,6/3	242959	1/40
2	PLS6-D2/3	242960	1/40
2.5	PLS6-D2,5/3	242961	1/40
3	PLS6-D3/3	242962	1/40
3.5	PLS6-D3,5/3	242963	1/40
4	PLS6-D4/3	242964	1/40
5	PLS6-D5/3	242965	1/40
6	PLS6-D6/3	242966	1/40
8	PLS6-D8/3	242967	1/40
10	PLS6-D10/3	242968	1/40
12	PLS6-D12/3	242969	1/40
13	PLS6-D13/3	242970	1/40
15	PLS6-D15/3	242971	1/40
16	PLS6-D16/3	242972	1/40
20	PLS6-D20/3	242973	1/40
25	PLS6-D25/3	242974	1/40
32	PLS6-D32/3	242975	1/40
40	PLS6-D40/3	242976	1/40

SG73911



#### 3+N-pole

0.5	PLS6-D0,5/3N	243025	1/30
1	PLS6-D1/3N	243026	1/30
1.5	PLS6-D1,5/3N	243027	1/30
1.6	PLS6-D1,6/3N	243028	1/30
2	PLS6-D2/3N	243029	1/30
2.5	PLS6-D2,5/3N	243030	1/30
3	PLS6-D3/3N	243031	1/30
3.5	PLS6-D3,5/3N	243032	1/30
4	PLS6-D4/3N	243033	1/30
5	PLS6-D5/3N	243034	1/30
6	PLS6-D6/3N	243035	1/30
8	PLS6-D8/3N	243036	1/30
10	PLS6-D10/3N	243037	1/30
12	PLS6-D12/3N	243038	1/30
13	PLS6-D13/3N	243039	1/30
15	PLS6-D15/3N	243040	1/30
16	PLS6-D16/3N	243041	1/30
20	PLS6-D20/3N	243042	1/30
25	PLS6-D25/3N	243043	1/30
32	PLS6-D32/3N	243044	1/30
40	PLS6-D40/3N	243045	1/30

SG70011



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.5	PLS6-D0,5/4	243094	1/30
1	PLS6-D1/4	243095	1/30
1.5	PLS6-D1,5/4	243096	1/30
1.6	PLS6-D1,6/4	243097	1/30
2	PLS6-D2/4	243098	1/30
2.5	PLS6-D2,5/4	243099	1/30
3	PLS6-D3/4	243100	1/30
3.5	PLS6-D3,5/4	243101	1/30
4	PLS6-D4/4	243102	1/30
5	PLS6-D5/4	243103	1/30
6	PLS6-D6/4	243104	1/30
8	PLS6-D8/4	243105	1/30
10	PLS6-D10/4	243106	1/30
12	PLS6-D12/4	243107	1/30
13	PLS6-D13/4	243108	1/30
15	PLS6-D15/4	243109	1/30
16	PLS6-D16/4	243110	1/30
20	PLS6-D20/4	243111	1/30
25	PLS6-D25/4	243112	1/30
32	PLS6-D32/4	243113	1/30
40	PLS6-D40/4	243114	1/30

SG38011



### Description

- High-quality miniature circuit breakers for residential applications
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 63 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA according to IEC/EN 60898-1



SG28411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4.5 kA, Characteristic B</b>			
<b>1-pole</b>			
1	PLS4-B1	243141	12/120
1.5	PLS4-B1,5	243142	12/120
1.6	PLS4-B1,6	243143	12/120
2	PLS4-B2	243144	12/120
2.5	PLS4-B2,5	243145	12/120
3	PLS4-B3	243146	12/120
3.5	PLS4-B3,5	243147	12/120
4	PLS4-B4	243148	12/120
5	PLS4-B5	243149	12/120
6	PLS4-B6	243150	12/120
8	PLS4-B8	243151	12/120
10	PLS4-B10	243152	12/120
12	PLS4-B12	243153	12/120
13	PLS4-B13	243154	12/120
15	PLS4-B15	243155	12/120
16	PLS4-B16	243156	12/120
20	PLS4-B20	243157	12/120
25	PLS4-B25	243158	12/120
32	PLS4-B32	243159	12/120
40	PLS4-B40	243160	12/120
50	PLS4-B50	243161	12/120
63	PLS4-B63	243162	12/120

SG20711



<b>1+N-pole 2MU</b>			
1	PLZ4-B1/1N	243189	1/60
1.5	PLZ4-B1,5/1N	243190	1/60
1.6	PLZ4-B1,6/1N	243191	1/60
2	PLZ4-B2/1N	243192	1/60
2.5	PLZ4-B2,5/1N	243193	1/60
3	PLZ4-B3/1N	243194	1/60
3.5	PLZ4-B3,5/1N	243195	1/60
4	PLZ4-B4/1N	243196	1/60
5	PLZ4-B5/1N	243197	1/60
6	PLZ4-B6/1N	243198	1/60
8	PLZ4-B8/1N	243199	1/60
10	PLZ4-B10/1N	243200	1/60
12	PLZ4-B12/1N	243201	1/60
13	PLZ4-B13/1N	243202	1/60
15	PLZ4-B15/1N	243203	1/60
16	PLZ4-B16/1N	243204	1/60
20	PLZ4-B20/1N	243205	1/60
25	PLZ4-B25/1N	243206	1/60
32	PLZ4-B32/1N	243207	1/60
40	PLZ4-B40/1N	243208	1/60
50	PLZ4-B50/1N	243209	1/60
63	PLZ4-B63/1N	243210	1/60

SG22911



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
1	PLS4-B1/2	243237	1/60
1.5	PLS4-B1,5/2	243238	1/60
1.6	PLS4-B1,6/2	243239	1/60
2	PLS4-B2/2	243240	1/60
2.5	PLS4-B2,5/2	243241	1/60
3	PLS4-B3/2	243242	1/60
3.5	PLS4-B3,5/2	243243	1/60
4	PLS4-B4/2	243244	1/60
5	PLS4-B5/2	243245	1/60
6	PLS4-B6/2	243246	1/60
8	PLS4-B8/2	243247	1/60
10	PLS4-B10/2	243248	1/60
12	PLS4-B12/2	243249	1/60
13	PLS4-B13/2	243250	1/60
15	PLS4-B15/2	243251	1/60
16	PLS4-B16/2	243252	1/60
20	PLS4-B20/2	243253	1/60
25	PLS4-B25/2	243254	1/60
32	PLS4-B32/2	243255	1/60
40	PLS4-B40/2	243256	1/60
50	PLS4-B50/2	243257	1/60
63	PLS4-B63/2	243258	1/60

SG31411



<b>3-pole</b>			
1	PLS4-B1/3	243285	1/40
1.5	PLS4-B1,5/3	243286	1/40
1.6	PLS4-B1,6/3	243287	1/40
2	PLS4-B2/3	243288	1/40
2.5	PLS4-B2,5/3	243289	1/40
3	PLS4-B3/3	243290	1/40
3.5	PLS4-B3,5/3	243291	1/40
4	PLS4-B4/3	243292	1/40
5	PLS4-B5/3	243293	1/40
6	PLS4-B6/3	243294	1/40
8	PLS4-B8/3	243295	1/40
10	PLS4-B10/3	243296	1/40
12	PLS4-B12/3	243297	1/40
13	PLS4-B13/3	243298	1/40
15	PLS4-B15/3	243299	1/40
16	PLS4-B16/3	243300	1/40
20	PLS4-B20/3	243301	1/40
25	PLS4-B25/3	243302	1/40
32	PLS4-B32/3	243303	1/40
40	PLS4-B40/3	243304	1/40
50	PLS4-B50/3	243305	1/40
63	PLS4-B63/3	243306	1/40

SG35211



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
1	PLS4-B1/3N	243333	1/30
1.5	PLS4-B1,5/3N	243334	1/30
1.6	PLS4-B1,6/3N	243335	1/30
2	PLS4-B2/3N	243336	1/30
2.5	PLS4-B2,5/3N	243337	1/30
3	PLS4-B3/3N	243338	1/30
3.5	PLS4-B3,5/3N	243339	1/30
4	PLS4-B4/3N	243340	1/30
5	PLS4-B5/3N	243341	1/30
6	PLS4-B6/3N	243342	1/30
8	PLS4-B8/3N	243343	1/30
10	PLS4-B10/3N	243344	1/30
12	PLS4-B12/3N	243345	1/30
13	PLS4-B13/3N	243346	1/30
15	PLS4-B15/3N	243347	1/30
16	PLS4-B16/3N	243348	1/30
20	PLS4-B20/3N	243349	1/30
25	PLS4-B25/3N	243350	1/30
32	PLS4-B32/3N	243351	1/30
40	PLS4-B40/3N	243352	1/30
50	PLS4-B50/3N	243353	1/30
63	PLS4-B63/3N	243354	1/30

SG37111



<b>4-pole</b>			
1	PLS4-B1/4	243381	1/30
1.5	PLS4-B1,5/4	243382	1/30
1.6	PLS4-B1,6/4	243383	1/30
2	PLS4-B2/4	243384	1/30
2.5	PLS4-B2,5/4	243385	1/30
3	PLS4-B3/4	243386	1/30
3.5	PLS4-B3,5/4	243387	1/30
4	PLS4-B4/4	243388	1/30
5	PLS4-B5/4	243389	1/30
6	PLS4-B6/4	243390	1/30
8	PLS4-B8/4	243391	1/30
10	PLS4-B10/4	243392	1/30
12	PLS4-B12/4	243393	1/30
13	PLS4-B13/4	243394	1/30
15	PLS4-B15/4	243395	1/30
16	PLS4-B16/4	243396	1/30
20	PLS4-B20/4	243397	1/30
25	PLS4-B25/4	243398	1/30
32	PLS4-B32/4	243399	1/30
40	PLS4-B40/4	243400	1/30
50	PLS4-B50/4	243401	1/30
63	PLS4-B63/4	243402	1/30

SG28411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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#### 4.5 kA, Characteristic C

##### 1-pole

0.16	PLS4-C0.16	243163	12/120
0.25	PLS4-C0,25	243164	12/120
0.5	PLS4-C0,5	243166	12/120
0.75	PLS4-C0,75	243165	12/120
1	PLS4-C1	243167	12/120
1.5	PLS4-C1,5	243168	12/120
1.6	PLS4-C1,6	243169	12/120
2	PLS4-C2	243170	12/120
2.5	PLS4-C2,5	243171	12/120
3	PLS4-C3	243172	12/120
3.5	PLS4-C3,5	243173	12/120
4	PLS4-C4	243174	12/120
5	PLS4-C5	243175	12/120
6	PLS4-C6	243176	12/120
8	PLS4-C8	243177	12/120
10	PLS4-C10	243178	12/120
12	PLS4-C12	243179	12/120
13	PLS4-C13	243180	12/120
15	PLS4-C15	243181	12/120
16	PLS4-C16	243182	12/120
20	PLS4-C20	243183	12/120
25	PLS4-C25	243184	12/120
32	PLS4-C32	243185	12/120
40	PLS4-C40	243186	12/120
50	PLS4-C50	243187	12/120
63	PLS4-C63	243188	12/120

SG20711



##### 1+N-pole 2MU

0.16	PLZ4-C0.16/1N	243211	1/60
0.25	PLZ4-C0,25/1N	243212	1/60
0.5	PLZ4-C0,5/1N	243214	1/60
0.75	PLZ4-C0,75/1N	243213	1/60
1	PLZ4-C1/1N	243215	1/60
1.5	PLZ4-C1,5/1N	243216	1/60
1.6	PLZ4-C1,6/1N	243217	1/60
2	PLZ4-C2/1N	243218	1/60
2.5	PLZ4-C2,5/1N	243219	1/60
3	PLZ4-C3/1N	243220	1/60
3.5	PLZ4-C3,5/1N	243221	1/60
4	PLZ4-C4/1N	243222	1/60
5	PLZ4-C5/1N	243223	1/60
6	PLZ4-C6/1N	243224	1/60
8	PLZ4-C8/1N	243225	1/60
10	PLZ4-C10/1N	243226	1/60
12	PLZ4-C12/1N	243227	1/60
13	PLZ4-C13/1N	243228	1/60
15	PLZ4-C15/1N	243229	1/60
16	PLZ4-C16/1N	243230	1/60
20	PLZ4-C20/1N	243231	1/60
25	PLZ4-C25/1N	243232	1/60
32	PLZ4-C32/1N	243233	1/60
40	PLZ4-C40/1N	243234	1/60
50	PLZ4-C50/1N	243235	1/60
63	PLZ4-C63/1N	243236	1/60

SG22911



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.16	PLS4-C0.16/2	243259	1/60
0.25	PLS4-C0,25/2	243260	1/60
0.5	PLS4-C0,5/2	243262	1/60
0.75	PLS4-C0,75/2	243261	1/60
1	PLS4-C1/2	243263	1/60
1.5	PLS4-C1,5/2	243264	1/60
1.6	PLS4-C1,6/2	243265	1/60
2	PLS4-C2/2	243266	1/60
2.5	PLS4-C2,5/2	243267	1/60
3	PLS4-C3/2	243268	1/60
3.5	PLS4-C3,5/2	243269	1/60
4	PLS4-C4/2	243270	1/60
5	PLS4-C5/2	243271	1/60
6	PLS4-C6/2	243272	1/60
8	PLS4-C8/2	243273	1/60
10	PLS4-C10/2	243274	1/60
12	PLS4-C12/2	243275	1/60
13	PLS4-C13/2	243276	1/60
15	PLS4-C15/2	243277	1/60
16	PLS4-C16/2	243278	1/60
20	PLS4-C20/2	243279	1/60
25	PLS4-C25/2	243280	1/60
32	PLS4-C32/2	243281	1/60
40	PLS4-C40/2	243282	1/60
50	PLS4-C50/2	243283	1/60
63	PLS4-C63/2	243284	1/60

SG31411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
0.16	PLS4-C0.16/3	243307	1/40
0.25	PLS4-C0,25/3	243308	1/40
0.5	PLS4-C0,5/3	243310	1/40
0.75	PLS4-C0,75/3	243309	1/40
1	PLS4-C1/3	243311	1/40
1.5	PLS4-C1,5/3	243312	1/40
1.6	PLS4-C1,6/3	243313	1/40
2	PLS4-C2/3	243314	1/40
2.5	PLS4-C2,5/3	243315	1/40
3	PLS4-C3/3	243316	1/40
3.5	PLS4-C3,5/3	243317	1/40
4	PLS4-C4/3	243318	1/40
5	PLS4-C5/3	243319	1/40
6	PLS4-C6/3	243320	1/40
8	PLS4-C8/3	243321	1/40
10	PLS4-C10/3	243322	1/40
12	PLS4-C12/3	243323	1/40
13	PLS4-C13/3	243324	1/40
15	PLS4-C15/3	243325	1/40
16	PLS4-C16/3	243326	1/40
20	PLS4-C20/3	243327	1/40
25	PLS4-C25/3	243328	1/40
32	PLS4-C32/3	243329	1/40
40	PLS4-C40/3	243330	1/40
50	PLS4-C50/3	243331	1/40
63	PLS4-C63/3	243332	1/40

SG35211



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
0.16	PLS4-C0.16/3N	243355	1/30
0.25	PLS4-C0,25/3N	243356	1/30
0.5	PLS4-C0,5/3N	243358	1/30
0.75	PLS4-C0,75/3N	243357	1/30
1	PLS4-C1/3N	243359	1/30
1.5	PLS4-C1,5/3N	243360	1/30
1.6	PLS4-C1,6/3N	243361	1/30
2	PLS4-C2/3N	243362	1/30
2.5	PLS4-C2,5/3N	243363	1/30
3	PLS4-C3/3N	243364	1/30
3.5	PLS4-C3,5/3N	243365	1/30
4	PLS4-C4/3N	243366	1/30
5	PLS4-C5/3N	243367	1/30
6	PLS4-C6/3N	243368	1/30
8	PLS4-C8/3N	243369	1/30
10	PLS4-C10/3N	243370	1/30
12	PLS4-C12/3N	243371	1/30
13	PLS4-C13/3N	243372	1/30
15	PLS4-C15/3N	243373	1/30
16	PLS4-C16/3N	243374	1/30
20	PLS4-C20/3N	243375	1/30
25	PLS4-C25/3N	243376	1/30
32	PLS4-C32/3N	243377	1/30
40	PLS4-C40/3N	243378	1/30
50	PLS4-C50/3N	243379	1/30
63	PLS4-C63/3N	243380	1/30

SG37111



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.16	PLS4-C0.16/4	243403	1/30
0.25	PLS4-C0,25/4	243404	1/30
0.5	PLS4-C0,5/4	243406	1/30
0.75	PLS4-C0,75/4	243405	1/30
1	PLS4-C1/4	243407	1/30
1.5	PLS4-C1,5/4	243408	1/30
1.6	PLS4-C1,6/4	243409	1/30
2	PLS4-C2/4	243410	1/30
2.5	PLS4-C2,5/4	243411	1/30
3	PLS4-C3/4	243412	1/30
3.5	PLS4-C3,5/4	243413	1/30
4	PLS4-C4/4	243414	1/30
5	PLS4-C5/4	243415	1/30
6	PLS4-C6/4	243416	1/30
8	PLS4-C8/4	243417	1/30
10	PLS4-C10/4	243418	1/30
12	PLS4-C12/4	243419	1/30
13	PLS4-C13/4	243420	1/30
15	PLS4-C15/4	243421	1/30
16	PLS4-C16/4	243422	1/30
20	PLS4-C20/4	243423	1/30
25	PLS4-C25/4	243424	1/30
32	PLS4-C32/4	243425	1/30
40	PLS4-C40/4	243426	1/30
50	PLS4-C50/4	243427	1/30
63	PLS4-C63/4	243428	1/30

**Specifications | Miniature Circuit Breakers PLS..., PLZ...**

**Description**

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC (use PLS6-DC for higher DC voltages)

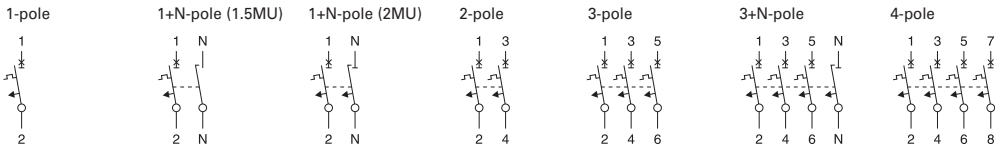
**Accessories:**

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

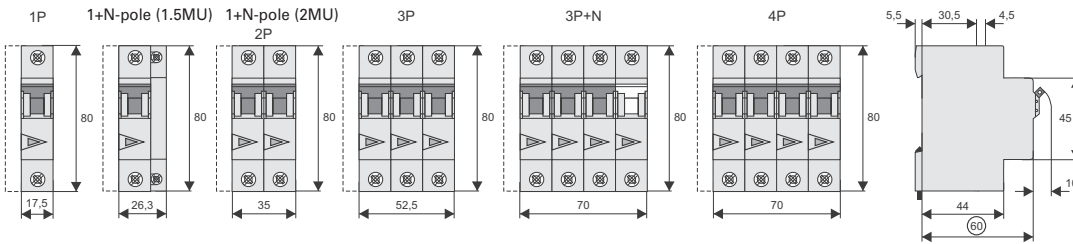
**Technical Data**

		PLS..., PLZ...
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	PLSM, PLZM 10 kA PLS6, PLZ6 6 kA PLS4, PLZ4 4.5 kA
Characteristic		B, C, D
Back-up fuse		PLSM, PLZM max. 125 A gL PLS6, PLZ6 max. 100 A gL PLS4, PLZ4 max. 80 A gL
Selectivity class		3
Endurance		electrical components $\geq 10,000$ switching operations mechanical components $\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU) 26.3 mm: device 1P+N (1.5MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
(1p+N, 1,5TE)		1-25 mm <sup>2</sup> / 1-16 mm <sup>2</sup> (N)
Terminal torque		2-2.4 Nm
(1p+N, 1,5TE)		2-2.4 Nm / 1.2-1.5 Nm (N)
Busbar thickness		0.8 - 2 mm (except N 0.5MU)
Mounting		independent of position

### Connection diagrams

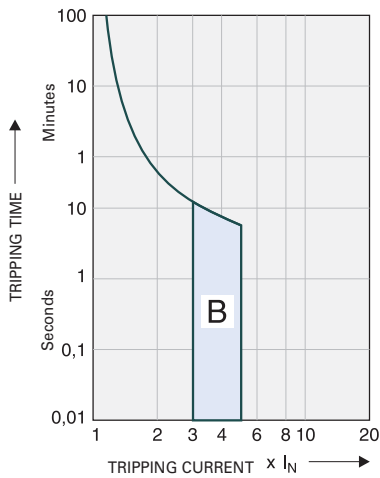


### Dimensions (mm)

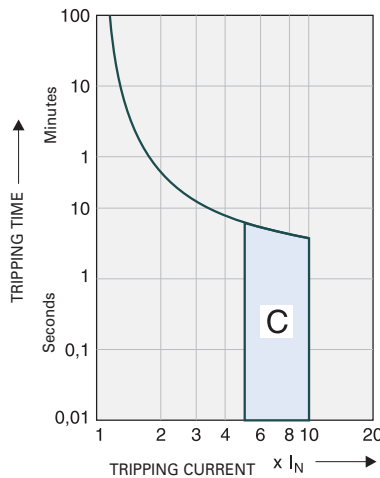


### Tripping Characteristics (IEC/EN 60898-1)

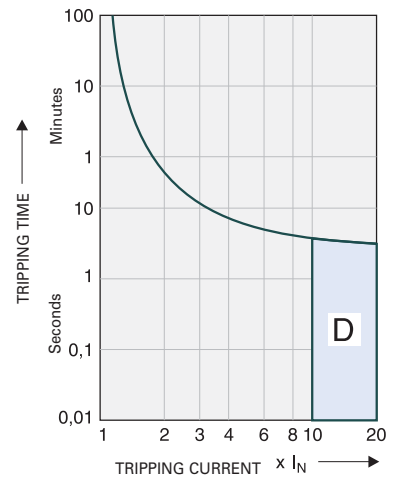
Tripping characteristic B



Tripping characteristic C



Tripping characteristic D



Quick-acting (B), slow (C), very slow (D)

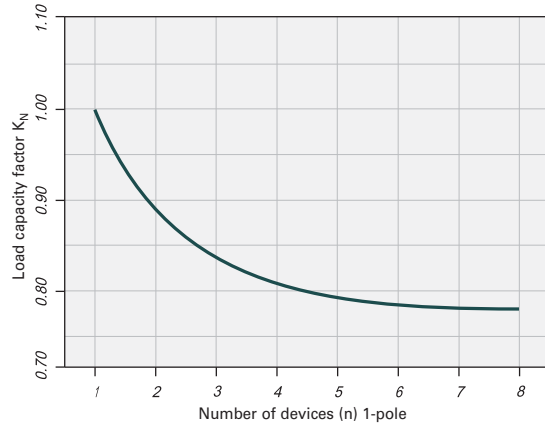


**Effect of the Ambient Temperature on Thermal Tripping Behaviour**

Adjusted rated current values according to the ambient temperature

I <sub>n</sub> [A]	Ambient temperature T [°C]															
	-25	-20	-10	0	10	20	30	35	40	45	50	55	60	65	70	75
0.16	0.20	0.19	0.19	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13
0.25	0.31	0.30	0.29	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.21
0.5	0.61	0.60	0.58	0.56	0.54	0.52	0.50	0.49	0.48	0.47	0.46	0.45	0.44	0.43	0.42	0.41
0.75	0.92	0.90	0.87	0.84	0.81	0.78	0.75	0.74	0.73	0.71	0.69	0.68	0.66	0.65	0.64	0.62
1	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.99	0.97	0.95	0.93	0.90	0.89	0.87	0.85	0.83
1.5	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.2
1.6	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.3
2	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.7	1.7	1.7
2.5	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.1	2.1
3	3.7	3.6	3.5	3.4	3.3	3.1	3.0	3.0	2.9	2.8	2.8	2.7	2.7	2.6	2.5	2.5
3.5	4.3	4.2	4.1	3.9	3.8	3.7	3.5	3.4	3.4	3.3	3.2	3.2	3.1	3.0	3.0	2.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9	3.8	3.7	3.6	3.5	3.5	3.4	3.3
5	6.1	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.1
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3	5.2	5.1	5.0
8	9.8	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7	7.6	7.4	7.2	7.1	6.9	6.8	6.6
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9	8.7	8.5	8.3
12	15	14	14	13	13	13	12	12	12	11	11	11	11	10	10	10
13	16	16	15	15	14	14	13	13	13	12	12	12	12	11	11	11
15	18	18	17	17	16	16	15	15	15	14	14	14	13	13	13	12
16	20	19	19	18	17	17	16	16	15	15	15	14	14	14	14	13
20	24	24	23	22	22	21	20	20	19	19	19	18	18	17	17	17
25	31	30	29	28	27	26	25	25	24	24	23	23	22	22	21	21
32	39	38	37	36	35	33	32	32	31	30	30	29	28	28	27	26
40	49	48	47	45	43	42	40	39	39	38	37	36	35	35	34	33
50	61	60	58	56	54	52	50	49	48	47	46	45	44	43	42	41
63	77	76	73	71	68	66	63	62	61	60	58	57	56	55	53	52

**Load Capacity of Series Connected Miniature Circuit Breakers**



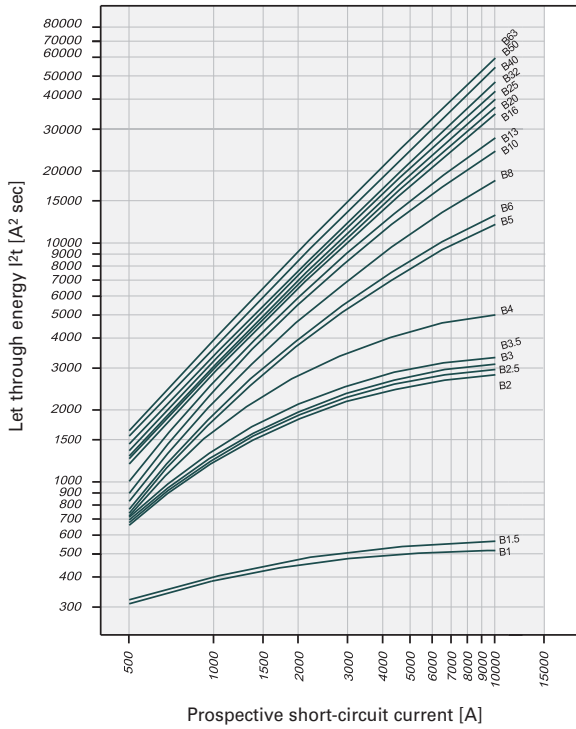
**Effect of Power Frequency**

Effect of power frequency on the tripping behaviour I<sub>MA</sub> of the quick release

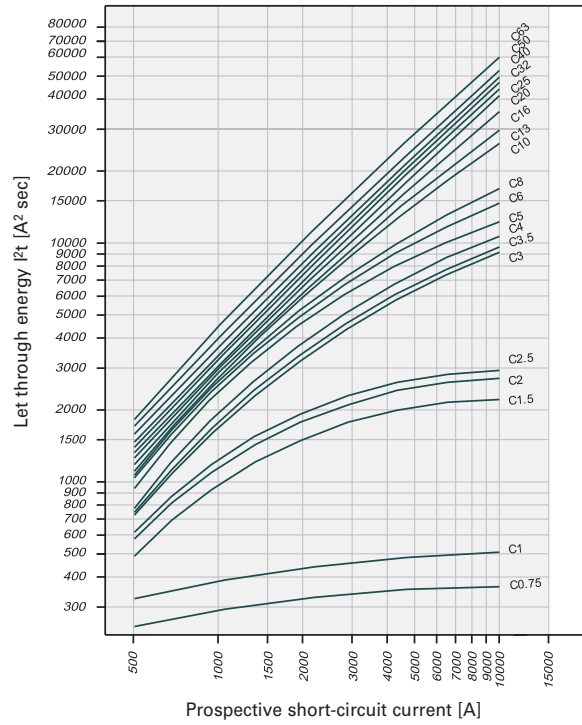
I <sub>MA</sub> (f)/I <sub>MA</sub> (50 Hz) [%]	Power frequency f [Hz]						
	16 <sup>2</sup> / <sub>3</sub>	50	60	100	200	300	400
	91	100	101	106	115	134	141

### Let-through Energy PLSM

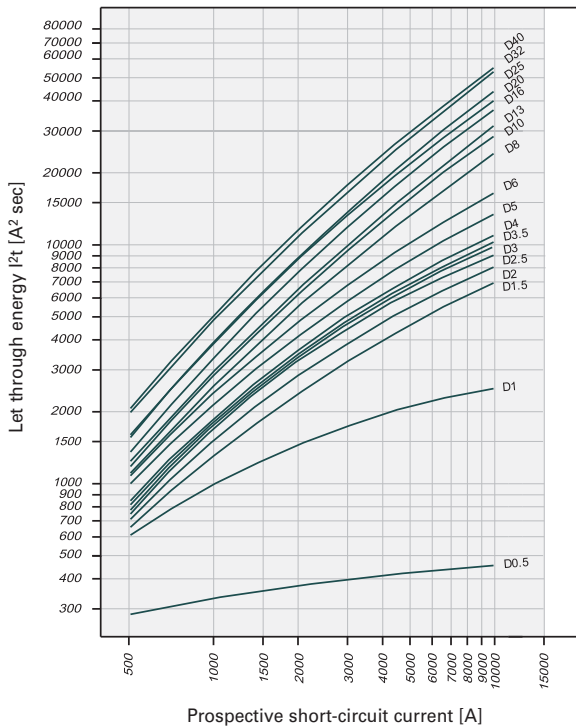
Let-through Energy PLSM, Characteristic B, 1-pole



Let-through Energy PLSM, Characteristic C, 1-pole



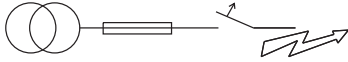
Let-through Energy PLSM, Characteristic D, 1-pole



**Short Circuit Selectivity PLSM towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers PLSM and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***)

PLSM $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
1.0	<0.5 <sup>1)</sup>	1.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	1.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	3.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.5	8.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	7.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.5	0.8	1.6	2.6	5.2	8.3	10.0 <sup>2)</sup>
10			0.5	0.8	1.4	2.2	3.9	6.0	10.0 <sup>2)</sup>
13			0.5	0.7	1.3	2.0	3.6	5.4	10.0 <sup>2)</sup>
16				0.6	1.2	1.9	3.2	4.6	8.4
20					1.2	1.8	3.1	4.4	7.8
25					1.2	1.8	3.0	4.2	7.3
32						1.7	2.8	3.9	6.8
40							2.7	3.8	6.5
50							2.5	3.5	5.7
63									5.3

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***)

PLSM $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
0.75	1.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	1.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.0	2.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	0.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.2	4.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.8	3.6	9.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.7	1.5	2.7	7.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	5.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.3	2.2	4.7	8.7	10.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	5.4	10.0 <sup>2)</sup>
13					1.3	1.9	3.3	5.0	9.4
16					1.2	1.8	3.2	4.4	8.0
20					1.2	1.8	3.1	4.1	7.0
25						1.7	2.8	3.8	6.5
32							2.7	3.7	6.2
40								3.5	5.9
50									5.5
63									

Short circuit selectivity **Characteristic D** towards fuse link **DII-DIV\***)

PLSM $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
0.5	0.5	3.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.0	2.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	3.5	7.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	2.8	5.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.4	2.3	4.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.3	4.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.1	4.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.8	9.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.5	0.7	1.7	3.1	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6			0.5	0.7	1.5	2.6	5.3	9.1	10.0 <sup>2)</sup>
8			<0.5 <sup>1)</sup>	0.7	1.4	2.2	3.9	6.0	10.0 <sup>2)</sup>
10				0.7	1.2	1.9	3.4	5.0	9.5
13					1.2	1.8	3.2	4.6	8.6
16						1.6	2.7	4.0	7.4
20						1.5	2.5	3.5	6.7
25							2.4	3.4	6.2
32								2.8	5.0
40									4.8

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

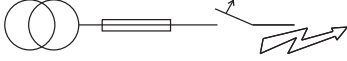
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

### Short Circuit Selectivity PLSM towards D01-D03 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers PLSM and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

PLSM $I_n$ [A]	D01-D03 gL/gG									
	10	16	20	25	35	50	63	80	100	
1.0	<0.5 <sup>1)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	4.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	2.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.5	0.8	1.7	4.0	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8			0.5	0.8	1.4	2.8	4.3	8.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			0.5	0.7	1.3	2.4	3.4	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	5.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16				0.6	1.1	2.2	2.9	4.6	10.0	10.0
20					1.1	2.1	2.8	4.4	9.3	9.3
25					1.1	2.0	2.7	4.2	8.7	8.7
32						2.0	2.6	4.0	8.0	8.0
40							2.5	3.8	7.5	7.5
50							2.3	3.4	6.7	6.7
63									6.2	6.2

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

PLSM $I_n$ [A]	D01-D03 gL/gG									
	10	16	20	25	35	50	63	80	100	
0.75	<0.5 <sup>1)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	0.5	0.6	0.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.9	5.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.8	4.7	9.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.6	4.0	7.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.3	3.1	5.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.5	4.0	8.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	5.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13					1.1	2.2	3.0	4.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16					1.1	2.1	2.8	4.4	9.5	9.5
20					1.0	2.0	2.6	4.0	8.3	8.3
25						1.9	2.5	3.8	7.8	7.8
32							2.5	3.7	7.3	7.3
40								3.5	7.0	7.0
50									6.5	6.5
63										6.5

Short circuit selectivity **Characteristic D** towards fuse link **D01-D03\***)

PLSM $I_n$ [A]	D01-D03 gL/gG									
	10	16	20	25	35	50	63	80	100	
0.5	<0.5 <sup>1)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.8	9.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	2.2	6.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.9	5.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.8	4.8	9.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.7	4.7	8.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	0.5	0.7	1.7	4.6	7.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.5	3.5	5.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6			<0.5 <sup>1)</sup>	0.5	1.3	2.9	4.5	9.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8			<0.5 <sup>1)</sup>	0.5	1.2	2.4	3.5	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10				0.5	1.1	2.2	3.0	5.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13					1.1	2.1	2.9	4.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16						1.9	2.6	3.9	9.0	9.0
20						1.7	2.3	3.5	8.0	8.0
25							2.2	3.4	7.5	7.5
32								2.9	6.0	6.0
40									5.7	5.7

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

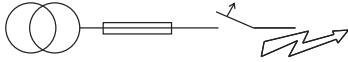
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

**Short Circuit Selectivity PLSM towards NH-00 fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers PLSM and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

PLSM	NH-00 gL/gG													
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160		
1.0	0.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
1.5	0.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
2.0	<0.5 <sup>1)</sup>	0.5	1.0	2.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
2.5	<0.5 <sup>1)</sup>	0.5	1.0	2.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
3.0	<0.5 <sup>1)</sup>	0.5	0.9	2.1	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
3.5	<0.5 <sup>1)</sup>	0.5	0.9	1.8	5.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.3	2.3	4.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.6	2.2	3.6	4.8	8.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.5	2.0	3.3	4.3	7.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	1.3	1.7	2.6	3.3	5.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
10		<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	9.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
13		<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	7.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	6.4	9.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
20				0.7	1.0	1.3	1.9	2.4	3.3	6.0	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
25					0.7	1.0	1.3	1.8	2.3	5.7	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
32						0.9	1.2	1.7	2.2	3.1	5.4	7.6	10.0 <sup>2)</sup>	
40									2.1	3.0	5.1	7.2	10.0 <sup>2)</sup>	
50										1.9	2.8	4.7	6.6	9.5
63											4.4	6.3	8.6	10.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

PLSM	NH-00 gL/gG													
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160		
0.75	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
1.0	0.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
1.5	<0.5 <sup>1)</sup>	0.6	1.3	4.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
2.0	<0.5 <sup>1)</sup>	0.6	1.0	2.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
2.5	<0.5 <sup>1)</sup>	0.5	1.0	2.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	1.8	2.6	4.7	6.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.7	2.4	4.2	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.5	2.1	3.6	5.0	10.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.2	1.7	2.8	3.8	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	5.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.1	1.5	2.3	2.9	4.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
13					1.0	1.3	1.9	2.4	3.6	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
16						1.0	1.3	1.8	2.3	3.3	6.0	8.8	10.0 <sup>2)</sup>	
20							1.0	1.2	1.7	2.2	3.2	5.5	7.7	10.0 <sup>2)</sup>
25								1.6	2.1	3.0	5.2	7.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
32									2.1	2.9	5.0	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
40										2.8	4.8	6.7	10.0	10.0 <sup>2)</sup>
50											4.5	6.3	9.5	10.0 <sup>2)</sup>
63												5.9	8.4	10.0 <sup>2)</sup>

Short circuit selectivity **Characteristic D** towards fuse link **NH-00\***)

PLSM	NH-00 gL/gG												
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
0.5	2.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	0.6	1.4	4.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	1.6	2.7	4.0	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.3	2.1	3.1	6.0	8.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	1.8	2.6	4.8	6.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.7	2.4	4.3	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.7	2.4	4.2	5.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.6	2.2	3.8	5.2	10.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.6	0.9	1.4	1.9	3.2	4.1	7.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.6	2.6	3.3	5.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8			0.5	0.8	1.1	1.5	2.2	2.7	4.1	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10				0.5	0.7	1.0	1.3	1.9	2.5	3.6	7.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13					1.0	1.3	1.9	2.3	3.4	6.5	9.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16						1.1	1.6	2.0	3.0	5.5	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
20							1.4	1.8	2.8	5.0	7.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
25								1.8	2.7	4.8	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
32									2.4	4.1	6.2	9.3	10.0 <sup>2)</sup>
40										4.0	6.0	9.0	10.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

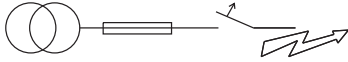
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

### Short Circuit Selectivity PLSM towards cylindrical fuse links

In case of short circuit, there is selectivity between the miniature circuit breakers PLSM and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **CH10x38 gG, CH14x51 gG, CH22x58 gG\*)**

PLSM $I_n$ [A]	CH10x38 gG				CH15x51 gG					CH22x58 gG								
	16	20	25	32	20	25	32	40	50	16	20	25	32	40	50	63	80	100
1	0.5	>10	>10	>10	>10	>10	>10	>10	>10	1.2	>10	>10	>10	>10	>10	>10	>10	>10
2	<0.5	0.6	1.2	3.6	0.5	1.0	5.2	>10	>10	<0.5	0.5	1.1	>10	>10	>10	>10	>10	>10
3	<0.5	0.5	0.8	1.4	0.5	0.9	3.7	>10	>10	<0.5	0.5	1.0	8.0	>10	>10	>10	>10	>10
4	<0.5	<0.5	0.7	1.2	<0.5	0.7	1.7	4.0	>10	<0.5	<0.5	0.8	2.3	5.1	>10	>10	>10	>10
6	<0.5	<0.5	0.6	0.9	<0.5	0.7	1.3	2.0	2.7	<0.5	<0.5	0.7	1.5	2.2	2.6	5.6	10	>10
10	<0.5	<0.5	0.6	0.9	<0.5	0.6	1.1	1.5	2.0	<0.5	<0.5	0.6	1.2	1.6	1.9	3.2	4.8	9.0
13	<0.5	<0.5	0.6	0.8	<0.5	0.6	1.0	1.4	1.9	<0.5	<0.5	0.6	1.2	1.5	1.7	3.0	4.3	7.7
16		<0.5	0.5	0.8	<0.5	0.5	1.0	1.4	1.8		<0.5	0.5	1.1	1.4	1.6	2.7	3.8	6.3
20			0.5	0.8		<0.5	0.9	1.3	1.6			0.5	1.1	1.4	1.6	2.6	3.7	6.0
25				0.7			0.9	1.3	1.6				1.0	1.3	1.5	2.5	3.5	5.6
32								1.2	1.5					1.3	1.5	2.4	3.3	5.2
40									1.5						1.4	2.3	3.2	5.0
50																2.1	2.9	4.5
63																	2.8	4.2

Short circuit selectivity **Characteristic C** towards fuse link **CH10x38 gG, CH14x51 gG, CH22x58 gG\*)**

PLSM $I_n$ [A]	CH10x38 gG				CH15x51 gG					CH22x58 gG								
	16	20	25	32	20	25	32	40	50	16	20	25	32	40	50	63	80	100
0.5	1.9	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10
1	<0.5	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10
2	<0.5	0.6	1.2	3.6	0.5	1.0	4.5	>10	>10	<0.5	0.6	1.1	>10	>10	>10	>10	>10	>10
3	<0.5	0.5	0.8	1.4	<0.5	0.7	1.4	2.4	3.7	<0.5	<0.5	0.8	1.8	2.7	3.5	9.3	>10	>10
4	<0.5	<0.5	0.7	1.2	<0.5	0.7	1.2	2.0	2.9	<0.5	<0.5	0.7	1.5	2.2	2.7	6.7	>10	>10
6	<0.5	<0.5	0.6	0.9	<0.5	<0.5	1.0	1.4	2.0	<0.5	<0.5	0.6	1.1	1.6	1.9	4.2	7.0	>10
10	<0.5	<0.5	0.5	0.8	<0.5	<0.5	0.9	1.3	1.7	<0.5	<0.5	0.6	1.1	1.5	1.8	2.9	4.1	7.5
13	<0.5	<0.5	0.5	0.8	<0.5	<0.5	0.9	1.3	1.7	<0.5	<0.5	0.5	1.0	1.4	1.7	2.7	3.8	6.5
16		<0.5	0.5	0.8	<0.5	<0.5	0.8	1.2	1.6		<0.5	<0.5	1.0	1.3	1.5	2.6	3.5	5.8
20			<0.5	0.7		<0.5	0.8	1.2	1.5			<0.5	0.9	1.2	1.4	2.5	3.3	5.4
25				0.7			0.8	1.1	1.4				0.9	1.2	1.4	2.3	3.2	5.0
32								1.1	1.4					1.1	1.3	2.2	3.0	4.8
40									1.3					1.2	2.0	2.8	4.6	
50																1.9	2.6	4.2
63																	2.3	3.7

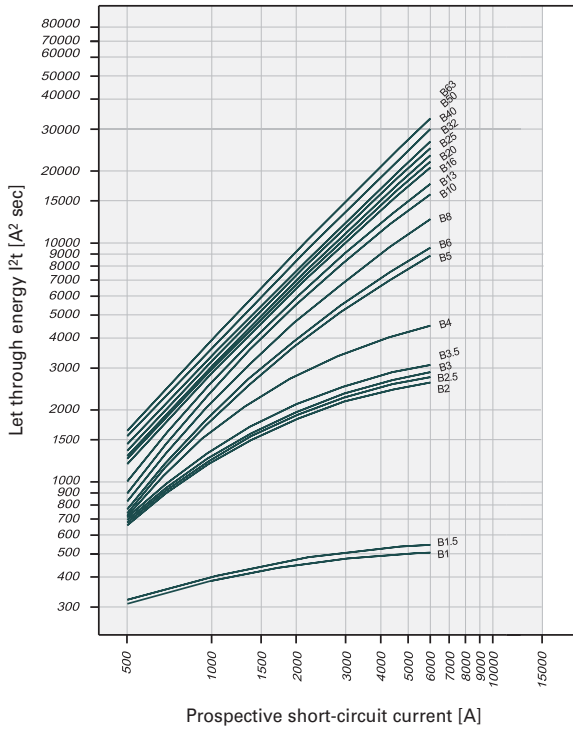
Short circuit selectivity **Characteristic C** towards fuse link **CH10x38 gG, CH14x51 gG, CH22x58 gG\*)**

PLSM $I_n$ [A]	CH10x38 gG				CH15x51 gG					CH22x58 gG								
	16	20	25	32	20	25	32	40	50	16	20	25	32	40	50	63	80	100
0.5	0.9	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10
1	<0.5	>10	>10	>10	>10	>10	>10	>10	>10	<0.5	0.6	1.5	>10	>10	>10	>10	>10	>10
2	<0.5	0.5	0.6	1.6	<0.5	1.0	1.7	>10	>10	<0.5	0.5	0.8	2.1	3.3	4.3	>10	>10	>10
3	<0.5	<0.5	0.8	1.3	<0.5	0.7	1.4	2.4	3.4	<0.5	<0.5	0.7	1.7	2.5	3.2	8.2	>10	>10
4	<0.5	<0.5	0.7	1.2	<0.5	0.7	1.3	2.0	3.1	<0.5	<0.5	0.7	1.6	2.3	3.0	7.0	>10	>10
6	<0.5	<0.5	0.6	1.0	<0.5	<0.5	1.0	1.6	2.0	<0.5	<0.5	0.6	1.3	1.7	2.1	4.2	7.0	>10
10	<0.5	<0.5	0.6	0.8	<0.5	<0.5	0.9	1.3	1.7	<0.5	<0.5	0.5	1.1	1.4	1.6	2.8	4.1	7.1
13	<0.5	<0.5	0.5	0.8	<0.5	<0.5	0.9	1.3	1.6	<0.5	<0.5	0.5	1.0	1.4	1.6	2.7	3.8	6.5
16		<0.5	0.5	0.7	<0.5	<0.5	0.8	1.1	1.4		<0.5	<0.5	1.0	1.2	1.4	2.3	3.2	5.5
20			<0.5	0.7		<0.5	0.7	1.0	1.3			<0.5	0.8	1.1	1.3	2.1	2.9	4.6
25				0.7			0.7	1.0	1.2				0.8	1.0	1.2	2.0	2.8	4.0
32														0.9	1.0	1.7	2.3	3.8
40															1.0	2.0	2.2	3.6

