PTCB TM1 12A M1 NO P - Thermal-magnetic device circuit breaker

1575581

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Thermal-magnetic device circuit breaker, 1-position, tripping characteristic: M1, mounting type: With base element on 35 mm DIN rail in accordance with EN 60715, rated current: 12 A

Your advantages

- More space in the control cabinet: protection and signaling in an overall width of just 8 mm
- Easy to set up applications thanks to flexible use of connectors with fixed nominal currents
- Transparency of load and switching status thanks to integrated remote signaling
- Easy handling from commissioning right through to maintenance due to clear functionality and switching state at all times

ELEKTROGERÄTE RÜCKNAHME

Commercial data

Item number	1575581
Packing unit	4 pc
Minimum order quantity	4 pc
Sales key	CL10
Product key	CLA127
GTIN	4067923064669
Weight per piece (including packing)	26.85 g
Weight per piece (excluding packing)	21.46 g
Customs tariff number	85362010
Country of origin	DE

Technical data

Product properties

Product type	Thermomagnetic device circuit breakers
Product family	PTCB TM
Number of positions	1
No. of channels	1
Mechanical service life	25 insertion cycles

Insulation characteristics

Protection class	II (according to EN 61140 for the actuation area)
Overvoltage category	II (250 V AC / IEC 60934)
	III (UL 1077)
	III (80 V DC / IEC 60934)
Pollution degree	2 (250 V AC / IEC 60934)
	3 (UL 1077)
	2 (80 V DC / IEC 60934)

Electrical properties

General

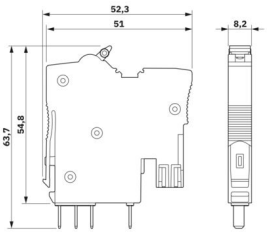
Operating voltage	10 V AC ... 277 V AC (UL 1077)
	10 V AC ... 240 V AC (IEC 60934)
	10 V DC ... 56 V DC
Rated voltage	240 V AC (IEC 60934)
	277 V AC (UL 1077)
	56 V DC (IEC 60934)
	56 V DC (UL 1077)
Rated insulation voltage U_i	250 V AC (IEC 60934)
	80 V DC (IEC 60934)
	277 V AC (UL 1077)
Rated current I_N	12 A
Rated surge voltage	2.5 kV (IEC 60934, reinforced insulation between load/auxiliary circuit and in the actuation area)
Insulation resistance R_{iso}	> 100 MΩ (500 V DC)
Type of actuation	S type
Tripping method	TM (thermal-magnetic)
Tripping level	Trip-free mechanism (positive)
Device resistance	11.8 mΩ
Required backup fuse	25 A (I > Icn, RK5 (UL 1077), type gG (IEC 60934))
Rated short-circuit switching capacity I_{cn}	300 A (240 V AC / IEC 60934)
	600 A (56 V DC/IEC 60934)
Short-circuit switching capacity	1000 A (277 V AC C1 / UL 1077)

	1000 A (56 V DC C1 / UL 1077)
Dielectric strength	3000 V AC (Actuation area)
	3000 V AC (between load and auxiliary circuits in accordance with IEC 60934)
	1554 V AC (between open contacts in accordance with UL 1077)
Switching cycles, max.	6000 (low-induction, UL 1077)
	3000 (IEC 60934, 240 V AC/56 V DC, inductive, -5°C … +60°C)
	1000 (IEC 60934, 240 V AC/56 V DC, inductive, -30°C … +60°C)
Fuse	M1
Power dissipation	0 W (No-load operation)
	1.6 W (Nominal operation)
Voltage drop	0.13 V (at 1 x I_n)

Indicator/remote signaling

Connection name	Connection 3 / 4
Switching function	N/O contact
Operating voltage	10 V AC ... 277 V AC
	10 V DC ... 56 V DC
Operating current	10 mA AC ... 200 mA AC
	10 mA DC ... 200 mA DC

Dimensions

Dimensional drawing	
Width	8.2 mm
Height	52.3 mm
Depth	63.7 mm

Material specifications

Color	light gray (RAL 7035)
Material	PA
Flammability rating according to UL 94	V-0
Insulating material group	I
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 3
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 3