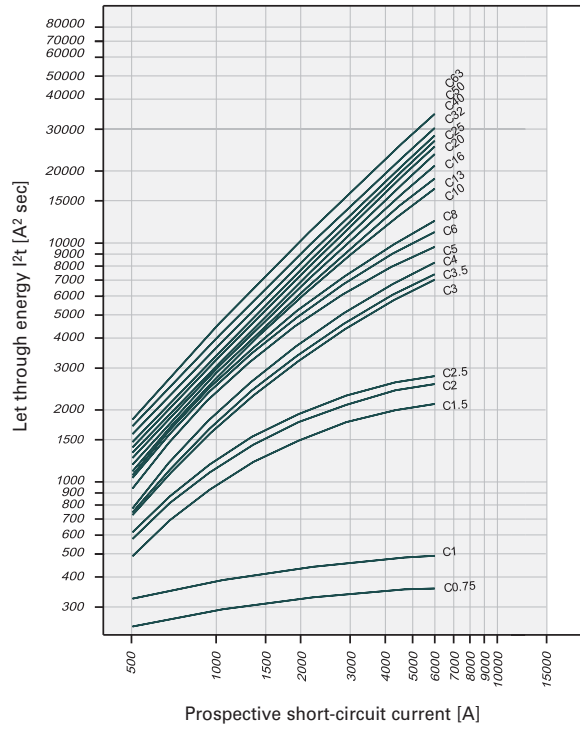
Darker areas: no selectivity

Let-through Energy PLS6

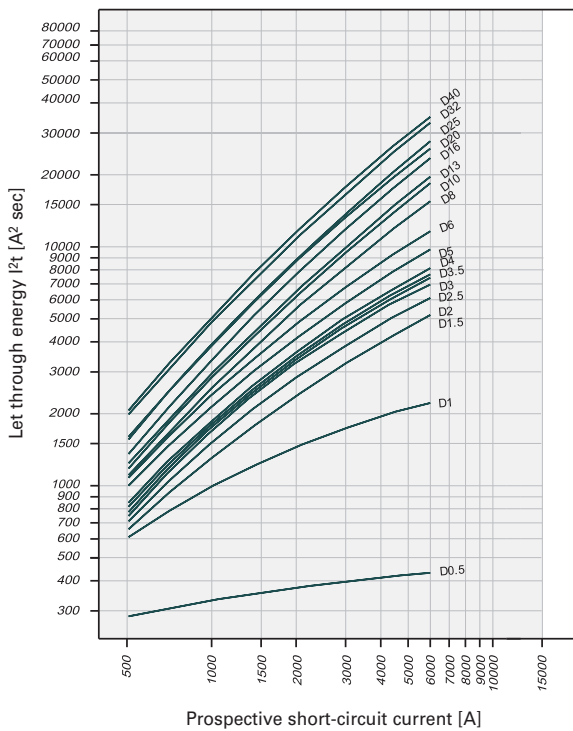
Let-through Energy PLS6, Characteristic B, 1-pole



Let-through Energy PLS6, Characteristic C, 1-pole



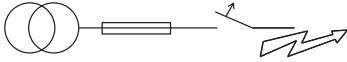
Let-through Energy PLS6, Characteristic D, 1-pole



### Short Circuit Selectivity PLS6 towards DII-DIV fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers PLS6 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***)

PLS6 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
1.0	<0.5 <sup>1)</sup>	1.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	1.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.5	0.8	1.6	2.6	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.8	1.4	2.2	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.5	0.7	1.3	2.0	3.6	5.4	6.0 <sup>2)</sup>
16				0.6	1.2	1.9	3.2	4.6	6.0 <sup>2)</sup>
20					1.2	1.8	3.1	4.4	6.0 <sup>2)</sup>
25					1.2	1.8	3.0	4.2	6.0 <sup>2)</sup>
32						1.7	2.8	3.9	6.0 <sup>2)</sup>
40							2.7	3.8	6.0 <sup>2)</sup>
50							2.5	3.5	5.7
63									5.3

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***)

PLS6 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
0.75	1.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	1.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.0	2.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	0.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.2	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.8	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.7	1.5	2.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.3	2.2	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.3	1.9	3.3	5.0	6.0 <sup>2)</sup>
16					1.2	1.8	3.2	4.4	6.0 <sup>2)</sup>
20					1.2	1.8	3.1	4.1	6.0 <sup>2)</sup>
25						1.7	2.8	3.8	6.0 <sup>2)</sup>
32							2.7	3.7	6.0 <sup>2)</sup>
40								3.5	5.9
50									5.5
63									

Short circuit selectivity **Characteristic D** towards fuse link **DII-DIV\***)

PLS6 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
0.5	0.5	3.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.0	2.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	3.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	2.8	5.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.4	2.3	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.3	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.1	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.5	0.7	1.7	3.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6			0.5	0.7	1.5	2.6	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			<0.5 <sup>1)</sup>	0.7	1.4	2.2	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10				0.7	1.2	1.9	3.4	5.0	6.0 <sup>2)</sup>
13					1.2	1.8	3.2	4.6	6.0 <sup>2)</sup>
16						1.6	2.7	4.0	6.0 <sup>2)</sup>
20						1.5	2.5	3.5	6.0 <sup>2)</sup>
25							2.4	3.4	6.0 <sup>2)</sup>
32								2.8	5.0
40									4.8

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

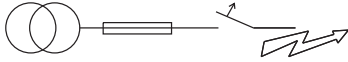
Darker areas: no selectivity



**Short Circuit Selectivity PLS6 towards D01-D03 fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers PLS6 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

PLS6 $I_n$ [A]	D01-D03 gL/gG									
	10	16	20	25	35	50	63	80	100	
1.0	<0.5 <sup>1)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	4.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	2.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.5	0.8	1.7	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			0.5	0.8	1.4	2.8	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.7	1.3	2.4	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				0.6	1.1	2.2	2.9	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.1	2.1	2.8	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.1	2.0	2.7	4.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32						2.0	2.6	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40							2.5	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
50							2.3	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
63									6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

PLS6 $I_n$ [A]	D01-D03 gL/gG									
	10	16	20	25	35	50	63	80	100	
0.75	<0.5 <sup>1)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	0.5	0.6	0.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.9	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.8	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.6	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.3	3.1	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.5	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	5.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.1	2.2	3.0	4.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.1	2.1	2.8	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.0	2.0	2.6	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25						1.9	2.5	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32							2.5	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40								3.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
50									6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
63										6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic D** towards fuse link **D01-D03\***)

PLS6 $I_n$ [A]	D01-D03 gL/gG									
	10	16	20	25	35	50	63	80	100	
0.5	<0.5 <sup>1)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	2.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.9	5.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.8	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.7	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	0.5	0.7	1.7	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.5	3.5	5.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6			<0.5 <sup>1)</sup>	0.5	1.3	2.9	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			<0.5 <sup>1)</sup>	0.5	1.2	2.4	3.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10				0.5	1.1	2.2	3.0	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.1	2.1	2.9	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16						1.9	2.6	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20						1.7	2.3	3.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25							2.2	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32								2.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40									5.7	6.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

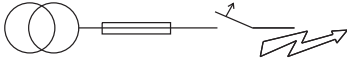
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

#### Short Circuit Selectivity PLS6 towards NH-00 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers PLS6 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

PLS6 $I_n$ [A]	NH-00 gL/gG												
	16	20	25	32	35	40	50	63	80	100	125	160	
1.0	0.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
1.5	0.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
2.0	<0.5 <sup>1)</sup>	0.5	1.0	2.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
2.5	<0.5 <sup>1)</sup>	0.5	1.0	2.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
3.0	<0.5 <sup>1)</sup>	0.5	0.9	2.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
3.5	<0.5 <sup>1)</sup>	0.5	0.9	1.8	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.3	2.3	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.6	2.2	3.6	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.5	2.0	3.3	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	1.3	1.7	2.6	3.3	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
10		<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
13		<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
20				0.7	1.0	1.3	1.9	2.4	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
25					0.7	1.0	1.3	1.8	2.3	3.2	5.7	6.0 <sup>2)</sup>	
32						0.9	1.2	1.7	2.2	3.1	5.4	6.0 <sup>2)</sup>	
40									2.1	3.0	5.1	6.0 <sup>2)</sup>	
50										1.9	2.8	4.7	6.0 <sup>2)</sup>
63											4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

PLS6 $I_n$ [A]	NH-00 gL/gG													
	16	20	25	32	35	40	50	63	80	100	125	160		
0.75	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
1.0	0.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
1.5	<0.5 <sup>1)</sup>	0.6	1.3	4.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
2.0	<0.5 <sup>1)</sup>	0.6	1.0	2.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
2.5	<0.5 <sup>1)</sup>	0.5	1.0	2.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	1.8	2.6	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.7	2.4	4.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.5	2.1	3.6	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.2	1.7	2.8	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.1	1.5	2.3	2.9	4.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
10				0.5	0.7	1.0	1.4	2.0	2.5	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
13						1.0	1.3	1.9	2.4	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
16							1.0	1.3	1.8	2.3	3.3	6.0 <sup>2)</sup>		
20								1.0	1.2	1.7	2.2	3.2	5.5	6.0 <sup>2)</sup>
25									1.6	2.1	3.0	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32										2.1	2.9	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40											2.8	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
50												4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
63													5.9	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic D** towards fuse link **NH-00\***

PLS6 $I_n$ [A]	NH-00 gL/gG											
	16	20	25	32	35	40	50	63	80	100	125	160
0.5	2.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	0.6	1.4	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	1.6	2.7	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.3	2.1	3.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	1.8	2.6	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.7	2.4	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.7	2.4	4.2	5.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.6	2.2	3.8	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.6	0.9	1.4	1.9	3.2	4.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.6	2.6	3.3	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			0.5	0.8	1.1	1.5	2.2	2.7	4.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10				0.5	0.7	1.0	1.3	1.9	2.5	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.0	1.3	1.9	2.3	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16						1.1	1.6	2.0	3.0	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20							1.4	1.8	2.8	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25								1.8	2.7	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32									2.4	4.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40										4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

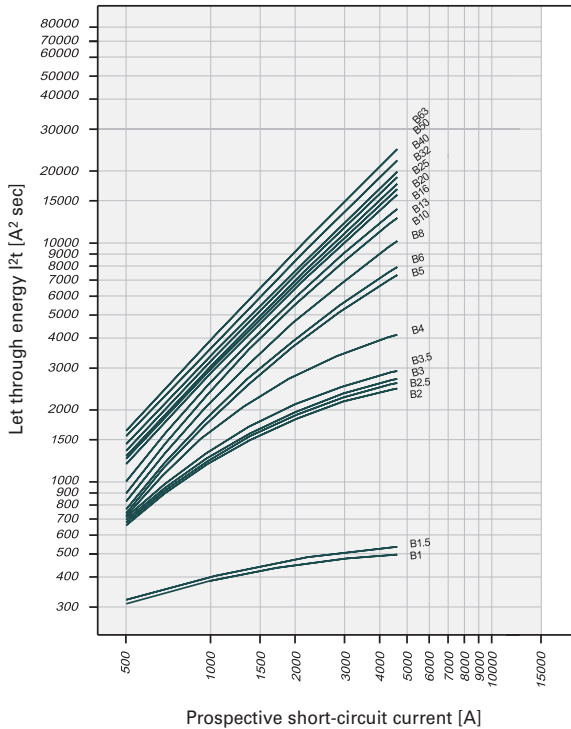
<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

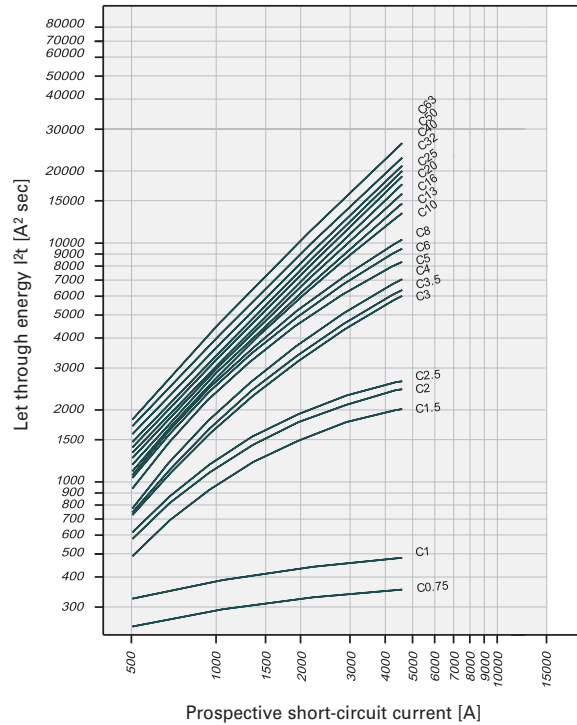
Darker areas: no selectivity

Let-through Energy PLS4

Let-through Energy PLS4, Characteristic B, 1-pole



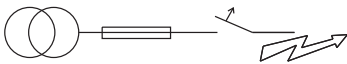
Let-through Energy PLS4, Characteristic C, 1-pole



Short Circuit Selectivity PLS4 towards DII-DIV fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers PLS4 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

PLS4 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
1.0	<0.5 <sup>1)</sup>	1.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.5	0.8	1.6	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.8	1.4	2.2	3.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			0.5	0.7	1.3	2.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.6	1.2	1.9	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.2	1.8	3.1	4.4	4.5 <sup>2)</sup>
25					1.2	1.8	3.0	4.2	4.5 <sup>2)</sup>
32						1.7	2.8	3.9	4.5 <sup>2)</sup>
40							2.7	3.8	4.5 <sup>2)</sup>
50							2.5	3.5	4.5 <sup>2)</sup>
63									4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

PLS4 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
0.75	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	1.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.0	2.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.8	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.7	1.5	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.3	2.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.3	1.9	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					1.2	1.8	3.2	4.4	4.5 <sup>2)</sup>
20					1.2	1.8	3.1	4.1	4.5 <sup>2)</sup>
25						1.7	2.8	3.8	4.5 <sup>2)</sup>
32							2.7	3.7	4.5 <sup>2)</sup>
40								3.5	4.5 <sup>2)</sup>
50									4.5 <sup>2)</sup>
63									4.5 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

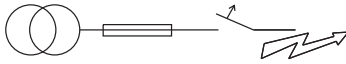
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

**Short Circuit Selectivity PLS4 towards D01-D03 fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers PLS4 and the upstream fuses up to the specified values of the selectivity limit current  $I_s$  [kA] (i. e. in case of short-circuit currents  $I_{cs}$  under  $I_s$  only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

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

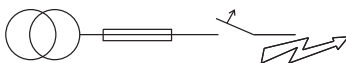


Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

PLS4 $I_n$ [A]	D01-D03 gL/gG									
	10	16	20	25	35	50	63	80	100	
1.0	<0.5 <sup>1)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	4.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.7	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8			0.5	0.8	1.4	2.8	4.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.7	1.3	2.4	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.6	1.1	2.2	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.1	2.1	2.8	4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25					1.1	2.0	2.7	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32						2.0	2.6	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40							2.5	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50							2.3	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63									4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

PLS4 $I_n$ [A]	D01-D03 gL/gG									
	10	16	20	25	35	50	63	80	100	
0.75	<0.5 <sup>1)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	0.5	0.6	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.6	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.3	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.5	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.1	2.2	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					1.1	2.1	2.8	4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.0	2.0	2.6	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25						1.9	2.5	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32							2.5	3.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40								3.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50									4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63										4.5 <sup>2)</sup>



Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

PLS4 $I_n$ [A]	NH-00 gL/gG												
	16	20	25	32	35	40	50	63	80	100	125	160	
1.0	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	0.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	0.5	1.0	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	0.5	1.0	2.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	0.5	0.9	2.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	1.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.3	2.3	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.1	1.6	2.2	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	1.1	1.5	2.0	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.6	1.0	1.3	1.7	2.6	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				0.7	1.0	1.3	1.9	2.4	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25				0.7	1.0	1.3	1.8	2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32					0.9	1.2	1.7	2.2	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40								2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50								1.9	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63									4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

PLS4 $I_n$ [A]	NH-00 gL/gG													
	16	20	25	32	35	40	50	63	80	100	125	160		
0.75	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
1.0	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
1.5	<0.5 <sup>1)</sup>	0.6	1.3	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
2.0	<0.5 <sup>1)</sup>	0.6	1.0	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
2.5	<0.5 <sup>1)</sup>	0.5	1.0	2.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	1.8	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.7	2.4	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.5	2.1	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.2	1.7	2.8	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.1	1.5	2.3	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
13					1.0	1.3	1.9	2.4	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
16					1.0	1.3	1.8	2.3	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
20					1.0	1.2	1.7	2.2	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
25						1.6	2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
32							2.1	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
40								2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
50									4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	
63											4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	

SG45311



## Description

- High-quality miniature circuit breakers for DC-applications
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 50 A
- Tripping Characteristic C
- Rated breaking capacity 10 kA according to IEC/EN 60947-2
- Up to 250 V DC per pole

# 1.334 Protective Devices

xPole

Miniature Circuit Breakers PLS6-DC for direct current application (MW)

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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## 10 kA, Characteristic C

### 1-pole

1	PLS6-C1-DC	243115	12/120
2	PLS6-C2-DC	243116	12/120
3	PLS6-C3-DC	243117	12/120
4	PLS6-C4-DC	243118	12/120
6	PLS6-C6-DC	243119	12/120
10	PLS6-C10-DC	243120	12/120
13	PLS6-C13-DC	243121	12/120
16	PLS6-C16-DC	243122	12/120
20	PLS6-C20-DC	243123	12/120
25	PLS6-C25-DC	243124	12/120
32	PLS6-C32-DC	243125	12/120
40	PLS6-C40-DC	243126	12/120
50	PLS6-C50-DC	243127	12/120

SG45311



### 2-pole

1	PLS6-C1/2-DC	243128	1/60
2	PLS6-C2/2-DC	243129	1/60
3	PLS6-C3/2-DC	243130	1/60
4	PLS6-C4/2-DC	243131	1/60
6	PLS6-C6/2-DC	243132	1/60
10	PLS6-C10/2-DC	243133	1/60
13	PLS6-C13/2-DC	243134	1/60
16	PLS6-C16/2-DC	243135	1/60
20	PLS6-C20/2-DC	243136	1/60
25	PLS6-C25/2-DC	243137	1/60
32	PLS6-C32/2-DC	243138	1/60
40	PLS6-C40/2-DC	243139	1/60
50	PLS6-C50/2-DC	243140	1/60

SG55411



**Specifications | Miniature Circuit Breakers PLS6-DC**

**Description**

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Rated breaking capacity 10 kA according to IEC/EN 60947
- Rated voltage to 250 V (per pole),  $\tau = 4$  ms
- Take into account polarity!

**Accessories:**

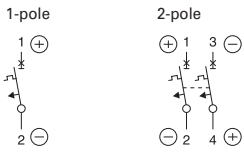
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

**Technical Data**

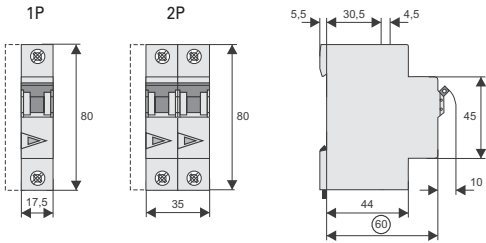
		PLS6-DC
<b>Electrical</b>		
Design according to		IEC/EN 60947-2
Current test marks as printed onto the device		
Rated voltage DC		1-2 A types: 220 V (per pole) 3-50 A types: 250 V (per pole)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60947-2		10 kA
Characteristic		C
Back-up fuse		max. 100 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position

Note: not for PV string protection!

### Connection diagrams

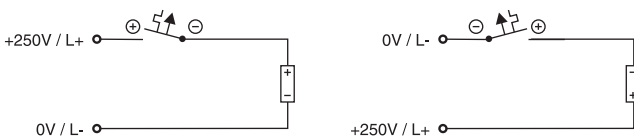


### Dimensions (mm)

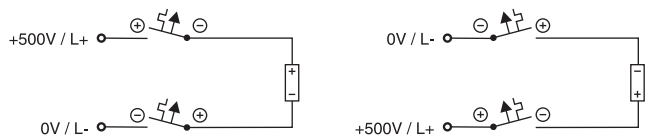


### Connection examples

#### Connection example at 250 V=, 1-pole

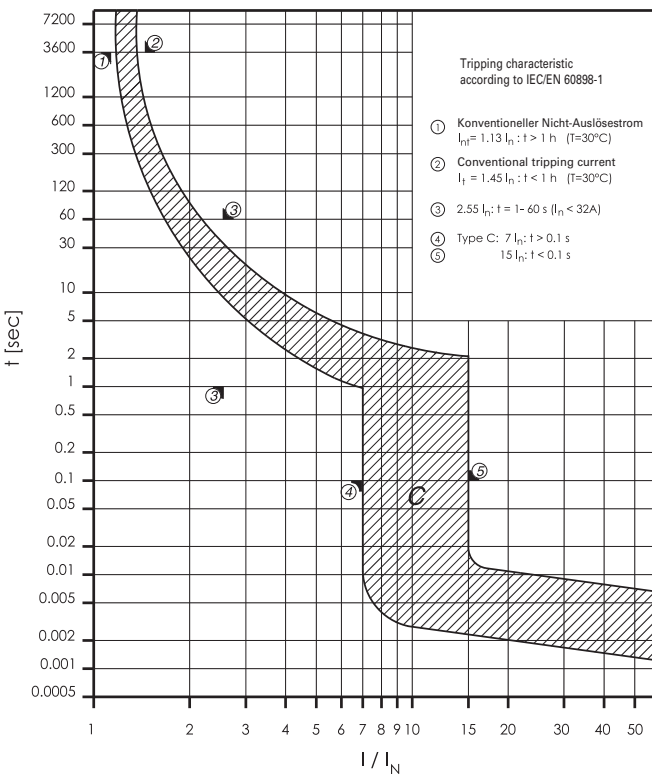


#### Connection example at 500 V=, 2-pole



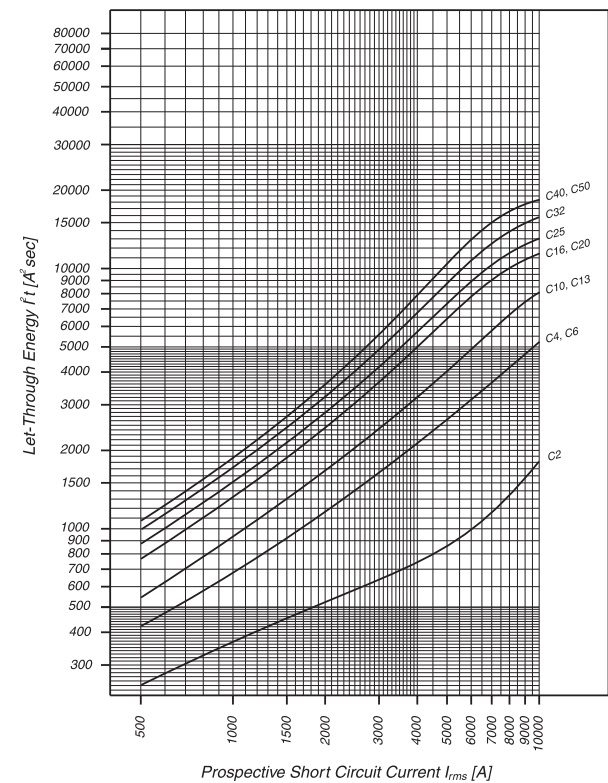
### Tripping characteristic PLS6-DC

Type C



### Let-through Energy PLS6-DC

Type C, 250 V d.c.,  $\tau = 5$  ms (according to IEC/EN 60947-2)





SG06511



## Description

- High-quality miniature circuit breakers for commercial and residential applications
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 63 A
- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA according to IEC/EN 60898-1

SG06211



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>10 kA, Characteristic B</b>			
<b>1-pole</b>			
1	PL7-B1/1	165052	12/120
1.5	PL7-B1,5/1	165048	12/120
1.6	PL7-B1,6/1	165049	12/120
2	PL7-B2/1	264839	12/120
2.5	PL7-B2,5/1	165053	12/120
3	PL7-B3/1	165055	12/120
3.5	PL7-B3,5/1	165054	12/120
4	PL7-B4/1	264850	12/120
5	PL7-B5/1	165056	12/120
6	PL7-B6/1	262673	12/120
8	PL7-B8/1	165057	12/120
10	PL7-B10/1	262674	12/120
12	PL7-B12/1	165050	12/120
13	PL7-B13/1	262675	12/120
15	PL7-B15/1	165051	12/120
16	PL7-B16/1	262676	12/120
20	PL7-B20/1	262677	12/120
25	PL7-B25/1	262678	12/120
32	PL7-B32/1	262679	12/120
40	PL7-B40/1	262690	12/120
50	PL7-B50/1	262691	12/120
63	PL7-B63/1	262692	12/120

SG06311



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>1+N-pole</b>			
1	PL7-B1/1N	165214	8/80
1.5	PL7-B1,5/1N	165212	8/80
1.6	PL7-B1,6/1N	165213	8/80
2	PL7-B2/1N	165218	8/80
2.5	PL7-B2,5/1N	165217	8/80
3	PL7-B3/1N	165220	8/80
3.5	PL7-B3,5/1N	165219	8/80
4	PL7-B4/1N	165221	8/80
5	PL7-B5/1N	165222	8/80
6	PL7-B6/1N	262727	8/80
8	PL7-B8/1N	165223	8/80
10	PL7-B10/1N	262728	8/80
12	PL7-B12/1N	165215	8/80
13	PL7-B13/1N	262729	8/80
15	PL7-B15/1N	165216	8/80
16	PL7-B16/1N	262740	8/80
20	PL7-B20/1N	262741	8/80
25	PL7-B25/1N	262742	8/80
32	PL7-B32/1N	262743	8/80

SG06411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
1	PL7-B1/2	165079	6/60
1.5	PL7-B1,5/2	165077	6/60
1.6	PL7-B1,6/2	165078	6/60
2	PL7-B2/2	165083	6/60
2.5	PL7-B2,5/2	165082	6/60
3	PL7-B3/2	165085	6/60
3.5	PL7-B3,5/2	165084	6/60
4	PL7-B4/2	165086	6/60
5	PL7-B5/2	165087	6/60
6	PL7-B6/2	262761	6/60
8	PL7-B8/2	165088	6/60
10	PL7-B10/2	262762	6/60
12	PL7-B12/2	165080	6/60
13	PL7-B13/2	262764	6/60
15	PL7-B15/2	165081	6/60
16	PL7-B16/2	262765	6/60
20	PL7-B20/2	262766	6/60
25	PL7-B25/2	262767	6/60
32	PL7-B32/2	262768	6/60
40	PL7-B40/2	262769	6/60
50	PL7-B50/2	263350	6/60
63	PL7-B63/2	263351	6/60

SG06511



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
1	PL7-B1/3	165112	4/40
1.5	PL7-B1,5/3	165110	4/40
1.6	PL7-B1,6/3	165111	4/40
2	PL7-B2/3	165116	4/40
2.5	PL7-B2,5/3	165115	4/40
3	PL7-B3/3	165118	4/40
3.5	PL7-B3,5/3	165117	4/40
4	PL7-B4/3	116709	4/40
5	PL7-B5/3	165119	4/40
6	PL7-B6/3	263386	4/40
8	PL7-B8/3	165120	4/40
10	PL7-B10/3	263387	4/40
12	PL7-B12/3	165113	4/40
13	PL7-B13/3	263388	4/40
15	PL7-B15/3	165114	4/40
16	PL7-B16/3	263389	4/40
20	PL7-B20/3	263390	4/40
25	PL7-B25/3	263391	4/40
32	PL7-B32/3	263392	4/40
40	PL7-B40/3	263393	4/40
50	PL7-B50/3	263400	4/40
63	PL7-B63/3	263401	4/40

# 1.340 Protective Devices

## Miniature Circuit Breakers PL7

xPole

SG06711



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
1	PL7-B1/3N	165251	3/30
1.5	PL7-B1,5/3N	165249	3/30
1.6	PL7-B1,6/3N	165250	3/30
2	PL7-B2/3N	165255	3/30
2.5	PL7-B2,5/3N	165254	3/30
3	PL7-B3/3N	165257	3/30
3.5	PL7-B3,5/3N	165256	3/30
4	PL7-B4/3N	165258	3/30
5	PL7-B5/3N	165259	3/30
6	PL7-B6/3N	263982	3/30
8	PL7-B8/3N	165260	3/30
10	PL7-B10/3N	263983	3/30
12	PL7-B12/3N	165252	3/30
13	PL7-B13/3N	263984	3/30
15	PL7-B15/3N	165253	3/30
16	PL7-B16/3N	263985	3/30
20	PL7-B20/3N	263986	3/30
25	PL7-B25/3N	263987	3/30
32	PL7-B32/3N	263988	3/30
40	PL7-B40/3N	263989	3/30
50	PL7-B50/3N	263990	3/30
63	PL7-B63/3N	263991	3/30

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
1	PL7-B1/4	165146	3/30
1.5	PL7-B1,5/4	165144	3/30
1.6	PL7-B1,6/4	165145	3/30
2	PL7-B2/4	165153	3/30
2.5	PL7-B2,5/4	165152	3/30
3	PL7-B3/4	165157	3/30
3.5	PL7-B3,5/4	165156	3/30
4	PL7-B4/4	165159	3/30
5	PL7-B5/4	165161	3/30
6	PL7-B6/4	165163	3/30
8	PL7-B8/4	165165	3/30
10	PL7-B10/4	165147	3/30
12	PL7-B12/4	165148	3/30
13	PL7-B13/4	165149	3/30
15	PL7-B15/4	165150	3/30
16	PL7-B16/4	165151	3/30
20	PL7-B20/4	165154	3/30
25	PL7-B25/4	165155	3/30
32	PL7-B32/4	165158	3/30
40	PL7-B40/4	165160	3/30
50	PL7-B50/4	165162	3/30
63	PL7-B63/4	165164	3/30

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>10 kA, Characteristic C</b>			
<b>1-pole</b>			
0.16	PL7-C0.16/1	262693	12/120
0.25	PL7-C0,25/1	262694	12/120
0.5	PL7-C0,5/1	262695	12/120
0.75	PL7-C0,75/1	262696	12/120
1	PL7-C1/1	262697	12/120
1.5	PL7-C1,5/1	165058	12/120
1.6	PL7-C1,6/1	262698	12/120
2	PL7-C2/1	262699	12/120
2.5	PL7-C2,5/1	165061	12/120
3	PL7-C3/1	165063	12/120
3.5	PL7-C3,5/1	165062	12/120
4	PL7-C4/1	262700	12/120
5	PL7-C5/1	165064	12/120
6	PL7-C6/1	262701	12/120
8	PL7-C8/1	165065	12/120
10	PL7-C10/1	262702	12/120
12	PL7-C12/1	165059	12/120
13	PL7-C13/1	262703	12/120
15	PL7-C15/1	165060	12/120
16	PL7-C16/1	262704	12/120
20	PL7-C20/1	262705	12/120
25	PL7-C25/1	262706	12/120
32	PL7-C32/1	262707	12/120
40	PL7-C40/1	262708	12/120
50	PL7-C50/1	262709	12/120
63	PL7-C63/1	262710	12/120

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<b>1+N-pole</b>			
0.16	PL7-C0.16/1N	165224	8/80
0.25	PL7-C0,25/1N	165225	8/80
0.5	PL7-C0,5/1N	165226	8/80
0.75	PL7-C0,75/1N	165227	8/80
1	PL7-C1/1N	165230	8/80
1.5	PL7-C1,5/1N	165228	8/80
1.6	PL7-C1,6/1N	165229	8/80
2	PL7-C2/1N	262744	8/80
2.5	PL7-C2,5/1N	165233	8/80
3	PL7-C3/1N	165235	8/80
3.5	PL7-C3,5/1N	165234	8/80
4	PL7-C4/1N	262745	8/80
5	PL7-C5/1N	165236	8/80
6	PL7-C6/1N	262746	8/80
8	PL7-C8/1N	165237	8/80
10	PL7-C10/1N	262747	8/80
12	PL7-C12/1N	165231	8/80
13	PL7-C13/1N	262748	8/80
15	PL7-C15/1N	165232	8/80
16	PL7-C16/1N	262749	8/80
20	PL7-C20/1N	262750	8/80
25	PL7-C25/1N	262751	8/80
32	PL7-C32/1N	262752	8/80

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.16	PL7-C0.16/2	165089	6/60
0.25	PL7-C0.25/2	165090	6/60
0.5	PL7-C0.5/2	263352	6/60
0.75	PL7-C0.75/2	165091	6/60
1	PL7-C1/2	263353	6/60
1.5	PL7-C1.5/2	165092	6/60
1.6	PL7-C1.6/2	165093	6/60
2	PL7-C2/2	263354	6/60
2.5	PL7-C2.5/2	165096	6/60
3	PL7-C3/2	165098	6/60
3.5	PL7-C3.5/2	165097	6/60
4	PL7-C4/2	263355	6/60
5	PL7-C5/2	165099	6/60
6	PL7-C6/2	263356	6/60
8	PL7-C8/2	165100	6/60
10	PL7-C10/2	263357	6/60
12	PL7-C12/2	165094	6/60
13	PL7-C13/2	263358	6/60
15	PL7-C15/2	165095	6/60
16	PL7-C16/2	263359	6/60
20	PL7-C20/2	263360	6/60
25	PL7-C25/2	263361	6/60
32	PL7-C32/2	263362	6/60
40	PL7-C40/2	263363	6/60
50	PL7-C50/2	263364	6/60
63	PL7-C63/2	263365	6/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
0.16	PL7-C0.16/3	165121	4/40
0.25	PL7-C0.25/3	165122	4/40
0.5	PL7-C0.5/3	263402	4/40
0.75	PL7-C0.75/3	165123	4/40
1	PL7-C1/3	263403	4/40
1.5	PL7-C1.5/3	165124	4/40
1.6	PL7-C1.6/3	165125	4/40
2	PL7-C2/3	263404	4/40
2.5	PL7-C2.5/3	165128	4/40
3	PL7-C3/3	165130	4/40
3.5	PL7-C3.5/3	165129	4/40
4	PL7-C4/3	263405	4/40
5	PL7-C5/3	165131	4/40
6	PL7-C6/3	263406	4/40
8	PL7-C8/3	165132	4/40
10	PL7-C10/3	263407	4/40
12	PL7-C12/3	165126	4/40
13	PL7-C13/3	263408	4/40
15	PL7-C15/3	165127	4/40
16	PL7-C16/3	263409	4/40
20	PL7-C20/3	263410	4/40
25	PL7-C25/3	263411	4/40
32	PL7-C32/3	263412	4/40
40	PL7-C40/3	263413	4/40
50	PL7-C50/3	263414	4/40
63	PL7-C63/3	263415	4/40

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
0.16	PL7-C0.16/3N	165261	3/30
0.25	PL7-C0.25/3N	165262	3/30
0.5	PL7-C0.5/3N	165263	3/30
0.75	PL7-C0.75/3N	165264	3/30
1	PL7-C1/3N	165267	3/30
1.5	PL7-C1.5/3N	165265	3/30
1.6	PL7-C1.6/3N	165266	3/30
2	PL7-C2/3N	165271	3/30
2.5	PL7-C2.5/3N	165270	3/30
3	PL7-C3/3N	165273	3/30
3.5	PL7-C3.5/3N	165272	3/30
4	PL7-C4/3N	165274	3/30
5	PL7-C5/3N	165275	3/30
6	PL7-C6/3N	263992	3/30
8	PL7-C8/3N	165276	3/30
10	PL7-C10/3N	263993	3/30
12	PL7-C12/3N	165268	3/30
13	PL7-C13/3N	263994	3/30
15	PL7-C15/3N	165269	3/30
16	PL7-C16/3N	263995	3/30
20	PL7-C20/3N	263996	3/30
25	PL7-C25/3N	263997	3/30
32	PL7-C32/3N	263998	3/30
40	PL7-C40/3N	263999	3/30
50	PL7-C50/3N	264000	3/30
63	PL7-C63/3N	264001	3/30

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.16	PL7-C0.16/4	165166	3/30
0.25	PL7-C0.25/4	165167	3/30
0.5	PL7-C0.5/4	165168	3/30
0.75	PL7-C0.75/4	165169	3/30
1	PL7-C1/4	165172	3/30
1.5	PL7-C1.5/4	165170	3/30
1.6	PL7-C1.6/4	165171	3/30
2	PL7-C2/4	165178	3/30
2.5	PL7-C2.5/4	165177	3/30
3	PL7-C3/4	165182	3/30
3.5	PL7-C3.5/4	165181	3/30
4	PL7-C4/4	165184	3/30
5	PL7-C5/4	165186	3/30
6	PL7-C6/4	165188	3/30
8	PL7-C8/4	165190	3/30
10	PL7-C10/4	165173	3/30
12	PL7-C12/4	165174	3/30
13	PL7-C13/4	165175	3/30
15	PL7-C15/4	165176	3/30
16	PL7-C16/4	107329	3/30
20	PL7-C20/4	165179	3/30
25	PL7-C25/4	165180	3/30
32	PL7-C32/4	165183	3/30
40	PL7-C40/4	165185	3/30
50	PL7-C50/4	165187	3/30
63	PL7-C63/4	165189	3/30

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>10 kA, Characteristic D</b>			
<b>1-pole</b>			
0.5	PL7-D0,5/1	165066	12/120
1	PL7-D1/1	165071	12/120
1.5	PL7-D1,5/1	165067	12/120
1.6	PL7-D1,6/1	165068	12/120
2	PL7-D2/1	262711	12/120
2.5	PL7-D2,5/1	165072	12/120
3	PL7-D3/1	165074	12/120
3.5	PL7-D3,5/1	165073	12/120
4	PL7-D4/1	262712	12/120
5	PL7-D5/1	165075	12/120
6	PL7-D6/1	262713	12/120
8	PL7-D8/1	165076	12/120
10	PL7-D10/1	262714	12/120
12	PL7-D12/1	165069	12/120
13	PL7-D13/1	262715	12/120
15	PL7-D15/1	165070	12/120
16	PL7-D16/1	262716	12/120
20	PL7-D20/1	262717	12/120
25	PL7-D25/1	262718	12/120
32	PL7-D32/1	262719	12/120
40	PL7-D40/1	262720	12/120

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<b>1+N-pole</b>			
0.5	PL7-D0,5/1N	165238	8/80
1	PL7-D1/1N	165241	8/80
1.5	PL7-D1,5/1N	165239	8/80
1.6	PL7-D1,6/1N	165240	8/80
2	PL7-D2/1N	262753	8/80
2.5	PL7-D2,5/1N	165244	8/80
3	PL7-D3/1N	165246	8/80
3.5	PL7-D3,5/1N	165245	8/80
4	PL7-D4/1N	262754	8/80
5	PL7-D5/1N	165247	8/80
6	PL7-D6/1N	262755	8/80
8	PL7-D8/1N	165248	8/80
10	PL7-D10/1N	262756	8/80
12	PL7-D12/1N	165242	8/80
13	PL7-D13/1N	262757	8/80
15	PL7-D15/1N	165243	8/80
16	PL7-D16/1N	262758	8/80
20	PL7-D20/1N	262759	8/80
25	PL7-D25/1N	262760	8/80



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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.5	PL7-D0,5/2	165101	6/60
1	PL7-D1/2	108184	6/60
1.5	PL7-D1,5/2	165102	6/60
1.6	PL7-D1,6/2	165103	6/60
2	PL7-D2/2	263366	6/60
2.5	PL7-D2,5/2	165106	6/60
3	PL7-D3/2	108185	6/60
3.5	PL7-D3,5/2	165107	6/60
4	PL7-D4/2	263367	6/60
5	PL7-D5/2	165108	6/60
6	PL7-D6/2	263368	6/60
8	PL7-D8/2	165109	6/60
10	PL7-D10/2	263369	6/60
12	PL7-D12/2	165104	6/60
13	PL7-D13/2	263380	6/60
15	PL7-D15/2	165105	6/60
16	PL7-D16/2	263381	6/60
20	PL7-D20/2	263382	6/60
25	PL7-D25/2	263383	6/60
32	PL7-D32/2	263384	6/60
40	PL7-D40/2	263385	6/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.5	PL7-D0,5/2	165101	6/60
1	PL7-D1/2	108184	6/60
1.5	PL7-D1,5/2	165102	6/60
1.6	PL7-D1,6/2	165103	6/60
2	PL7-D2/2	263366	6/60
2.5	PL7-D2,5/2	165106	6/60
3	PL7-D3/2	108185	6/60
3.5	PL7-D3,5/2	165107	6/60
4	PL7-D4/2	263367	6/60
5	PL7-D5/2	165108	6/60
6	PL7-D6/2	263368	6/60
8	PL7-D8/2	165109	6/60
10	PL7-D10/2	263369	6/60
12	PL7-D12/2	165104	6/60
13	PL7-D13/2	263380	6/60
15	PL7-D15/2	165105	6/60
16	PL7-D16/2	263381	6/60
20	PL7-D20/2	263382	6/60
25	PL7-D25/2	263383	6/60
32	PL7-D32/2	263384	6/60
40	PL7-D40/2	263385	6/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
0.5	PL7-D0,5/3	165133	4/40
1	PL7-D1/3	165136	4/40
1.5	PL7-D1,5/3	165134	4/40
1.6	PL7-D1,6/3	165135	4/40
2	PL7-D2/3	263416	4/40
2.5	PL7-D2,5/3	165139	4/40
3	PL7-D3/3	165141	4/40
3.5	PL7-D3,5/3	165140	4/40
4	PL7-D4/3	263417	4/40
5	PL7-D5/3	165142	4/40
6	PL7-D6/3	263418	4/40
8	PL7-D8/3	165143	4/40
10	PL7-D10/3	263419	4/40
12	PL7-D12/3	165137	4/40
13	PL7-D13/3	263420	4/40
15	PL7-D15/3	165138	4/40
16	PL7-D16/3	263421	4/40
20	PL7-D20/3	263422	4/40
25	PL7-D25/3	263423	4/40
32	PL7-D32/3	263424	4/40
40	PL7-D40/3	263425	4/40

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
0.5	PL7-D0,5/3N	165277	3/30
1	PL7-D1/3N	165280	3/30
1.5	PL7-D1,5/3N	165278	3/30
1.6	PL7-D1,6/3N	165279	3/30
2	PL7-D2/3N	165284	3/30
2.5	PL7-D2,5/3N	165283	3/30
3	PL7-D3/3N	165286	3/30
3.5	PL7-D3,5/3N	165285	3/30
4	PL7-D4/3N	165287	3/30
5	PL7-D5/3N	165288	3/30
6	PL7-D6/3N	264002	3/30
8	PL7-D8/3N	165289	3/30
10	PL7-D10/3N	264003	3/30
12	PL7-D12/3N	165281	3/30
13	PL7-D13/3N	264004	3/30
15	PL7-D15/3N	165282	3/30
16	PL7-D16/3N	264005	3/30
20	PL7-D20/3N	264006	3/30
25	PL7-D25/3N	264007	3/30
32	PL7-D32/3N	264008	3/30
40	PL7-D40/3N	264009	3/30

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.5	PL7-D0,5/4	165191	3/30
1	PL7-D1/4	165194	3/30
1.5	PL7-D1,5/4	165192	3/30
1.6	PL7-D1,6/4	165193	3/30
2	PL7-D2/4	165201	3/30
2.5	PL7-D2,5/4	165200	3/30
3	PL7-D3/4	165205	3/30
3.5	PL7-D3,5/4	165204	3/30
4	PL7-D4/4	165207	3/30
5	PL7-D5/4	165209	3/30
6	PL7-D6/4	165210	3/30
8	PL7-D8/4	165211	3/30
10	PL7-D10/4	165195	3/30
12	PL7-D12/4	165196	3/30
13	PL7-D13/4	165197	3/30
15	PL7-D15/4	165198	3/30
16	PL7-D16/4	165199	3/30
20	PL7-D20/4	165202	3/30
25	PL7-D25/4	165203	3/30
32	PL7-D32/4	165206	3/30
40	PL7-D40/4	165208	3/30

## Specifications | Miniature Circuit Breakers PL7

### Description

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC (use PL7-DC for higher DC voltages)

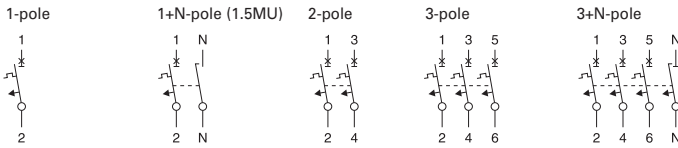
### Accessories:

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

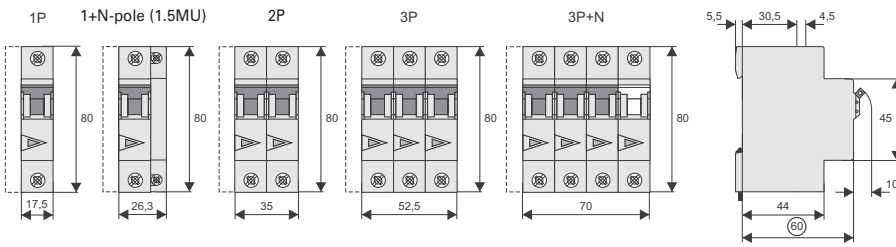
## Technical Data

		PL7
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	10 kA
Characteristic		B, C, D
Back-up fuse		max. 125 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 10,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU) 26.3 mm: device 1P+N (1.5MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
(1p+N, 1,5TE)		1-25 mm <sup>2</sup> / 1-2x10 mm <sup>2</sup> (N)
Terminal torque		2-2.4 Nm
(1p+N, 1,5TE)		2-2.4 Nm / 1.2-1.5 Nm (N)
Busbar thickness		0.8 - 2 mm (except N 0.5MU)
Mounting		independent of position

Connection diagrams

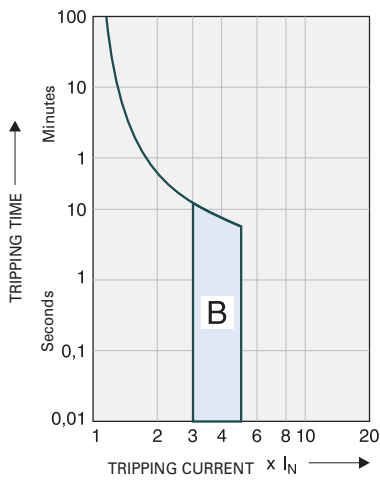


Dimensions (mm)

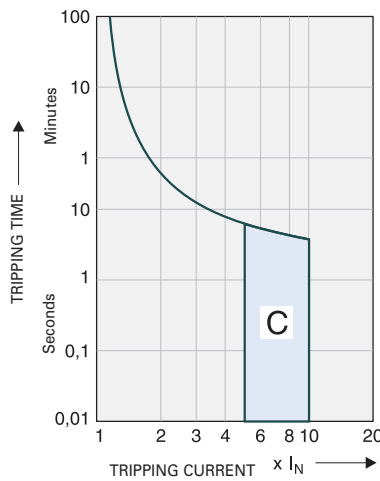


Tripping Characteristics (IEC/EN 60898-1)

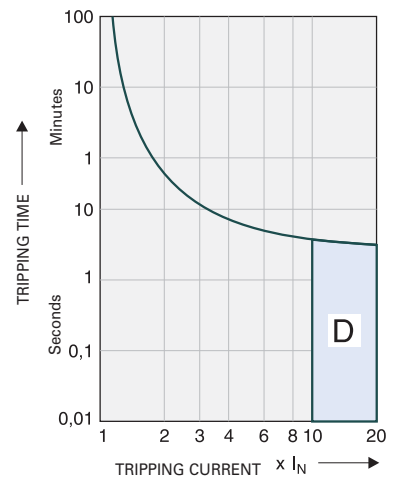
Tripping characteristic B



Tripping characteristic C



Tripping characteristic D



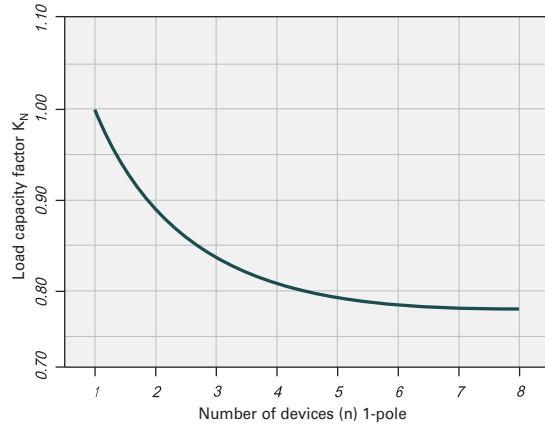
Quick-acting (B), slow (C), very slow (D)

### Effect of the Ambient Temperature on Thermal Tripping Behaviour

Adjusted rated current values according to the ambient temperature

I <sub>n</sub> [A]	Ambient temperature T [°C]															
	-25	-20	-10	0	10	20	30	35	40	45	50	55	60	65	70	75
0.16	0.20	0.19	0.19	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13
0.25	0.31	0.30	0.29	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.21
0.5	0.61	0.60	0.58	0.56	0.54	0.52	0.50	0.49	0.48	0.47	0.46	0.45	0.44	0.43	0.42	0.41
0.75	0.92	0.90	0.87	0.84	0.81	0.78	0.75	0.74	0.73	0.71	0.69	0.68	0.66	0.65	0.64	0.62
1	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.99	0.97	0.95	0.93	0.90	0.89	0.87	0.85	0.83
1.5	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.2
1.6	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.3
2	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.7	1.7	1.7
2.5	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.1	2.1
3	3.7	3.6	3.5	3.4	3.3	3.1	3.0	3.0	2.9	2.8	2.8	2.7	2.7	2.6	2.5	2.5
3.5	4.3	4.2	4.1	3.9	3.8	3.7	3.5	3.4	3.4	3.3	3.2	3.2	3.1	3.0	3.0	2.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9	3.8	3.7	3.6	3.5	3.5	3.4	3.3
5	6.1	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.1
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3	5.2	5.1	5.0
8	9.8	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7	7.6	7.4	7.2	7.1	6.9	6.8	6.6
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9	8.7	8.5	8.3
12	15	14	14	13	13	13	12	12	12	11	11	11	11	10	10	10
13	16	16	15	15	14	14	13	13	13	12	12	12	12	11	11	11
15	18	18	17	17	16	16	15	15	15	14	14	14	13	13	13	12
16	20	19	19	18	17	17	16	16	15	15	15	14	14	14	14	13
20	24	24	23	22	22	21	20	20	19	19	19	18	18	17	17	17
25	31	30	29	28	27	26	25	25	24	24	23	23	22	22	21	21
32	39	38	37	36	35	33	32	32	31	30	30	29	28	28	27	26
40	49	48	47	45	43	42	40	39	39	38	37	36	35	35	34	33
50	61	60	58	56	54	52	50	49	48	47	46	45	44	43	42	41
63	77	76	73	71	68	66	63	62	61	60	58	57	56	55	53	52

### Load Capacity of Series Connected Miniature Circuit Breakers



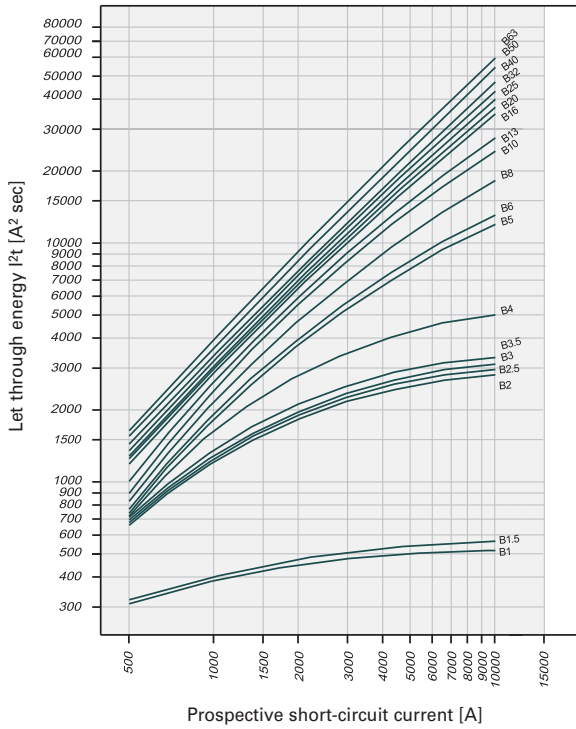
### Effect of Power Frequency

Effect of power frequency on the tripping behaviour I<sub>MA</sub> of the quick release

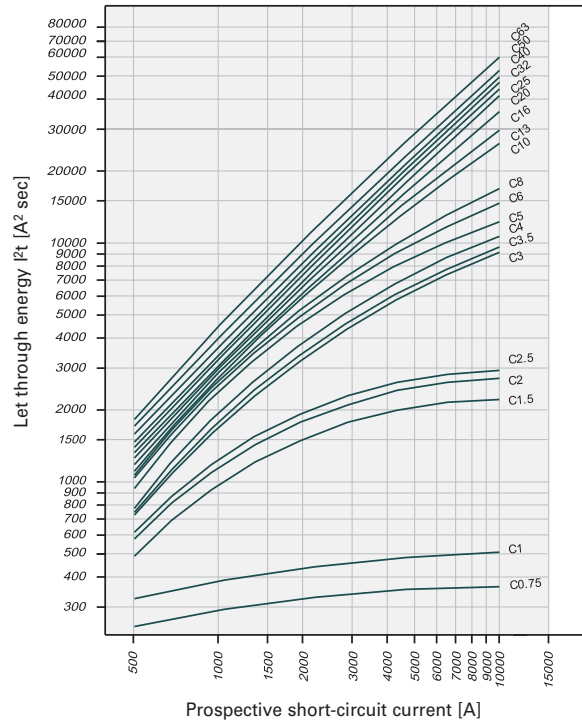
I <sub>MA</sub> (f)/I <sub>MA</sub> (50 Hz) [%]	Power frequency f [Hz]						
	16 <sup>2/3</sup>	50	60	100	200	300	400
	91	100	101	106	115	134	141

Let-through Energy PL7

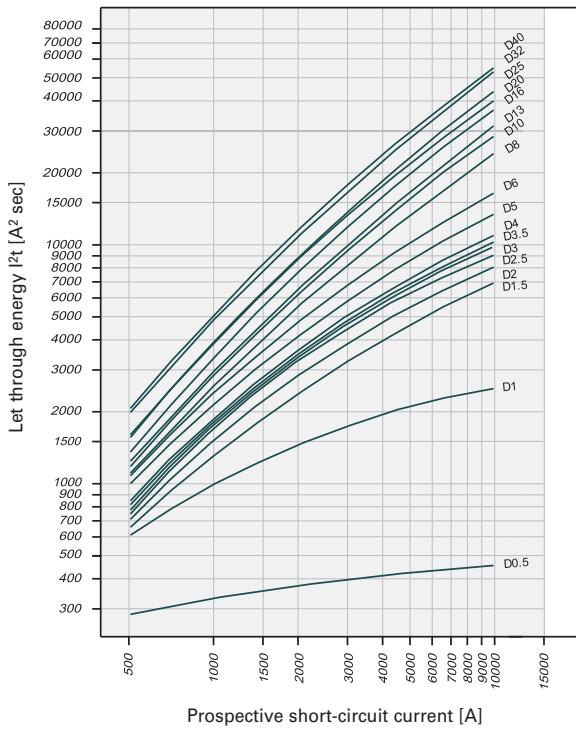
Let-through Energy PL7, Characteristic B, 1-pole



Let-through Energy PL7, Characteristic C, 1-pole



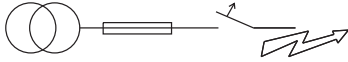
Let-through Energy PL7, Characteristic D, 1-pole



### Short Circuit Selectivity PL7 towards DII-DIV fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers PL7 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***)

PL7	DII-DIV gL/gG											
$I_n$ [A]	10	16	20	25	35	50	63	80	100			
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	3.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.5	8.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
6		<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	7.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
8		<0.5 <sup>1)</sup>	0.5	0.8	1.6	2.6	5.2	8.3	10.0 <sup>2)</sup>			
10			0.5	0.8	1.4	2.2	3.9	6.0	10.0 <sup>2)</sup>			
13			0.5	0.7	1.3	2.0	3.6	5.4	10.0 <sup>2)</sup>			
16				0.6	1.2	1.9	3.2	4.6	8.4			
20						1.2	1.8	3.1	4.4	7.8		
25							1.2	1.8	3.0	4.2	7.3	
32								1.7	2.8	3.9	6.8	
40									2.7	3.8	6.5	
50										2.5	3.5	5.7
63												5.3

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***)

PL7	DII-DIV gL/gG											
$I_n$ [A]	10	16	20	25	35	50	63	80	100			
0.75	1.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
1.0	<0.5 <sup>1)</sup>	1.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
1.6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.0	2.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.8	3.6	9.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.7	1.5	2.7	7.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
6		<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	5.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>			
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.3	2.2	4.7	8.7	10.0 <sup>2)</sup>			
10			<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	5.4	10.0 <sup>2)</sup>			
13						1.3	1.9	3.3	5.0	9.4		
16							1.2	1.8	3.2	4.4	8.0	
20								1.2	1.8	3.1	4.1	7.0
25									1.7	2.8	3.8	6.5
32										2.7	3.7	6.2
40											3.5	5.9
50												5.5
63												

Short circuit selectivity **Characteristic D** towards fuse link **DII-DIV\***)

PL7	DII-DIV gL/gG									
$I_n$ [A]	10	16	20	25	35	50	63	80	100	
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	2.8	5.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
4		<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.8	9.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
5		<0.5 <sup>1)</sup>	0.5	0.7	1.7	3.1	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
6			0.5	0.7	1.5	2.6	5.3	9.1	10.0 <sup>2)</sup>	
8			<0.5 <sup>1)</sup>	0.7	1.4	2.2	3.9	6.0	10.0 <sup>2)</sup>	
10				0.7	1.2	1.9	3.4	5.0	9.5	
13					1.2	1.8	3.2	4.6	8.6	
16						1.6	2.7	4.0	7.4	
20							1.5	2.5	3.5	6.7
25								2.4	3.4	6.2
32									2.8	5.0
40										4.8

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

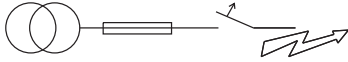
Darker areas: no selectivity



**Short Circuit Selectivity PL7 towards D01-D03 fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers PL7 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

PL7 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	2.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.5	0.8	1.7	4.0	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8			0.5	0.8	1.4	2.8	4.3	8.2	10.0 <sup>2)</sup>
10			0.5	0.7	1.3	2.4	3.4	6.0	10.0 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	5.3	10.0 <sup>2)</sup>
16				0.6	1.1	2.2	2.9	4.6	10.0
20					1.1	2.1	2.8	4.4	9.3
25						1.1	2.0	2.7	8.7
32							2.0	2.6	8.0
40								2.5	7.5
50									6.7
63									6.2

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

PL7 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
0.75	<0.5 <sup>1)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
1.6	<0.5 <sup>1)</sup>	0.5	0.6	0.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.6	4.0	7.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.3	3.1	5.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.5	4.0	8.6	10.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	5.4	10.0 <sup>2)</sup>
13					1.1	2.2	3.0	4.9	10.0 <sup>2)</sup>
16						1.1	2.1	2.8	9.5
20							1.0	2.0	8.3
25								1.9	7.8
32									7.3
40									7.0
50									6.5
63									

Short circuit selectivity **Characteristic D** towards fuse link **D01-D03\***)

PL7 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
4		<0.5 <sup>1)</sup>	0.5	0.7	1.7	4.6	7.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.5	3.5	5.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6			<0.5 <sup>1)</sup>	0.5	1.3	2.9	4.5	9.0	10.0 <sup>2)</sup>
8			<0.5 <sup>1)</sup>	0.5	1.2	2.4	3.5	6.0	10.0 <sup>2)</sup>
10				0.5	1.1	2.2	3.0	5.0	10.0 <sup>2)</sup>
13					1.1	2.1	2.9	4.6	10.0 <sup>2)</sup>
16						1.9	2.6	3.9	9.0
20							1.7	2.3	8.0
25								2.2	7.5
32									6.0
40									5.7

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

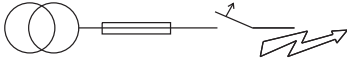
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

#### Short Circuit Selectivity PL7 towards NH-00 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers PL7 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

PL7	NH-00 gL/gG												
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
2	<0.5 <sup>1)</sup>	0.5	1.0	2.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.3	2.3	4.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.6	2.2	3.6	4.8	8.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.5	2.0	3.3	4.3	7.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	1.3	1.7	2.6	3.3	5.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
10	<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	9.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
13	<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	7.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
16		0.5	0.7	1.0	1.3	1.9	2.4	3.4	6.4	9.3	10.0 <sup>2)</sup>		
20				0.7	1.0	1.3	1.9	2.4	3.3	6.0	8.7	10.0 <sup>2)</sup>	
25				0.7	1.0	1.3	1.8	2.3	3.2	5.7	8.0	10.0 <sup>2)</sup>	
32				0.9	1.2	1.7	2.2	3.1	5.4	7.6	10.0 <sup>2)</sup>		
40								2.1	3.0	5.1	7.2	10.0 <sup>2)</sup>	
50								1.9	2.8	4.7	6.6	9.5	
63									4.4	6.3	8.6		

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

PL7	NH-00 gL/gG												
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
0.75	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
1.0	0.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
1.6	<0.5 <sup>1)</sup>	0.6	1.3	4.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
2	<0.5 <sup>1)</sup>	0.6	1.0	2.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.5	2.1	3.6	5.0	10.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.2	1.7	2.8	3.8	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	5.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.1	1.5	2.3	2.9	4.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
13					1.0	1.3	1.9	2.4	3.6	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
16					1.0	1.3	1.8	2.3	3.3	6.0	8.8	10.0 <sup>2)</sup>	
20					1.0	1.2	1.7	2.2	3.2	5.5	7.7	10.0 <sup>2)</sup>	
25						1.6	2.1	3.0	5.2	7.3	10.0 <sup>2)</sup>		
32							2.1	2.9	5.0	7.0	10.0 <sup>2)</sup>		
40								2.8	4.8	6.7	10.0		
50									4.5	6.3	9.5		
63										5.9	8.4		

Short circuit selectivity **Characteristic D** towards fuse link **NH-00\***)

PL7	NH-00 gL/gG												
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.6	2.2	3.8	5.2	10.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
5		<0.5 <sup>1)</sup>	0.6	0.9	1.4	1.9	3.2	4.1	7.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
6		<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.6	2.6	3.3	5.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
8			0.5	0.8	1.1	1.5	2.2	2.7	4.1	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
10			0.5	0.7	1.0	1.3	1.9	2.5	3.6	7.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
13					1.0	1.3	1.9	2.3	3.4	6.5	9.5	10.0 <sup>2)</sup>	
16						1.1	1.6	2.0	3.0	5.5	8.0	10.0 <sup>2)</sup>	
20							1.4	1.8	2.8	5.0	7.5	10.0 <sup>2)</sup>	
25								1.8	2.7	4.8	7.0	10.0 <sup>2)</sup>	
32									2.4	4.1	6.2	9.3	
40										4.0	6.0	9.0	

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

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## Description

- High-quality miniature circuit breakers for commercial and residential applications
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 63 A
- Tripping characteristics B, C, D
- Rated breaking capacity 6 kA according to IEC/EN 60898-1

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>6 kA, Characteristic B</b>			
<b>1-pole</b>			
1	PL6-B1/1	164740	12/120
1.5	PL6-B1,5/1	164736	12/120
1.6	PL6-B1,6/1	164737	12/120
2	PL6-B2/1	286516	12/120
2.5	PL6-B2,5/1	164741	12/120
3	PL6-B3/1	164743	12/120
3.5	PL6-B3,5/1	164742	12/120
4	PL6-B4/1	286517	12/120
5	PL6-B5/1	164744	12/120
6	PL6-B6/1	286518	12/120
8	PL6-B8/1	164745	12/120
10	PL6-B10/1	286519	12/120
12	PL6-B12/1	164738	12/120
13	PL6-B13/1	286520	12/120
15	PL6-B15/1	164739	12/120
16	PL6-B16/1	286521	12/120
20	PL6-B20/1	286522	12/120
25	PL6-B25/1	286523	12/120
32	PL6-B32/1	286524	12/120
40	PL6-B40/1	286525	12/120
50	PL6-B50/1	286526	12/120
63	PL6-B63/1	286527	12/120

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>1+N-pole</b>			
1	PL6-B1/1N	164903	8/80
1.5	PL6-B1,5/1N	164901	8/80
1.6	PL6-B1,6/1N	164902	8/80
2	PL6-B2/1N	164907	8/80
2.5	PL6-B2,5/1N	164906	8/80
3	PL6-B3/1N	164911	8/80
3.5	PL6-B3,5/1N	164910	8/80
4	PL6-B4/1N	164913	8/80
5	PL6-B5/1N	164914	8/80
6	PL6-B6/1N	106025	8/80
8	PL6-B8/1N	164915	8/80
10	PL6-B10/1N	106026	8/80
12	PL6-B12/1N	164904	8/80
13	PL6-B13/1N	106027	8/80
15	PL6-B15/1N	164905	8/80
16	PL6-B16/1N	106028	8/80
20	PL6-B20/1N	164908	8/80
25	PL6-B25/1N	164909	8/80
32	PL6-B32/1N	164912	8/80

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
1	PL6-B1/2	164803	6/60
1.5	PL6-B1,5/2	164801	6/60
1.6	PL6-B1,6/2	164802	6/60
2	PL6-B2/2	286550	6/60
2.5	PL6-B2,5/2	164806	6/60
3	PL6-B3/2	164808	6/60
3.5	PL6-B3,5/2	164807	6/60
4	PL6-B4/2	286551	6/60
5	PL6-B5/2	164809	6/60
6	PL6-B6/2	286552	6/60
8	PL6-B8/2	164810	6/60
10	PL6-B10/2	286553	6/60
12	PL6-B12/2	164804	6/60
13	PL6-B13/2	286554	6/60
15	PL6-B15/2	164805	6/60
16	PL6-B16/2	286555	6/60
20	PL6-B20/2	286556	6/60
25	PL6-B25/2	286557	6/60
32	PL6-B32/2	286558	6/60
40	PL6-B40/2	286559	6/60
50	PL6-B50/2	286560	6/60
63	PL6-B63/2	286561	6/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
1	PL6-B1/3	164868	4/40
1.5	PL6-B1,5/3	164866	4/40
1.6	PL6-B1,6/3	164867	4/40
2	PL6-B2/3	286584	4/40
2.5	PL6-B2,5/3	164871	4/40
3	PL6-B3/3	164873	4/40
3.5	PL6-B3,5/3	164872	4/40
4	PL6-B4/3	286585	4/40
5	PL6-B5/3	164874	4/40
6	PL6-B6/3	286586	4/40
8	PL6-B8/3	164875	4/40
10	PL6-B10/3	286587	4/40
12	PL6-B12/3	164869	4/40
13	PL6-B13/3	286588	4/40
15	PL6-B15/3	164870	4/40
16	PL6-B16/3	286589	4/40
20	PL6-B20/3	286590	4/40
25	PL6-B25/3	286591	4/40
32	PL6-B32/3	286592	4/40
40	PL6-B40/3	286593	4/40
50	PL6-B50/3	286594	4/40
63	PL6-B63/3	286595	4/40

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
1	PL6-B1/3N	165002	3/30
1.5	PL6-B1,5/3N	165000	3/30
1.6	PL6-B1,6/3N	165001	3/30
2	PL6-B2/3N	165007	3/30
2.5	PL6-B2,5/3N	165006	3/30
3	PL6-B3/3N	165009	3/30
3.5	PL6-B3,5/3N	165008	3/30
4	PL6-B4/3N	165010	3/30
5	PL6-B5/3N	165011	3/30
6	PL6-B6/3N	106035	3/30
8	PL6-B8/3N	165012	3/30
10	PL6-B10/3N	106036	3/30
12	PL6-B12/3N	165003	3/30
13	PL6-B13/3N	165004	3/30
15	PL6-B15/3N	165005	3/30
16	PL6-B16/3N	106037	3/30
20	PL6-B20/3N	106038	3/30
25	PL6-B25/3N	106039	3/30
32	PL6-B32/3N	106040	3/30
40	PL6-B40/3N	106041	3/30
50	PL6-B50/3N	106903	3/30
63	PL6-B63/3N	106904	3/30

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
1	PL6-B1/4	166489	3/30
1.5	PL6-B1,5/4	166487	3/30
1.6	PL6-B1,6/4	166488	3/30
2	PL6-B2/4	166496	3/30
2.5	PL6-B2,5/4	166495	3/30
3	PL6-B3/4	166499	3/30
4	PL6-B4/4	166501	3/30
5	PL6-B5/4	166503	3/30
6	PL6-B6/4	166505	3/30
8	PL6-B8/4	166507	3/30
10	PL6-B10/4	166490	3/30
12	PL6-B12/4	166491	3/30
13	PL6-B13/4	166492	3/30
15	PL6-B15/4	166493	3/30
16	PL6-B16/4	166494	3/30
20	PL6-B20/4	166497	3/30
25	PL6-B25/4	166498	3/30
32	PL6-B32/4	166500	3/30
40	PL6-B40/4	166502	3/30
50	PL6-B50/4	166504	3/30
63	PL6-B63/4	166506	3/30

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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**6 kA, Characteristic C**

**1-pole**

0.16	PL6-C0.16/1	164746	12/120
0.25	PL6-C0,25/1	164747	12/120
0.5	PL6-C0,5/1	164748	12/120
0.75	PL6-C0,75/1	164749	12/120
1	PL6-C1/1	164754	12/120
1.5	PL6-C1,5/1	164750	12/120
1.6	PL6-C1,6/1	164751	12/120
2	PL6-C2/1	286528	12/120
2.5	PL6-C2,5/1	164755	12/120
3	PL6-C3/1	164757	12/120
3.5	PL6-C3,5/1	164756	12/120
4	PL6-C4/1	286529	12/120
5	PL6-C5/1	164758	12/120
6	PL6-C6/1	286530	12/120
8	PL6-C8/1	164759	12/120
10	PL6-C10/1	286531	12/120
12	PL6-C12/1	164752	12/120
13	PL6-C13/1	286532	12/120
15	PL6-C15/1	164753	12/120
16	PL6-C16/1	286533	12/120
20	PL6-C20/1	286534	12/120
25	PL6-C25/1	286535	12/120
32	PL6-C32/1	286536	12/120
40	PL6-C40/1	286537	12/120
50	PL6-C50/1	286538	12/120
63	PL6-C63/1	286539	12/120

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**1+N-pole**

0.16	PL6-C0.16/1N	164916	8/80
0.25	PL6-C0,25/1N	164917	8/80
0.5	PL6-C0,5/1N	164918	8/80
0.75	PL6-C0,75/1N	164919	8/80
1	PL6-C1/1N	164922	8/80
1.5	PL6-C1,5/1N	164920	8/80
1.6	PL6-C1,6/1N	164921	8/80
2	PL6-C2/1N	106029	8/80
2.5	PL6-C2,5/1N	164925	8/80
3	PL6-C3/1N	164929	8/80
3.5	PL6-C3,5/1N	164928	8/80
4	PL6-C4/1N	106030	8/80
5	PL6-C5/1N	164931	8/80
6	PL6-C6/1N	106031	8/80
8	PL6-C8/1N	164932	8/80
10	PL6-C10/1N	106032	8/80
12	PL6-C12/1N	164923	8/80
13	PL6-C13/1N	106033	8/80
15	PL6-C15/1N	164924	8/80
16	PL6-C16/1N	106034	8/80
20	PL6-C20/1N	164926	8/80
25	PL6-C25/1N	164927	8/80
32	PL6-C32/1N	164930	8/80

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.16	PL6-C0.16/2	164811	6/60
0.25	PL6-C0.25/2	164812	6/60
0.5	PL6-C0.5/2	164813	6/60
0.75	PL6-C0.75/2	164814	6/60
1	PL6-C1/2	164817	6/60
1.5	PL6-C1.5/2	164815	6/60
1.6	PL6-C1.6/2	164816	6/60
2	PL6-C2/2	286562	6/60
2.5	PL6-C2.5/2	164820	6/60
3	PL6-C3/2	164822	6/60
3.5	PL6-C3.5/2	164821	6/60
4	PL6-C4/2	286563	6/60
5	PL6-C5/2	164823	6/60
6	PL6-C6/2	286564	6/60
8	PL6-C8/2	164824	6/60
10	PL6-C10/2	286565	6/60
12	PL6-C12/2	164818	6/60
13	PL6-C13/2	286566	6/60
15	PL6-C15/2	164819	6/60
16	PL6-C16/2	286567	6/60
20	PL6-C20/2	286568	6/60
25	PL6-C25/2	286569	6/60
32	PL6-C32/2	286570	6/60
40	PL6-C40/2	286571	6/60
50	PL6-C50/2	286572	6/60
63	PL6-C63/2	286573	6/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
0.16	PL6-C0.16/3	164876	4/40
0.25	PL6-C0.25/3	164877	4/40
0.5	PL6-C0.5/3	164878	4/40
0.75	PL6-C0.75/3	164879	4/40
1	PL6-C1/3	164882	4/40
1.5	PL6-C1.5/3	164880	4/40
1.6	PL6-C1.6/3	164881	4/40
2	PL6-C2/3	286596	4/40
2.5	PL6-C2.5/3	164885	4/40
3	PL6-C3/3	164887	4/40
3.5	PL6-C3.5/3	164886	4/40
4	PL6-C4/3	286597	4/40
5	PL6-C5/3	164888	4/40
6	PL6-C6/3	286598	4/40
8	PL6-C8/3	164889	4/40
10	PL6-C10/3	286599	4/40
12	PL6-C12/3	164883	4/40
13	PL6-C13/3	286600	4/40
15	PL6-C15/3	164884	4/40
16	PL6-C16/3	286601	4/40
20	PL6-C20/3	286602	4/40
25	PL6-C25/3	286603	4/40
32	PL6-C32/3	286604	4/40
40	PL6-C40/3	286605	4/40
50	PL6-C50/3	286606	4/40
63	PL6-C63/3	286607	4/40



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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
0.16	PL6-C0.16/3N	165013	3/30
0.25	PL6-C0.25/3N	165014	3/30
0.5	PL6-C0.5/3N	165015	3/30
0.75	PL6-C0.75/3N	165016	3/30
1	PL6-C1/3N	165019	3/30
1.5	PL6-C1.5/3N	165017	3/30
1.6	PL6-C1.6/3N	165018	3/30
2	PL6-C2/3N	106905	3/30
2.5	PL6-C2.5/3N	165022	3/30
3	PL6-C3/3N	165024	3/30
3.5	PL6-C3.5/3N	165023	3/30
4	PL6-C4/3N	106906	3/30
5	PL6-C5/3N	165025	3/30
6	PL6-C6/3N	106907	3/30
8	PL6-C8/3N	165026	3/30
10	PL6-C10/3N	106908	3/30
12	PL6-C12/3N	165020	3/30
13	PL6-C13/3N	106909	3/30
15	PL6-C15/3N	165021	3/30
16	PL6-C16/3N	106910	3/30
20	PL6-C20/3N	106911	3/30
25	PL6-C25/3N	106912	3/30
32	PL6-C32/3N	106913	3/30
40	PL6-C40/3N	106914	3/30
50	PL6-C50/3N	106915	3/30
63	PL6-C63/3N	106916	3/30

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.16	PL6-C0.16/4	166508	3/30
0.25	PL6-C0.25/4	166509	3/30
0.5	PL6-C0.5/4	166510	3/30
0.75	PL6-C0.75/4	166511	3/30
1	PL6-C1/4	166514	3/30
1.5	PL6-C1.5/4	166512	3/30
1.6	PL6-C1.6/4	166513	3/30
2	PL6-C2/4	166521	3/30
2.5	PL6-C2.5/4	166520	3/30
3	PL6-C3/4	166525	3/30
3.5	PL6-C3.5/4	166524	3/30
4	PL6-C4/4	166527	3/30
5	PL6-C5/4	166529	3/30
6	PL6-C6/4	166531	3/30
8	PL6-C8/4	166533	3/30
10	PL6-C10/4	166515	3/30
12	PL6-C12/4	166516	3/30
13	PL6-C13/4	166517	3/30
15	PL6-C15/4	166518	3/30
16	PL6-C16/4	166519	3/30
20	PL6-C20/4	166522	3/30
25	PL6-C25/4	166523	3/30
32	PL6-C32/4	166526	3/30
40	PL6-C40/4	166528	3/30
50	PL6-C50/4	166530	3/30
63	PL6-C63/4	166532	3/30

SG45411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>6 kA, Characteristic D</b>			
<b>1-pole</b>			
0.5	PL6-D0,5/1	164760	12/120
1	PL6-D1/1	164765	12/120
1.5	PL6-D1,5/1	164761	12/120
1.6	PL6-D1,6/1	164762	12/120
2	PL6-D2/1	286540	12/120
2.5	PL6-D2,5/1	164766	12/120
3	PL6-D3/1	164768	12/120
3.5	PL6-D3,5/1	164767	12/120
4	PL6-D4/1	286541	12/120
5	PL6-D5/1	164769	12/120
6	PL6-D6/1	286542	12/120
8	PL6-D8/1	164770	12/120
10	PL6-D10/1	286543	12/120
12	PL6-D12/1	164763	12/120
13	PL6-D13/1	286544	12/120
15	PL6-D15/1	164764	12/120
16	PL6-D16/1	286545	12/120
20	PL6-D20/1	286546	12/120
25	PL6-D25/1	286547	12/120
32	PL6-D32/1	286548	12/120
40	PL6-D40/1	286549	12/120

SG51411



<b>1+N-pole</b>			
0.5	PL6-D0,5/1N	164933	8/80
1	PL6-D1/1N	164936	8/80
1.5	PL6-D1,5/1N	164934	8/80
1.6	PL6-D1,6/1N	164935	8/80
2	PL6-D2/1N	164943	8/80
2.5	PL6-D2,5/1N	164942	8/80
3	PL6-D3/1N	164947	8/80
3.5	PL6-D3,5/1N	164946	8/80
4	PL6-D4/1N	164948	8/80
5	PL6-D5/1N	164949	8/80
6	PL6-D6/1N	164950	8/80
8	PL6-D8/1N	164951	8/80
10	PL6-D10/1N	164937	8/80
12	PL6-D12/1N	164938	8/80
13	PL6-D13/1N	164939	8/80
15	PL6-D15/1N	164940	8/80
16	PL6-D16/1N	164941	8/80
20	PL6-D20/1N	164944	8/80
25	PL6-D25/1N	164945	8/80

SG51511



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>2-pole</b>			
0.5	PL6-D0,5/2	164825	6/60
1	PL6-D1/2	164828	6/60
1.5	PL6-D1,5/2	164826	6/60
1.6	PL6-D1,6/2	164827	6/60
2	PL6-D2/2	286574	6/60
2.5	PL6-D2,5/2	164831	6/60
3	PL6-D3/2	164833	6/60
3.5	PL6-D3,5/2	164832	6/60
4	PL6-D4/2	286575	6/60
5	PL6-D5/2	164834	6/60
6	PL6-D6/2	286576	6/60
8	PL6-D8/2	164835	6/60
10	PL6-D10/2	286577	6/60
12	PL6-D12/2	164829	6/60
13	PL6-D13/2	286578	6/60
15	PL6-D15/2	164830	6/60
16	PL6-D16/2	286579	6/60
20	PL6-D20/2	286580	6/60
25	PL6-D25/2	286581	6/60
32	PL6-D32/2	286582	6/60
40	PL6-D40/2	286583	6/60

SG62211



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
0.5	PL6-D0,5/3	164890	4/40
1	PL6-D1/3	164893	4/40
1.5	PL6-D1,5/3	164891	4/40
1.6	PL6-D1,6/3	164892	4/40
2	PL6-D2/3	286608	4/40
2.5	PL6-D2,5/3	164896	4/40
3	PL6-D3/3	164898	4/40
3.5	PL6-D3,5/3	164897	4/40
4	PL6-D4/3	286609	4/40
5	PL6-D5/3	164899	4/40
6	PL6-D6/3	286610	4/40
8	PL6-D8/3	164900	4/40
10	PL6-D10/3	286611	4/40
12	PL6-D12/3	164894	4/40
13	PL6-D13/3	286612	4/40
15	PL6-D15/3	164895	4/40
16	PL6-D16/3	286613	4/40
20	PL6-D20/3	286614	4/40
25	PL6-D25/3	286615	4/40
32	PL6-D32/3	286616	4/40
40	PL6-D40/3	286617	4/40

SG64711



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
0.5	PL6-D0,5/3N	165027	3/30
1	PL6-D1/3N	165030	3/30
1.5	PL6-D1,5/3N	165028	3/30
1.6	PL6-D1,6/3N	165029	3/30
2	PL6-D2/3N	165037	3/30
2.5	PL6-D2,5/3N	165036	3/30
3	PL6-D3/3N	165041	3/30
3.5	PL6-D3,5/3N	165040	3/30
4	PL6-D4/3N	165043	3/30
5	PL6-D5/3N	165045	3/30
6	PL6-D6/3N	165046	3/30
8	PL6-D8/3N	165047	3/30
10	PL6-D10/3N	165031	3/30
12	PL6-D12/3N	165032	3/30
13	PL6-D13/3N	165033	3/30
15	PL6-D15/3N	165034	3/30
16	PL6-D16/3N	165035	3/30
20	PL6-D20/3N	165038	3/30
25	PL6-D25/3N	165039	3/30
32	PL6-D32/3N	165042	3/30
40	PL6-D40/3N	165044	3/30

SG26612



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.5	PL6-D0,5/4	166534	3/30
1	PL6-D1/4	166537	3/30
1.5	PL6-D1,5/4	166535	3/30
1.6	PL6-D1,6/4	166536	3/30
2	PL6-D2/4	166544	3/30
2.5	PL6-D2,5/4	166543	3/30
3	PL6-D3/4	166548	3/30
3.5	PL6-D3,5/4	166547	3/30
4	PL6-D4/4	166550	3/30
5	PL6-D5/4	166552	3/30
6	PL6-D6/4	166553	3/30
8	PL6-D8/4	166554	3/30
10	PL6-D10/4	166538	3/30
12	PL6-D12/4	166539	3/30
13	PL6-D13/4	166540	3/30
15	PL6-D15/4	166541	3/30
16	PL6-D16/4	166542	3/30
20	PL6-D20/4	166545	3/30
25	PL6-D25/4	166546	3/30
32	PL6-D32/4	166549	3/30
40	PL6-D40/4	166551	3/30

**Specifications | Miniature Circuit Breakers PL6****Description**

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC

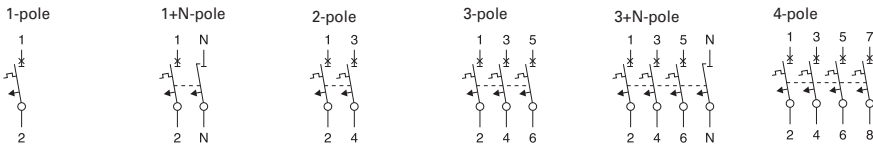
**Accessories:**

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

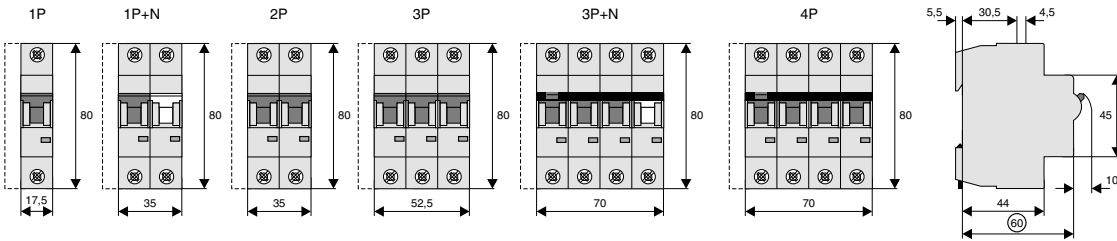
**Technical Data**

		PL6
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	6 kA
Characteristic		B, C, D
Back-up fuse		max. 100 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 10,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
Minimal voltage		12 V AC/DC
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position

### Connection diagrams

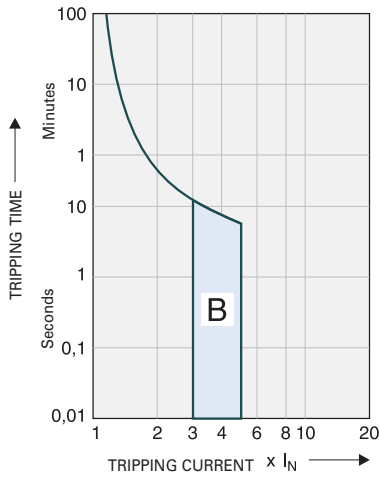


### Dimensions (mm)

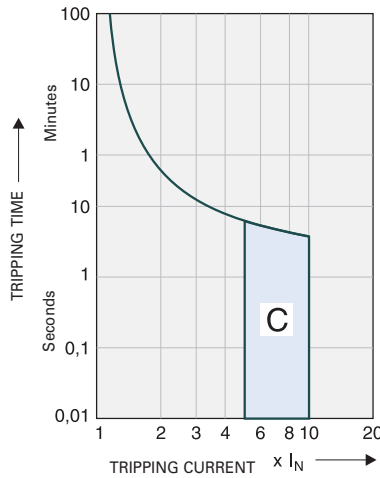


### Tripping Characteristics (IEC/EN 60898-1)

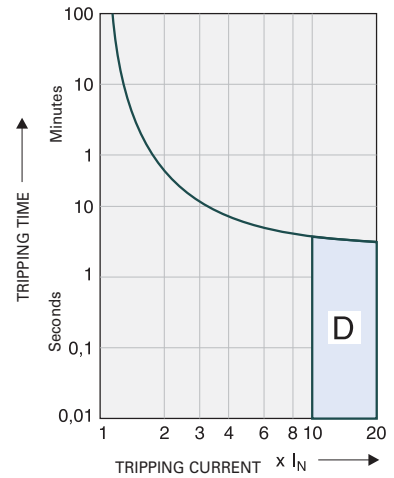
Tripping characteristic B



Tripping characteristic C



Tripping characteristic D



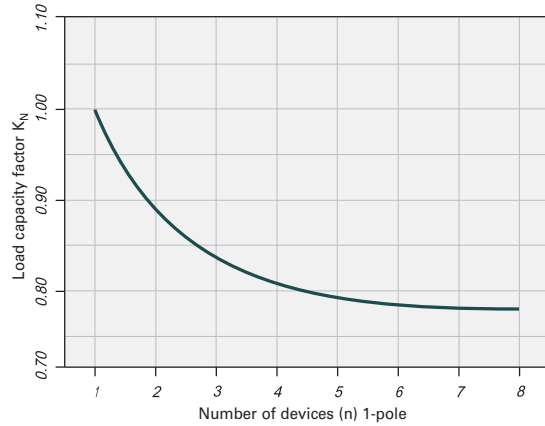
Quick-acting (B), slow (C), very slow (D)

**Effect of the Ambient Temperature on Thermal Tripping Behaviour**

Adjusted rated current values according to the ambient temperature

I <sub>n</sub> [A]	Ambient temperature T [°C]															
	-25	-20	-10	0	10	20	30	35	40	45	50	55	60	65	70	75
0.16	0.20	0.19	0.19	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13
0.25	0.31	0.30	0.29	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.21
0.5	0.61	0.60	0.58	0.56	0.54	0.52	0.50	0.49	0.48	0.47	0.46	0.45	0.44	0.43	0.42	0.41
0.75	0.92	0.90	0.87	0.84	0.81	0.78	0.75	0.74	0.73	0.71	0.69	0.68	0.66	0.65	0.64	0.62
1	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.99	0.97	0.95	0.93	0.90	0.89	0.87	0.85	0.83
1.5	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.2
1.6	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.3
2	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.7	1.7	1.7
2.5	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.1	2.1
3	3.7	3.6	3.5	3.4	3.3	3.1	3.0	3.0	2.9	2.8	2.8	2.7	2.7	2.6	2.5	2.5
3.5	4.3	4.2	4.1	3.9	3.8	3.7	3.5	3.4	3.4	3.3	3.2	3.2	3.1	3.0	3.0	2.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9	3.8	3.7	3.6	3.5	3.5	3.4	3.3
5	6.1	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.1
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3	5.2	5.1	5.0
8	9.8	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7	7.6	7.4	7.2	7.1	6.9	6.8	6.6
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9	8.7	8.5	8.3
12	15	14	14	13	13	13	12	12	12	11	11	11	11	10	10	10
13	16	16	15	15	14	14	13	13	13	12	12	12	12	11	11	11
15	18	18	17	17	16	16	15	15	15	14	14	14	13	13	13	12
16	20	19	19	18	17	17	16	16	15	15	15	14	14	14	14	13
20	24	24	23	22	22	21	20	20	19	19	19	18	18	17	17	17
25	31	30	29	28	27	26	25	25	24	24	23	23	22	22	21	21
32	39	38	37	36	35	33	32	32	31	30	30	29	28	28	27	26
40	49	48	47	45	43	42	40	39	39	38	37	36	35	35	34	33
50	61	60	58	56	54	52	50	49	48	47	46	45	44	43	42	41
63	77	76	73	71	68	66	63	62	61	60	58	57	56	55	53	52

**Load Capacity of Series Connected Miniature Circuit Breakers**



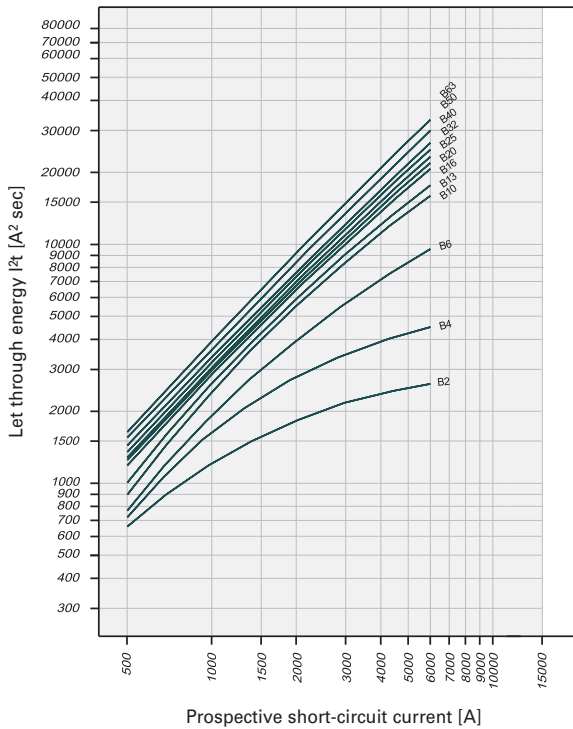
**Effect of Power Frequency**

Effect of power frequency on the tripping behaviour I<sub>MA</sub> of the quick release

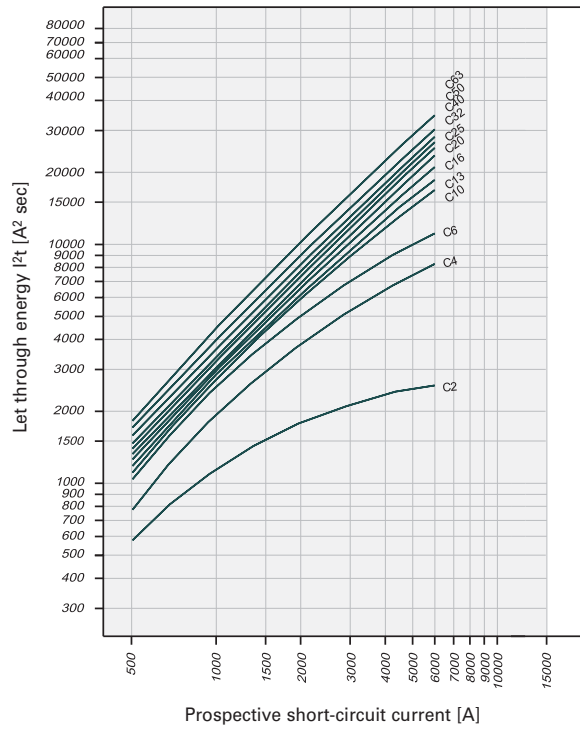
I <sub>MA</sub> (f)/I <sub>MA</sub> (50 Hz) [%]	Power frequency f [Hz]						
	16 <sup>2</sup> / <sub>3</sub>	50	60	100	200	300	400
	91	100	101	106	115	134	141