Mechanical properties

Mechanical data

Open side panel	No

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (Connection area)
	IP30 (Actuation area)
Ambient temperature (operation)	-30 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (250 V AC / IEC 60934)
Humidity test	96 h, 95 % RH, 40 °C
Shock (operation)	30g (IEC 60068-2-27, Test Ea)
	Category 1, Class B (DIN EN 61373)
Vibration (operation)	10 Hz ... 150 Hz, 20 cycles (IEC 60068-2-6, Test Fc)
	10 Hz ... 75 Hz (Amplitude ±0.35 mm; in accordance with IEC 60068-2-6, Test Fc)
	75 Hz ... 150 Hz (8g)
	Category 1, Class B (DIN EN 61373)

Approvals

UL approval

Identification	UL Recognized UL 1077

CSA, Canada

Identification	CSA C22.2 No. 235-04

Standards and regulations

Standards/specifications	IEC 60934
Note	2019
Standards/specifications	UL 1077
Note	Additional protective devices for use in electrical equipment
Standards/specifications	CSA C22.2 No. 235-04
Note	2017
Standards/specifications	IEC 60068-2-6
Note	Environmental influences – Vibrations (sinusoidal)
Standards/specifications	IEC 60068-2-11
Note	Environmental influences - corrosion resistance/salt spray, test Ka
Standards/specifications	EN 60068-2-27
Note	Environmental influences – Shocks
Standards/specifications	EN 60068-2-78
Note	Environmental influences – Moisture and heat, constant
Standards/specifications	DIN EN 50274
Note	Touch protection and back-of-hand safety

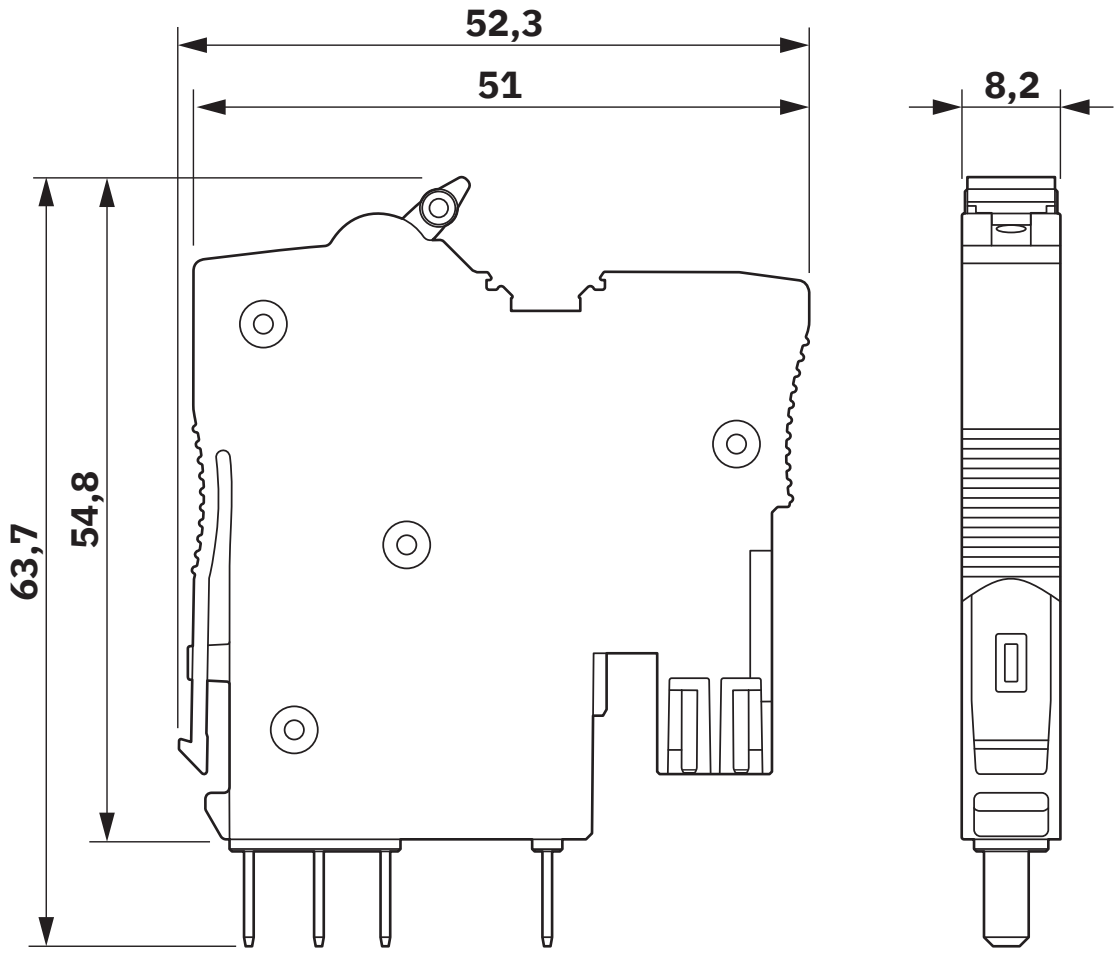
Standards/specifications	IEC 60529
Note	2019
Standards/specifications	EN 61373
Note	Railway applications - Rolling stock equipment - Shock and vibration tests
Standards/specifications	EN 45545-2
Note	Railway applications - Fire protection on railway vehicles - Part 2: Requirements for fire behavior of materials and components