#### Let-through Energy PL6

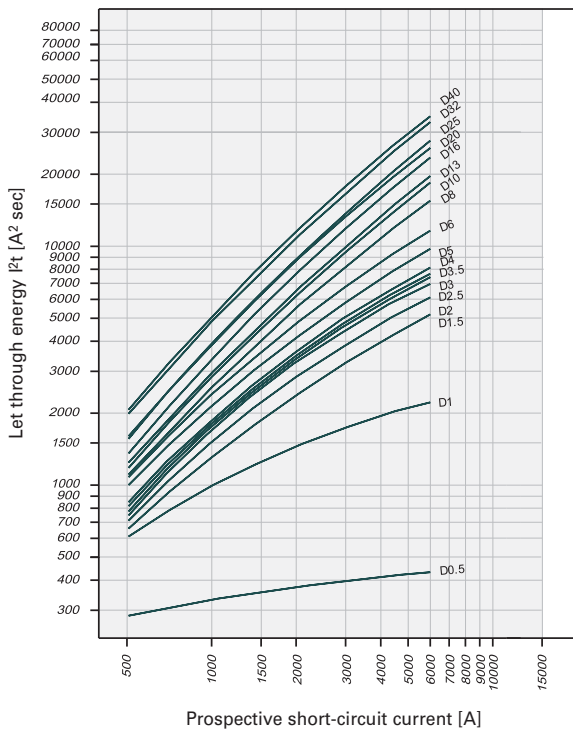
Let-through Energy PL6, Characteristic B, 1-pole



Let-through Energy PL6, Characteristic C, 1-pole



Let-through Energy PL6, Characteristic D, 1-pole

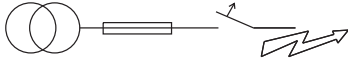




**Short Circuit Selectivity PL6 towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers PL6 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***)

PL6 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.5	0.8	1.6	2.6	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.8	1.4	2.2	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.5	0.7	1.3	2.0	3.6	5.4	6.0 <sup>2)</sup>
16				0.6	1.2	1.9	3.2	4.6	6.0 <sup>2)</sup>
20					1.2	1.8	3.1	4.4	6.0 <sup>2)</sup>
25					1.2	1.8	3.0	4.2	6.0 <sup>2)</sup>
32						1.7	2.8	3.9	6.0 <sup>2)</sup>
40							2.7	3.8	6.0 <sup>2)</sup>
50							2.5	3.5	5.7
63									5.3

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***)

PL6 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.8	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.7	1.5	2.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.3	2.2	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.3	1.9	3.3	5.0	6.0 <sup>2)</sup>
16					1.2	1.8	3.2	4.4	6.0 <sup>2)</sup>
20					1.2	1.8	3.1	4.1	6.0 <sup>2)</sup>
25						1.7	2.8	3.8	6.0 <sup>2)</sup>
32							2.7	3.7	6.0 <sup>2)</sup>
40								3.5	5.9
50									5.5

Short circuit selectivity **Characteristic D** towards fuse link **DII-DIV\***)

PL6 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	2.8	5.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.5	0.7	1.7	3.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6			0.5	0.7	1.5	2.6	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			<0.5 <sup>1)</sup>	0.7	1.4	2.2	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10				0.7	1.2	1.9	3.4	5.0	6.0 <sup>2)</sup>
13					1.2	1.8	3.2	4.6	6.0 <sup>2)</sup>
16						1.6	2.7	4.0	6.0 <sup>2)</sup>
20						1.5	2.5	3.5	6.0 <sup>2)</sup>
25							2.4	3.4	6.0 <sup>2)</sup>
32								2.8	5.0
40									4.8

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

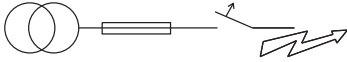
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

### Short Circuit Selectivity PL6 towards D01-D03 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers PL6 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

PL6 $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	2.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.5	0.8	1.7	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			0.5	0.8	1.4	2.8	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.7	1.3	2.4	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	5.3	6.0 <sup>2)</sup>
16				0.6	1.1	2.2	2.9	4.6	6.0 <sup>2)</sup>
20					1.1	2.1	2.8	4.4	6.0 <sup>2)</sup>
25					1.1	2.0	2.7	4.2	6.0 <sup>2)</sup>
32						2.0	2.6	4.0	6.0 <sup>2)</sup>
40							2.5	3.8	6.0 <sup>2)</sup>
50							2.3	3.4	6.0 <sup>2)</sup>
63									6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

PL6 $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.6	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.3	3.1	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.5	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	5.4	6.0 <sup>2)</sup>
13					1.1	2.2	3.0	4.9	6.0 <sup>2)</sup>
16					1.1	2.1	2.8	4.4	6.0 <sup>2)</sup>
20					1.0	2.0	2.6	4.0	6.0 <sup>2)</sup>
25					1.9	2.5	3.8	6.0 <sup>2)</sup>	
32						2.5	3.7	6.0 <sup>2)</sup>	
40							3.5	6.0 <sup>2)</sup>	
50								6.0 <sup>2)</sup>	

Short circuit selectivity **Characteristic D** towards fuse link **D01-D03\***)

PL6 $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	2.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	0.5	0.7	1.7	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.5	3.5	5.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6			<0.5 <sup>1)</sup>	0.5	1.3	2.9	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			<0.5 <sup>1)</sup>	0.5	1.2	2.4	3.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10				0.5	1.1	2.2	3.0	5.0	6.0 <sup>2)</sup>
13					1.1	2.1	2.9	4.6	6.0 <sup>2)</sup>
16						1.9	2.6	3.9	6.0 <sup>2)</sup>
20						1.7	2.3	3.5	6.0 <sup>2)</sup>
25							2.2	3.4	6.0 <sup>2)</sup>
32								2.9	6.0 <sup>2)</sup>
40									5.7

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

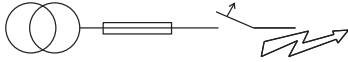
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

**Short Circuit Selectivity PL6 towards NH-00 fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers PL6 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

PL6	NH-00 gL/gG												
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
2	<0.5 <sup>1)</sup>	0.5	1.0	2.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.3	2.3	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.6	2.2	3.6	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.5	2.0	3.3	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	1.3	1.7	2.6	3.3	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
10		<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
13		<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
20				0.7	1.0	1.3	1.9	2.4	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
25					0.7	1.0	1.3	1.8	2.3	3.2	5.7	6.0 <sup>2)</sup>	
32						0.9	1.2	1.7	2.2	3.1	5.4	6.0 <sup>2)</sup>	
40									2.1	3.0	5.1	6.0 <sup>2)</sup>	
50										1.9	2.8	4.7	6.0 <sup>2)</sup>
63											4.4	6.0 <sup>2)</sup>	

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

PL6	NH-00 gL/gG												
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
2	<0.5 <sup>1)</sup>	0.6	1.0	2.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.5	2.1	3.6	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.2	1.7	2.8	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.1	1.5	2.3	2.9	4.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
13					1.0	1.3	1.9	2.4	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
16						1.0	1.3	1.8	2.3	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
20							1.0	1.2	1.7	2.2	3.2	5.5	6.0 <sup>2)</sup>
25								1.6	2.1	3.0	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32									2.1	2.9	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40										2.8	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
50											4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
63												5.9	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic D** towards fuse link **NH-00\***)

PL6	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.3	2.1	3.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.6	2.2	3.8	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.6	0.9	1.4	1.9	3.2	4.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.6	2.6	3.3	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
8			0.5	0.8	1.1	1.5	2.2	2.7	4.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.7	1.0	1.3	1.9	2.5	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.0	1.3	1.9	2.3	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16						1.1	1.6	2.0	3.0	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20							1.4	1.8	2.8	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25								1.8	2.7	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32									2.4	4.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40										4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

SG08211



### Description

- High-quality miniature circuit breakers for DC-applications
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 50 A
- Tripping Characteristic C
- Rated breaking capacity 10 kA according to IEC/EN 60947-2
- Up to 250 V DC per pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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**10 kA, Characteristic C**

SG06211



**1-pole**

1	PL7-C1/1-DC	264851	12/120
2	PL7-C2/1-DC	264883	12/120
3	PL7-C3/1-DC	264884	12/120
4	PL7-C4/1-DC	264885	12/120
6	PL7-C6/1-DC	264886	12/120
10	PL7-C10/1-DC	264887	12/120
13	PL7-C13/1-DC	264888	12/120
16	PL7-C16/1-DC	264889	12/120
20	PL7-C20/1-DC	264890	12/120
25	PL7-C25/1-DC	264891	12/120
32	PL7-C32/1-DC	264892	12/120
40	PL7-C40/1-DC	264893	12/120
50	PL7-C50/1-DC	264894	12/120

SG06411



**2-pole**

1	PL7-C1/2-DC	264895	6/60
2	PL7-C2/2-DC	264896	6/60
3	PL7-C3/2-DC	264897	6/60
4	PL7-C4/2-DC	264898	6/60
6	PL7-C6/2-DC	264899	6/60
10	PL7-C10/2-DC	264900	6/60
13	PL7-C13/2-DC	264901	6/60
16	PL7-C16/2-DC	264902	6/60
20	PL7-C20/2-DC	264903	6/60
25	PL7-C25/2-DC	264904	6/60
32	PL7-C32/2-DC	264905	6/60
40	PL7-C40/2-DC	264906	6/60
50	PL7-C50/2-DC	264907	6/60

## Specifications | Miniature Circuit Breakers PL7-DC

### Description

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Rated breaking capacity 10 kA according to IEC/EN 60947
- Rated voltage to 250 V (per pole),  $\tau = 4$  ms
- Take into account polarity!

### Accessories:

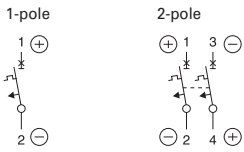
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

## Technical Data

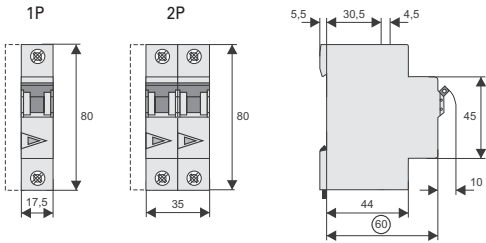
		PL7-DC
<b>Electrical</b>		
Design according to		IEC/EN 60947-2
Current test marks as printed onto the device		
Rated voltage DC		1-2 A types: 220 V (per pole) 3-50 A types: 250 V (per pole)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60947-2		10 kA
Characteristic		C
Back-up fuse		max. 100 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position

Note: not for PV string protection!

Connection diagrams

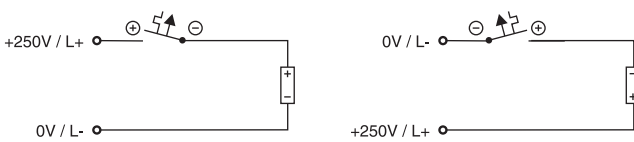


Dimensions (mm)

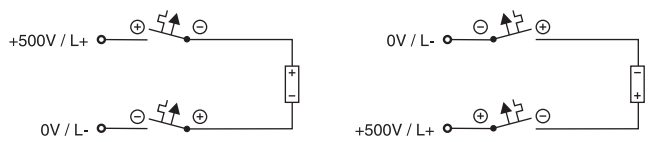


Connection examples

Connection example at 250 V=, 1-pole

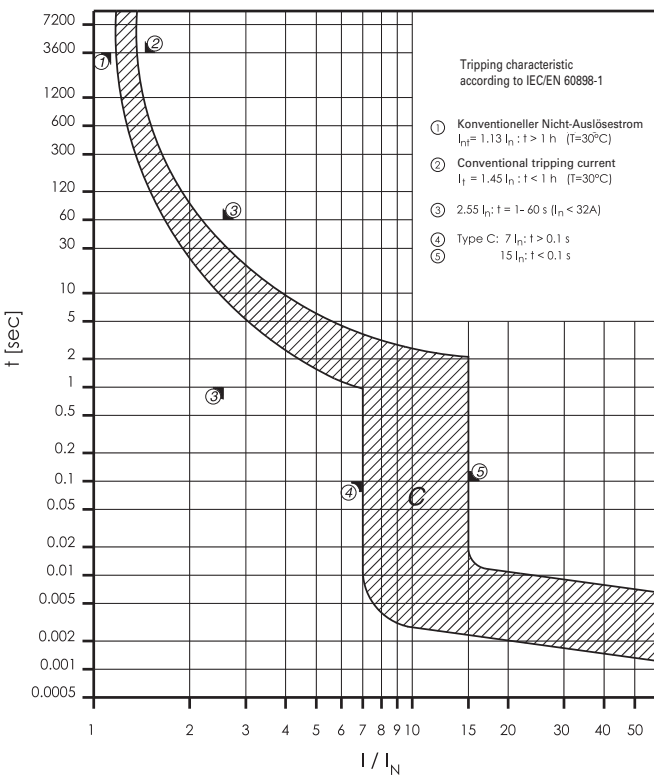


Connection example at 500 V=, 2-pole



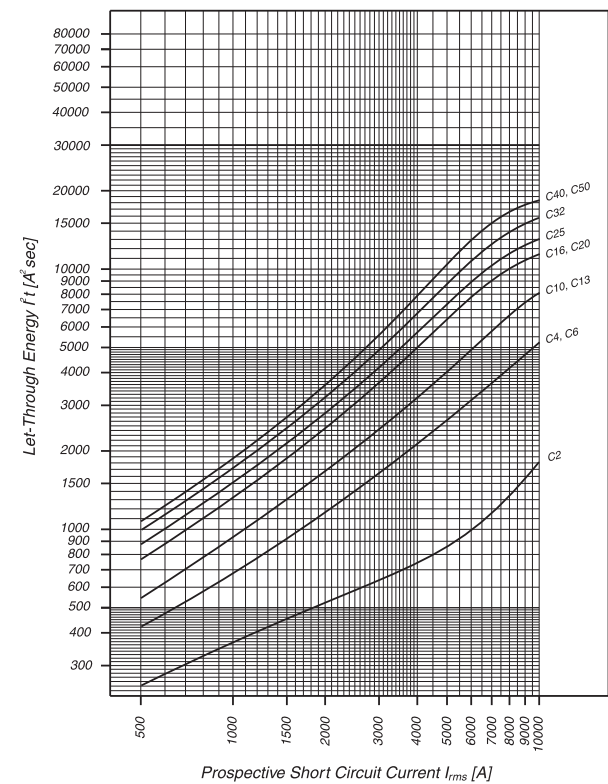
Tripping characteristic PL7-DC

Type C



Let-through Energy PL7-DC

Type C, 250 V d.c.,  $\tau = 5 \text{ ms}$  (according to IEC/EN 60947-2)



SG49112



### Description

- High-quality miniature circuit breakers for commercial and residential applications
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 63 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA according to IEC/EN 60898-1



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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**4.5 kA, Characteristic B**

SG48712



**1-pole**

1	PL4-B1/1	164711	12/120
1.5	PL4-B1,5/1	164706	12/120
1.6	PL4-B1,6/1	164707	12/120
2	PL4-B2/1	164713	12/120
2.5	PL4-B2,5/1	164712	12/120
3	PL4-B3/1	164715	12/120
3.5	PL4-B3,5/1	164714	12/120
4	PL4-B4/1	164716	12/120
5	PL4-B5/1	164717	12/120
6	PL4-B6/1	293113	12/120
8	PL4-B8/1	164718	12/120
10	PL4-B10/1	293114	12/120
12	PL4-B12/1	164708	12/120
13	PL4-B13/1	164709	12/120
15	PL4-B15/1	164710	12/120
16	PL4-B16/1	293115	12/120
20	PL4-B20/1	293116	12/120
25	PL4-B25/1	293117	12/120
32	PL4-B32/1	293118	12/120
40	PL4-B40/1	293119	12/120
50	PL4-B50/1	293120	12/120
63	PL4-B63/1	293121	12/120

SG48412



**2-pole**

1	PL4-B1/2	164773	6/60
1.5	PL4-B1,5/2	164771	6/60
1.6	PL4-B1,6/2	164772	6/60
2	PL4-B2/2	164778	6/60
2.5	PL4-B2,5/2	164777	6/60
3	PL4-B3/2	164780	6/60
3.5	PL4-B3,5/2	164779	6/60
4	PL4-B4/2	164781	6/60
5	PL4-B5/2	164782	6/60
6	PL4-B6/2	293131	6/60
8	PL4-B8/2	164783	6/60
10	PL4-B10/2	293132	6/60
12	PL4-B12/2	164774	6/60
13	PL4-B13/2	164775	6/60
15	PL4-B15/2	164776	6/60
16	PL4-B16/2	293133	6/60
20	PL4-B20/2	293134	6/60
25	PL4-B25/2	293135	6/60
32	PL4-B32/2	293136	6/60
40	PL4-B40/2	293137	6/60
50	PL4-B50/2	293138	6/60
63	PL4-B63/2	293139	6/60

SG49112



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
1	PL4-B1/3	164838	4/40
1.5	PL4-B1,5/3	164836	4/40
1.6	PL4-B1,6/3	164837	4/40
2	PL4-B2/3	164843	4/40
2.5	PL4-B2,5/3	164842	4/40
3	PL4-B3/3	164845	4/40
3.5	PL4-B3,5/3	164844	4/40
4	PL4-B4/3	164846	4/40
5	PL4-B5/3	164847	4/40
6	PL4-B6/3	293149	4/40
8	PL4-B8/3	164848	4/40
10	PL4-B10/3	293150	4/40
12	PL4-B12/3	164839	4/40
13	PL4-B13/3	164840	4/40
15	PL4-B15/3	164841	4/40
16	PL4-B16/3	293151	4/40
20	PL4-B20/3	293152	4/40
25	PL4-B25/3	293153	4/40
32	PL4-B32/3	293154	4/40
40	PL4-B40/3	293155	4/40
50	PL4-B50/3	293156	4/40
63	PL4-B63/3	293157	4/40

SG49312



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
1	PL4-B1/3N	164954	1/30
1.5	PL4-B1,5/3N	164952	1/30
1.6	PL4-B1,6/3N	164953	1/30
2	PL4-B2/3N	164961	1/30
2.5	PL4-B2,5/3N	164960	1/30
3	PL4-B3/3N	164965	1/30
3.5	PL4-B3,5/3N	164964	1/30
4	PL4-B4/3N	164967	1/30
5	PL4-B5/3N	164969	1/30
6	PL4-B6/3N	164971	1/30
8	PL4-B8/3N	164973	1/30
10	PL4-B10/3N	164955	1/30
12	PL4-B12/3N	164956	1/30
13	PL4-B13/3N	164957	1/30
15	PL4-B15/3N	164958	1/30
16	PL4-B16/3N	164959	1/30
20	PL4-B20/3N	164962	1/30
25	PL4-B25/3N	164963	1/30
32	PL4-B32/3N	164966	1/30
40	PL4-B40/3N	164968	1/30
50	PL4-B50/3N	164970	1/30
63	PL4-B63/3N	164972	1/30

SG49212



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
1	PL4-B1/4	166441	1/30
1.5	PL4-B1,5/4	166439	1/30
1.6	PL4-B1,6/4	166440	1/30
2	PL4-B2/4	166448	1/30
2.5	PL4-B2,5/4	166447	1/30
3	PL4-B3/4	166452	1/30
3.5	PL4-B3,5/4	166451	1/30
4	PL4-B4/4	166454	1/30
5	PL4-B5/4	166456	1/30
6	PL4-B6/4	166458	1/30
8	PL4-B8/4	166460	1/30
10	PL4-B10/4	166442	1/30
12	PL4-B12/4	166443	1/30
13	PL4-B13/4	166444	1/30
15	PL4-B15/4	166445	1/30
16	PL4-B16/4	166446	1/30
20	PL4-B20/4	166449	1/30
25	PL4-B25/4	166450	1/30
32	PL4-B32/4	166453	1/30
40	PL4-B40/4	166455	1/30
50	PL4-B50/4	166457	1/30
63	PL4-B63/4	166459	1/30

SG48712



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4.5 kA, Characteristic C</b>			
<b>1-pole</b>			
0.16	PL4-C0.16/1	164719	12/120
0.25	PL4-C0,25/1	164720	12/120
0.5	PL4-C0,5/1	164721	12/120
0.75	PL4-C0,75/1	164722	12/120
1	PL4-C1/1	164728	12/120
1.5	PL4-C1,5/1	164723	12/120
1.6	PL4-C1,6/1	164724	12/120
2	PL4-C2/1	164730	12/120
2.5	PL4-C2,5/1	164729	12/120
3	PL4-C3/1	164732	12/120
3.5	PL4-C3,5/1	164731	12/120
4	PL4-C4/1	164733	12/120
5	PL4-C5/1	164734	12/120
6	PL4-C6/1	293122	12/120
8	PL4-C8/1	164735	12/120
10	PL4-C10/1	293123	12/120
12	PL4-C12/1	164725	12/120
13	PL4-C13/1	164726	12/120
15	PL4-C15/1	164727	12/120
16	PL4-C16/1	293124	12/120
20	PL4-C20/1	293125	12/120
25	PL4-C25/1	293126	12/120
32	PL4-C32/1	293127	12/120
40	PL4-C40/1	293128	12/120
50	PL4-C50/1	293129	12/120
63	PL4-C63/1	293130	12/120

SG48412



<b>2-pole</b>			
0.16	PL4-C0.16/2	164784	6/60
0.25	PL4-C0,25/2	164785	6/60
0.5	PL4-C0,5/2	164786	6/60
0.75	PL4-C0,75/2	164787	6/60
1	PL4-C1/2	164790	6/60
1.5	PL4-C1,5/2	164788	6/60
1.6	PL4-C1,6/2	164789	6/60
2	PL4-C2/2	164795	6/60
2.5	PL4-C2,5/2	164794	6/60
3	PL4-C3/2	164797	6/60
3.5	PL4-C3,5/2	164796	6/60
4	PL4-C4/2	164798	6/60
5	PL4-C5/2	164799	6/60
6	PL4-C6/2	293140	6/60
8	PL4-C8/2	164800	6/60
10	PL4-C10/2	293141	6/60
12	PL4-C12/2	164791	6/60
13	PL4-C13/2	164792	6/60
15	PL4-C15/2	164793	6/60
16	PL4-C16/2	293142	6/60
20	PL4-C20/2	293143	6/60
25	PL4-C25/2	293144	6/60
32	PL4-C32/2	293145	6/60
40	PL4-C40/2	293146	6/60
50	PL4-C50/2	293147	6/60
63	PL4-C63/2	293148	6/60

SG49112



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
0.16	PL4-C0.16/3	164849	4/40
0.25	PL4-C0,25/3	164850	4/40
0.5	PL4-C0,5/3	164851	4/40
0.75	PL4-C0,75/3	164852	4/40
1	PL4-C1/3	164855	4/40
1.5	PL4-C1,5/3	164853	4/40
1.6	PL4-C1,6/3	164854	4/40
2	PL4-C2/3	164860	4/40
2.5	PL4-C2,5/3	164859	4/40
3	PL4-C3/3	164862	4/40
3.5	PL4-C3,5/3	164861	4/40
4	PL4-C4/3	164863	4/40
5	PL4-C5/3	164864	4/40
6	PL4-C6/3	293158	4/40
8	PL4-C8/3	164865	4/40
10	PL4-C10/3	293159	4/40
12	PL4-C12/3	164856	4/40
13	PL4-C13/3	164857	4/40
15	PL4-C15/3	164858	4/40
16	PL4-C16/3	293160	4/40
20	PL4-C20/3	293161	4/40
25	PL4-C25/3	293162	4/40
32	PL4-C32/3	293163	4/40
40	PL4-C40/3	293164	4/40
50	PL4-C50/3	293165	4/40
63	PL4-C63/3	293166	4/40

SG49312



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
0.16	PL4-C0.16/3N	164974	1/30
0.25	PL4-C0,25/3N	164975	1/30
0.5	PL4-C0,5/3N	164976	1/30
0.75	PL4-C0,75/3N	164977	1/30
1	PL4-C1/3N	164980	1/30
1.5	PL4-C1,5/3N	164978	1/30
1.6	PL4-C1,6/3N	164979	1/30
2	PL4-C2/3N	164987	1/30
2.5	PL4-C2,5/3N	164986	1/30
3	PL4-C3/3N	164991	1/30
3.5	PL4-C3,5/3N	164990	1/30
4	PL4-C4/3N	164993	1/30
5	PL4-C5/3N	164995	1/30
6	PL4-C6/3N	164997	1/30
8	PL4-C8/3N	164999	1/30
10	PL4-C10/3N	164981	1/30
12	PL4-C12/3N	164982	1/30
13	PL4-C13/3N	164983	1/30
15	PL4-C15/3N	164984	1/30
16	PL4-C16/3N	164985	1/30
20	PL4-C20/3N	164988	1/30
25	PL4-C25/3N	164989	1/30
32	PL4-C32/3N	164992	1/30
40	PL4-C40/3N	164994	1/30
50	PL4-C50/3N	164996	1/30
63	PL4-C63/3N	164998	1/30

SG49212



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
0.16	PL4-C0.16/4	166461	1/30
0.25	PL4-C0,25/4	166462	1/30
0.5	PL4-C0,5/4	166463	1/30
0.75	PL4-C0,75/4	166464	1/30
1	PL4-C1/4	166467	1/30
1.5	PL4-C1,5/4	166465	1/30
1.6	PL4-C1,6/4	166466	1/30
2	PL4-C2/4	166474	1/30
2.5	PL4-C2,5/4	166473	1/30
3	PL4-C3/4	166478	1/30
3.5	PL4-C3,5/4	166477	1/30
4	PL4-C4/4	166480	1/30
5	PL4-C5/4	166482	1/30
6	PL4-C6/4	166484	1/30
8	PL4-C8/4	166486	1/30
10	PL4-C10/4	166468	1/30
12	PL4-C12/4	166469	1/30
13	PL4-C13/4	166470	1/30
15	PL4-C15/4	166471	1/30
16	PL4-C16/4	166472	1/30
20	PL4-C20/4	166475	1/30
25	PL4-C25/4	166476	1/30
32	PL4-C32/4	166479	1/30
40	PL4-C40/4	166481	1/30
50	PL4-C50/4	166483	1/30
63	PL4-C63/4	166485	1/30

**Specifications | Miniature Circuit Breakers PL4**

**Description**

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC

**Accessories:**

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

**Technical Data**

**PL4**

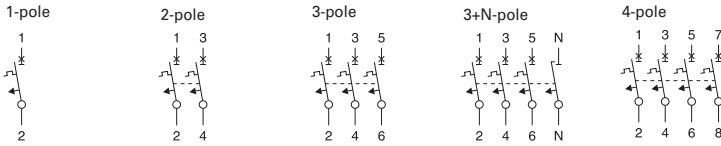
**Electrical**

Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	4.5 kA
Characteristic		B, C
Back-up fuse		max. 100 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 10,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
Minimal voltage		12 V AC/DC

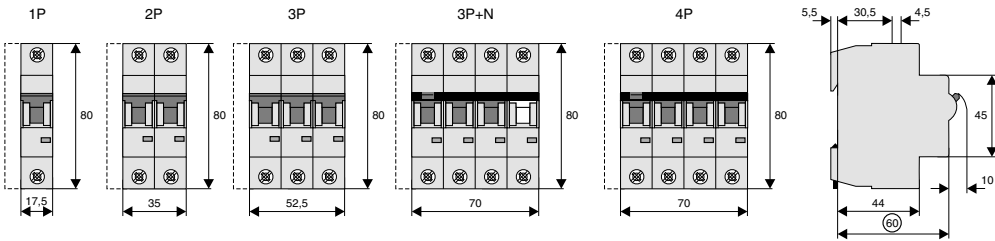
**Mechanical**

Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position

#### Connection diagrams

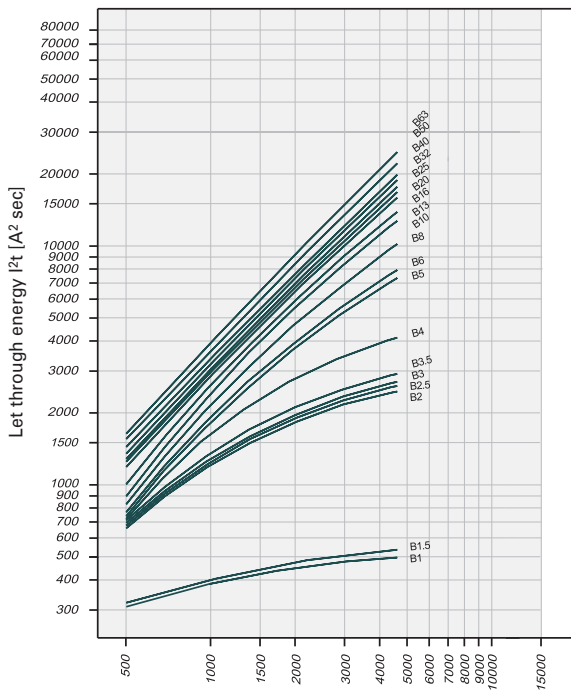


#### Dimensions (mm)

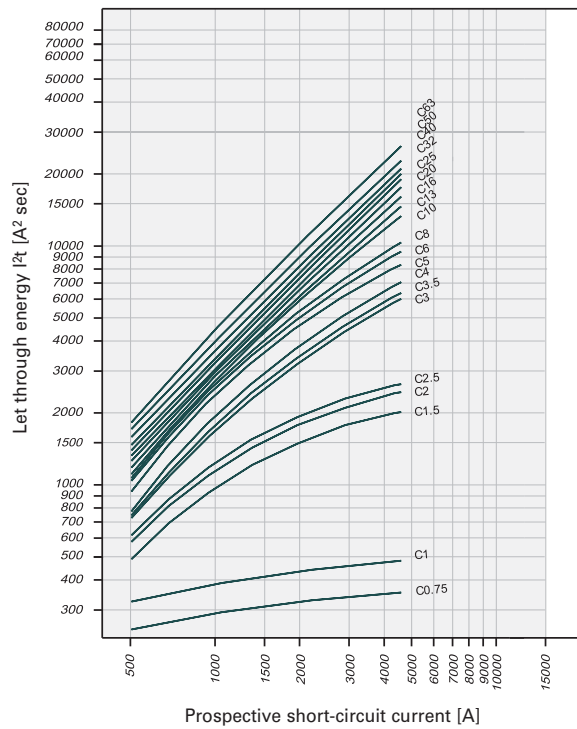


#### Let-through Energy PL4

Let-through Energy PL4, Characteristic B, 1-pole



Let-through Energy PL4, Characteristic C, 1-pole

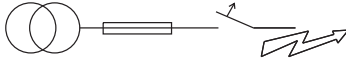




**Short Circuit Selectivity PL4 towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers PL4 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

PL4 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
1.0	<0.5 <sup>1)</sup>	1.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.0	3.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.5	0.8	1.6	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.8	1.4	2.2	3.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			0.5	0.7	1.3	2.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.6	1.2	1.9	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.2	1.8	3.1	4.4	4.5 <sup>2)</sup>
25					1.2	1.8	3.0	4.2	4.5 <sup>2)</sup>
32						1.7	2.8	3.9	4.5 <sup>2)</sup>
40							2.7	3.8	4.5 <sup>2)</sup>
50							2.5	3.5	4.5 <sup>2)</sup>
63									4.5 <sup>2)</sup>

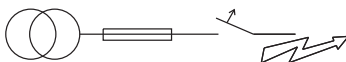
Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

PL4 $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
0.75	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	1.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.0	2.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.8	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.7	1.5	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.3	2.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.3	1.9	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					1.2	1.8	3.2	4.4	4.5 <sup>2)</sup>
20					1.2	1.8	3.1	4.1	4.5 <sup>2)</sup>
25						1.7	2.8	3.8	4.5 <sup>2)</sup>
32							2.7	3.7	4.5 <sup>2)</sup>
40								3.5	4.5 <sup>2)</sup>
50									4.5 <sup>2)</sup>
63									

**Short Circuit Selectivity PL4 towards D01-D03 fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers PL4 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

PL4 $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
1.0	<0.5 <sup>1)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	4.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.9	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	0.5	0.8	1.7	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8			0.5	0.8	1.4	2.8	4.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.7	1.3	2.4	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.6	1.1	2.2	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.1	2.1	2.8	4.4	4.5 <sup>2)</sup>
25					1.1	2.0	2.7	4.2	4.5 <sup>2)</sup>
32						2.0	2.6	4.0	4.5 <sup>2)</sup>
40							2.5	3.8	4.5 <sup>2)</sup>
50							2.3	3.4	4.5 <sup>2)</sup>
63									4.5 <sup>2)</sup>

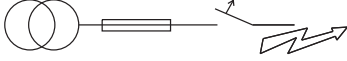
Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

PL4 $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
0.75	<0.5 <sup>1)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.0	<0.5 <sup>1)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	0.5	0.6	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.6	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	1.3	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.5	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.1	2.2	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					1.1	2.1	2.8	4.4	4.5 <sup>2)</sup>
20					1.0	2.0	2.6	4.0	4.5 <sup>2)</sup>
25						1.9	2.5	3.8	4.5 <sup>2)</sup>
32							2.5	3.7	4.5 <sup>2)</sup>
40								3.5	4.5 <sup>2)</sup>
50									4.5 <sup>2)</sup>
63									

### Short Circuit Selectivity PL4 towards NH-00 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers PL4 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

PL4	NH-00 gL/gG												
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
1.0	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	0.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	0.5	1.0	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	0.5	1.0	2.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	0.5	0.9	2.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	0.5	0.9	1.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.3	2.3	4.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.6	2.2	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.5	2.0	3.3	4.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.0	1.3	1.7	2.6	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				0.7	1.0	1.3	1.9	2.4	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25				0.7	1.0	1.3	1.8	2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32					0.9	1.2	1.7	2.2	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40								2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50									1.9	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63										4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

PL4	NH-00 gL/gG												
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160	
0.75	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.0	0.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
1.5	<0.5 <sup>1)</sup>	0.6	1.3	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.0	<0.5 <sup>1)</sup>	0.6	1.0	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
2.5	<0.5 <sup>1)</sup>	0.5	1.0	2.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.0	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	1.8	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
3.5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.7	2.4	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.5	2.1	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.2	1.7	2.8	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
8	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.1	1.5	2.3	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10				0.5	0.7	1.0	1.4	2.0	2.5	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13						1.0	1.3	1.9	2.4	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16						1.0	1.3	1.8	2.3	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20						1.0	1.2	1.7	2.2	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25							1.6	2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32								2.1	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40									2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50										4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63											4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity



sg03518\_r



### Description

- High-quality miniature circuit breakers for commercial and residential applications
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Rated currents up to 63 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA according to IEC/EN 60898-1

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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**6 kA, Characteristic B**

sg02918\_r



**1-pole**

6	HN-B6/1	194818	12/120
10	HN-B10/1	194819	12/120
13	HN-B13/1	194820	12/120
16	HN-B16/1	194821	12/120
20	HN-B20/1	194822	12/120
25	HN-B25/1	194823	12/120
32	HN-B32/1	194824	12/120
40	HN-B40/1	194825	12/120
50	HN-B50/1	194826	12/120
63	HN-B63/1	194827	12/120

sg02718\_r



**1+N-pole**

6	HN-B6/1N	194838	6/60
10	HN-B10/1N	194839	6/60
13	HN-B13/1N	194840	6/60
16	HN-B16/1N	194841	6/60
20	HN-B20/1N	194842	6/60
25	HN-B25/1N	194843	6/60
32	HN-B32/1N	194844	6/60
40	HN-B40/1N	194845	6/60
50	HN-B50/1N	194846	6/60
63	HN-B63/1N	194847	6/60

sg03118\_r



**2-pole**

6	HN-B6/2	194858	6/60
10	HN-B10/2	194859	6/60
13	HN-B13/2	194860	6/60
16	HN-B16/2	194861	6/60
20	HN-B20/2	194862	6/60
25	HN-B25/2	194863	6/60
32	HN-B32/2	194864	6/60
40	HN-B40/2	194865	6/60
50	HN-B50/2	194866	6/60
63	HN-B63/2	194867	6/60

sg03418\_r



**3-pole**

6	HN-B6/3	194878	4/40
10	HN-B10/3	194879	4/40
13	HN-B13/3	194880	4/40
16	HN-B16/3	194881	4/40
20	HN-B20/3	194882	4/40
25	HN-B25/3	194883	4/40
32	HN-B32/3	194884	4/40
40	HN-B40/3	194885	4/40
50	HN-B50/3	194886	4/40
63	HN-B63/3	194887	4/40

sg03618\_r



Rated current  
 $I_n$  (A)

Type  
Designation

Article No.

Units per  
package

#### 3+N-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HN-B6/3N	194898	3/30
10	HN-B10/3N	194899	3/30
13	HN-B13/3N	194900	3/30
16	HN-B16/3N	194901	3/30
20	HN-B20/3N	194902	3/30
25	HN-B25/3N	194903	3/30
32	HN-B32/3N	194904	3/30
40	HN-B40/3N	194905	3/30
50	HN-B50/3N	194906	3/30
63	HN-B63/3N	194907	3/30

sg02918\_r



#### 6 kA, Characteristic C

##### 1-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HN-C6/1	194828	12/120
10	HN-C10/1	194829	12/120
13	HN-C13/1	194830	12/120
16	HN-C16/1	194831	12/120
20	HN-C20/1	194832	12/120
25	HN-C25/1	194833	12/120
32	HN-C32/1	194834	12/120
40	HN-C40/1	194835	12/120
50	HN-C50/1	194836	12/120
63	HN-C63/1	194837	12/120

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##### 1+N-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HN-C6/1N	194848	6/60
10	HN-C10/1N	194849	6/60
13	HN-C13/1N	194850	6/60
16	HN-C16/1N	194851	6/60
20	HN-C20/1N	194852	6/60
25	HN-C25/1N	194853	6/60
32	HN-C32/1N	194854	6/60
40	HN-C40/1N	194855	6/60
50	HN-C50/1N	194856	6/60
63	HN-C63/1N	194857	6/60

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##### 2-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HN-C6/2	194868	6/60
10	HN-C10/2	194869	6/60
13	HN-C13/2	194870	6/60
16	HN-C16/2	194871	6/60
20	HN-C20/2	194872	6/60
25	HN-C25/2	194873	6/60
32	HN-C32/2	194874	6/60
40	HN-C40/2	194875	6/60
50	HN-C50/2	194876	6/60
63	HN-C63/2	194877	6/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
6	HN-C6/3	194888	4/40
10	HN-C10/3	194889	4/40
13	HN-C13/3	194890	4/40
16	HN-C16/3	194891	4/40
20	HN-C20/3	194892	4/40
25	HN-C25/3	194893	4/40
32	HN-C32/3	194894	4/40
40	HN-C40/3	194895	4/40
50	HN-C50/3	194896	4/40
63	HN-C63/3	194897	4/40

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
6	HN-C6/3N	194908	3/30
10	HN-C10/3N	194909	3/30
13	HN-C13/3N	194910	3/30
16	HN-C16/3N	194911	3/30
20	HN-C20/3N	194912	3/30
25	HN-C25/3N	194913	3/30
32	HN-C32/3N	194914	3/30
40	HN-C40/3N	194915	3/30
50	HN-C50/3N	194916	3/30
63	HN-C63/3N	194917	3/30

### Specifications | Miniature Circuit Breakers HN

#### Description

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC

#### Accessories:

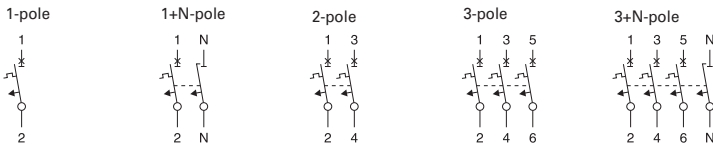
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

### Technical Data

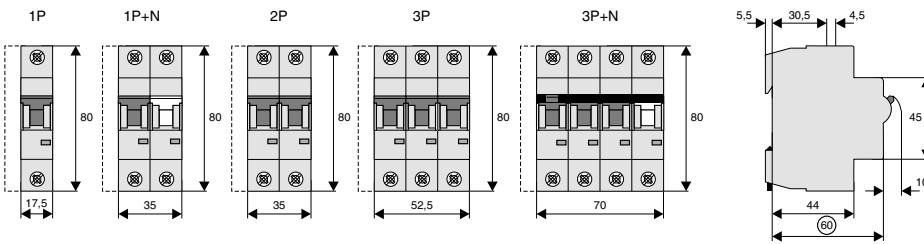
		HN
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	6 kA
Characteristic		B, C
Back-up fuse		max. 100 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 10,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
Minimal voltage		12 V AC/DC
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position



**Connection diagrams**

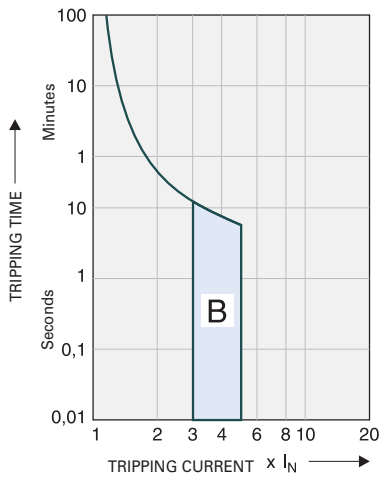


**Dimensions (mm)**

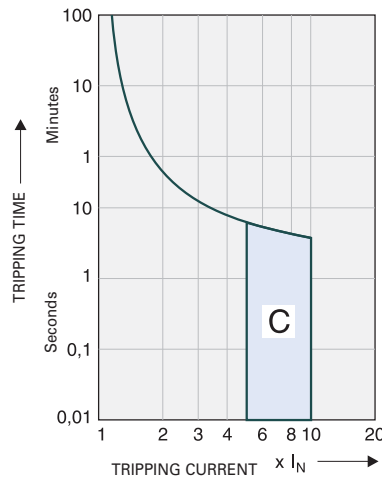


**Tripping Characteristics (IEC/EN 60898-1)**

Tripping characteristic B



Tripping characteristic C



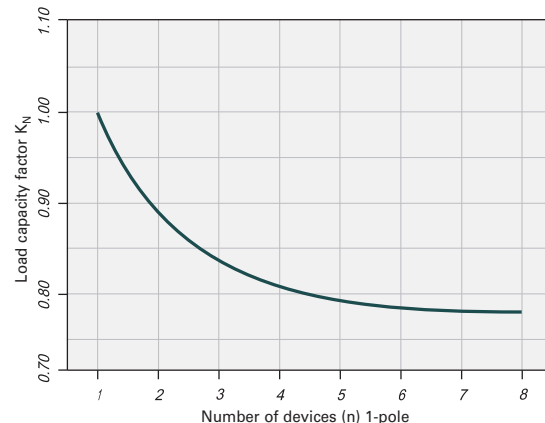
Quick-acting (B), slow (C)

**Effect of the Ambient Temperature on Thermal Tripping Behaviour**

Adjusted rated current values according to the ambient temperature

I <sub>n</sub> [A]	Ambient temperature T [°C]															
	-25	-20	-10	0	10	20	30	35	40	45	50	55	60	65	70	75
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3	5.2	5.1	5.0
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9	8.7	8.5	8.3
13	16	16	15	15	14	14	13	13	13	12	12	12	12	11	11	11
16	20	19	19	18	17	17	16	16	15	15	15	14	14	14	14	13
20	24	24	23	22	22	21	20	20	19	19	19	18	18	17	17	17
25	31	30	29	28	27	26	25	25	24	24	23	23	22	22	21	21
32	39	38	37	36	35	33	32	32	31	30	30	29	28	28	27	26
40	49	48	47	45	43	42	40	39	39	38	37	36	35	35	34	33
50	61	60	58	56	54	52	50	49	48	47	46	45	44	43	42	41
63	77	76	73	71	68	66	63	62	61	60	58	57	56	55	53	52

**Load Capacity of Series Connected Miniature Circuit Breakers**



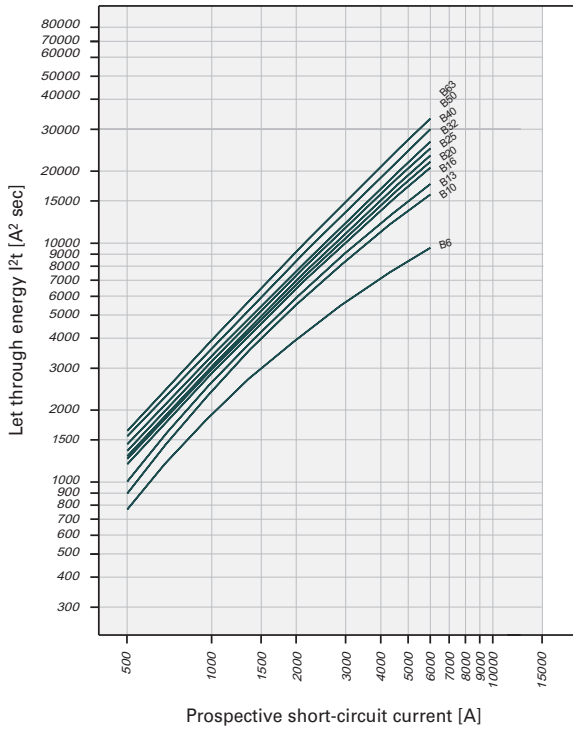
#### Effect of Power Frequency

Effect of power frequency on the tripping behaviour  $I_{MA}$  of the quick release

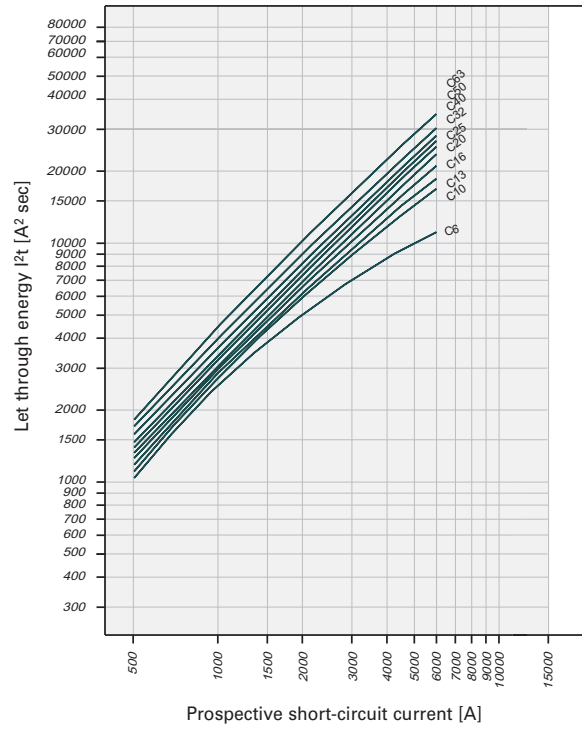
	Power frequency f [Hz]						
	$16\frac{2}{3}$	50	60	100	200	300	400
$I_{MA}(f)/I_{MA}(50\text{ Hz})$ [%]	91	100	101	106	115	134	141

#### Let-through Energy HN

Let-through Energy HN, Characteristic B, 1-pole



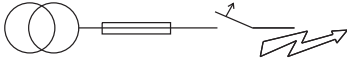
Let-through Energy HN, Characteristic C, 1-pole



**Short Circuit Selectivity HN towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers HN and the upstream fuses 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).

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



**Towards DII-DIV fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***)

HN $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6	<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		0.5	0.8	1.4	2.2	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13		0.5	0.7	1.3	2.0	3.6	5.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16			0.6	1.2	1.9	3.2	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20				1.2	1.8	3.1	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25				1.2	1.8	3.0	4.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32					1.7	2.8	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40						2.7	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
50							2.5	3.5	5.7
63									5.3

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***)

HN $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6	<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13				1.3	1.9	3.3	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16				1.2	1.8	3.2	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20				1.2	1.8	3.1	4.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.7	2.8	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32						2.7	3.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40							3.5	5.9	6.0 <sup>2)</sup>
50								5.5	6.0 <sup>2)</sup>

**Towards D01-D03 fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

HN $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
6	<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		0.5	0.7	1.3	2.4	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	5.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16			0.6	1.1	2.2	2.9	4.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20				1.1	2.1	2.8	4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					1.1	2.0	2.7	4.2	6.0 <sup>2)</sup>
32						2.0	2.6	4.0	6.0 <sup>2)</sup>
40							2.5	3.8	6.0 <sup>2)</sup>
50							2.3	3.4	6.0 <sup>2)</sup>
63									6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

HN $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	5.4	6.0 <sup>2)</sup>
13					1.1	2.2	3.0	4.9	6.0 <sup>2)</sup>
16					1.1	2.1	2.8	4.4	6.0 <sup>2)</sup>
20						1.0	2.6	4.0	6.0 <sup>2)</sup>
25							1.9	2.5	3.8
32								2.5	3.7
40									3.5
50									6.0 <sup>2)</sup>

**Towards NH-00 fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

HN $I_n$ [A]	NH-00 gL/gG											
	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.5	2.0	3.3	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20				0.7	1.0	1.3	1.9	2.4	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25					0.7	1.0	1.3	1.8	2.3	3.2	5.7	6.0 <sup>2)</sup>
32						0.9	1.2	1.7	2.2	3.1	5.4	6.0 <sup>2)</sup>
40								2.1	3.0	5.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
50									1.9	2.8	4.7	6.0 <sup>2)</sup>
63										4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

HN $I_n$ [A]	NH-00 gL/gG											
	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.0	1.3	1.9	2.4	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.0	1.3	1.8	2.3	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20						1.0	1.2	1.7	2.2	3.2	5.5	6.0 <sup>2)</sup>
25							1.6	2.1	3.0	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32								2.1	2.9	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40									2.8	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
50										4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
63											5.9	6.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

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### Description

- High-quality miniature circuit breakers for commercial and residential applications
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Rated currents up to 63 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA according to IEC/EN 60898-1

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
----------------------------	---------------------	-------------	----------------------

**6 kA, Characteristic B**

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**1-pole**

6	HN-B6/1-HX	195018	12/120
10	HN-B10/1-HX	195019	12/120
13	HN-B13/1-HX	195020	12/120
16	HN-B16/1-HX	195021	12/120
20	HN-B20/1-HX	195022	12/120
25	HN-B25/1-HX	195023	12/120
32	HN-B32/1-HX	195024	12/120
40	HN-B40/1-HX	195025	12/120
50	HN-B50/1-HX	195026	12/120
63	HN-B63/1-HX	195027	12/120

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**1+N-pole**

6	HN-B6/1N-HX	195038	6/60
10	HN-B10/1N-HX	195039	6/60
13	HN-B13/1N-HX	195040	6/60
16	HN-B16/1N-HX	195041	6/60
20	HN-B20/1N-HX	195042	6/60
25	HN-B25/1N-HX	195043	6/60
32	HN-B32/1N-HX	195044	6/60
40	HN-B40/1N-HX	195045	6/60
50	HN-B50/1N-HX	195046	6/60
63	HN-B63/1N-HX	195047	6/60

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**2-pole**

6	HN-B6/2-HX	195058	6/60
10	HN-B10/2-HX	195059	6/60
13	HN-B13/2-HX	195060	6/60
16	HN-B16/2-HX	195061	6/60
20	HN-B20/2-HX	195062	6/60
25	HN-B25/2-HX	195063	6/60
32	HN-B32/2-HX	195064	6/60
40	HN-B40/2-HX	195065	6/60
50	HN-B50/2-HX	195066	6/60
63	HN-B63/2-HX	195067	6/60

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**3-pole**

6	HN-B6/3-HX	195078	4/40
10	HN-B10/3-HX	195079	4/40
13	HN-B13/3-HX	195080	4/40
16	HN-B16/3-HX	195081	4/40
20	HN-B20/3-HX	195082	4/40
25	HN-B25/3-HX	195083	4/40
32	HN-B32/3-HX	195084	4/40
40	HN-B40/3-HX	195085	4/40
50	HN-B50/3-HX	195086	4/40
63	HN-B63/3-HX	195087	4/40

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
6	HN-B6/3N-HX	195098	3/30
10	HN-B10/3N-HX	195099	3/30
13	HN-B13/3N-HX	195100	3/30
16	HN-B16/3N-HX	195101	3/30
20	HN-B20/3N-HX	195102	3/30
25	HN-B25/3N-HX	195103	3/30
32	HN-B32/3N-HX	195104	3/30
40	HN-B40/3N-HX	195105	3/30
50	HN-B50/3N-HX	195106	3/30
63	HN-B63/3N-HX	195107	3/30

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<b>6 kA, Characteristic C</b>			
<b>1-pole</b>			
6	HN-C6/1-HX	195028	12/120
10	HN-C10/1-HX	195029	12/120
13	HN-C13/1-HX	195030	12/120
16	HN-C16/1-HX	195031	12/120
20	HN-C20/1-HX	195032	12/120
25	HN-C25/1-HX	195033	12/120
32	HN-C32/1-HX	195034	12/120
40	HN-C40/1-HX	195035	12/120
50	HN-C50/1-HX	195036	12/120
63	HN-C63/1-HX	195037	12/120

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<b>1+N-pole</b>			
6	HN-C6/1N-HX	195048	6/60
10	HN-C10/1N-HX	195049	6/60
13	HN-C13/1N-HX	195050	6/60
16	HN-C16/1N-HX	195051	6/60
20	HN-C20/1N-HX	195052	6/60
25	HN-C25/1N-HX	195053	6/60
32	HN-C32/1N-HX	195054	6/60
40	HN-C40/1N-HX	195055	6/60
50	HN-C50/1N-HX	195056	6/60
63	HN-C63/1N-HX	195057	6/60

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<b>2-pole</b>			
6	HN-C6/2-HX	195068	6/60
10	HN-C10/2-HX	195069	6/60
13	HN-C13/2-HX	195070	6/60
16	HN-C16/2-HX	195071	6/60
20	HN-C20/2-HX	195072	6/60
25	HN-C25/2-HX	195073	6/60
32	HN-C32/2-HX	195074	6/60
40	HN-C40/2-HX	195075	6/60
50	HN-C50/2-HX	195076	6/60
63	HN-C63/2-HX	195077	6/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
6	HN-C6/3-HX	195088	4/40
10	HN-C10/3-HX	195089	4/40
13	HN-C13/3-HX	195090	4/40
16	HN-C16/3-HX	195091	4/40
20	HN-C20/3-HX	195092	4/40
25	HN-C25/3-HX	195093	4/40
32	HN-C32/3-HX	195094	4/40
40	HN-C40/3-HX	195095	4/40
50	HN-C50/3-HX	195096	4/40
63	HN-C63/3-HX	195097	4/40

sg03618\_r



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
6	HN-C6/3N-HX	195108	3/30
10	HN-C10/3N-HX	195109	3/30
13	HN-C13/3N-HX	195110	3/30
16	HN-C16/3N-HX	195111	3/30
20	HN-C20/3N-HX	195112	3/30
25	HN-C25/3N-HX	195113	3/30
32	HN-C32/3N-HX	195114	3/30
40	HN-C40/3N-HX	195115	3/30
50	HN-C50/3N-HX	195116	3/30
63	HN-C63/3N-HX	195117	3/30

### Specifications | Miniature Circuit Breakers HN-HX

#### Description

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC

#### Accessories:

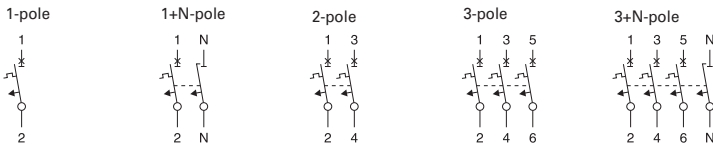
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

### Technical Data

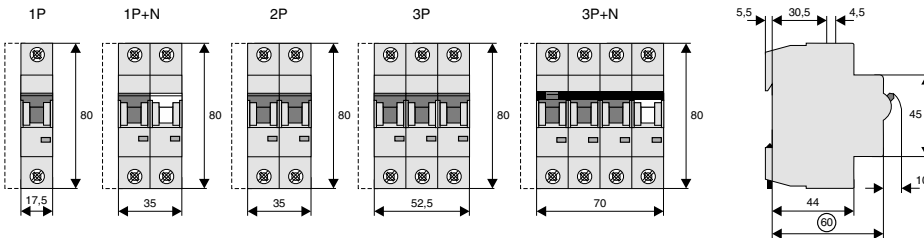
		HN-HX
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	6 kA
Characteristic		B, C
Back-up fuse		max. 100 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 10,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
Minimal voltage		12 V AC/DC
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position



**Connection diagrams**

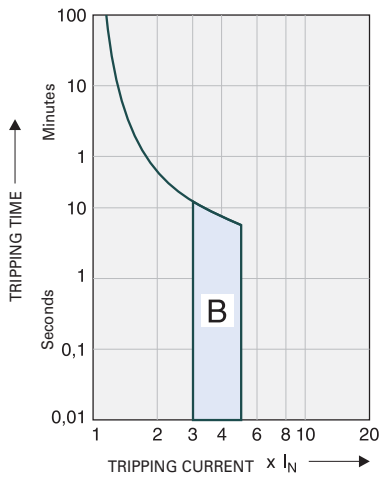


**Dimensions (mm)**

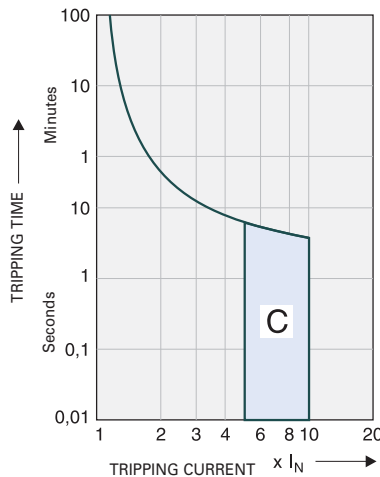


**Tripping Characteristics (IEC/EN 60898-1)**

Tripping characteristic B



Tripping characteristic C



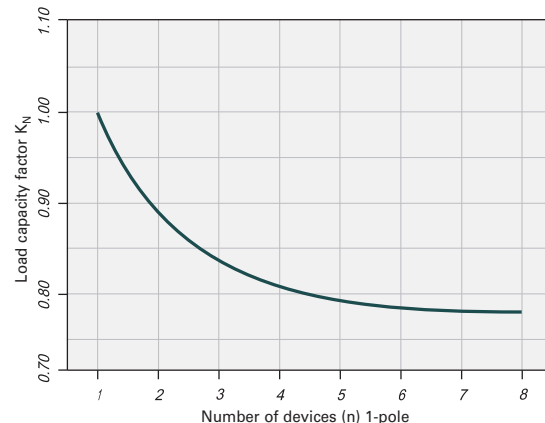
Quick-acting (B), slow (C)

**Effect of the Ambient Temperature on Thermal Tripping Behaviour**

Adjusted rated current values according to the ambient temperature

I <sub>n</sub> [A]	Ambient temperature T [°C]															
	-25	-20	-10	0	10	20	30	35	40	45	50	55	60	65	70	75
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3	5.2	5.1	5.0
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9	8.7	8.5	8.3
13	16	16	15	15	14	14	13	13	13	12	12	12	12	11	11	11
16	20	19	19	18	17	17	16	16	15	15	15	14	14	14	14	13
20	24	24	23	22	22	21	20	20	19	19	19	18	18	17	17	17
25	31	30	29	28	27	26	25	25	24	24	23	23	22	22	21	21
32	39	38	37	36	35	33	32	32	31	30	30	29	28	28	27	26
40	49	48	47	45	43	42	40	39	39	38	37	36	35	35	34	33
50	61	60	58	56	54	52	50	49	48	47	46	45	44	43	42	41
63	77	76	73	71	68	66	63	62	61	60	58	57	56	55	53	52

**Load Capacity of Series Connected Miniature Circuit Breakers**



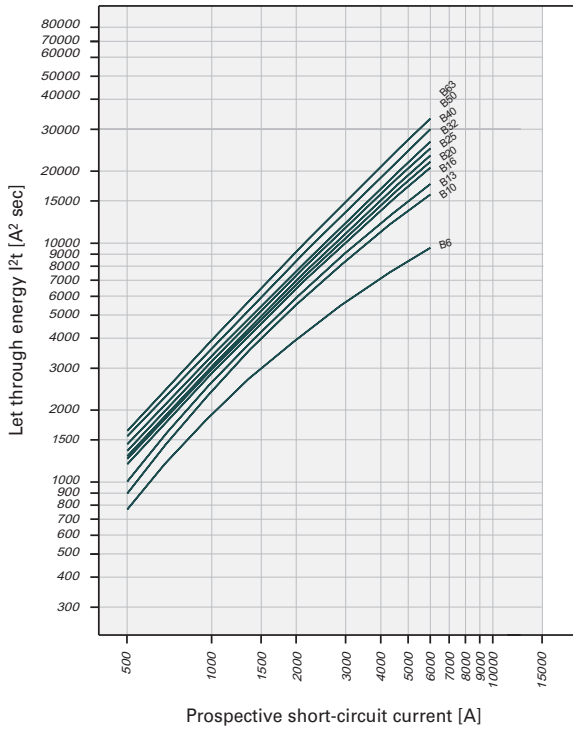
## Effect of Power Frequency

Effect of power frequency on the tripping behaviour  $I_{MA}$  of the quick release

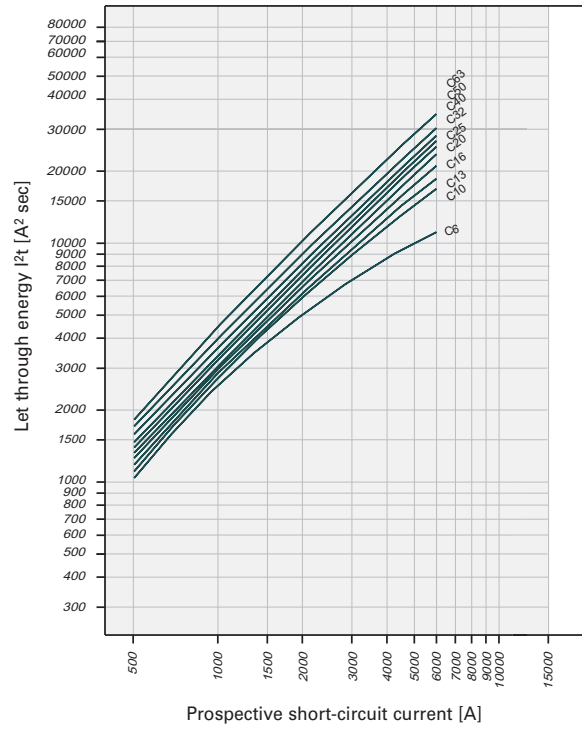
	Power frequency f [Hz]						
	$16\frac{2}{3}$	50	60	100	200	300	400
$I_{MA}(f)/I_{MA}(50\text{ Hz})$ [%]	91	100	101	106	115	134	141

## Let-through Energy HN-HX

Let-through Energy HN-HX, Characteristic B, 1-pole



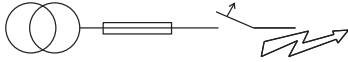
Let-through Energy HN-HX, Characteristic C, 1-pole



**Short Circuit Selectivity HN-HX towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers HN-HX and the upstream fuses 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).

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



**Towards DII-DIV fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***)

HN-HX	DII-DIV gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.8	1.4	2.2	3.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			0.5	0.7	1.3	2.0	3.6	5.4	6.0 <sup>2)</sup>
16				0.6	1.2	1.9	3.2	4.6	6.0 <sup>2)</sup>
20					1.2	1.8	3.1	4.4	6.0 <sup>2)</sup>
25					1.2	1.8	3.0	4.2	6.0 <sup>2)</sup>
32						1.7	2.8	3.9	6.0 <sup>2)</sup>
40							2.7	3.8	6.0 <sup>2)</sup>
50							2.5	3.5	5.7
63									5.3

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***)

HN-HX	DII-DIV gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.3	1.9	3.3	5.0	6.0 <sup>2)</sup>
16					1.2	1.8	3.2	4.4	6.0 <sup>2)</sup>
20					1.2	1.8	3.1	4.1	6.0 <sup>2)</sup>
25						1.7	2.8	3.8	6.0 <sup>2)</sup>
32							2.7	3.7	6.0 <sup>2)</sup>
40								3.5	5.9
50									5.5

**Towards D01-D03 fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

HN-HX	D01-D03 gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.7	1.3	2.4	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	5.3	6.0 <sup>2)</sup>
16				0.6	1.1	2.2	2.9	4.6	6.0 <sup>2)</sup>
20					1.1	2.1	2.8	4.4	6.0 <sup>2)</sup>
25					1.1	2.0	2.7	4.2	6.0 <sup>2)</sup>
32						2.0	2.6	4.0	6.0 <sup>2)</sup>
40							2.5	3.8	6.0 <sup>2)</sup>
50							2.3	3.4	6.0 <sup>2)</sup>
63									6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

HN-HX	D01-D03 gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	5.4	6.0 <sup>2)</sup>
13					1.1	2.2	3.0	4.9	6.0 <sup>2)</sup>
16					1.1	2.1	2.8	4.4	6.0 <sup>2)</sup>
20						1.0	2.6	4.0	6.0 <sup>2)</sup>
25						1.9	2.5	3.8	6.0 <sup>2)</sup>
32							2.5	3.7	6.0 <sup>2)</sup>
40								3.5	6.0 <sup>2)</sup>
50									6.0 <sup>2)</sup>

**Towards NH-00 fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

HN-HX	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.5	2.0	3.3	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20				0.7	1.0	1.3	1.9	2.4	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25				0.7	1.0	1.3	1.8	2.3	3.2	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
32					0.9	1.2	1.7	2.2	3.1	5.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
40								2.1	3.0	5.1	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
50								1.9	2.8	4.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
63									4.4	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

HN-HX	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13					1.0	1.3	1.9	2.4	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16					1.0	1.3	1.8	2.3	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20					1.0	1.2	1.7	2.2	3.2	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25						1.6	2.1	3.0	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
32							2.1	2.9	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
40								2.8	4.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	
50								4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>		
63										5.9	6.0 <sup>2)</sup>	

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

sg03518\_r



### Description

- High-quality miniature circuit breakers for commercial and residential applications
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Rated currents up to 63 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA according to IEC/EN 60898-1

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
----------------------------	---------------------	-------------	----------------------

**4.5 kA, Characteristic B**

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**1-pole**

6	HL-B6/1	194718	12/120
10	HL-B10/1	194719	12/120
13	HL-B13/1	194720	12/120
16	HL-B16/1	194721	12/120
20	HL-B20/1	194722	12/120
25	HL-B25/1	194723	12/120
32	HL-B32/1	194724	12/120
40	HL-B40/1	194725	12/120
50	HL-B50/1	194726	12/120
63	HL-B63/1	194727	12/120

sg03218\_r



**1+N-pole**

6	HL-B6/1N	194738	6/60
10	HL-B10/1N	194739	6/60
13	HL-B13/1N	194740	6/60
16	HL-B16/1N	194741	6/60
20	HL-B20/1N	194742	6/60
25	HL-B25/1N	194743	6/60
32	HL-B32/1N	194744	6/60
40	HL-B40/1N	194745	6/60
50	HL-B50/1N	194746	6/60
63	HL-B63/1N	194747	6/60

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**2-pole**

6	HL-B6/2	194758	6/60
10	HL-B10/2	194759	6/60
13	HL-B13/2	194760	6/60
16	HL-B16/2	194761	6/60
20	HL-B20/2	194762	6/60
25	HL-B25/2	194763	6/60
32	HL-B32/2	194764	6/60
40	HL-B40/2	194765	6/60
50	HL-B50/2	194766	6/60
63	HL-B63/2	194767	6/60

sg03318\_r



**3-pole**

6	HL-B6/3	194778	4/40
10	HL-B10/3	194779	4/40
13	HL-B13/3	194780	4/40
16	HL-B16/3	194781	4/40
20	HL-B20/3	194782	4/40
25	HL-B25/3	194783	4/40
32	HL-B32/3	194784	4/40
40	HL-B40/3	194785	4/40
50	HL-B50/3	194786	4/40
63	HL-B63/3	194787	4/40

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Rated current  
 $I_n$  (A)

Type  
Designation

Article No.

Units per  
package

#### 3+N-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HL-B6/3N	194798	3/30
10	HL-B10/3N	194799	3/30
13	HL-B13/3N	194800	3/30
16	HL-B16/3N	194801	3/30
20	HL-B20/3N	194802	3/30
25	HL-B25/3N	194803	3/30
32	HL-B32/3N	194804	3/30
40	HL-B40/3N	194805	3/30
50	HL-B50/3N	194806	3/30
63	HL-B63/3N	194807	3/30

#### 4.5 kA, Characteristic C

sg02818\_r



#### 1-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HL-C6/1	194728	12/120
10	HL-C10/1	194729	12/120
13	HL-C13/1	194730	12/120
16	HL-C16/1	194731	12/120
20	HL-C20/1	194732	12/120
25	HL-C25/1	194733	12/120
32	HL-C32/1	194734	12/120
40	HL-C40/1	194735	12/120
50	HL-C50/1	194736	12/120
63	HL-C63/1	194737	12/120

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#### 1+N-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HL-C6/1N	194748	6/60
10	HL-C10/1N	194749	6/60
13	HL-C13/1N	194750	6/60
16	HL-C16/1N	194751	6/60
20	HL-C20/1N	194752	6/60
25	HL-C25/1N	194753	6/60
32	HL-C32/1N	194754	6/60
40	HL-C40/1N	194755	6/60
50	HL-C50/1N	194756	6/60
63	HL-C63/1N	194757	6/60

sg03018\_r



#### 2-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HL-C6/2	194768	6/60
10	HL-C10/2	194769	6/60
13	HL-C13/2	194770	6/60
16	HL-C16/2	194771	6/60
20	HL-C20/2	194772	6/60
25	HL-C25/2	194773	6/60
32	HL-C32/2	194774	6/60
40	HL-C40/2	194775	6/60
50	HL-C50/2	194776	6/60
63	HL-C63/2	194777	6/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
6	HL-C6/3	194788	4/40
10	HL-C10/3	194789	4/40
13	HL-C13/3	194790	4/40
16	HL-C16/3	194791	4/40
20	HL-C20/3	194792	4/40
25	HL-C25/3	194793	4/40
32	HL-C32/3	194794	4/40
40	HL-C40/3	194795	4/40
50	HL-C50/3	194796	4/40
63	HL-C63/3	194797	4/40

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
6	HL-C6/3N	194808	3/30
10	HL-C10/3N	194809	3/30
13	HL-C13/3N	194810	3/30
16	HL-C16/3N	194811	3/30
20	HL-C20/3N	194812	3/30
25	HL-C25/3N	194813	3/30
32	HL-C32/3N	194814	3/30
40	HL-C40/3N	194815	3/30
50	HL-C50/3N	194816	3/30
63	HL-C63/3N	194817	3/30

## Specifications | Miniature Circuit Breakers HL

### Description

- High selectivity between and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC

### Accessories:

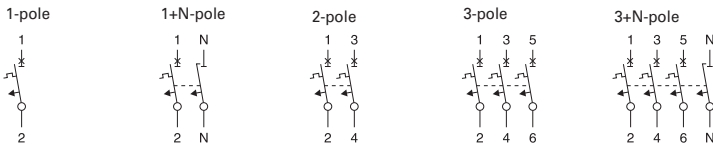
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

## Technical Data

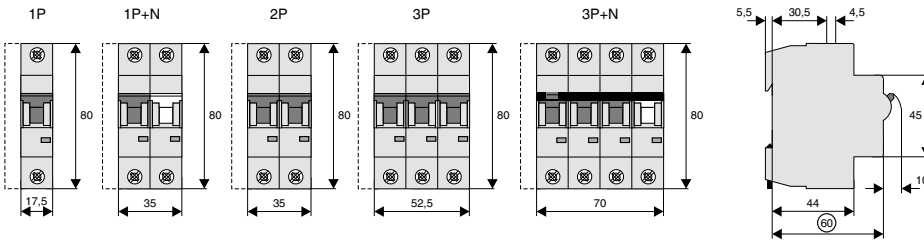
		HL
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	4.5 kA
Characteristic		B, C
Back-up fuse		max. 100 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 10,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
Minimal voltage		12 V AC/DC
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position
Climatic conditions		according to IEC 68-2 (25...55 °C / 90...95 % RH)



**Connection diagrams**

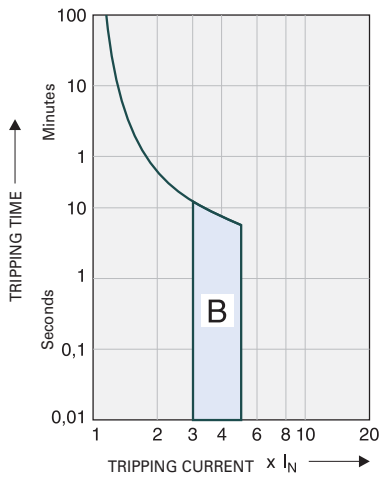


**Dimensions (mm)**

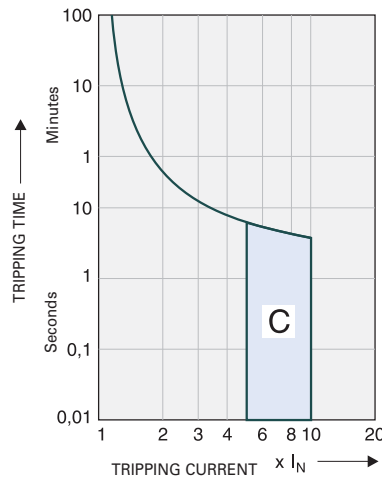


**Tripping Characteristics (IEC/EN 60898-1)**

Tripping characteristic B



Tripping characteristic C



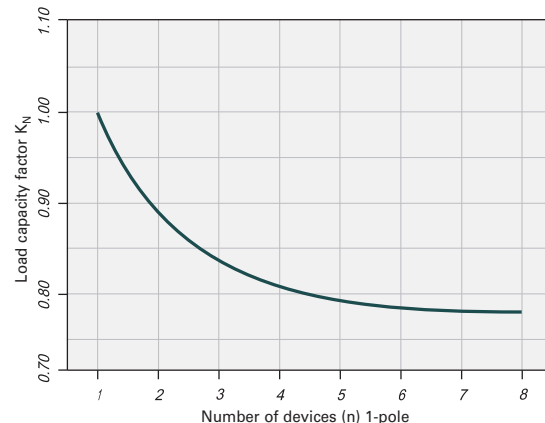
Quick-acting (B), slow (C)

**Effect of the Ambient Temperature on Thermal Tripping Behaviour**

Adjusted rated current values according to the ambient temperature

I <sub>n</sub> [A]	Ambient temperature T [°C]															
	-25	-20	-10	0	10	20	30	35	40	45	50	55	60	65	70	75
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3	5.2	5.1	5.0
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9	8.7	8.5	8.3
13	16	16	15	15	14	14	13	13	13	12	12	12	12	11	11	11
16	20	19	19	18	17	17	16	16	15	15	15	14	14	14	14	13
20	24	24	23	22	22	21	20	20	19	19	19	18	18	17	17	17
25	31	30	29	28	27	26	25	25	24	24	23	23	22	22	21	21
32	39	38	37	36	35	33	32	32	31	30	30	29	28	28	27	26
40	49	48	47	45	43	42	40	39	39	38	37	36	35	35	34	33
50	61	60	58	56	54	52	50	49	48	47	46	45	44	43	42	41
63	77	76	73	71	68	66	63	62	61	60	58	57	56	55	53	52

**Load Capacity of Series Connected Miniature Circuit Breakers**



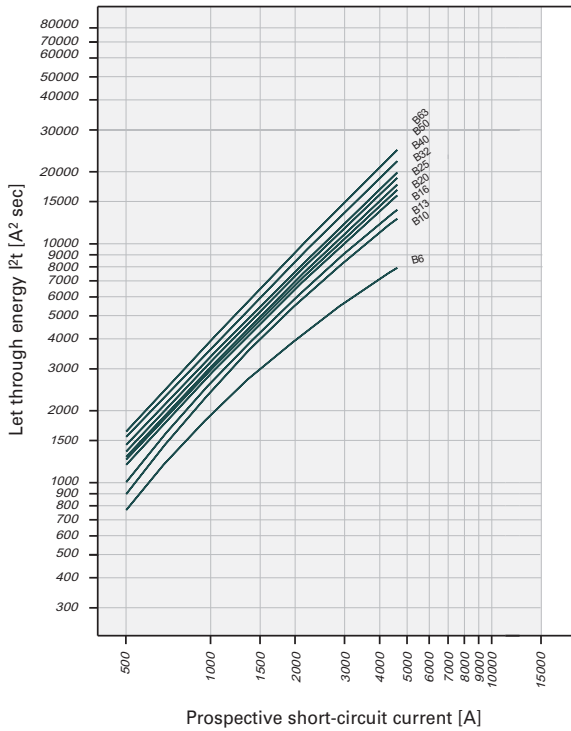
### Effect of Power Frequency

Effect of power frequency on the tripping behaviour  $I_{MA}$  of the quick release

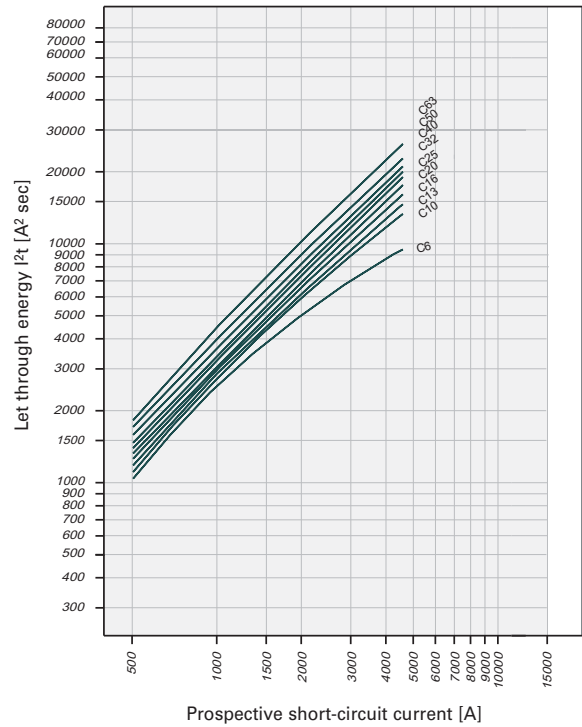
	Power frequency f [Hz]						
	<b>16<sup>2</sup>/<sub>3</sub></b>	<b>50</b>	<b>60</b>	<b>100</b>	<b>200</b>	<b>300</b>	<b>400</b>
$I_{MA}(f)/I_{MA}(50 \text{ Hz})$ [%]	91	100	101	106	115	134	141

### Let-through Energy HL

Let-through Energy HL, Characteristic B, 1-pole



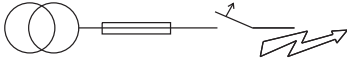
Let-through Energy HL, Characteristic C, 1-pole



**Short Circuit Selectivity HL towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers HL and the upstream fuses 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).

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



**Towards DII-DIV fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***)

HL $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6	<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		0.5	0.8	1.4	2.2	3.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13		0.5	0.7	1.3	2.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16			0.6	1.2	1.9	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				1.2	1.8	3.1	4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25				1.2	1.8	3.0	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32					1.7	2.8	3.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40						2.7	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50						2.5	3.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63								4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***)

HL $I_n$ [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
6	<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13				1.3	1.9	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				1.2	1.8	3.2	4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				1.2	1.8	3.1	4.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25					1.7	2.8	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32						2.7	3.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40							3.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50								4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63									4.5 <sup>2)</sup>

**Towards D01-D03 fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

HL $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
6	<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		0.5	0.7	1.3	2.4	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16			0.6	1.1	2.2	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				1.1	2.1	2.8	4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25				1.1	2.0	2.7	4.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32					2.0	2.6	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40						2.5	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50						2.3	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63								4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

HL $I_n$ [A]	D01-D03 gL/gG								
	10	16	20	25	35	50	63	80	100
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13				1.1	2.2	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				1.1	2.1	2.8	4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.0	2.6	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25						1.9	2.5	3.8	4.5 <sup>2)</sup>
32							2.5	3.7	4.5 <sup>2)</sup>
40								3.5	4.5 <sup>2)</sup>
50									4.5 <sup>2)</sup>
63									4.5 <sup>2)</sup>

**Towards NH-00 fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

HL $I_n$ [A]	NH-00 gL/gG											
	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.5	2.0	3.3	4.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				0.7	1.0	1.3	1.9	2.4	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25				0.7	1.0	1.3	1.8	2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32					0.9	1.2	1.7	2.2	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40								2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50								1.9	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63									4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

HL $I_n$ [A]	NH-00 gL/gG											
	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13				1.0	1.3	1.9	2.4	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				1.0	1.3	1.8	2.3	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				1.0	1.2	1.7	2.2	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25					1.6	2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32						2.1	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40							2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50								4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63										4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity

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## Description

- High-quality miniature circuit breakers for commercial and residential applications
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Rated currents up to 63 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA according to IEC/EN 60898-1

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
----------------------------	---------------------	-------------	----------------------

**4.5 kA, Characteristic B**

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**1-pole**

6	HL-B6/1-HX	194918	12/120
10	HL-B10/1-HX	194919	12/120
13	HL-B13/1-HX	194920	12/120
16	HL-B16/1-HX	194921	12/120
20	HL-B20/1-HX	194922	12/120
25	HL-B25/1-HX	194923	12/120
32	HL-B32/1-HX	194924	12/120
40	HL-B40/1-HX	194925	12/120
50	HL-B50/1-HX	194926	12/120
63	HL-B63/1-HX	194927	12/120

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**1+N-pole**

6	HL-B6/1N-HX	194938	6/60
10	HL-B10/1N-HX	194939	6/60
13	HL-B13/1N-HX	194940	6/60
16	HL-B16/1N-HX	194941	6/60
20	HL-B20/1N-HX	194942	6/60
25	HL-B25/1N-HX	194943	6/60
32	HL-B32/1N-HX	194944	6/60
40	HL-B40/1N-HX	194945	6/60
50	HL-B50/1N-HX	194946	6/60
63	HL-B63/1N-HX	194947	6/60

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**2-pole**

6	HL-B6/2-HX	194958	6/60
10	HL-B10/2-HX	194959	6/60
13	HL-B13/2-HX	194960	6/60
16	HL-B16/2-HX	194961	6/60
20	HL-B20/2-HX	194962	6/60
25	HL-B25/2-HX	194963	6/60
32	HL-B32/2-HX	194964	6/60
40	HL-B40/2-HX	194965	6/60
50	HL-B50/2-HX	194966	6/60
63	HL-B63/2-HX	194967	6/60

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**3-pole**

6	HL-B6/3-HX	194978	4/40
10	HL-B10/3-HX	194979	4/40
13	HL-B13/3-HX	194980	4/40
16	HL-B16/3-HX	194981	4/40
20	HL-B20/3-HX	194982	4/40
25	HL-B25/3-HX	194983	4/40
32	HL-B32/3-HX	194984	4/40
40	HL-B40/3-HX	194985	4/40
50	HL-B50/3-HX	194986	4/40
63	HL-B63/3-HX	194987	4/40

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Rated current  
 $I_n$  (A)

Type  
Designation

Article No.

Units per  
package

#### 3+N-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HL-B6/3N-HX	194998	3/30
10	HL-B10/3N-HX	194999	3/30
13	HL-B13/3N-HX	195000	3/30
16	HL-B16/3N-HX	195001	3/30
20	HL-B20/3N-HX	195002	3/30
25	HL-B25/3N-HX	195003	3/30
32	HL-B32/3N-HX	195004	3/30
40	HL-B40/3N-HX	195005	3/30
50	HL-B50/3N-HX	195006	3/30
63	HL-B63/3N-HX	195007	3/30

#### 4.5 kA, Characteristic C

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#### 1-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HL-C6/1-HX	194928	12/120
10	HL-C10/1-HX	194929	12/120
13	HL-C13/1-HX	194930	12/120
16	HL-C16/1-HX	194931	12/120
20	HL-C20/1-HX	194932	12/120
25	HL-C25/1-HX	194933	12/120
32	HL-C32/1-HX	194934	12/120
40	HL-C40/1-HX	194935	12/120
50	HL-C50/1-HX	194936	12/120
63	HL-C63/1-HX	194937	12/120

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#### 1+N-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HL-C6/1N-HX	194948	6/60
10	HL-C10/1N-HX	194949	6/60
13	HL-C13/1N-HX	194950	6/60
16	HL-C16/1N-HX	194951	6/60
20	HL-C20/1N-HX	194952	6/60
25	HL-C25/1N-HX	194953	6/60
32	HL-C32/1N-HX	194954	6/60
40	HL-C40/1N-HX	194955	6/60
50	HL-C50/1N-HX	194956	6/60
63	HL-C63/1N-HX	194957	6/60

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#### 2-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
6	HL-C6/2-HX	194968	6/60
10	HL-C10/2-HX	194969	6/60
13	HL-C13/2-HX	194970	6/60
16	HL-C16/2-HX	194971	6/60
20	HL-C20/2-HX	194972	6/60
25	HL-C25/2-HX	194973	6/60
32	HL-C32/2-HX	194974	6/60
40	HL-C40/2-HX	194975	6/60
50	HL-C50/2-HX	194976	6/60
63	HL-C63/2-HX	194977	6/60

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3-pole</b>			
6	HL-C6/3-HX	194988	4/40
10	HL-C10/3-HX	194989	4/40
13	HL-C13/3-HX	194990	4/40
16	HL-C16/3-HX	194991	4/40
20	HL-C20/3-HX	194992	4/40
25	HL-C25/3-HX	194993	4/40
32	HL-C32/3-HX	194994	4/40
40	HL-C40/3-HX	194995	4/40
50	HL-C50/3-HX	194996	4/40
63	HL-C63/3-HX	194997	4/40

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
6	HL-C6/3N-HX	195008	3/30
10	HL-C10/3N-HX	195009	3/30
13	HL-C13/3N-HX	195010	3/30
16	HL-C16/3N-HX	195011	3/30
20	HL-C20/3N-HX	195012	3/30
25	HL-C25/3N-HX	195013	3/30
32	HL-C32/3N-HX	195014	3/30
40	HL-C40/3N-HX	195015	3/30
50	HL-C50/3N-HX	195016	3/30
63	HL-C63/3N-HX	195017	3/30

## Specifications | Miniature Circuit Breakers HL-HX

### Description

- High selectivity between and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC

### Accessories:

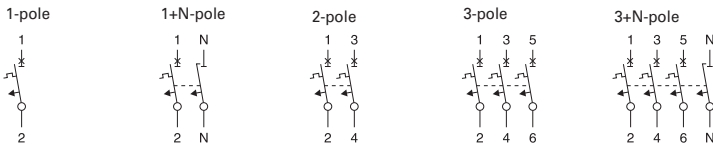
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

## Technical Data

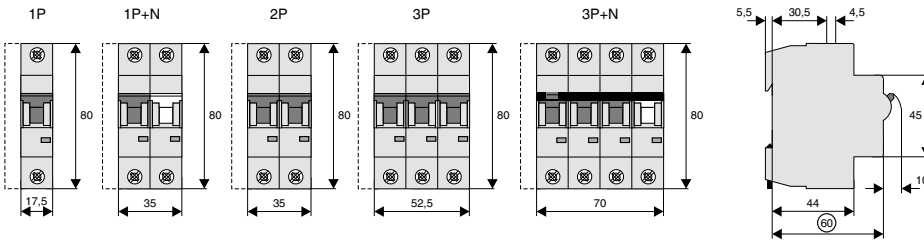
		HL-HX
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	4.5 kA
Characteristic		B, C
Back-up fuse		max. 100 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 10,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
Minimal voltage		12 V AC/DC
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position
Climatic conditions		according to IEC 68-2 (25...55 °C / 90...95 % RH)



**Connection diagrams**

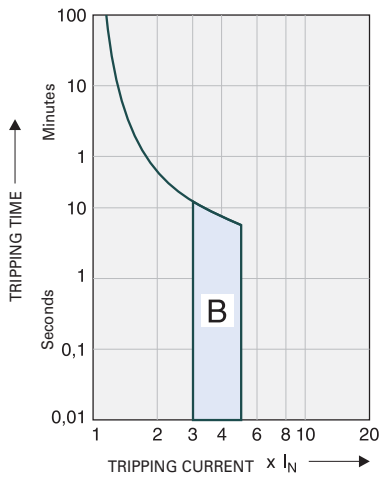


**Dimensions (mm)**

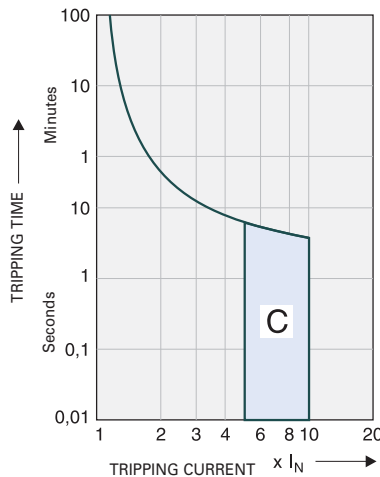


**Tripping Characteristics (IEC/EN 60898-1)**

Tripping characteristic B



Tripping characteristic C



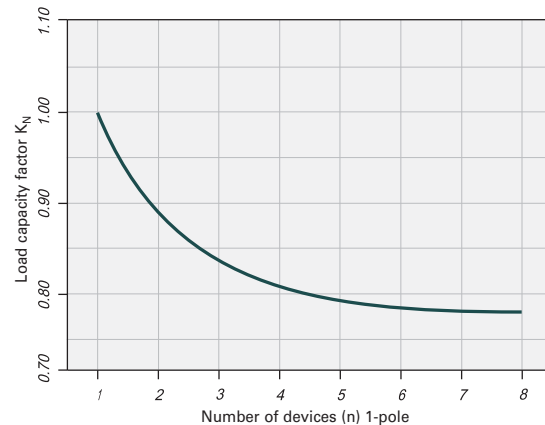
Quick-acting (B), slow (C)

**Effect of the Ambient Temperature on Thermal Tripping Behaviour**

Adjusted rated current values according to the ambient temperature

I <sub>n</sub> [A]	Ambient temperature T [°C]															
	-25	-20	-10	0	10	20	30	35	40	45	50	55	60	65	70	75
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3	5.2	5.1	5.0
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9	8.7	8.5	8.3
13	16	16	15	15	14	14	13	13	13	12	12	12	12	11	11	11
16	20	19	19	18	17	17	16	16	15	15	15	14	14	14	14	13
20	24	24	23	22	22	21	20	20	19	19	19	18	18	17	17	17
25	31	30	29	28	27	26	25	25	24	24	23	23	22	22	21	21
32	39	38	37	36	35	33	32	32	31	30	30	29	28	28	27	26
40	49	48	47	45	43	42	40	39	39	38	37	36	35	35	34	33
50	61	60	58	56	54	52	50	49	48	47	46	45	44	43	42	41
63	77	76	73	71	68	66	63	62	61	60	58	57	56	55	53	52

**Load Capacity of Series Connected Miniature Circuit Breakers**



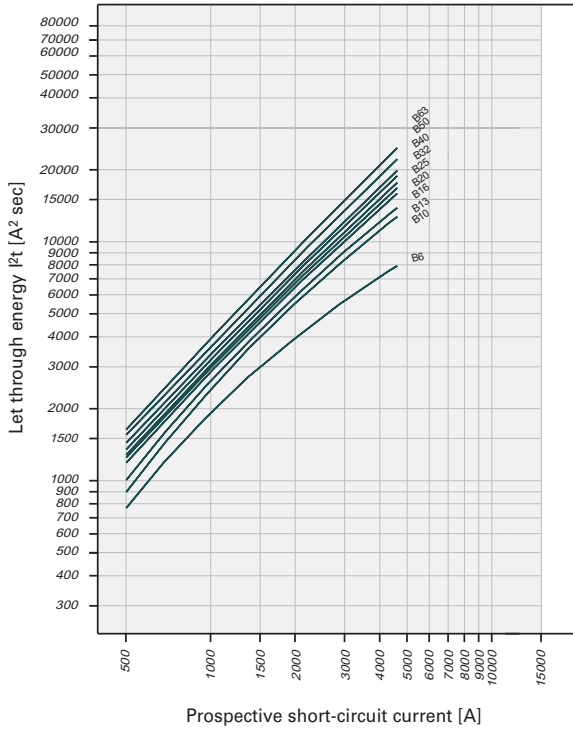
### Effect of Power Frequency

Effect of power frequency on the tripping behaviour  $I_{MA}$  of the quick release

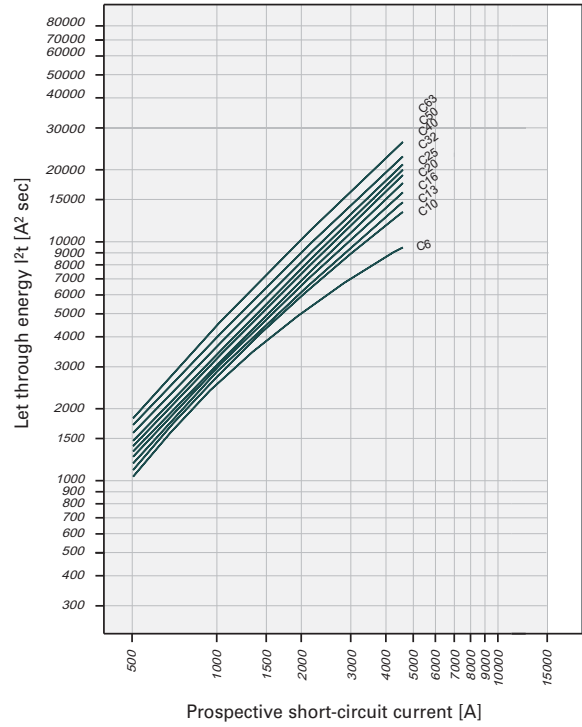
	Power frequency f [Hz]						
	<b>16<sup>2</sup>/<sub>3</sub></b>	<b>50</b>	<b>60</b>	<b>100</b>	<b>200</b>	<b>300</b>	<b>400</b>
$I_{MA}(f)/I_{MA}(50\text{ Hz})$ [%]	91	100	101	106	115	134	141

### Let-through Energy HL-HX

Let-through Energy HL-HX, Characteristic B, 1-pole



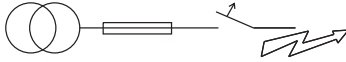
Let-through Energy HL-HX, Characteristic C, 1-pole



**Short Circuit Selectivity HL-HX towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the miniature circuit breakers HL-HX and the upstream fuses 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).