Mounting

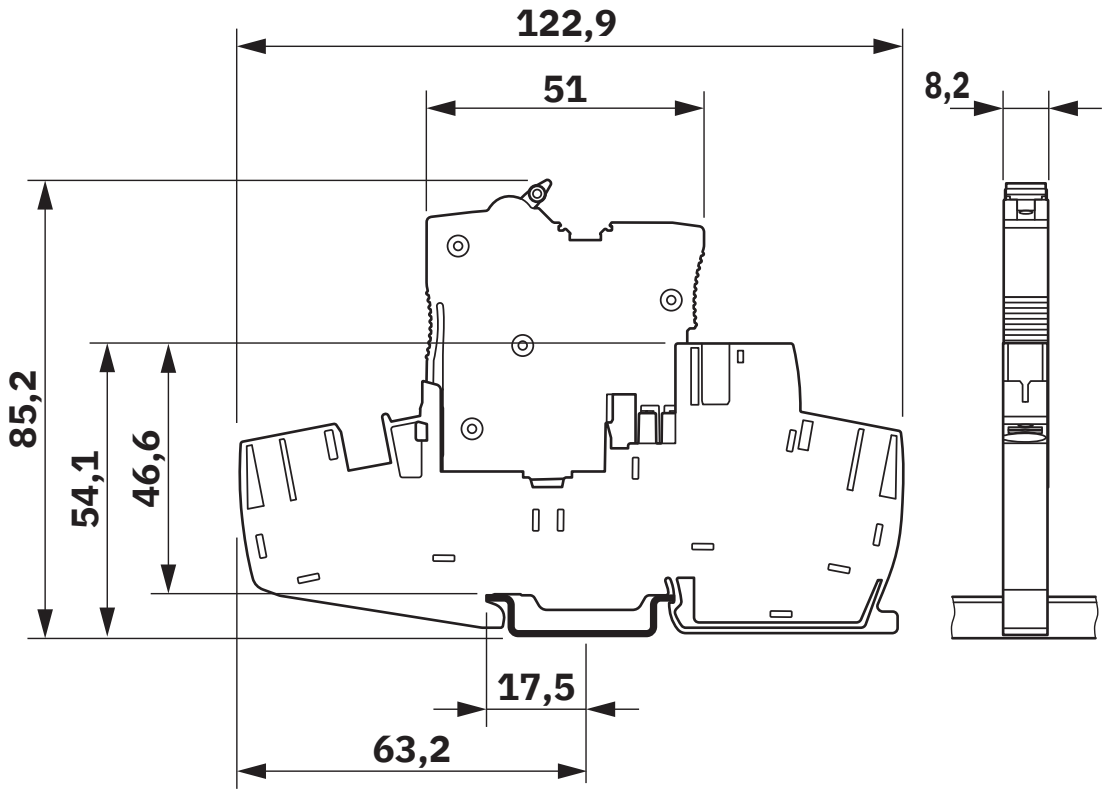
Mounting type	With base element on 35 mm DIN rail in accordance with EN 60715