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



**Towards DII-DIV fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***)

HL-HX	DII-DIV gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.6	0.9	1.8	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.8	1.4	2.2	3.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			0.5	0.7	1.3	2.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.6	1.2	1.9	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.2	1.8	3.1	4.4	4.5 <sup>2)</sup>
25					1.2	1.8	3.0	4.2	4.5 <sup>2)</sup>
32						1.7	2.8	3.9	4.5 <sup>2)</sup>
40							2.7	3.8	4.5 <sup>2)</sup>
50							2.5	3.5	4.5 <sup>2)</sup>
63								4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***)

HL-HX	DII-DIV gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.5	0.6	1.4	2.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.6	1.3	2.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.3	1.9	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					1.2	1.8	3.2	4.4	4.5 <sup>2)</sup>
20					1.2	1.8	3.1	4.1	4.5 <sup>2)</sup>
25						1.7	2.8	3.8	4.5 <sup>2)</sup>
32							2.7	3.7	4.5 <sup>2)</sup>
40								3.5	4.5 <sup>2)</sup>
50									4.5 <sup>2)</sup>
63									4.5 <sup>2)</sup>

**Towards D01-D03 fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

HL-HX	D01-D03 gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	0.5	0.8	1.6	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.7	1.3	2.4	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.7	1.2	2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16				0.6	1.1	2.2	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20					1.1	2.1	2.8	4.4	4.5 <sup>2)</sup>
25					1.1	2.0	2.7	4.2	4.5 <sup>2)</sup>
32						2.0	2.6	4.0	4.5 <sup>2)</sup>
40							2.5	3.8	4.5 <sup>2)</sup>
50							2.3	3.4	4.5 <sup>2)</sup>
63								4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

HL-HX	D01-D03 gL/gG								
$I_n$ [A]	10	16	20	25	35	50	63	80	100
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.2	2.3	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.1	2.2	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					1.1	2.1	2.8	4.4	4.5 <sup>2)</sup>
20						1.0	2.0	2.6	4.0
25						1.9	2.5	3.8	4.5 <sup>2)</sup>
32							2.5	3.7	4.5 <sup>2)</sup>
40								3.5	4.5 <sup>2)</sup>
50									4.5 <sup>2)</sup>
63									4.5 <sup>2)</sup>

**Towards NH-00 fuse link**

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

HL-HX	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.1	1.5	2.0	3.3	4.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10		<0.5 <sup>1)</sup>	0.6	0.9	1.2	1.5	2.2	2.7	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13		<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.4	2.1	2.6	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20				0.7	1.0	1.3	1.9	2.4	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25					0.7	1.0	1.3	1.8	2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32						0.9	1.2	1.7	2.2	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40							2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50								1.9	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63									4.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

HL-HX	NH-00 gL/gG											
$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
6	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.5	0.8	1.2	1.5	2.5	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13					1.0	1.3	1.9	2.4	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16					1.0	1.3	1.8	2.3	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20						1.0	1.2	1.7	2.2	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25							1.6	2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32								2.1	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40									2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
50										4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
63											4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: no selectivity



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### Description

- High-quality miniature circuit breakers for commercial and residential applications
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 63 A
- Tripping characteristics B, C, D
- Rated breaking capacity 6 kA according to IEC/EN 60898-1

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Rated current  
 $I_n$  (A)

Type  
Designation

Article No.

Units per  
package

#### 6 kA, Characteristic B

##### 1-pole

2	CLS6-B2	247596	12/120
4	CLS6-B4	247597	12/120
6	CLS6-B6	247598	12/120
10	CLS6-B10	247599	12/120
13	CLS6-B13	247600	12/120
16	CLS6-B16	247601	12/120
20	CLS6-B20	247602	12/120
25	CLS6-B25	247603	12/120
32	CLS6-B32	247604	12/120
40	CLS6-B40	247605	12/120
50	CLS6-B50	247606	12/120
63	CLS6-B63	247607	12/120

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##### 1+N-pole

2	CLS6-B2/1N	247630	1/60
4	CLS6-B4/1N	247631	1/60
6	CLS6-B6/1N	247632	1/60
10	CLS6-B10/1N	247633	1/60
13	CLS6-B13/1N	247634	1/60
16	CLS6-B16/1N	247635	1/60
20	CLS6-B20/1N	247636	1/60
25	CLS6-B25/1N	247637	1/60
32	CLS6-B32/1N	247638	1/60
40	CLS6-B40/1N	247639	1/60
50	CLS6-B50/1N	247640	1/60
63	CLS6-B63/1N	247641	1/60

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##### 2-pole

2	CLS6-B2/2	247664	1/60
4	CLS6-B4/2	247665	1/60
6	CLS6-B6/2	247666	1/60
10	CLS6-B10/2	247667	1/60
13	CLS6-B13/2	247668	1/60
16	CLS6-B16/2	247669	1/60
20	CLS6-B20/2	247670	1/60
25	CLS6-B25/2	247671	1/60
32	CLS6-B32/2	247672	1/60
40	CLS6-B40/2	247673	1/60
50	CLS6-B50/2	247674	1/60
63	CLS6-B63/2	247675	1/60

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##### 3-pole

2	CLS6-B2/3	247698	1/40
4	CLS6-B4/3	247699	1/40
6	CLS6-B6/3	247700	1/40
10	CLS6-B10/3	247701	1/40
13	CLS6-B13/3	247702	1/40
16	CLS6-B16/3	247703	1/40
20	CLS6-B20/3	247704	1/40
25	CLS6-B25/3	247705	1/40
32	CLS6-B32/3	247706	1/40
40	CLS6-B40/3	247707	1/40
50	CLS6-B50/3	247708	1/40
63	CLS6-B63/3	247709	1/40

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
2	CLS6-B2/3N	247732	1/30
4	CLS6-B4/3N	247733	1/30
6	CLS6-B6/3N	247734	1/30
10	CLS6-B10/3N	247735	1/30
13	CLS6-B13/3N	247736	1/30
16	CLS6-B16/3N	247737	1/30
20	CLS6-B20/3N	247738	1/30
25	CLS6-B25/3N	247739	1/30
32	CLS6-B32/3N	247740	1/30
40	CLS6-B40/3N	247741	1/30
50	CLS6-B50/3N	247742	1/30
63	CLS6-B63/3N	247743	1/30

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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
2	CLS6-B2/4	247766	1/30
4	CLS6-B4/4	247767	1/30
6	CLS6-B6/4	247768	1/30
10	CLS6-B10/4	247769	1/30
13	CLS6-B13/4	247770	1/30
16	CLS6-B16/4	247771	1/30
20	CLS6-B20/4	247772	1/30
25	CLS6-B25/4	247773	1/30
32	CLS6-B32/4	247774	1/30
40	CLS6-B40/4	247775	1/30
50	CLS6-B50/4	247776	1/30
63	CLS6-B63/4	247777	1/30

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Rated current  
 $I_n$  (A)

Type  
Designation

Article No. Units per package

### 6 kA, Characteristic C

#### 1-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
2	CLS6-C2	247608	12/120
4	CLS6-C4	247609	12/120
6	CLS6-C6	247610	12/120
10	CLS6-C10	247611	12/120
13	CLS6-C13	247612	12/120
16	CLS6-C16	247613	12/120
20	CLS6-C20	247614	12/120
25	CLS6-C25	247615	12/120
32	CLS6-C32	247616	12/120
40	CLS6-C40	247617	12/120
50	CLS6-C50	247618	12/120
63	CLS6-C63	247619	12/120

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#### 1+N-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
2	CLS6-C2/1N	247642	1/60
4	CLS6-C4/1N	247643	1/60
6	CLS6-C6/1N	247644	1/60
10	CLS6-C10/1N	247645	1/60
13	CLS6-C13/1N	247646	1/60
16	CLS6-C16/1N	247647	1/60
20	CLS6-C20/1N	247648	1/60
25	CLS6-C25/1N	247649	1/60
32	CLS6-C32/1N	247650	1/60
40	CLS6-C40/1N	247651	1/60
50	CLS6-C50/1N	247652	1/60
63	CLS6-C63/1N	247653	1/60

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#### 2-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
2	CLS6-C2/2	247676	1/60
4	CLS6-C4/2	247677	1/60
6	CLS6-C6/2	247678	1/60
10	CLS6-C10/2	247679	1/60
13	CLS6-C13/2	247680	1/60
16	CLS6-C16/2	247681	1/60
20	CLS6-C20/2	247682	1/60
25	CLS6-C25/2	247683	1/60
32	CLS6-C32/2	247684	1/60
40	CLS6-C40/2	247685	1/60
50	CLS6-C50/2	247686	1/60
63	CLS6-C63/2	247687	1/60

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#### 3-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
2	CLS6-C2/3	247710	1/40
4	CLS6-C4/3	247711	1/40
6	CLS6-C6/3	247712	1/40
10	CLS6-C10/3	247713	1/40
13	CLS6-C13/3	247714	1/40
16	CLS6-C16/3	247715	1/40
20	CLS6-C20/3	247716	1/40
25	CLS6-C25/3	247717	1/40
32	CLS6-C32/3	247718	1/40
40	CLS6-C40/3	247719	1/40
50	CLS6-C50/3	247720	1/40
63	CLS6-C63/3	247721	1/40



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Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
2	CLS6-C2/3N	247744	1/30
4	CLS6-C4/3N	247745	1/30
6	CLS6-C6/3N	247746	1/30
10	CLS6-C10/3N	247747	1/30
13	CLS6-C13/3N	247748	1/30
16	CLS6-C16/3N	247749	1/30
20	CLS6-C20/3N	247750	1/30
25	CLS6-C25/3N	247751	1/30
32	CLS6-C32/3N	247752	1/30
40	CLS6-C40/3N	247753	1/30
50	CLS6-C50/3N	247754	1/30
63	CLS6-C63/3N	247755	1/30

SG10411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
2	CLS6-C2/4	247778	1/30
4	CLS6-C4/4	247779	1/30
6	CLS6-C6/4	247780	1/30
10	CLS6-C10/4	247781	1/30
13	CLS6-C13/4	247782	1/30
16	CLS6-C16/4	247783	1/30
20	CLS6-C20/4	247784	1/30
25	CLS6-C25/4	247785	1/30
32	CLS6-C32/4	247786	1/30
40	CLS6-C40/4	247787	1/30
50	CLS6-C50/4	247788	1/30
63	CLS6-C63/4	247789	1/30

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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#### 6 kA, Characteristic D

SG10011



#### 1-pole

2	CLS6-D2	247620	12/120
4	CLS6-D4	247621	12/120
6	CLS6-D6	247622	12/120
10	CLS6-D10	247623	12/120
13	CLS6-D13	247624	12/120
16	CLS6-D16	247625	12/120
20	CLS6-D20	247626	12/120
25	CLS6-D25	247627	12/120
32	CLS6-D32	247628	12/120
40	CLS6-D40	247629	12/120

SG10111



#### 1+N-pole

2	CLS6-D2/1N	247654	1/60
4	CLS6-D4/1N	247655	1/60
6	CLS6-D6/1N	247656	1/60
10	CLS6-D10/1N	247657	1/60
13	CLS6-D13/1N	247658	1/60
16	CLS6-D16/1N	247659	1/60
20	CLS6-D20/1N	247660	1/60
25	CLS6-D25/1N	247661	1/60
32	CLS6-D32/1N	247662	1/60
40	CLS6-D40/1N	247663	1/60

SG10211



#### 2-pole

2	CLS6-D2/2	247688	1/60
4	CLS6-D4/2	247689	1/60
6	CLS6-D6/2	247690	1/60
10	CLS6-D10/2	247691	1/60
13	CLS6-D13/2	247692	1/60
16	CLS6-D16/2	247693	1/60
20	CLS6-D20/2	247694	1/60
25	CLS6-D25/2	247695	1/60
32	CLS6-D32/2	247696	1/60
40	CLS6-D40/2	247697	1/60

SG10311



#### 3-pole

2	CLS6-D2/3	247722	1/40
4	CLS6-D4/3	247723	1/40
6	CLS6-D6/3	247724	1/40
10	CLS6-D10/3	247725	1/40
13	CLS6-D13/3	247726	1/40
16	CLS6-D16/3	247727	1/40
20	CLS6-D20/3	247728	1/40
25	CLS6-D25/3	247729	1/40
32	CLS6-D32/3	247730	1/40
40	CLS6-D40/3	247731	1/40

SG10511



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>3+N-pole</b>			
2	CLS6-D2/3N	247756	1/30
4	CLS6-D4/3N	247757	1/30
6	CLS6-D6/3N	247758	1/30
10	CLS6-D10/3N	247759	1/30
13	CLS6-D13/3N	247760	1/30
16	CLS6-D16/3N	247761	1/30
20	CLS6-D20/3N	247762	1/30
25	CLS6-D25/3N	247763	1/30
32	CLS6-D32/3N	247764	1/30
40	CLS6-D40/3N	247765	1/30

SG10411



Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
<b>4-pole</b>			
2	CLS6-D2/4	247790	1/30
4	CLS6-D4/4	247791	1/30
6	CLS6-D6/4	247792	1/30
10	CLS6-D10/4	247793	1/30
13	CLS6-D13/4	247794	1/30
16	CLS6-D16/4	247795	1/30
20	CLS6-D20/4	247796	1/30
25	CLS6-D25/4	247797	1/30
32	CLS6-D32/4	247798	1/30
40	CLS6-D40/4	247799	1/30

SG83711



### Description

- High-quality miniature circuit breakers for residential applications
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 63 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA according to IEC/EN 60898-1

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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**4.5 kA, Characteristic B**

SG83011



**1-pole**

2	CLS4-B2	247824	12/120
4	CLS4-B4	247825	12/120
6	CLS4-B6	247826	12/120
10	CLS4-B10	247827	12/120
13	CLS4-B13	247828	12/120
16	CLS4-B16	247829	12/120
20	CLS4-B20	247830	12/120
25	CLS4-B25	247831	12/120
32	CLS4-B32	247832	12/120
40	CLS4-B40	247833	12/120
50	CLS4-B50	247834	12/120
63	CLS4-B63	247835	12/120

SG82811



**1+N-pole**

2	CLS4-B2/1N	247848	1/60
4	CLS4-B4/1N	247849	1/60
6	CLS4-B6/1N	247850	1/60
10	CLS4-B10/1N	247851	1/60
13	CLS4-B13/1N	247852	1/60
16	CLS4-B16/1N	247853	1/60
20	CLS4-B20/1N	247854	1/60
25	CLS4-B25/1N	247855	1/60
32	CLS4-B32/1N	247856	1/60
40	CLS4-B40/1N	247857	1/60
50	CLS4-B50/1N	247858	1/60
63	CLS4-B63/1N	247859	1/60

SG82711



**2-pole**

2	CLS4-B2/2	247872	1/60
4	CLS4-B4/2	247873	1/60
6	CLS4-B6/2	247874	1/60
10	CLS4-B10/2	247875	1/60
13	CLS4-B13/2	247876	1/60
16	CLS4-B16/2	247877	1/60
20	CLS4-B20/2	247878	1/60
25	CLS4-B25/2	247879	1/60
32	CLS4-B32/2	247880	1/60
40	CLS4-B40/2	247881	1/60
50	CLS4-B50/2	247882	1/60
63	CLS4-B63/2	247883	1/60

SG83611



**3-pole**

2	CLS4-B2/3	247896	1/40
4	CLS4-B4/3	247897	1/40
6	CLS4-B6/3	247898	1/40
10	CLS4-B10/3	247899	1/40
13	CLS4-B13/3	247900	1/40
16	CLS4-B16/3	247901	1/40
20	CLS4-B20/3	247902	1/40
25	CLS4-B25/3	247903	1/40
32	CLS4-B32/3	247904	1/40
40	CLS4-B40/3	247905	1/40
50	CLS4-B50/3	247906	1/40
63	CLS4-B63/3	247907	1/40

# 1.430 Protective Devices

## Miniature Circuit Breakers CLS4 (DE)

**xClear**

SG83811



Rated current  
 $I_n$  (A)

Type  
Designation

Article No.

Units per  
package

### 3+N-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
2	CLS4-B2/3N	247920	1/30
4	CLS4-B4/3N	247921	1/30
6	CLS4-B6/3N	247922	1/30
10	CLS4-B10/3N	247923	1/30
13	CLS4-B13/3N	247924	1/30
16	CLS4-B16/3N	247925	1/30
20	CLS4-B20/3N	247926	1/30
25	CLS4-B25/3N	247927	1/30
32	CLS4-B32/3N	247928	1/30
40	CLS4-B40/3N	247929	1/30
50	CLS4-B50/3N	247930	1/30
63	CLS4-B63/3N	247931	1/30

SG83711



### 4-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
2	CLS4-B2/4	247944	1/30
4	CLS4-B4/4	247945	1/30
6	CLS4-B6/4	247946	1/30
10	CLS4-B10/4	247947	1/30
13	CLS4-B13/4	247948	1/30
16	CLS4-B16/4	247949	1/30
20	CLS4-B20/4	247950	1/30
25	CLS4-B25/4	247951	1/30
32	CLS4-B32/4	247952	1/30
40	CLS4-B40/4	247953	1/30
50	CLS4-B50/4	247955	1/30
63	CLS4-B63/4	247956	1/30

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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**4.5 kA, Characteristic C**

SG83011



**1-pole**

2	CLS4-C2	247836	12/120
4	CLS4-C4	247837	12/120
6	CLS4-C6	247838	12/120
10	CLS4-C10	247839	12/120
13	CLS4-C13	247840	12/120
16	CLS4-C16	247841	12/120
20	CLS4-C20	247842	12/120
25	CLS4-C25	247843	12/120
32	CLS4-C32	247844	12/120
40	CLS4-C40	247845	12/120
50	CLS4-C50	247846	12/120
63	CLS4-C63	247847	12/120

SG82811



**1+N-pole**

2	CLS4-C2/1N	247860	1/60
4	CLS4-C4/1N	247861	1/60
6	CLS4-C6/1N	247862	1/60
10	CLS4-C10/1N	247863	1/60
13	CLS4-C13/1N	247864	1/60
16	CLS4-C16/1N	247865	1/60
20	CLS4-C20/1N	247866	1/60
25	CLS4-C25/1N	247867	1/60
32	CLS4-C32/1N	247868	1/60
40	CLS4-C40/1N	247869	1/60
50	CLS4-C50/1N	247870	1/60
63	CLS4-C63/1N	247871	1/60

SG82711



**2-pole**

2	CLS4-C2/2	247884	1/60
4	CLS4-C4/2	247885	1/60
6	CLS4-C6/2	247886	1/60
10	CLS4-C10/2	247887	1/60
13	CLS4-C13/2	247888	1/60
16	CLS4-C16/2	247889	1/60
20	CLS4-C20/2	247890	1/60
25	CLS4-C25/2	247891	1/60
32	CLS4-C32/2	247892	1/60
40	CLS4-C40/2	247893	1/60
50	CLS4-C50/2	247894	1/60
63	CLS4-C63/2	247895	1/60

SG83611



**3-pole**

2	CLS4-C2/3	247908	1/40
4	CLS4-C4/3	247909	1/40
6	CLS4-C6/3	247910	1/40
10	CLS4-C10/3	247911	1/40
13	CLS4-C13/3	247912	1/40
16	CLS4-C16/3	247913	1/40
20	CLS4-C20/3	247914	1/40
25	CLS4-C25/3	247915	1/40
32	CLS4-C32/3	247916	1/40
40	CLS4-C40/3	247917	1/40
50	CLS4-C50/3	247918	1/40
63	CLS4-C63/3	247919	1/40

# 1.432 Protective Devices

## Miniature Circuit Breakers CLS4 (DE)

**xClear**

SG83811



Rated current  
 $I_n$  (A)

Type  
Designation

Article No.

Units per  
package

### 3+N-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
2	CLS4-C2/3N	247932	1/30
4	CLS4-C4/3N	247933	1/30
6	CLS4-C6/3N	247934	1/30
10	CLS4-C10/3N	247935	1/30
13	CLS4-C13/3N	247936	1/30
16	CLS4-C16/3N	247937	1/30
20	CLS4-C20/3N	247938	1/30
25	CLS4-C25/3N	247939	1/30
32	CLS4-C32/3N	247940	1/30
40	CLS4-C40/3N	247941	1/30
50	CLS4-C50/3N	247942	1/30
63	CLS4-C63/3N	247943	1/30

SG83711



### 4-pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
2	CLS4-C2/4	247957	1/30
4	CLS4-C4/4	247958	1/30
6	CLS4-C6/4	247959	1/30
10	CLS4-C10/4	247960	1/30
13	CLS4-C13/4	247961	1/30
16	CLS4-C16/4	247962	1/30
20	CLS4-C20/4	247963	1/30
25	CLS4-C25/4	247964	1/30
32	CLS4-C32/4	247965	1/30
40	CLS4-C40/4	247966	1/30
50	CLS4-C50/4	247967	1/30
63	CLS4-C63/4	247968	1/30



**Specifications | Miniature Circuit Breakers CLS.**

**Description**

- High selectivity between MCB and back-up fuse due to low let-through energy
- Twin-purpose terminal (lift/open-mouthed) above and below
- Compatible with standard busbar
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC (use CLS6-DC for higher DC voltages)

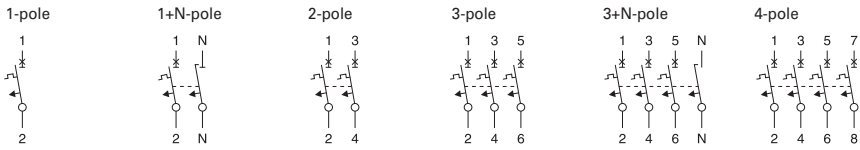
**Accessories:**

Auxiliary switch for subsequent installation	Z-AHK	248433
Tripping signal switch for subsequent installation	Z-NHK	248434
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

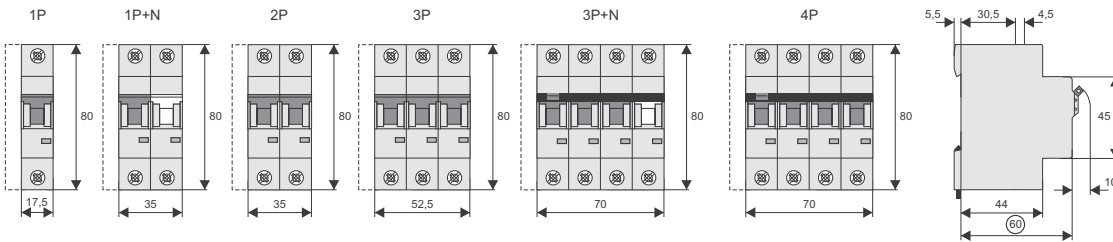
**Technical Data**

		CLS.
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	
CLS6		6 kA
CLS4		4.5 kA
Characteristic		B, C, D (only CLS6)
Back-up fuse		
>6 kA		max. 100 A gL
>4.5 kA		max. 80 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 8,000$ switching operations
Line voltage connection		at will (above/below)
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
1P+N (1,5TE)		26.3 mm
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position

### Connection diagrams

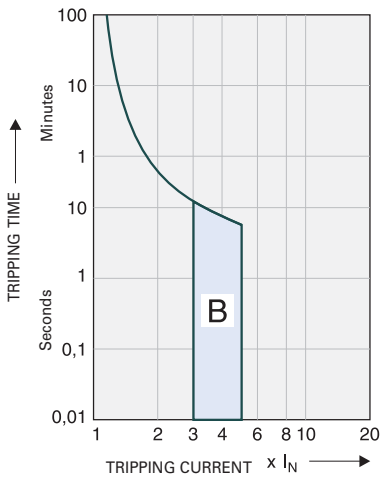


### Dimensions (mm)

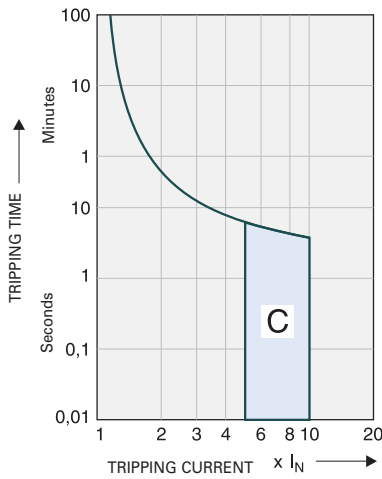


### Tripping Characteristics (IEC/EN 60898-1)

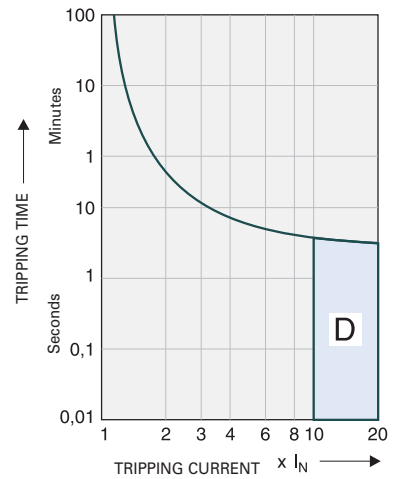
Tripping characteristic B



Tripping characteristic C



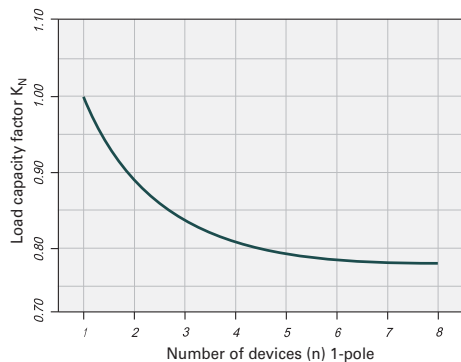
Tripping characteristic D



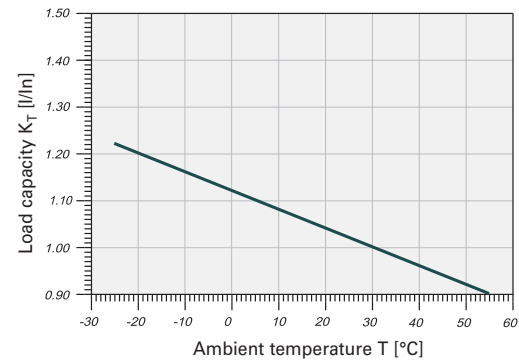
Quick-acting (B), slow (C), very slow (D)

### Load Capacity

Load capacity in case of block installation (1-pole)

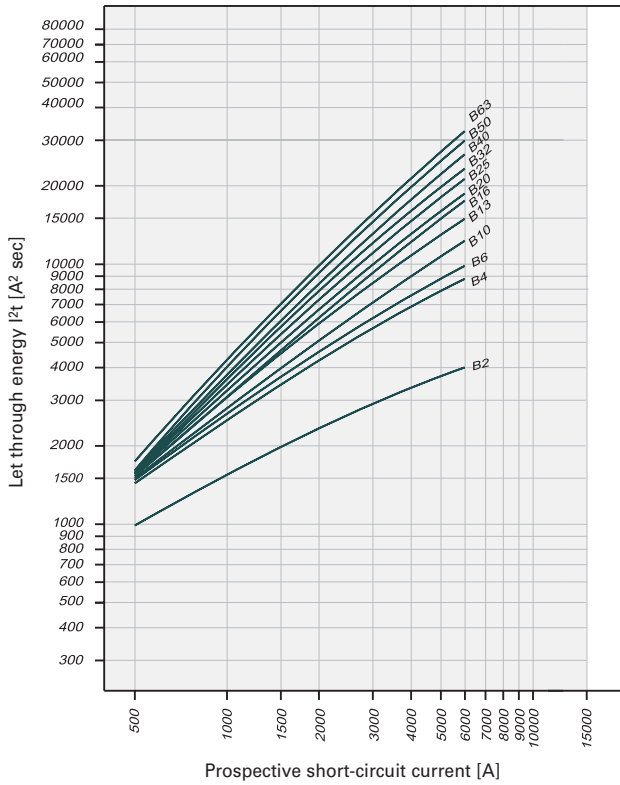


Effect of ambient temperature

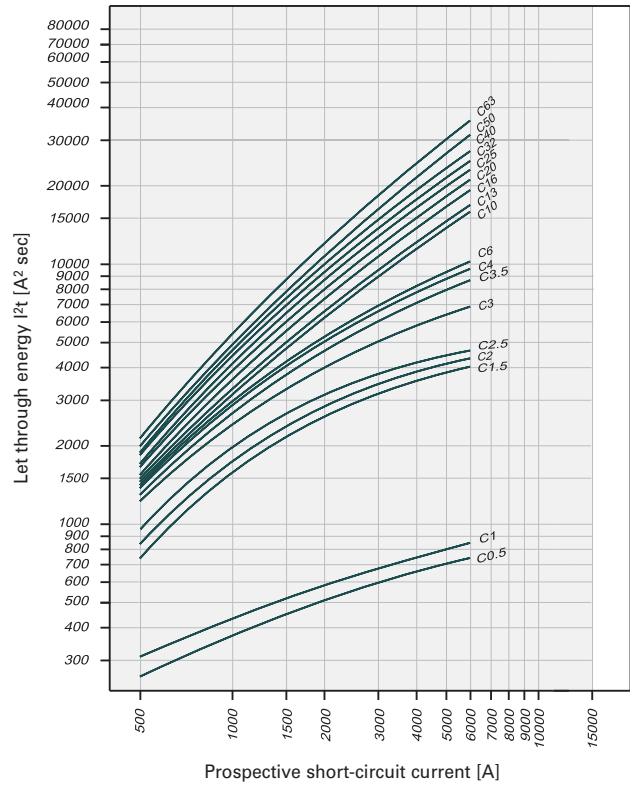


**Let-through Energy CLS6**

Let-through Energy CLS6, Characteristic B, 1-pole



Let-through Energy CLS6, Characteristic C, 1-pole



Determined according to EN 60898-1. Values for characteristic D upon enquiry.

#### Short Circuit Selectivity CLS6

- Short circuit selectivity (in kA) CLS6 and upstream fuse D0 or NH, operating class gL/gG
- 1.4 . . . selectivity up to 1.4 kA; Darker areas: no selectivity

#### Selectivity towards back-up fuses D01, D02, D03

##### Characteristic B

CLS6 $I_n$ [A]	Rated current of the back-up fuse in A gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5	<0.5	0.5	0.8	2.2	6.0	6.0	6.0	6.0
4	<0.5	<0.5	<0.5	0.5	1.2	3.1	5.5	6.0	6.0
6		<0.5	<0.5	0.5	1.2	2.7	4.5	6.0	6.0
10			<0.5	0.5	1.1	2.3	3.6	5.0	6.0
13			<0.5	0.5	1.0	2.0	3.1	4.3	6.0
16				0.5	1.0	1.7	2.8	3.8	6.0
20					0.9	1.6	2.7	3.6	6.0
25					0.9	1.6	2.5	3.3	6.0
32						1.6	2.3	3.0	5.8
40							2.2	2.9	5.3
50							2.1	2.7	4.8
63									4.5

##### Characteristic C

CLS6 $I_n$ [A]	Rated current of the back-up fuse in A gL/gG								
	10	16	20	25	35	50	63	80	100
0.5	<0.5	1.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0
1	<0.5	0.8	3.9	6.0	6.0	6.0	6.0	6.0	6.0
2	<0.5	<0.5	0.5	0.8	1.7	6.0	6.0	6.0	6.0
3	<0.5	<0.5	<0.5	0.6	1.3	4.3	6.0	6.0	6.0
4	<0.5	<0.5	<0.5	0.6	1.2	2.7	4.7	6.0	6.0
6		<0.5	<0.5	0.6	1.1	2.3	4.0	6.0	6.0
10			<0.5	0.6	1.1	1.9	2.8	3.9	6.0
13					1.0	1.8	2.7	3.7	6.0
16					1.0	1.7	2.5	3.3	6.0
20					0.9	1.6	2.3	3.1	6.3
25						1.5	2.2	2.9	5.7
32							2.1	2.7	5.3
40								2.6	5.0
50									4.5
63									

#### Selectivity towards back-up fuses NH size 00

##### Characteristic B

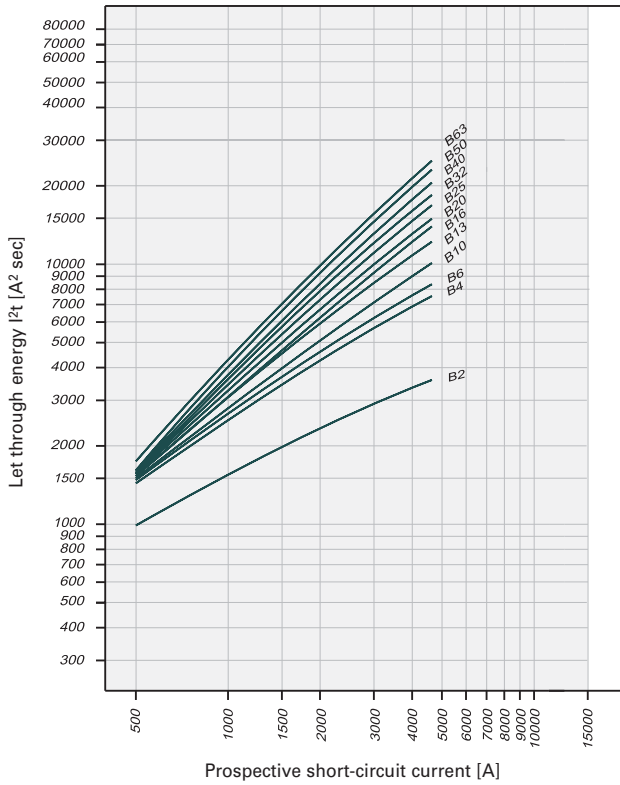
CLS6 $I_n$ [A]	Rated current of the back-up fuse in A gL/gG										
	16	20	25	35	40	50	63	80	100	125	160
2	<0.5	<0.5	0.6	3.2	6.0	6.0	6.0	6.0	6.0	6.0	6.0
4	<0.5	<0.5	<0.5	1.2	1.8	3.0	4.8	7.2	6.0	6.0	6.0
6	<0.5	<0.5	<0.5	1.1	1.6	2.6	4.0	5.8	6.0	6.0	6.0
10		<0.5	<0.5	1.1	1.5	2.2	3.2	4.5	6.0	6.0	6.0
13		<0.5	<0.5	1.0	1.4	2.0	2.9	4.0	6.0	6.0	6.0
16			<0.5	0.9	1.3	1.8	2.6	3.5	6.0	6.0	6.0
20				0.9	1.3	1.7	2.4	3.3	6.0	6.0	6.0
25				0.9	1.1	1.6	2.3	3.1	5.5	6.0	6.0
32				0.8	1.1	1.5	2.1	2.9	5.0	6.0	6.0
40						1.5	2.0	2.8	4.6	6.0	6.0
50							1.9	2.7	4.2	6.0	6.0
63								3.9	6.0	6.0	

##### Characteristic C

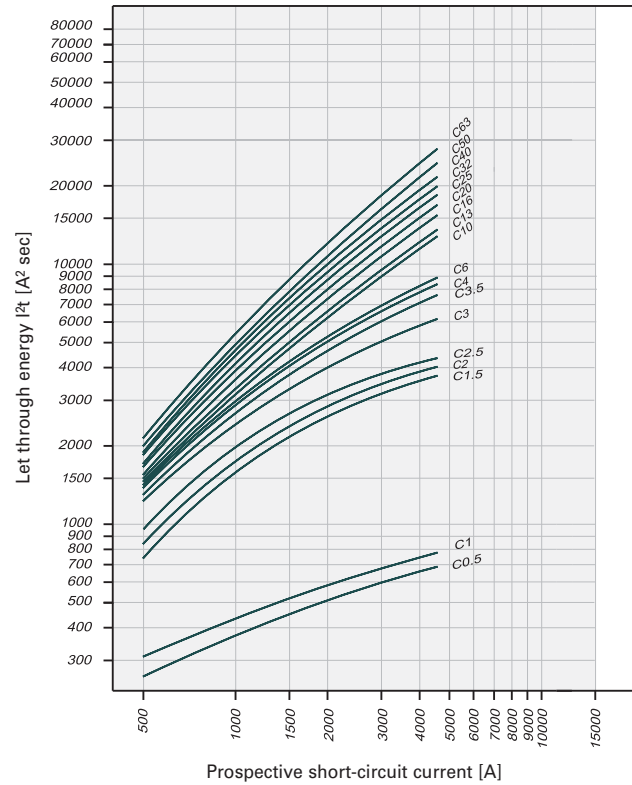
CLS6 $I_n$ [A]	Rated current of the back-up fuse in A gL/gG										
	16	20	25	35	40	50	63	80	100	125	160
0.5	0.9	2.7	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
1	0.7	2.0	1.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
2	<0.5	<0.5	0.6	2.2	4.2	6.0	6.0	6.0	6.0	6.0	6.0
3	<0.5	<0.5	0.5	1.4	2.1	4.0	6.0	6.0	6.0	6.0	6.0
4	<0.5	<0.5	<0.5	1.1	1.5	2.5	4.0	6.0	6.0	6.0	6.0
6	<0.5	<0.5	<0.5	1.0	1.4	2.3	3.6	5.3	6.0	6.0	6.0
10			<0.5	0.9	1.3	1.8	2.6	3.6	6.0	6.0	6.0
13				0.9	1.3	1.7	2.5	3.5	6.0	6.0	6.0
16				0.9	1.1	1.6	2.3	3.2	5.8	6.0	6.0
20				0.8	1.1	1.5	2.1	3.0	5.3	6.0	6.0
25						1.4	2.0	2.8	4.8	6.0	6.0
32							1.9	2.6	4.5	6.0	6.0
40								2.5	4.3	6.0	6.0
50									4.0	6.0	6.0
63										6.0	6.0

Let-through Energy CLS4

Let-through Energy CLS4, Characteristic B, 1-pole



Let-through Energy CLS4, Characteristic C, 1-pole



Determined according to 60898-1.

#### Short Circuit Selectivity CLS4

- Short circuit selectivity (in kA) CLS4 and upstream fuse D0 or NH, operating class gL/gG
- 1.4 . . . selectivity up to 1.4 kA; Darker areas: no selectivity

#### Selectivity towards back-up fuses D01, D02, D03

##### Characteristic B

CLS4 $I_n$ [A]	Rated current of the back-up fuse in A gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5	<0.5	0.5	0.8	2.2	4.5	4.5	4.5	4.5
4	<0.5	<0.5	<0.5	0.5	1.2	3.1	4.5	4.5	4.5
6		<0.5	<0.5	0.5	1.2	2.7	4.5	4.5	4.5
10			<0.5	0.5	1.1	2.3	3.6	4.5	4.5
13			<0.5	0.5	1.0	2.0	3.1	4.3	4.5
16				0.5	1.0	1.7	2.8	3.8	4.5
20					0.9	1.6	2.7	3.6	4.5
25					0.9	1.6	2.5	3.3	4.5
32						1.6	2.3	3.0	4.5
40							2.2	2.9	4.5
50							2.1	2.7	4.5
63									4.5

##### Characteristic C

CLS4 $I_n$ [A]	Rated current of the back-up fuse in A gL/gG								
	10	16	20	25	35	50	63	80	100
0.5	<0.5	1.1	4.5	4.5	4.5	4.5	4.5	4.5	4.5
1	<0.5	0.8	3.9	4.5	4.5	4.5	4.5	4.5	4.5
2	<0.5	<0.5	0.5	0.8	1.7	4.5	4.5	4.5	4.5
3	<0.5	<0.5	<0.5	0.6	1.3	4.3	4.5	4.5	4.5
4	<0.5	<0.5	<0.5	0.6	1.2	2.7	4.5	4.5	4.5
6		<0.5	<0.5	0.6	1.1	2.3	4.0	4.5	4.5
10			<0.5	0.6	1.1	1.9	2.8	3.9	4.5
13					1.0	1.8	2.7	3.7	4.5
16					1.0	1.7	2.5	3.3	4.5
20					0.9	1.6	2.3	3.1	4.5
25						1.5	2.2	2.9	4.5
32							2.1	2.7	4.5
40								2.6	4.5
50									4.5
63									

#### Selectivity towards back-up fuses NH size 00

##### Characteristic B

CLS4 $I_n$ [A]	Rated current of the back-up fuse in A gL/gG										
	16	20	25	35	40	50	63	80	100	125	160
2	<0.5	<0.5	0.6	3.2	4.5	4.5	4.5	4.5	4.5	4.5	4.5
4	<0.5	<0.5	<0.5	1.2	1.8	3.0	4.8	7.2	4.5	4.5	4.5
6	<0.5	<0.5	<0.5	1.1	1.6	2.6	4.0	5.8	4.5	4.5	4.5
10		<0.5	<0.5	1.1	1.5	2.2	3.2	4.5	4.5	4.5	4.5
13		<0.5	<0.5	1.0	1.4	2.0	2.9	4.0	4.5	4.5	4.5
16			<0.5	0.9	1.3	1.8	2.6	3.5	4.5	4.5	4.5
20				0.9	1.3	1.7	2.4	3.3	4.5	4.5	4.5
25				0.9	1.1	1.6	2.3	3.1	4.5	4.5	4.5
32				0.8	1.1	1.5	2.1	2.9	4.5	4.5	4.5
40						1.5	2.0	2.8	4.5	4.5	4.5
50							1.9	2.7	4.2	4.5	4.5
63								3.9	4.5	4.5	

##### Characteristic C

CLS4 $I_n$ [A]	Rated current of the back-up fuse in A gL/gG										
	16	20	25	35	40	50	63	80	100	125	160
0.5	0.9	2.7	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
1	0.7	2.0	1.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
2	<0.5	<0.5	0.6	2.2	4.2	4.5	4.5	4.5	4.5	4.5	4.5
3	<0.5	<0.5	0.5	1.4	2.1	4.0	4.5	4.5	4.5	4.5	4.5
4	<0.5	<0.5	<0.5	1.1	1.5	2.5	4.0	4.5	4.5	4.5	4.5
6	<0.5	<0.5	<0.5	1.0	1.4	2.3	3.6	4.5	4.5	4.5	4.5
10			<0.5	0.9	1.3	1.8	2.6	3.6	4.5	4.5	4.5
13				0.9	1.3	1.7	2.5	3.5	4.5	4.5	4.5
16				0.9	1.1	1.6	2.3	3.2	4.5	4.5	4.5
20				0.8	1.1	1.5	2.1	3.0	4.5	4.5	4.5
25						1.4	2.0	2.8	4.5	4.5	4.5
32							1.9	2.6	4.5	4.5	4.5
40								2.5	4.3	4.5	4.5
50									4.0	4.5	4.5
63										4.5	4.5

SG83111



## Description

- High-quality miniature circuit breakers for DC-applications
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 50 A
- Tripping Characteristic C
- Rated breaking capacity 6 kA according to IEC/EN 60898-1
- Up to 250 V DC per pole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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#### 10 kA, Characteristic C

SG83111



#### 1-pole

2	CLS6-C2-DC	247800	12/120
3	CLS6-C3-DC	247801	12/120
4	CLS6-C4-DC	247802	12/120
6	CLS6-C6-DC	247803	12/120
10	CLS6-C10-DC	247804	12/120
13	CLS6-C13-DC	247805	12/120
16	CLS6-C16-DC	247806	12/120
20	CLS6-C20-DC	247807	12/120
25	CLS6-C25-DC	247808	12/120
32	CLS6-C32-DC	247809	12/120
40	CLS6-C40-DC	247810	12/120
50	CLS6-C50-DC	247811	12/120

SG82611



#### 2-pole

2	CLS6-C2/2-DC	247812	1/60
3	CLS6-C3/2-DC	247813	1/60
4	CLS6-C4/2-DC	247814	1/60
6	CLS6-C6/2-DC	247815	1/60
10	CLS6-C10/2-DC	247816	1/60
13	CLS6-C13/2-DC	247817	1/60
16	CLS6-C16/2-DC	247818	1/60
20	CLS6-C20/2-DC	247819	1/60
25	CLS6-C25/2-DC	247820	1/60
32	CLS6-C32/2-DC	247821	1/60
40	CLS6-C40/2-DC	247822	1/60
50	CLS6-C50/2-DC	247823	1/60



**Specifications | Miniature Circuit Breakers CLS6-DC**

**Description**

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Rated breaking capacity 10 kA according to IEC/EN 60947
- Rated voltage to 250 V (per pole),  $\tau = 4$  ms
- Take into account polarity!