Drawings

Dimensional drawing

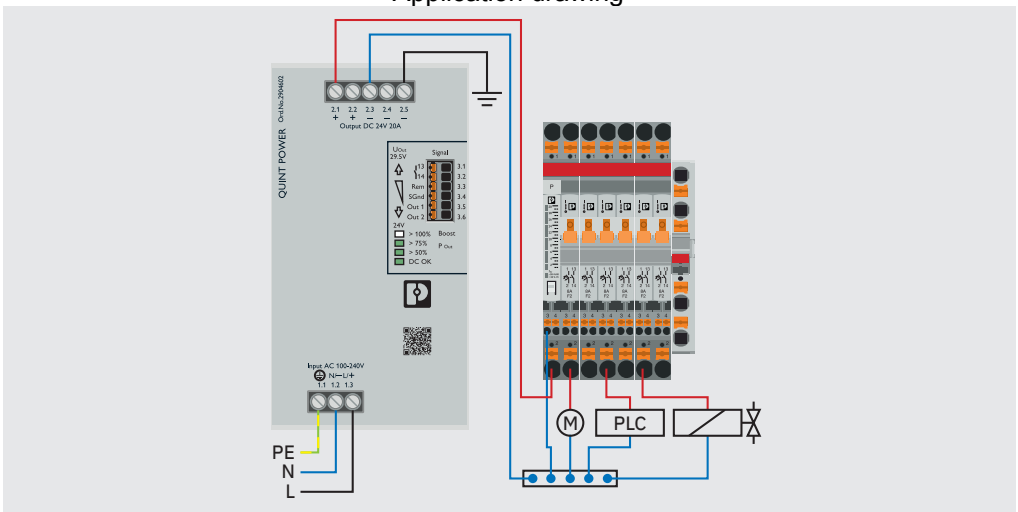


Dimensional drawing



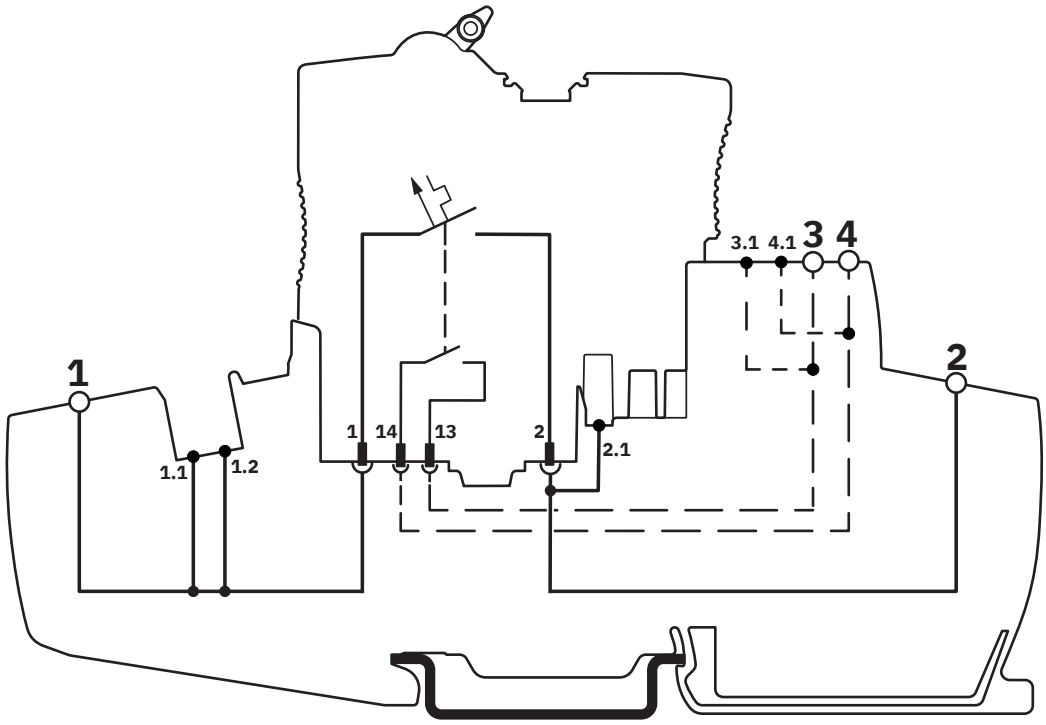
The figure shows the complete module consisting of a base element and connector