**Accessories:**

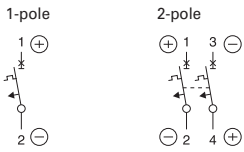
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

**Technical Data**

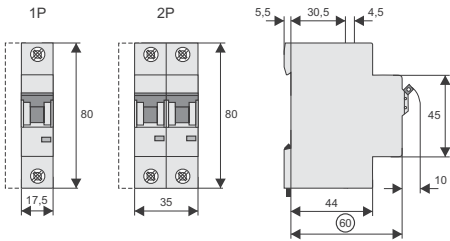
		<b>CLS6-DC</b>
<b>Electrical</b>		
Design according to		IEC/EN 60947-2
Current test marks as printed onto the device		
Rated voltage DC		1-2 A types: 220 V (per pole) 3-50 A types: 250 V (per pole)
Rated breaking capacity according to IEC/EN 60947-2		10 kA
Characteristic		C
Back-up fuse		max. 100 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance		
electrical components		$\geq 4,000$ switching operations
mechanical components		$\geq 20,000$ switching operations
Line voltage connection		at will (above/below)
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position

Note: not for PV string protection!

### Connection diagrams

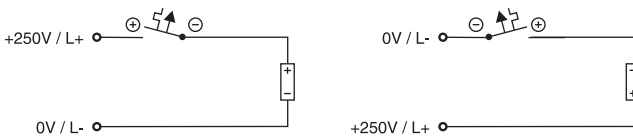


### Dimensions (mm)

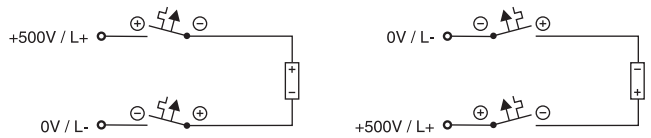


### Connection examples

Connection example at 250 V=, 1-pole

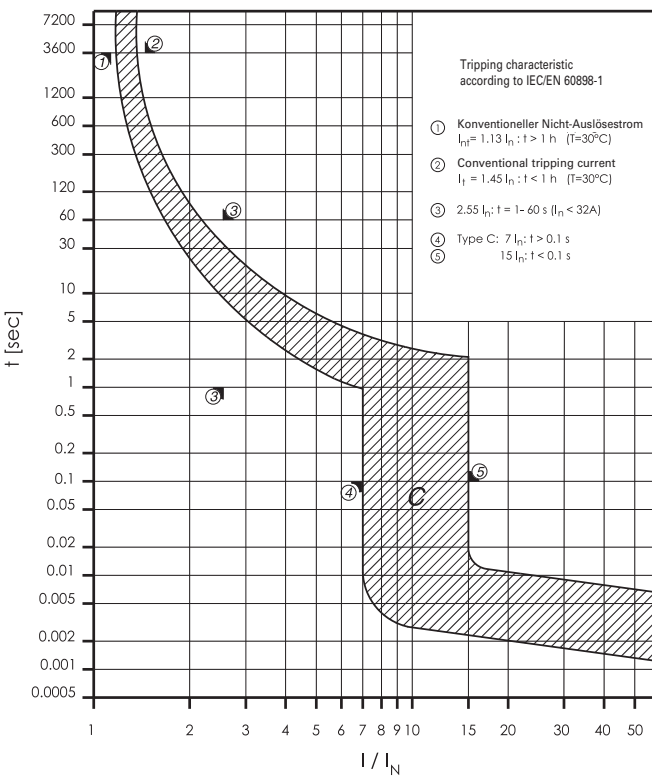


Connection example at 500 V=, 2-pole



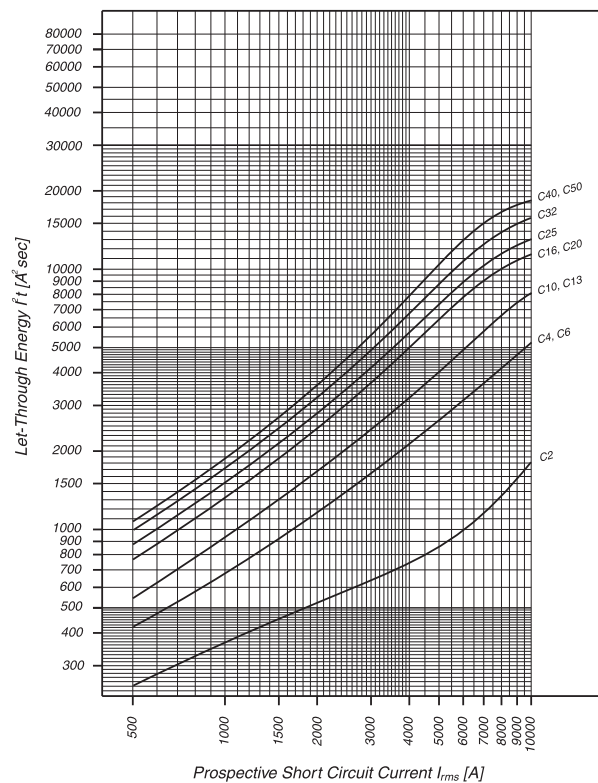
### Tripping characteristic CLS6-DC

Type C



### Let-through Energy CLS6-DC

Type C, 250 V d.c.,  $\tau = 5 \text{ ms}$  (according to IEC/EN 60947-2)



SG33911



## Description

- Contact position indicator red - green
- Two plug-in terminals at the output side
- Single-wire lines can be connected without tools
- Plug-in terminals can be opened conveniently by means of a screwdriver
- Guide for secure terminal connection below
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 16 A
- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA according to IEC/EN 60898-1

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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#### 10 kA, Characteristic B

SG11511



#### 1-pole

2	PLI-B2/1	101245	12/120
4	PLI-B4/1	101246	12/120
6	PLI-B6/1	101247	12/120
8	PLI-B8/1	101248	12/120
10	PLI-B10/1	101249	12/120
13	PLI-B13/1	101250	12/120
16	PLI-B16/1	101251	12/120

SG20011



#### 1+N-pole 2MU

2	PLI-B2/1N	101266	1/60
4	PLI-B4/1N	101267	1/60
6	PLI-B6/1N	101268	1/60
8	PLI-B8/1N	101269	1/60
10	PLI-B10/1N	101270	1/60
13	PLI-B13/1N	101271	1/60
16	PLI-B16/1N	101272	1/60

SG19511



#### 2-pole

2	PLI-B2/2	101287	1/60
4	PLI-B4/2	101288	1/60
6	PLI-B6/2	101289	1/60
8	PLI-B8/2	101290	1/60
10	PLI-B10/2	101291	1/60
13	PLI-B13/2	101292	1/60
16	PLI-B16/2	101293	1/60

SG33911



#### 3-pole

2	PLI-B2/3	101308	1/40
4	PLI-B4/3	101309	1/40
6	PLI-B6/3	101310	1/40
8	PLI-B8/3	101311	1/40
10	PLI-B10/3	101312	1/40
13	PLI-B13/3	101313	1/40
16	PLI-B16/3	101314	1/40

SG19211



#### 3+N-pole

2	PLI-B2/3N	101329	1/30
4	PLI-B4/3N	101330	1/30
6	PLI-B6/3N	101331	1/30
8	PLI-B8/3N	101332	1/30
10	PLI-B10/3N	101333	1/30
13	PLI-B13/3N	101334	1/30
16	PLI-B16/3N	101335	1/30

SG39011



#### 4-pole

2	PLI-B2/4	101350	1/30
4	PLI-B4/4	101351	1/30
6	PLI-B6/4	101352	1/30
8	PLI-B8/4	101353	1/30
10	PLI-B10/4	101354	1/30
13	PLI-B13/4	101355	1/30
16	PLI-B16/4	101356	1/30

Miniature Circuit Breakers with Plug-in Terminals at the output side PLI

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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**10 kA, Characteristic C**

SG11511



**1-pole**

2	PLI-C2/1	101252	12/120
4	PLI-C4/1	101253	12/120
6	PLI-C6/1	101254	12/120
8	PLI-C8/1	101255	12/120
10	PLI-C10/1	101256	12/120
13	PLI-C13/1	101257	12/120
16	PLI-C16/1	101258	12/120

SG20011



**1+N-pole 2MU**

2	PLI-C2/1N	101273	1/60
4	PLI-C4/1N	101274	1/60
6	PLI-C6/1N	101275	1/60
8	PLI-C8/1N	101276	1/60
10	PLI-C10/1N	101277	1/60
13	PLI-C13/1N	101278	1/60
16	PLI-C16/1N	101279	1/60

SG19511



**2-pole**

2	PLI-C2/2	101294	1/60
4	PLI-C4/2	101295	1/60
6	PLI-C6/2	101296	1/60
8	PLI-C8/2	101297	1/60
10	PLI-C10/2	101298	1/60
13	PLI-C13/2	101299	1/60
16	PLI-C16/2	101300	1/60

SG33911



**3-pole**

2	PLI-C2/3	101315	1/40
4	PLI-C4/3	101316	1/40
6	PLI-C6/3	101317	1/40
8	PLI-C8/3	101318	1/40
10	PLI-C10/3	101319	1/40
13	PLI-C13/3	101320	1/40
16	PLI-C16/3	101321	1/40

SG19211



**3+N-pole**

2	PLI-C2/3N	101336	1/30
4	PLI-C4/3N	101337	1/30
6	PLI-C6/3N	101338	1/30
8	PLI-C8/3N	101339	1/30
10	PLI-C10/3N	101340	1/30
13	PLI-C13/3N	101341	1/30
16	PLI-C16/3N	101342	1/30

SG39011



**4-pole**

2	PLI-C2/4	101357	1/30
4	PLI-C4/4	101358	1/30
6	PLI-C6/4	101359	1/30
8	PLI-C8/4	101360	1/30
10	PLI-C10/4	101361	1/30
13	PLI-C13/4	101362	1/30
16	PLI-C16/4	101363	1/30

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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#### 10 kA, Characteristic D

SG11511



#### 1-pole

2	PLI-D2/1	101259	12/120
4	PLI-D4/1	101260	12/120
6	PLI-D6/1	101261	12/120
8	PLI-D8/1	101262	12/120
10	PLI-D10/1	101263	12/120
13	PLI-D13/1	101264	12/120
16	PLI-D16/1	101265	12/120

SG20011



#### 1+N-pole 2MU

2	PLI-D2/1N	101280	1/60
4	PLI-D4/1N	101281	1/60
6	PLI-D6/1N	101282	1/60
8	PLI-D8/1N	101283	1/60
10	PLI-D10/1N	101284	1/60
13	PLI-D13/1N	101285	1/60
16	PLI-D16/1N	101286	1/60

SG19511



#### 2-pole

2	PLI-D2/2	101301	1/60
4	PLI-D4/2	101302	1/60
6	PLI-D6/2	101303	1/60
8	PLI-D8/2	101304	1/60
10	PLI-D10/2	101305	1/60
13	PLI-D13/2	101306	1/60
16	PLI-D16/2	101307	1/60

SG33911



#### 3-pole

2	PLI-D2/3	101322	1/40
4	PLI-D4/3	101323	1/40
6	PLI-D6/3	101324	1/40
8	PLI-D8/3	101325	1/40
10	PLI-D10/3	101326	1/40
13	PLI-D13/3	101327	1/40
16	PLI-D16/3	101328	1/40

SG19211



#### 3+N-pole

2	PLI-D2/3N	101343	1/30
4	PLI-D4/3N	101344	1/30
6	PLI-D6/3N	101345	1/30
8	PLI-D8/3N	101346	1/30
10	PLI-D10/3N	101347	1/30
13	PLI-D13/3N	101348	1/30
16	PLI-D16/3N	101349	1/30

SG39011



#### 4-pole

2	PLI-D2/4	101364	1/30
4	PLI-D4/4	101365	1/30
6	PLI-D6/4	101366	1/30
8	PLI-D8/4	101367	1/30
10	PLI-D10/4	101368	1/30
13	PLI-D13/4	101369	1/30
16	PLI-D16/4	101370	1/30

**Specifications | Miniature Circuit Breakers with Plug-in Terminals at the output side PLI**

**Description**

- High selectivity between MCB and back-up fuse due to low let-through energy
- Plug-in terminals above (at the output side)
- Two terminal points per pole
- Single-wire lines can be connected without tools
- The conductor can be removed from the plug-in terminal and single- or fine-wire lines can be connected by means of a screwdriver DIN 5264 Type A and Type B (maximum blade width 3 mm)
- Twin-purpose terminal (lift/open-mouthed) below
- Compatible with standard busbar below
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- Suitable for applications up to 48 V DC

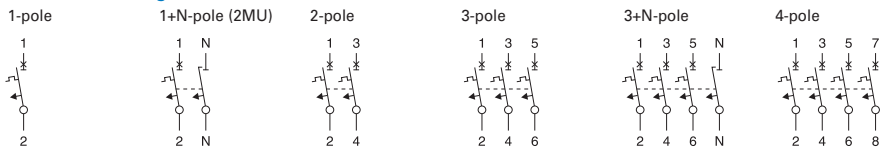
**Accessories:**

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

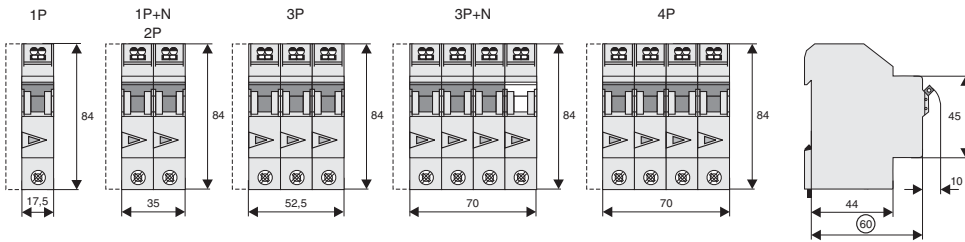
**Technical Data**

		PLI
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 48 V (per pole)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	10 kA
Characteristic		B, C, D
Back-up fuse		max. 125 A gL
Selectivity class		3
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)
Endurance electrical components		$\geq 8,000$ switching operations
Line voltage connection		below
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm per pole (1MU)
Mounting		quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper terminals		twin plug-in terminals
Lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Upper terminal capacity		1-4 mm <sup>2</sup> , with wire end sleeve 1-2.5 mm <sup>2</sup>
Lower terminal capacity		1-25 mm <sup>2</sup>
Terminal torque		2-2.4 Nm
Busbar thickness		0.8 - 2 mm
Mounting		independent of position

### Connection diagrams



### Dimensions (mm)





SG14511



## Description

- Top-quality miniature circuit breakers 1P+N with a width of 1 module unit requiring little space for installation
- Contact position indicator red - green
- Guide for secure terminal connection
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA according to IEC/EN 60898-1

# 1.450 Protective Devices

## Miniature Circuit Breakers PLN6 (MW)

xPole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
----------------------------	---------------------	-------------	----------------------

### 6 kA, Characteristic B

#### 1+N-pole

6	PLN6-B6/1N	263161	12/120
10	PLN6-B10/1N	263162	12/120
13	PLN6-B13/1N	263163	12/120
16	PLN6-B16/1N	263164	12/120
20	PLN6-B20/1N	263165	12/120
25	PLN6-B25/1N	263166	12/120
32	PLN6-B32/1N	263167	12/120
40	PLN6-B40/1N	263168	12/120

SG14511



### 6 kA, Characteristic C

#### 1+N-pole

2	PLN6-C2/1N	263169	12/120
4	PLN6-C4/1N	263170	12/120
6	PLN6-C6/1N	263171	12/120
10	PLN6-C10/1N	263172	12/120
13	PLN6-C13/1N	263173	12/120
16	PLN6-C16/1N	263174	12/120
20	PLN6-C20/1N	263175	12/120
25	PLN6-C25/1N	263176	12/120
32	PLN6-C32/1N	263177	12/120
40	PLN6-C40/1N	263178	12/120

SG14511



SG15711



## Description

- Top-quality miniature circuit breakers 1P+N with a width of 1 module unit requiring little space for installation
- Contact position indicator red - green
- Guide for secure terminal connection
- Comprehensive range of accessories can be mounted subsequently
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 4.5 kA according to IEC/EN 60898-1

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
----------------------------	---------------------	-------------	----------------------

### 4.5 kA, Characteristic B

#### 1+N-pole

6	PLN4-B6/1N	263179	12/120
10	PLN4-B10/1N	263180	12/120
13	PLN4-B13/1N	263181	12/120
16	PLN4-B16/1N	263182	12/120
20	PLN4-B20/1N	263183	12/120
25	PLN4-B25/1N	263184	12/120
32	PLN4-B32/1N	263185	12/120
40	PLN4-B40/1N	263186	12/120

SG15711



### 4.5 kA, Characteristic C

#### 1+N-pole

2	PLN4-C2/1N	263187	12/120
4	PLN4-C4/1N	263188	12/120
6	PLN4-C6/1N	263189	12/120
10	PLN4-C10/1N	263190	12/120
13	PLN4-C13/1N	263191	12/120
16	PLN4-C16/1N	263192	12/120
20	PLN4-C20/1N	263193	12/120
25	PLN4-C25/1N	263194	12/120
32	PLN4-C32/1N	263195	12/120
40	PLN4-C40/1N	263196	12/120

SG15711



**Specifications | Miniature Circuit Breakers PLN6, PLN4**

**Description**

- High selectivity between MCB and back-up fuse due to low let-through energy
- Busbar positioning optionally above or below
- Compatible with standard busbar
- Switching toggle in colour designating the rated current
- Meets the requirements of insulation co-ordination, distance between contacts  $\geq 4$  mm, for secure isolation
- 1-pole breaking capacity  $I_{cn1} = 3$  kA

**Accessories:**

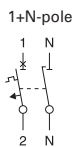
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Compact enclosure	KLV-TC-2	276240

**Busbars:** see chapter busbar systems

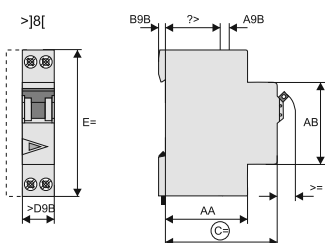
**Technical Data**

		PLN6, PLN4
<b>Electrical</b>		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	$U_n$	230 VAC
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	$I_{cn}$	
PLN6		6 kA
PLN4		4.5 kA
Characteristic		B, C
Back-up fuse		
>6 kA		max. 100 A gL/gG
>4.5 kA		max. 80 A gL/gG
Selectivity class		3
Endurance electrical components		$\geq 8,000$ switching operations
<b>Mechanical</b>		
Frame size		45 mm
Device height		80 mm
Device width		17.5 mm (1MU for 1+N)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection		IP20
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1-16 mm <sup>2</sup>

**Connection diagram**

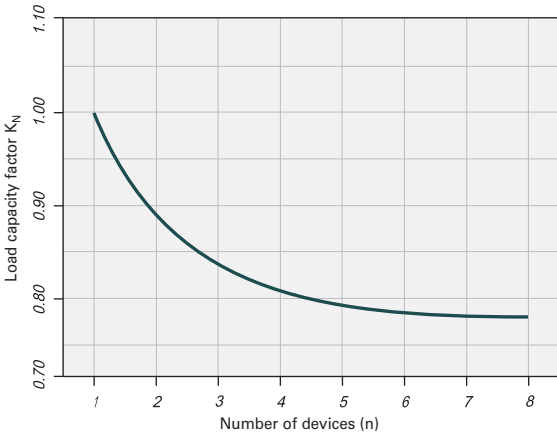


**Dimensions (mm)**

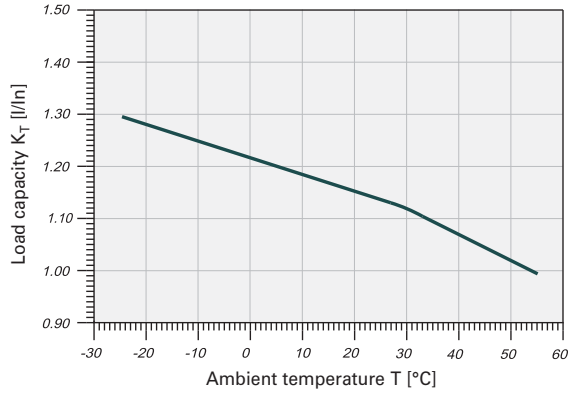


#### Load Capacity PLN6

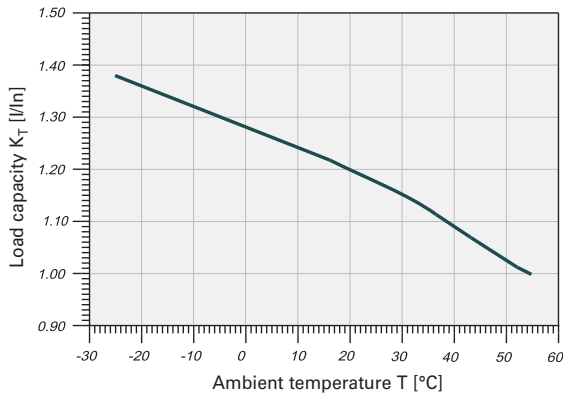
Load capacity in case of MCB block installation



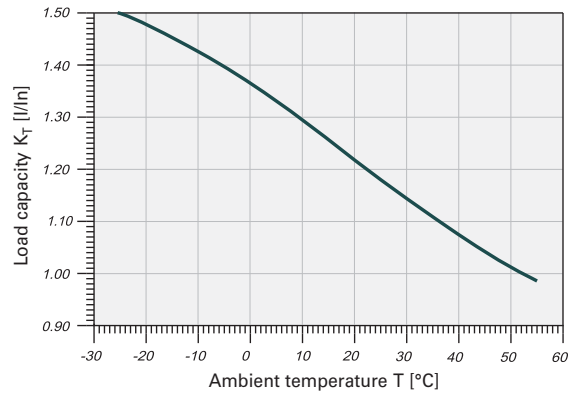
Current carrying capacity at ambient temperature ( $I_n = 2-13$  A)



Current carrying capacity at ambient temperature ( $I_n = 16-25$  A)



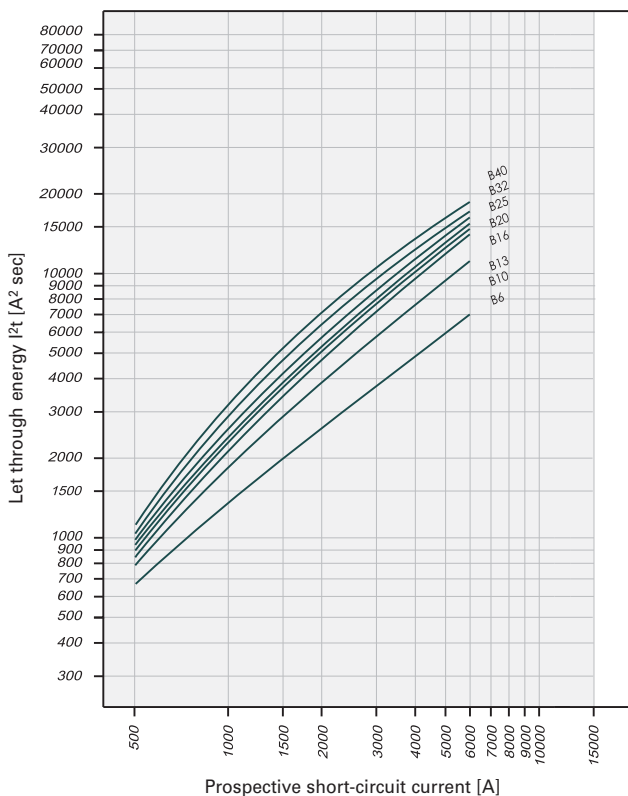
Current carrying capacity at ambient temperature ( $I_n = 32, 40$  A)



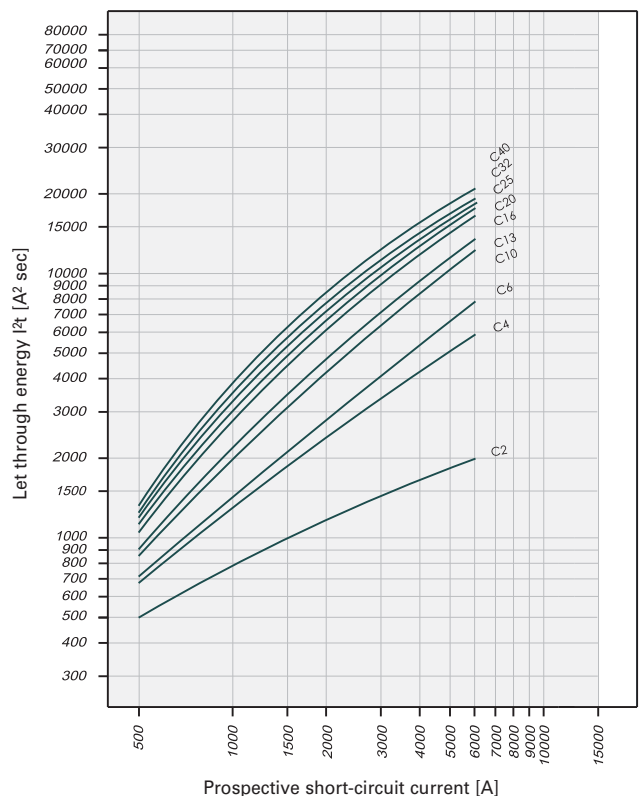
Permitted permanent load at ambient temperature  $T$  (°C) with  $n$  devices:  $I_{DL} = I_n K_T(T) K_N(N)$ .

#### Let-through Energy PLN6

Maximum let-through energy PLN6, Characteristic B



Maximum let-through energy PLN6, Characteristic C

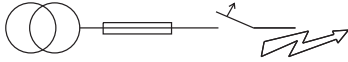


Determined according to 60898-1.

**Short Circuit Selectivity PLN6**

In case of short circuit, there is selectivity between the miniature circuit breakers PLN6 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***)

PLN6	DII-DIV gL/gG						
$I_n$ [A]	20	25	35	50	63	80	100
6	0.7	1.2	2.9	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10	0.6	0.9	1.9	3.1	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13	0.5	0.7	1.5	2.5	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16	0.5	0.7	1.4	2.3	4.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20	0.5	0.7	1.4	2.2	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25	0.5	0.6	1.3	2.0	3.8	5.8	6.0 <sup>2)</sup>
32	0.5	0.6	1.2	1.8	3.4	5.5	6.0 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.6	1.1	1.7	3.1	5.0	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***)

PLN6	DII-DIV gL/gG						
$I_n$ [A]	20	25	35	50	63	80	100
2	1.5	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	0.7	1.2	3.3	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6	0.7	1.1	2.6	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10	0.5	0.8	1.7	2.8	5.2	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13	0.5	0.7	1.5	2.5	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16	0.5	0.6	1.2	2.0	3.6	5.6	6.0 <sup>2)</sup>
20	0.5	0.6	1.2	1.8	3.3	5.1	6.0 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.6	1.1	1.7	3.0	4.8	6.0 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	0.6	1.0	1.6	2.8	4.5	6.0 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.6	1.0	1.5	2.6	4.0	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***)

PLN6	D01-D03 gL/gG						
$I_n$ [A]	20	25	35	50	63	80	100
6	0.6	0.9	2.5	5.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10	0.5	0.8	1.6	3.4	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13	0.5	0.7	1.3	2.7	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16	0.5	0.6	1.3	2.5	3.8	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
20	<0.5 <sup>1)</sup>	0.6	1.3	2.4	3.6	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.6	1.2	2.3	3.3	5.8	6.0 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	0.6	1.1	2.1	3.0	5.5	6.0 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.6	1.0	2.0	2.8	4.9	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***)

PLN6	D01-D03 gL/gG						
$I_n$ [A]	20	25	35	50	63	80	100
2	1.1	2.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	0.6	0.9	2.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6	0.6	0.9	2.3	5.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10	0.5	0.7	1.5	3.0	4.5	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
13	0.5	0.7	1.3	2.7	4.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
16	<0.5 <sup>1)</sup>	0.6	1.1	2.2	3.1	5.5	6.0 <sup>2)</sup>
20	<0.5 <sup>1)</sup>	0.6	1.1	2.1	2.9	5.2	6.0 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.5	1.0	2.0	2.7	4.8	6.0 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	0.5	1.0	1.9	2.6	4.5	6.0 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.5	0.9	1.7	2.3	4.0	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***)

PLN6	NH-00 gL/gG								
$I_n$ [A]	20	25	32	35	40	50	63	80	100
6	0.5	0.9	1.5	2.3	3.2	4.9	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10	<0.5 <sup>1)</sup>	0.7	1.2	1.5	2.0	3.1	3.9	5.9	6.0 <sup>2)</sup>
13	<0.5 <sup>1)</sup>	0.6	1.0	1.3	1.7	2.5	3.1	4.6	6.0 <sup>2)</sup>
16	<0.5 <sup>1)</sup>	0.6	1.0	1.3	1.6	2.4	2.9	4.5	6.0 <sup>2)</sup>
20	<0.5 <sup>1)</sup>	0.5	0.9	1.3	1.5	2.3	2.8	4.3	6.0 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.5	0.9	1.1	1.4	2.1	2.6	4.0	6.0 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	0.5	0.8	1.0	1.3	1.9	2.4	3.6	6.0 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.5	0.8	0.9	1.1	1.7	2.2	3.3	6.0 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***)

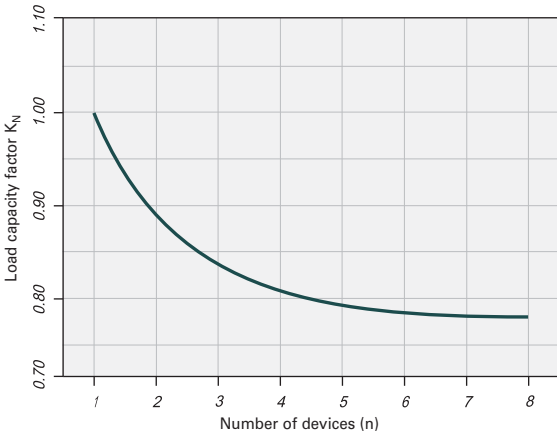
PLN6	NH-00 gL/gG								
$I_n$ [A]	20	25	32	35	40	50	63	80	100
2	0.7	2.1	6.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
4	0.5	0.9	1.6	2.6	3.7	6.0	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
6	0.5	0.8	1.4	2.1	2.9	4.5	5.7	6.0 <sup>2)</sup>	6.0 <sup>2)</sup>
10	<0.5 <sup>1)</sup>	0.6	1.0	1.4	1.9	2.8	3.5	5.2	6.0 <sup>2)</sup>
13	<0.5 <sup>1)</sup>	0.6	0.9	1.3	1.7	2.5	3.1	4.7	6.0 <sup>2)</sup>
16	<0.5 <sup>1)</sup>	0.5	0.7	1.0	1.3	2.0	2.5	3.8	6.0 <sup>2)</sup>
20	<0.5 <sup>1)</sup>	0.5	0.7	0.9	1.2	1.8	2.3	3.5	6.0 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.5	0.7	0.9	1.1	1.6	2.1	3.3	6.0 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.5	2.0	3.1	6.0 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.0	1.4	1.9	2.9	6.0 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

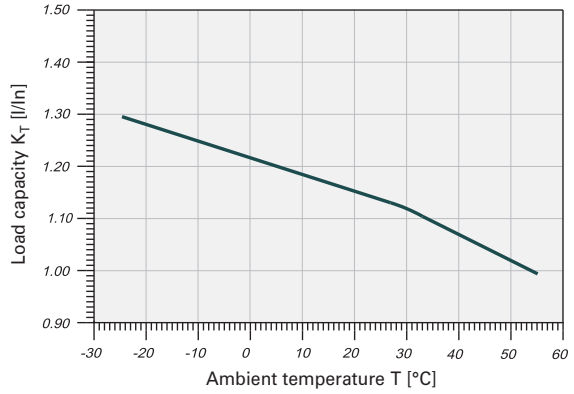
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

#### Load Capacity PLN4

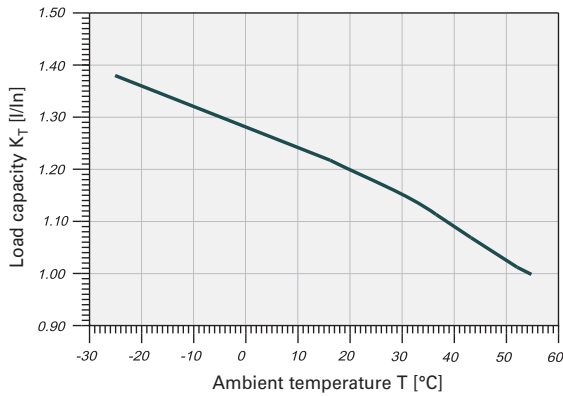
Load capacity in case of MCB block installation



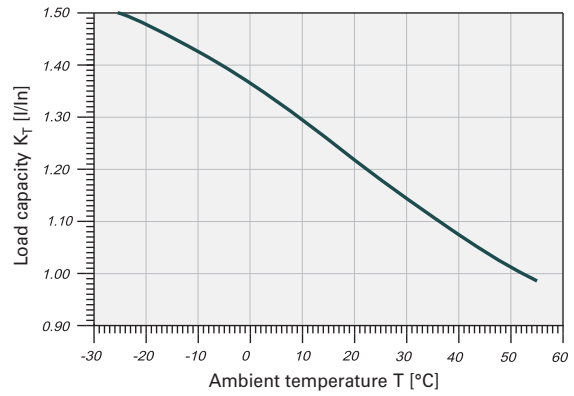
Current carrying capacity at ambient temperature ( $I_n = 2-13 A$ )



Current carrying capacity at ambient temperature ( $I_n = 16-25 A$ )



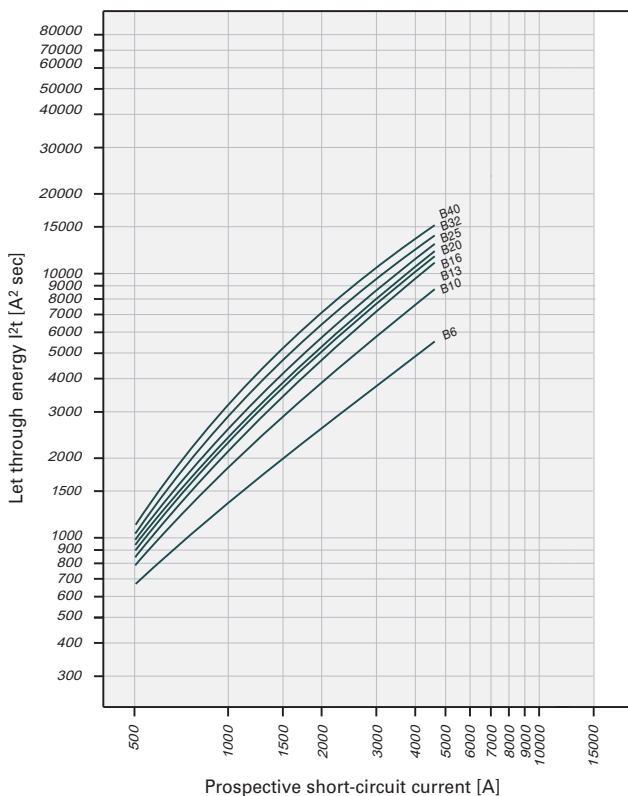
Current carrying capacity at ambient temperature ( $I_n = 32, 40 A$ )



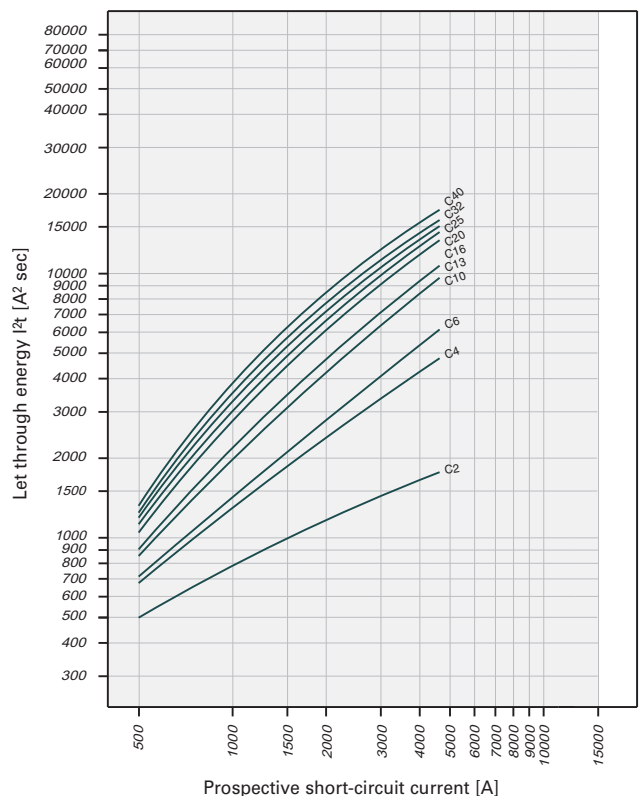
Permitted permanent load at ambient temperature T (°C) with n devices:  $I_{DL} = I_n K_T(T) K_N(N)$ .

#### Let-through Energy PLN4

Maximum let-through energy PLN4, Characteristic B



Maximum let-through energy PLN4, Characteristic C



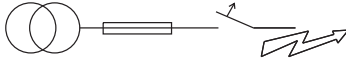
Determined according to 60898-1.



**Short Circuit Selectivity PLN4**

In case of short circuit, there is selectivity between the miniature circuit breakers PLN4 and the upstream fuses 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).

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



Short circuit selectivity **Characteristic B** towards fuse link **DII-DIV\***

PLN4	DII-DIV gL/gG						
$I_n$ [A]	20	25	35	50	63	80	100
6	0.7	1.2	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10	0.6	0.9	1.9	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13	0.5	0.7	1.5	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16	0.5	0.7	1.4	2.3	4.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20	0.5	0.7	1.4	2.2	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25	0.5	0.6	1.3	2.0	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32	0.5	0.6	1.2	1.8	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.6	1.1	1.7	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **DII-DIV\***

PLN4	DII-DIV gL/gG						
$I_n$ [A]	20	25	35	50	63	80	100
2	1.5	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	0.7	1.2	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	0.7	1.1	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10	0.5	0.8	1.7	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13	0.5	0.7	1.5	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16	0.5	0.6	1.2	2.0	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20	0.5	0.6	1.2	1.8	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.6	1.1	1.7	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	0.6	1.0	1.6	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.6	1.0	1.5	2.6	4.0	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic B** towards fuse link **D01-D03\***

PLN4	D01-D03 gL/gG						
$I_n$ [A]	20	25	35	50	63	80	100
6	0.6	0.9	2.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10	0.5	0.8	1.6	3.4	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13	0.5	0.7	1.3	2.7	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16	0.5	0.6	1.3	2.5	3.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20	<0.5 <sup>1)</sup>	0.6	1.3	2.4	3.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.6	1.2	2.3	3.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	0.6	1.1	2.1	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.6	1.0	2.0	2.8	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **D01-D03\***

PLN4	D01-D03 gL/gG						
$I_n$ [A]	20	25	35	50	63	80	100
2	1.1	2.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	0.6	0.9	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	0.6	0.9	2.3	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10	0.5	0.7	1.5	3.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13	0.5	0.7	1.3	2.7	4.0	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16	<0.5 <sup>1)</sup>	0.6	1.1	2.2	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20	<0.5 <sup>1)</sup>	0.6	1.1	2.1	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.5	1.0	2.0	2.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	0.5	1.0	1.9	2.6	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.5	0.9	1.7	2.3	4.0	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic B** towards fuse link **NH-00\***

PLN4	NH-00 gL/gG								
$I_n$ [A]	20	25	32	35	40	50	63	80	100
6	0.5	0.9	1.5	2.3	3.2	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10	<0.5 <sup>1)</sup>	0.7	1.2	1.5	2.0	3.1	3.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13	<0.5 <sup>1)</sup>	0.6	1.0	1.3	1.7	2.5	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16	<0.5 <sup>1)</sup>	0.6	1.0	1.3	1.6	2.4	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
20	<0.5 <sup>1)</sup>	0.5	0.9	1.3	1.5	2.3	2.8	4.3	4.5 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.5	0.9	1.1	1.4	2.1	2.6	4.0	4.5 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	0.5	0.8	1.0	1.3	1.9	2.4	3.6	4.5 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	0.5	0.8	0.9	1.1	1.7	2.2	3.3	4.5 <sup>2)</sup>

Short circuit selectivity **Characteristic C** towards fuse link **NH-00\***

PLN4	NH-00 gL/gG								
$I_n$ [A]	20	25	32	35	40	50	63	80	100
2	0.7	2.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
4	0.5	0.9	1.6	2.6	3.7	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
6	0.5	0.8	1.4	2.1	2.9	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
10	<0.5 <sup>1)</sup>	0.6	1.0	1.4	1.9	2.8	3.5	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
13	<0.5 <sup>1)</sup>	0.6	0.9	1.3	1.7	2.5	3.1	4.5 <sup>2)</sup>	4.5 <sup>2)</sup>
16	<0.5 <sup>1)</sup>	0.5	0.7	1.0	1.3	2.0	2.5	3.8	4.5 <sup>2)</sup>
20	<0.5 <sup>1)</sup>	0.5	0.7	0.9	1.2	1.8	2.3	3.5	4.5 <sup>2)</sup>
25	<0.5 <sup>1)</sup>	0.5	0.7	0.9	1.1	1.6	2.1	3.3	4.5 <sup>2)</sup>
32	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.1	1.5	2.0	3.1	4.5 <sup>2)</sup>
40	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.8	1.0	1.4	1.9	2.9	4.5 <sup>2)</sup>

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

SG43611



### Description

- 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 up to 25 kA according to EN 60947-2

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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**25 kA, Characteristic B**

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

# 1.460 Protective Devices

## Miniature Circuit Breakers PLHT

xPole

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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### 25 kA, Characteristic C

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

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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**25 kA, Characteristic D**

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

Rated current $I_n$ (A)	Type Designation	Article No.	Units per package
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### Miniature Circuit Breakers PLHT-V, 25 kA, similar to characteristic D

#### 1-pole

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

SG69611



### Accessories for Miniature Circuit Breakers PLHT, PLHT-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

SG09311



#### Auxiliary switch

Function	Type Designation	Article No.	Units per package
1NO+1NC	Z-LHK	248440	10/100

SG16111

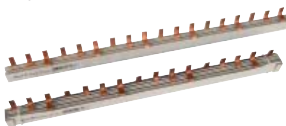


### Accessories for Miniature Circuit Breakers PLHT-V

#### Switching interlock, Busbar block, Neutral disconnecter

Benennung	Type Designation	Article No.	Units per package
Switching interlock	LH-SPL	285752	1
Switching interlock	LHSP-E	215999	1
Switchoff interlock	LHSP-A	216000	1
Busbar block 35 mm <sup>2</sup>	Z-SV-35/PLHT-V	264939	4
Neutral disconnecter	Z-NTS	248443	1

wa\_sg11402



SG15911



**Specifications | Miniature Circuit Breakers PLHT**

**Description**

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

**Accessories:**

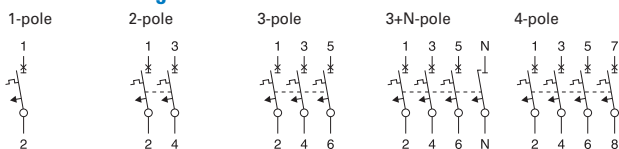
Auxiliary switch for subsequent installation (0.5 MU)	Z-LHK	248440
Shunt trip release subsequent installation (1.5 MU)	Z-LHASA/230	248442
	Z-LHASA/24	248441
Switching interlock	LH-SPL	285752

**Busbars:** see chapter busbar systems

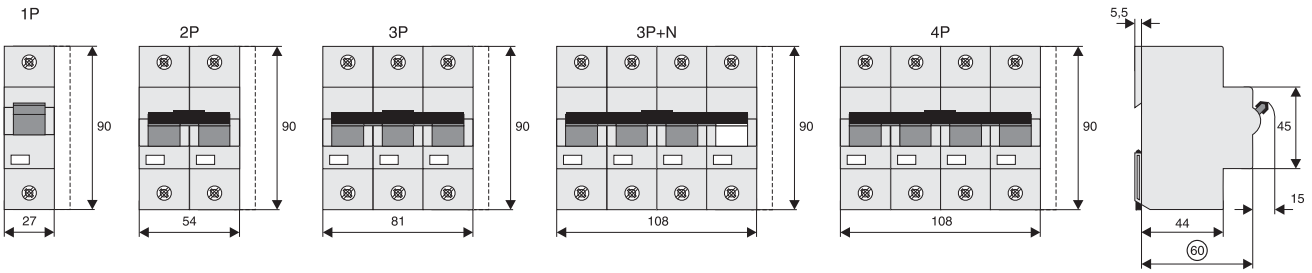
**Technical Data**

		PLHT
<b>Electrical</b>		
Design according to		EN 60947-2
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 60 V (per pole, max. 2 poles)
Ultimate short circuit breaking capacity according to IEC/EN 60947-2		
Characteristic B, C		$I_n = 20-63$ A: 25 kA $I_n = 80-100$ A: 20 kA $I_n = 125$ A: 15 kA
Characteristic D		$I_n = 20-63$ A: 25 kA $I_n = 80$ A: 20 kA $I_n = 100$ A: 15 kA
Characteristic		in accordance with 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 accordance with class 3
Endurance		$\geq 20,000$ switching operations
<b>Mechanical</b>		
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		IP20
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 <sup>2</sup>

**Connection diagrams**

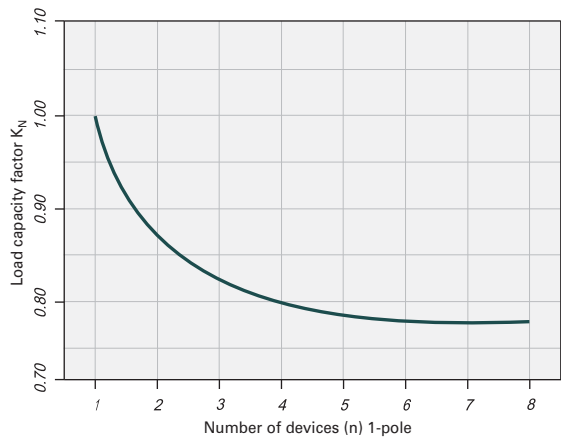


#### Dimensions (mm)

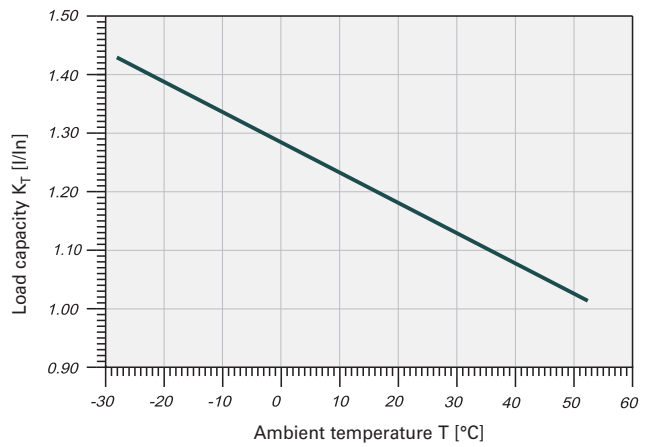


#### Load Capacity

Load capacity in case of block installation



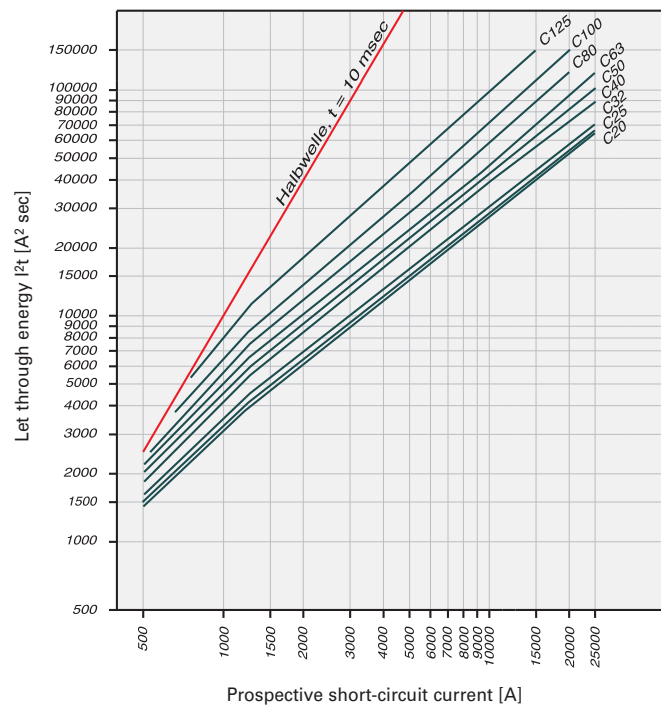
Effect of ambient temperature



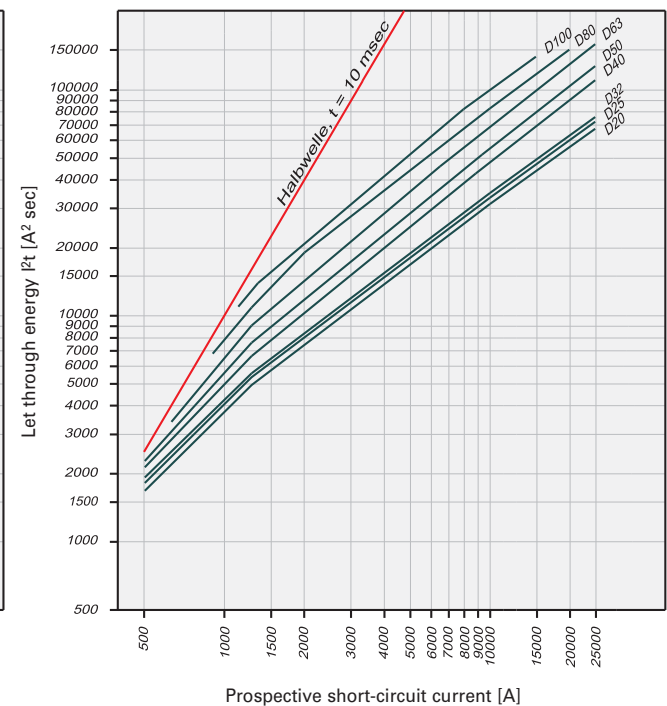
Permitted permanent load at ambient temperature T [°C] with n devices:  $I_{DL} = I_n K_T(T) K_N(N)$ .

#### Durchlassenergie

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



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



Determined according to 60898-1.



**Short Circuit Selectivity PLHT towards D01, D02, D03 and NH size 00**

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

**Selectivity towards back-up fuses D01, D02, D03**

**Characteristic C**

PLHT I <sub>n</sub> [A]	Rated current of the back-up fuse in A gL/gG					
	25	35	50	63	80	100
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						

**Characteristic D**

PLHT I <sub>n</sub> [A]	Rated current of the back-up fuse in A gL/gG					
	25	35	50	63	80	100
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						

**Selectivity towards back-up fuses NH size 00**

**Characteristic C**

PLHT I <sub>n</sub> [A]	Rated current of the back-up fuse in A gL/gG									
	25	35	40	50	63	80	100	125	160	200
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

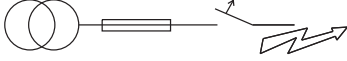
**Characteristic D**

PLHT I <sub>n</sub> [A]	Rated current of the back-up fuse in A gL/gG											
	25	35	40	50	63	80	100	125	160	200	200	
20	<0.5	0.8	1.1	1.5	2.3	3.1	5.6	16.0	25.0	25.0	25.0	
25		0.7	1.0	1.4	2.1	3.0	5.3	14.0	23.0	25.0	25.0	
32		0.7	1.0	1.3	2.1	2.9	5.0	13.0	22.0	25.0	25.0	
40				1.1	1.8	2.5	4.2	10.0	15.0	25.0	25.0	
50					1.6	2.3	3.8	8.5	13.0	22.0	25.0	
63						2.1	3.2	7.0	10.5	18.0	25.0	
80							2.8	5.5	8.4	15.0	25.0	
100								4.8	7.5	12.5	25.0	

### Short Circuit Selectivity PLHT towards NZM

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 **NZM1\***)

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 **NZM1\***)

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

Short circuit selectivity **Characteristic C** towards **NZM2\***)

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 **NZM2\***)

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										

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the MCB

Darker areas: 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  $\geq 4$  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 disconnecter	Z-NTS	248443

**Busbars:**

see capter busbar systems

**Technical Data**

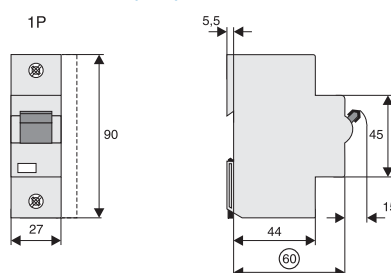
		PLHT-V
<b>Electrical</b>		
Design according to		EN 60947-2
Current test marks as printed onto the device		
Rated voltage	$U_n$	AC: 230/400 V DC: 60 V (per pole, max. 2 poles)
Ultimate short circuit breaking capacity according to IEC/EN 60947-2		25 kA
Service short circuit breaking capacity		20 kA
Rated breaking capacity		DC: max. 60 V, 1-pole
Characteristic		similar to D
Back-up fuse		max. 200 A gL (>20 kA)
Rated insulation voltage		440 V
Peak withstand voltage	$U_{imp}$	4 kV
Selectivity class		in accordance with class 3
Endurance		$\geq 20,000$ switching operations
<b>Mechanical</b>		
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		IP20
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 <sup>2</sup>

**Connection diagram**

1-pole



**Dimensions (mm)**



## Specifications | Accessories for PLHT, PLHT-V

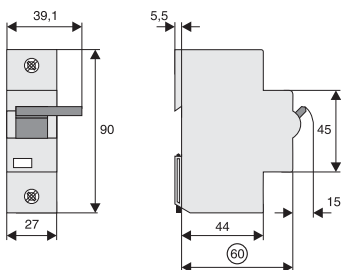
### Shunt trip release Z-LHASA

- 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

## Technical Data

	Z-LHASA
<b>Electrical</b>	
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
<b>Mechanical</b>	
Frame size	45 mm
Device height	90 mm
Device width	27 mm
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection	IP20
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

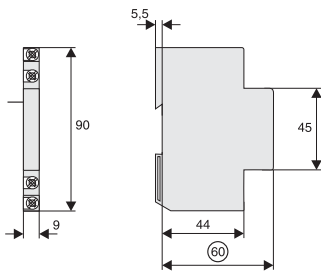
**Technical Data**

	Z-LHK
<b>Electrical</b>	
Rated operational current	(250 V~) 6 A / AC13
Minimum operational voltage	24 V 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	6 A / 250 VAC 2 A / 440 VAC
Utilisation category DC13	4 A / 60 VDC 2 A / 110 VDC 0,5 A / 230 VDC
<b>Mechanical</b>	
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 <sup>2</sup> to 2 x 2.5 mm <sup>2</sup>

**Connection diagram**



**Dimensions (mm)**



#### Specifications | Accessories for PLHT-V

##### Switching interlock LHSP-E, LH-SPL

- Prevents undesired switching ON or OFF

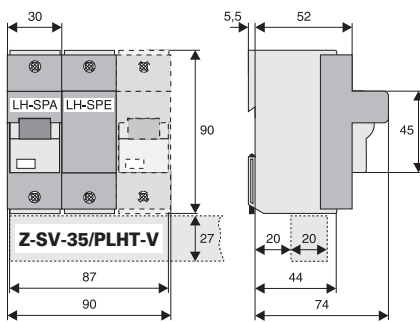
##### Switchoff interlock LHSP-A

- Prevents undesired switch-OFF

##### Busbar block 35 mm<sup>2</sup> Z-SV-35/PLHT-V, 3-pole (see chapter busbar systems)

- 110/220 A
- Step distance 30 mm

##### Dimensions (mm)



SG09811

SG09711



Setting Range (A)	Type Designation	Article No.	Units per package
-------------------	------------------	-------------	-------------------

#### Adjustable MCB Z-MS

SG09911



##### 2-pole

0.10 - 0.16	Z-MS-0.16/2	248389	1/60
0.16 - 0.25	Z-MS-0,25/2	248390	1/60
0.25 - 0.40	Z-MS-0,4/2	248391	1/60
0.40 - 0.63	Z-MS-0,63/2	248392	1/60
0.63 - 1.00	Z-MS-1/2	248393	1/60
1.00 - 1.60	Z-MS-1,6/2	248394	1/60
1.60 - 2.50	Z-MS-2,5/2	248395	1/60
2.50 - 4.00	Z-MS-4/2	248396	1/60
4.00 - 6.30	Z-MS-6,3/2	248397	1/60
6.30 - 10.0	Z-MS-10/2	248398	1/60
10.0 - 16.0	Z-MS-16/2	248399	1/60
16.0 - 25.0	Z-MS-25/2	248400	1/60
25.0 - 40.0	Z-MS-40/2	248401	1/60

SG09811



##### 3-pole

0.10 - 0.16	Z-MS-0.16/3	248402	1/40
0.16 - 0.25	Z-MS-0,25/3	248403	1/40
0.25 - 0.40	Z-MS-0,4/3	248404	1/40
0.40 - 0.63	Z-MS-0,63/3	248405	1/40
0.63 - 1.00	Z-MS-1/3	248406	1/40
1.00 - 1.60	Z-MS-1,6/3	248407	1/40
1.60 - 2.50	Z-MS-2,5/3	248408	1/40
2.50 - 4.00	Z-MS-4/3	248409	1/40
4.00 - 6.30	Z-MS-6,3/3	248410	1/40
6.30 - 10.0	Z-MS-10/3	248411	1/40
10.0 - 16.0	Z-MS-16/3	248412	1/40
16.0 - 25.0	Z-MS-25/3	248413	1/40
25.0 - 40.0	Z-MS-40/3	248414	1/40

Rated Current I <sub>n</sub> (A)	Setting Range (A)	Type Designation	Article No.	Units per package
----------------------------------	-------------------	------------------	-------------	-------------------

#### Power Limiter Z-TS

SG09611



##### 1-pole, 230 V~

20	13-20	Z-TS20/1	266850	2
25	16-25	Z-TS25/1	266852	2
32	20-32	Z-TS32/1	266853	2
40	25-40	Z-TS40/1	266854	2
50	40-50	Z-TS50/1	266855	2
63	50-63	Z-TS63/1	266856	2

SG09711



##### 3-pole, 400 V~

20	13-20	Z-TS20/3	266857	1
25	16-25	Z-TS25/3	266858	1
32	20-32	Z-TS32/3	266859	1
40	25-40	Z-TS40/3	266860	1
50	40-50	Z-TS50/3	266861	1
63	50-63	Z-TS63/3	266862	1



**Accessories for Adjustable MCB and Power Limiter**

Function	Type Designation	Article No.	Units per package
Shunt trip release 24 V	ZP-ASA/24	248438	6/60
Shunt trip release 230 V	ZP-ASA/230	248439	6/60
Undervoltage release 115 V	Z-USA/115	248288	6/60
Undervoltage release 230 V	Z-USA/230	248289	6/60
Undervoltage release 400 V	Z-USA/400	248290	6/60
Undervoltage release, delayed 115 V	Z-USD/115	248292	6/60
Undervoltage release, delayed 230 V	Z-USD/230	248291	6/60
Auxiliary switch	ZP-IHK	286052	4/120
Tripping signal switch	ZP-NHK	248437	4/120
Remote control and automatic switching device	Z-FW-LP	248296	1/20
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960	12/720

**Moisture-proof enclosure Z-MFG, IP54**

SG82111



ON/OFF	Z-MFG	248383	1
ON/OFF N-conductor	Z-MFG/NL	248384	1
ON/OFF with EMERGENCY OFF	Z-MFG/NOT	248385	1

## Specifications | Adjustable MCB Z-MS

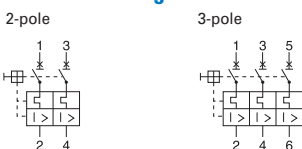
### Description

- Reliable protection in case of thermal overload and short circuit
- Suitable for installation in compact distribution boxes
- Contact position indicator red - green
- Main field of application: switching and protection of three-phase AC motors with power ratings up to 15 kW (380/400 V) and other consumers up to 40 A
- Also suitable as main switch, isolating characteristics according to IEC/EN 60947
- All manual motor starters with thermal overload tripping and magnetic short-circuit tripping
- Terminals and accessories compatible with CLS6, Z-A40, PFIM etc.

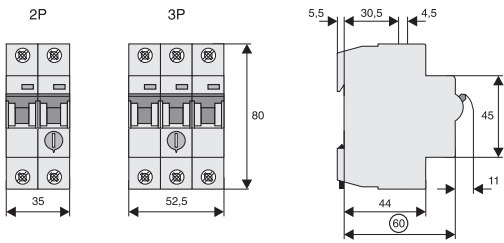
### Technical Data

		Z-MS
<b>General</b>		
Terminal capacity		1 - 25 mm <sup>2</sup>
Busbar thickness		0.8-2 mm
Endurance mechanical components		20,000 switching operations
Shock resistance (shock duration 20 ms)		20 g
Ambient temperature		
open		-25 ... + 50 °C
hermetically enclosed		-25 ... + 40 °C
Resistance to climatic conditions		
humidity and heat, constant, according to		IEC 68-2-3
humidity and heat, periodical, according to		IEC 68-2-30
Weight approx.		
2-pole		244 g
3-pole		366 g
Degree of protection		IP20
<b>Main Current Paths</b>		
Rated insulation voltage	$U_i$	440 V
Rated impulse withstand voltage	$U_{imp}$	4 kV
Rated short circuit breaking capacity	$I_g$	10 kA
Thermal current $I_{th\ max} = I_{e\ max}$		40 A
Electrical endurance AC3 and $I_g$		6,000 switching operations
Motor switching capacity AC3		400 (415) V
Power loss per contact		
1.6-10 A		2.3 W
16 A		3.3 W
25-40 A		4.5 W
Operating frequency		50/60 Hz
<b>Auxiliary switch Z-AHK/Z-NHK</b>		
Rated insulation voltage	$U_i$	440 V
Thermal current	$I_{th}$	8 A
Rated operational current	$I_e$	
250 V		6 A
with AC 13, 440 V		2 A
Max. back-up fuse for short-circuit protection		4 A (gL, gG) CLS6-4/B-HS
Terminal capacity (1 or 2 conductors)		0.75 ... 2.5 mm <sup>2</sup>
<b>Moisture-Proof Enclosure 4 MU IP54, Z-MFG</b>		
Reliable power loss of incorporated devices		17W (e.g. Z-MS-40/3+Z-USA/230)

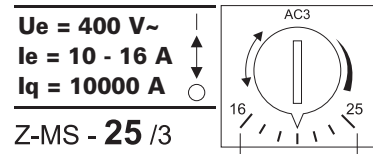
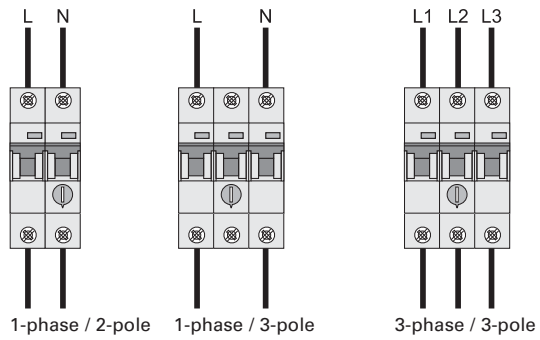
### Connection diagram



**Dimensions (mm)**



**Connection**



**Selection of Switches for the Protection of Motors**

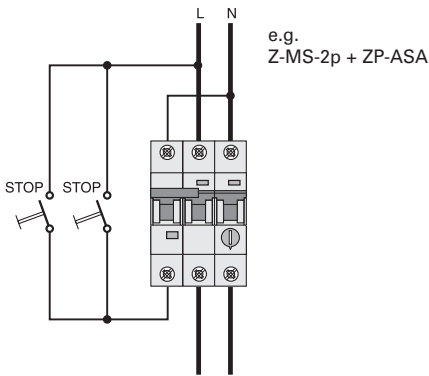
Motor power and current						
1-phase 230 - 240 V		3-phase 230 - 240 V		3-phase 400 - 415 V		Setting ranges of overload release
kW	A	kW	A	kW	A	A
		0.06	0.4	0.06	0.2	0.16 - 0.25
		0.09	0.5	0.09	0.3	0.25 - 0.4
				0.12	0.4	0.4 - 0.63
				0.18	0.6	0.4 - 0.63
0.06	0.7	0.12	0.7	0.25	0.8	0.63 - 1
0.09	0.7					0.63 - 1
0.12	1.3	0.18	1.0	0.37	1.1	1 - 1.6
		0.25	1.4	0.55	1.5	1 - 1.6
0.18	1.9	0.37	2.0	0.75	1.9	1.6 - 2.5
0.25	2.4					1.6 - 2.5
0.37	2.9	0.55	2.7	1.1	2.6	2.5 - 4
		0.8	3.2	1.5	3.6	2.5 - 4
0.55	4.2	1.1	4.6	2.2	5.0	4 - 6.3
0.75	5.6					4 - 6.3
1.1	7.4	1.5	6.3	2.5-3.0	6.6	6.3 - 10
1.5	8.9	2.5	8.7			6.3 - 10
				4.0	8.5	6.3 - 10
2.2	14.5	3.0	11.5	5.5	11.3	10 - 16
				7.5	13.2	10 - 16
3	17.8	4.0	14.8			16 - 20
		5.5	19.6	11.0	21.7	16 - 20
		7.5	26.4	15.0	29.3	25 - 40
		11.0	38.0	18.5	36.0	25 - 40

**Overview of Types, Maximum Back-up Fuse and Short Circuit Behaviour**

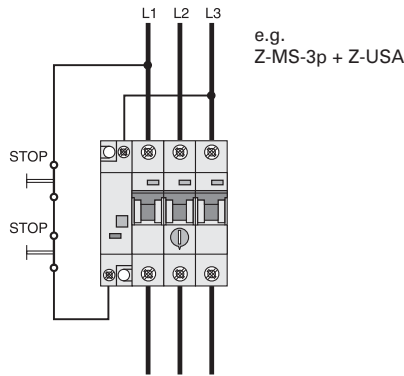
Type	Setting Range (A)	max. Back-up Fuse gL, gG <sup>1)</sup>		Typical responding currents of short-circuit releases (A)
		(A) 3 x 230 V	(A) 3 x 400 V	
Z-MS-0.16	0.10 - 0.16			1.3 - 1.7
Z-MS-0.25	0.16 - 0.25			2.0 - 2.6
Z-MS-0.40	0.25 - 0.40			3.1 - 4.8
Z-MS-0.63	0.40 - 0.63			4.9 - 6.6
Z-MS-1.00	0.63 - 1.00			10 - 13
Z-MS-1.60	1.0 - 1.6			16 - 21
Z-MS-2.50	1.6 - 2.5			25 - 33
Z-MS-4.00	2.5 - 4.0			40 - 52
Z-MS-6.30	4.0 - 6.3	100	100	63 - 82
Z-MS-10.0	6.3 - 10.0	100	100	78 - 105
Z-MS-16.0	10.0 - 16.0	100	100	160 - 208
Z-MS-25.0	16.0 - 25.0	100	100	250 - 325
Z-MS-40.0	25.0 - 40.0	100	100	400 - 520

<sup>1)</sup> In case of short circuit currents up to the rated breaking capacity, no back-up fuse is required (inherent current withstand capability)

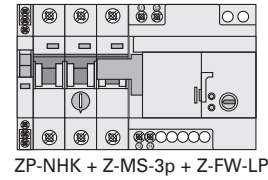
### Connection of Shunt Trip Release



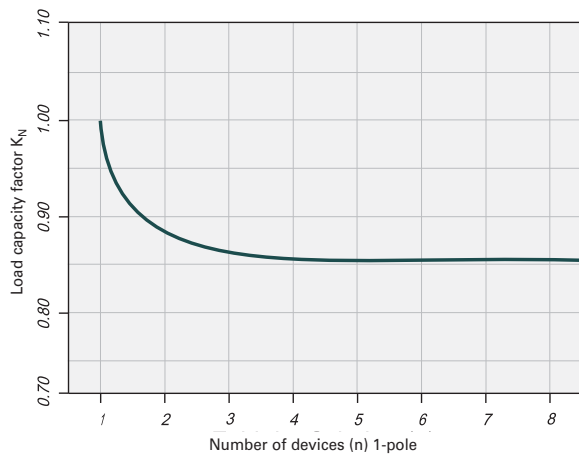
### Connection of Undervoltage Release



### Block Diagram with Remote Switching Device

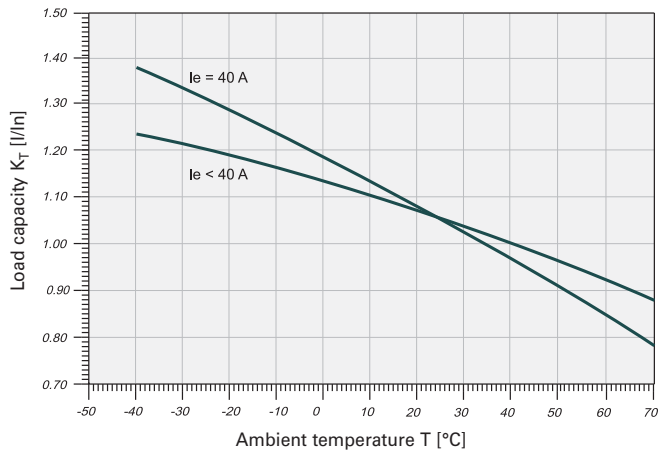


### Load Capacity in Case of Block Installation



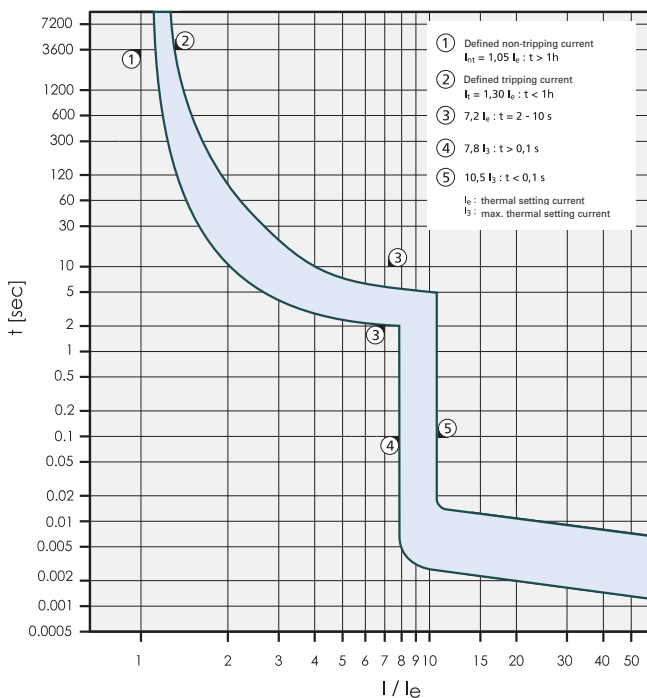
Permitted permanent load at ambient temperature T [°C] with n devices:  
 $I_{DL}(T, n) = I_n K_T(T) K_n(n)$

### Effect of the Ambient Temperature to the Load Capacity



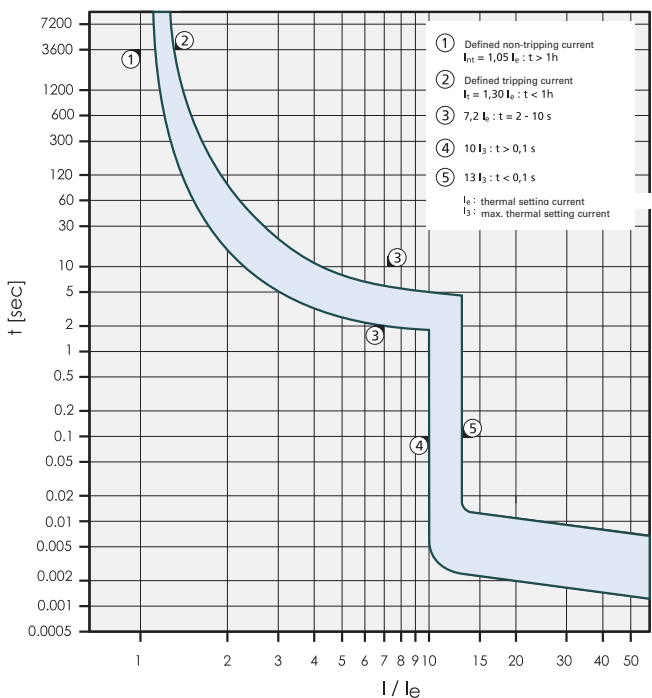
Valid for Z-MS devices, 3-pole, reference ambient temperature 20°C,  
 permitted permanent load at ambient temperature T [°C] with n devices:  
 $I_L(T) = I_n K_T(T)$

### Typical Tripping Characteristic MS 0.16/0.25/0.4/0.63/10A



Tripping current as a multiple of the maximum setting current, at an ambient temperature of 20 °C, from cold state

### Typical Tripping Characteristic MS 1/1.6/2.5/4/6.3/16/25/40A

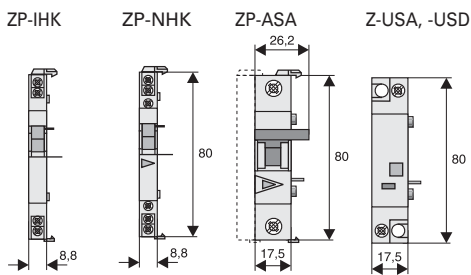


Tripping current as a multiple of the maximum setting current, at an ambient temperature of 20 °C, from cold state

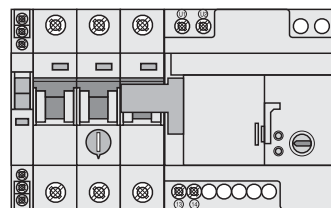
**Adjustable MCB Accessory**

- Accessories for Adjustable MCB are the same as for PFIM, CLS etc. (releases, auxiliary switches, and busbars
- Shunt trip release ZP-ASA
- Undervoltage releases  
Z-USA: instantaneous  
Z-USD: delayed
- Auxiliary switch ZP-IHK: 1 NO + 1 NC
- Tripping signal switch ZP-NHK: 1 CO + 1 CO
- Remote control and automatic switching device Z-FW
- Moisture-proof enclosure IP54  
Z-MFG  
Z-MFG/NL: with N-led through (solid neutral)  
Z-MFG/NOT: with N-led through (solid neutral) and EMERGENCY OFF key

**Dimensions (mm)**



**Installation Example**



ZP-NHK + Z-MS-2p + Z-FW-LP

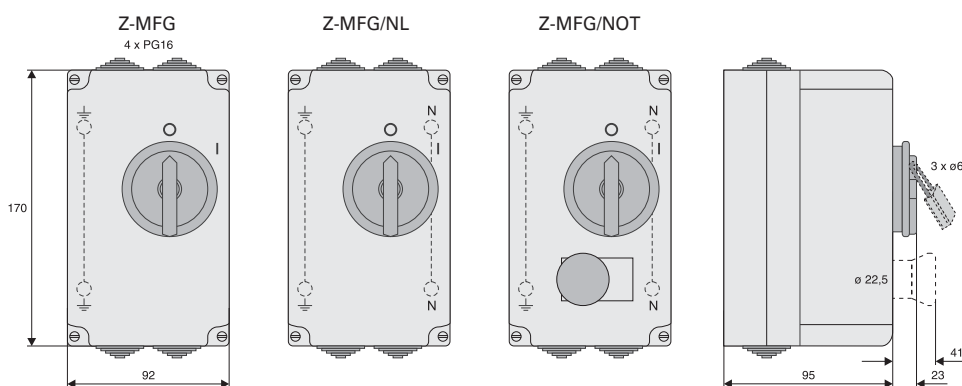
**Moisture-proof enclosure Z-MFG**

- According to EN 50298
- Suitable for manual motor starters Z-MS, e.g. 3p (+ Z-USA); miniature circuit breakers CLS, e.g. 3p (+ Z-USA); circuit breakers Z-A40
- Earth conductor connection integrated in all types
- Entries for 4 x PG16 cable glands prepared
- Operation: Turning handle, can be locked in the OFF-position by means of 3 padlocks, max. Ø 6 mm
- Enclosure cover can be sealed with leads in 2 locations
- Scope of delivery: 4 entry bushes, 1 mushroom-shaped pushbutton (red) + 1 contact (NC) in Z-MFG/NOT

**Technical Data**

	Z-MFG	Z-MFG/NL	Z-MFG/NOT
<b>Electrical</b>			
Power Loss of installed devices	max. 17 W	max. 17 W	max. 17 W
<b>Mechanical</b>			
Degree of protection	IP54	IP54	IP54
Protection class	II	II	II
Neutral connection	-	integrated	integrated
Max. Device width	4MU	4MU	4MU
Terminal capacity N/PE	max. 16 mm <sup>2</sup>	max. 16 mm <sup>2</sup>	max. 16 mm <sup>2</sup>
Tightening torque			
N/PE terminals	max. 2 Nm	max. 2 Nm	max. 2 Nm
Cover screws	max. 2 Nm	max. 2 Nm	max. 2 Nm

**Dimensions (mm)**



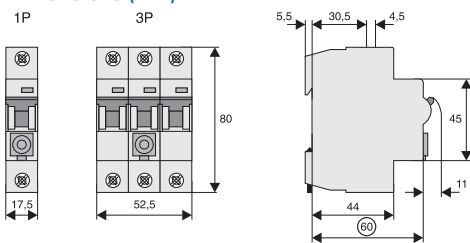
### Power Limiter Z-TS

- Type in accordance with EN/IEC 60898-1, EN/IEC 60947
- Shape compatible with and suitable for standard busbar connection to e.g. CLS6, PLSM, Z-A40, Z-MS, PFIM
- Switching device for voluntary or power-authority limitation of power consumption of user systems and equipment
- Approved by the Austrian regional power supply companies, easy to re-set by the customer
- 1- and 3-pole design
- Adjustment screw for setting range under sealable cover cap

### Technical Data

		Z-TS20/.	Z-TS25/.	Z-TS32/.	Z-TS40/.	Z-TS50/.	Z-TS63/.
<b>Electrical</b>							
Rated operating voltage	$U_e$	230/400 V AC	230/400 V AC	230/400 V AC	230/400 V AC	230/400 V AC	230/400 V AC
Rated frequency		50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Rated current (Current setpoint values)	$I_e$	13-16-20 A	16-20-25 A	20-25-32 A	25-32-40 A	40-50 A	50-63 A
Rated impulse withstand voltage	$U_{imp}$	4 kV (1.2/50 $\mu$ s)	4 kV (1.2/50 $\mu$ s)	4 kV (1.2/50 $\mu$ s)	4 kV (1.2/50 $\mu$ s)	4 kV (1.2/50 $\mu$ s)	4 kV (1.2/50 $\mu$ s)
Rated insulation voltage	$U_i$	500 V	500 V	500 V	500 V	500 V	500 V
Reference ambient temperature		30 °C	30 °C	30 °C	30 °C	30 °C	30 °C
Tripping method		Overload release and magnetic fast release					
Conventional non-tripping current	$I_{nt}$	1.13 $I_e$ (t > 1 h)	1.13 $I_e$ (t > 1 h)	1.13 $I_e$ (t > 1 h)	1.13 $I_e$ (t > 1 h)	1.13 $I_e$ (t > 1 h)	1.13 $I_e$ (t > 1 h)
Conventional tripping current	$I_t$	1.45 $I_e$ (t < 1 h)	1.45 $I_e$ (t < 1 h)	1.45 $I_e$ (t < 1 h)	1.45 $I_e$ (t < 1 h)	1.45 $I_e$ (t < 1 h)	1.45 $I_e$ (t < 1 h)
Response values for the magnetic fast release	$I_{MA}$	200-300 A	250-375 A	320-500 A	320-500 A	380-500 A	380-500 A
Utilization category		AC-1 (Conventional operating behavior / switch and breaking capacity according to EN/IEC 60947): $I = I_e, U = 1,05 U_e, \cos \varphi = 0.8, 6,000$ operating cycles $I = 1,5 I_e, U = 1,05 U_e, \cos \varphi = 0.8, 50$ operating cycles					
Rated breaking capacity (according to EN/IEC 60868)	$I_{cn}$	10 kA	10 kA	10 kA	6 kA	6 kA	6 kA
Service short circuit breaking capacity (acc. to EN/IEC 60868)	$I_{cs}$	7.5 kA	7.5 kA	7.5 kA	6 kA	6 kA	6 kA
Energy limitation class (according to EN/IEC 60898-1)		3	3	3	3	3	3
Maximum back-up fuse		125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG
<b>Mechanical</b>							
Frame size		45 mm	45 mm	45 mm	45 mm	45 mm	45 mm
Device height		80 mm	80 mm	80 mm	80 mm	80 mm	80 mm
Device width		1MU (1P), 3MU (3P)1MU (1P), 3MU (3P)1MU (1P), 3MU (3P)1MU (1P), 3MU (3P)1MU (1P), 3MU (3P)1MU (1P), 3MU (3P)1MU (1P), 3MU (3P)					
Number of poles		1, 3	1, 3	1, 3	1, 3	1, 3	1, 3
Mounting		quick fastening on DIN rail IEC/EN 60715					
Upper and lower terminals		lift terminals	lift terminals	lift terminals	lift terminals	lift terminals	lift terminals
Terminal capacity single/multi wire		1x(1-25) mm <sup>2</sup>	1x(1-25) mm <sup>2</sup>	1x(1-25) mm <sup>2</sup>	1x(1-25) mm <sup>2</sup>	1x(1-25) mm <sup>2</sup>	1x(1-25) mm <sup>2</sup>
Terminal capacity fine wire with wire end sleeve		1x(0.75-16) mm <sup>2</sup>	1x(0.75-16) mm <sup>2</sup>	1x(0.75-16) mm <sup>2</sup>	1x(0.75-16) mm <sup>2</sup>	1x(0.75-16) mm <sup>2</sup>	1x(0.75-16) mm <sup>2</sup>
Terminal screw		M5, cross recess according to DIN 7962-Z2, Pozidrive					
Terminal torque		max. 2.4 Nm	max. 2.4 Nm	max. 2.4 Nm	max. 2.4 Nm	max. 2.4 Nm	max. 2.4 Nm
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274					
Resistance to climatic conditions		Damp heat, constant, acc. to IEC 68-2-3 / Damp heat, cyclic, acc. to IEC 68-2-30					

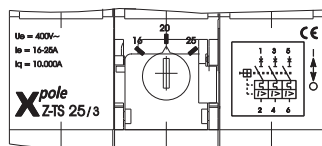
### Dimensions (mm)



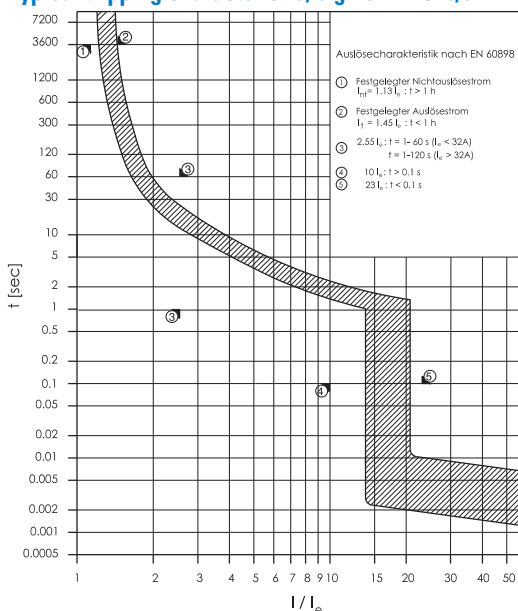
### Accessories

- Busbar block ZV7
- Auxiliary switch and tripping signal switch Z-AHK, Z-NHK
- Shunt trip release and undervoltage release Z-ASA, Z-USA, Z-USD
- Moisture-proof enclosure Z-MFG

### Imprint



### Typical tripping characteristic, e.g. for Z-TS20/3



Motor rating (kW)	Setting Range Overload release (A)	Type Designation	Article No.	Units per package
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**Motor-protective circuit-breaker PKZM01**

**Push-button operated**

–	0.1 - 0.16	PKZM01-0.16	278475	1
0.06	0.16 - 0.25	PKZM01-0,25	278476	1
0.09	0.25 - 0.4	PKZM01-0,4	278477	1
0.12	0.4 - 0.63	PKZM01-0,63	278478	1
0.25	0.63 - 1	PKZM01-1	278479	1
0.55	1 - 1.6	PKZM01-1,6	278480	1
0.75	1.6 - 2.5	PKZM01-2,5	278481	1
1.5	2.5 - 4	PKZM01-4	278482	1
2.2	4 - 6.3	PKZM01-6,3	278483	1
4	6.3 - 10	PKZM01-10	278484	1
5.5	10 - 12	PKZM01-12	278485	1
7.5	12 - 16	PKZM01-16	283390	1

**Accessories**

Plastic enclosure for PKZM01	CI-PKZ01-G	281404	1
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**Motor-protective circuit-breaker - complete unit PKZM01-G**

**Degree of protection of the housing IP65**

–	0.1 - 0.16	PKZM01-0.16-G	286068	1
0.06	0.16 - 0.25	PKZM01-0,25-G	286069	1
0.09	0.25 - 0.4	PKZM01-0,4-G	286080	1
0.12	0.4 - 0.63	PKZM01-0,63-G	286081	1
0.25	0.63 - 1	PKZM01-1-G	286082	1
0.55	1 - 1.6	PKZM01-1,6-G	286083	1
0.75	1.6 - 2.5	PKZM01-2,5-G	286084	1
1.5	2.5 - 4	PKZM01-4-G	286085	1
2.2	4 - 6.3	PKZM01-6,3-G	286086	1
4	6.3 - 10	PKZM01-10-G	286087	1
5.5	10 - 12	PKZM01-12-G	286088	1
7.5	12 - 16	PKZM01-16-G	286089	1

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**Motor-protective circuit-breaker PKZM0**

**Rotary operator knob**

–	0.1 - 0.16	PKZM0-0.16	072730	1
0.06	0.16 - 0.25	PKZM0-0,25	072731	1
0.09	0.25 - 0.4	PKZM0-0,4	072732	1
0.12	0.4 - 0.63	PKZM0-0,63	072733	1
0.25	0.63 - 1	PKZM0-1	072734	1
0.55	1 - 1.6	PKZM0-1,6	072735	1
0.75	1.6 - 2.5	PKZM0-2,5	072736	1
1.5	2.5 - 4	PKZM0-4	072737	1
2.2	4 - 6.3	PKZM0-6,3	072738	1
4	6.3 - 10	PKZM0-10	072739	1
5.5	10 - 12	PKZM0-12	278486	1
7.5	12 - 16	PKZM0-16	046938	1
9	16 - 20	PKZM0-20	046988	1
12.5	20 - 25	PKZM0-25	046989	1
15	25 - 32	PKZM0-32	278489	1

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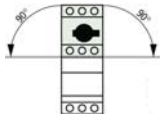


Function	Type Designation	Article No.	Units per package
<b>Accessories</b>			
Plastic enclosure for PKZM0, Rotary operator knob black	CI-K2-PKZ0-G	219654	1
Plastic enclosure for PKZM0, Rotary operator knob red, for use as EMERGENCY OFF	CI-K2-PKZ0-GR	219655	1
Auxiliary switch PKZ, 1NO/1NC, on the side	NHI11-PKZ0	072896	1
Auxiliary switch PKZ, 1NO/1NC, below	NHI-E-11-PKZ0	082882	1
Undervoltage release PKZ, 230 V / 50 Hz	U-PKZ0(230V50HZ)	073135	1
Undervoltage release PKZ, 400 V / 50 Hz	U-PKZ0(400V50HZ)	073138	1



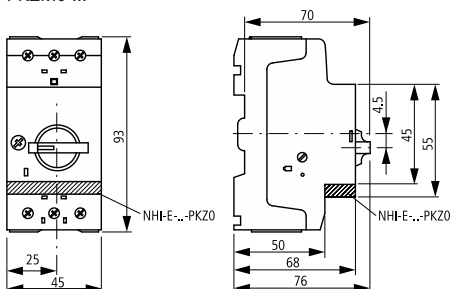
Specifications | xStart Motor Protectors

Technical Data

	PKZM01-...	PKZM0-...
<b>General Data</b>		
Standards and regulations	IEC/EN 60947, VDE 0660, UL 508, CSA C 22.2 No. 14	
Resistance to climatic conditions	Humidity and heat, constant according to IEC 60068-2-78 Humidity and heat, periodical according to IEC 60068-2-30	
Mounting position		
Power input direction	any	any
Degree of protection		
Device	IP20	IP20
Terminals	IP00	IP00
Protection against accidental contact	finger and hand touch safe	
Shock resistance half-sinusoidal shock 10 ms acc. to IEC 60068-2-27	25 g	25 g
Mounting height	max. 2,000 m	max. 2,000 m
Terminal capacity		
single wire	1 x (1-6) mm <sup>2</sup> , 2 x (1-6) mm <sup>2</sup>	1 x (1-6) mm <sup>2</sup> , 2 x (1-6) mm <sup>2</sup>
single wire with wire end sleeve according to DIN 46228	1 x (1-6) mm <sup>2</sup> , 2 x (1-6) mm <sup>2</sup>	1 x (1-6) mm <sup>2</sup> , 2 x (1-6) mm <sup>2</sup>
single or multi wire	18-10 AWG	18-10 AWG
Tightening torque of terminal screws		
Main conductor	1.7 Nm	1.7 Nm
Auxiliary contact	1 Nm	1 Nm
<b>Main Current Paths</b>		
Rated impulse withstand voltage	$U_{imp}$ 6,000 V AC	6,000 V AC
Overvoltage category/Degree of pollution	III/3	III/3
Rated operating voltage	$U_e$ 690 V AC	690 V AC
Rated uninterrupted current = Rated operational current	$I_u = I_e$ 16 A or current setting for excess current release	32 A or current setting for excess current release
Rated frequency	40-60 Hz	40-60 Hz
Current heat loss, 3-pole, operating temperature	6 W	6 W
Endurance		
Electrical components (AC-3 at 400 V)	0.05 x 10 <sup>6</sup> operating cycles	0.1 x 10 <sup>6</sup> operating cycles
Mechanical components	0.05 x 10 <sup>6</sup> operating cycles	0.1 x 10 <sup>6</sup> operating cycles
Max. operating frequency	25 operating cycles/h	40 operating cycles/h
Short-circuit resistance DC	60 kA	60 kA (up to PKZM0-16) 40 kA (PKZM0-20 to PKZM0-32)
Motor switching capacity		
AC-3 ( up to 690 V)	12 A	32 A
DC-5 ( up to 250 V)	12 A (3 current paths in series)	32 A (3 current paths in series)
<b>Releases</b>		
Temperature compensation		
According to IEC/EN 60947, VDE 0660	-5 to 40 °C	-5 to 40 °C
Operating range	-25 to +55 °C	-25 to +55 °C
Residual fault of temperature compensation for T > 20 °C	≤ 0.25 %/K	≤ 0.25 %/K
Setting range for overload release	0.6-1 x $I_u$	0.6-1 x $I_u$
Short-circuit release - fixed setting	14 x $I_u$	14 x $I_u$
Short-circuit release tolerance	± 20 %	± 20 %
Phase-failure sensitivity	IEC/EN 60947-1-1, VDE 0660 Part 102	

Dimensions (mm)

PKZM0-...



PKZM01-...