Application drawing

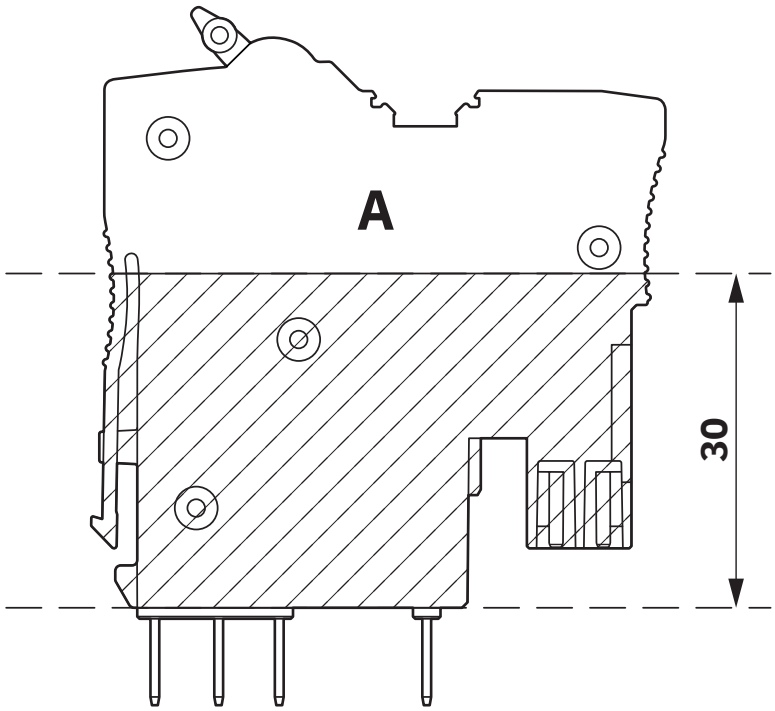


System and energy monitoring

Connection diagram

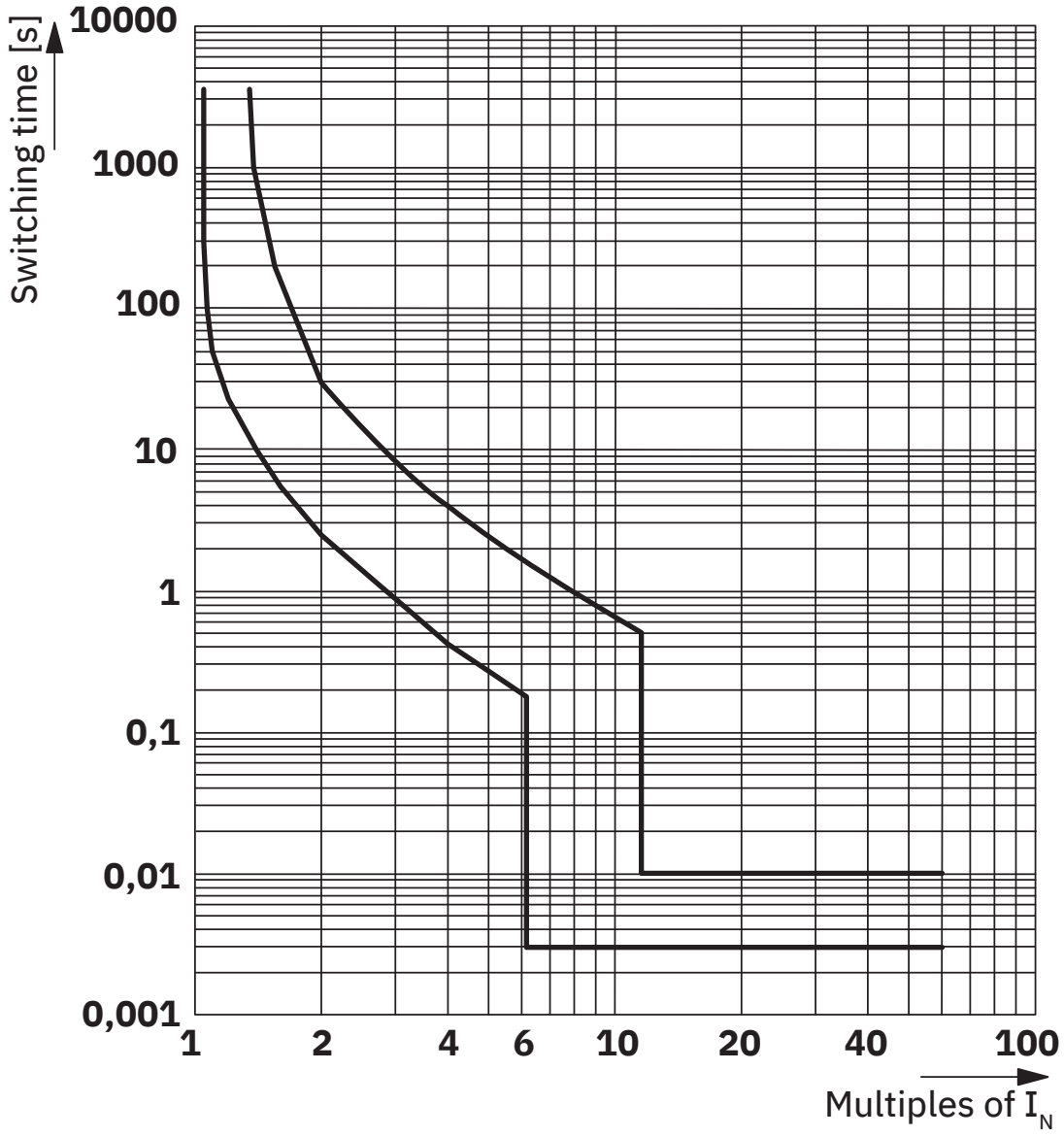


Schematic diagram



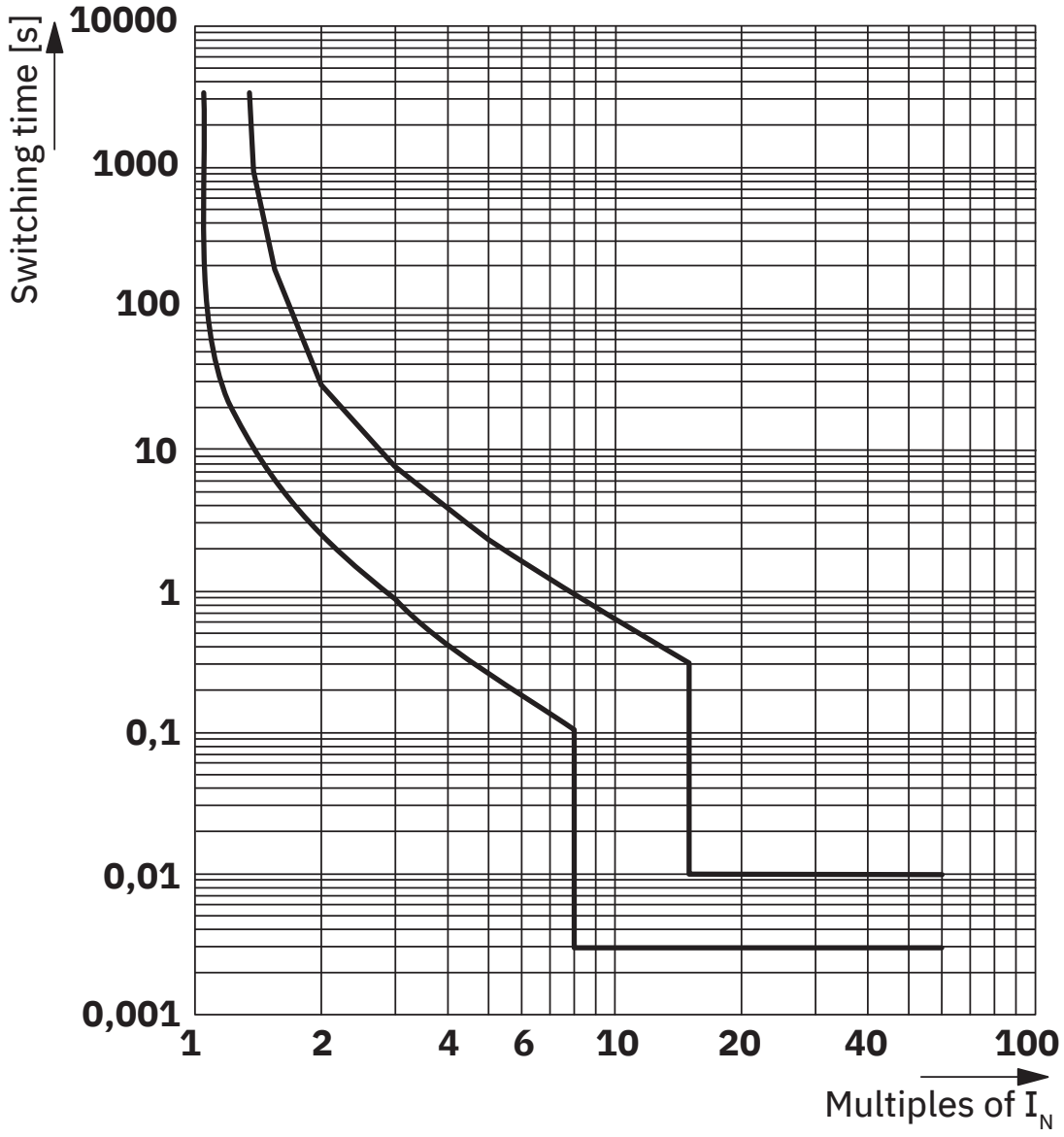
Actuation area A

Diagram



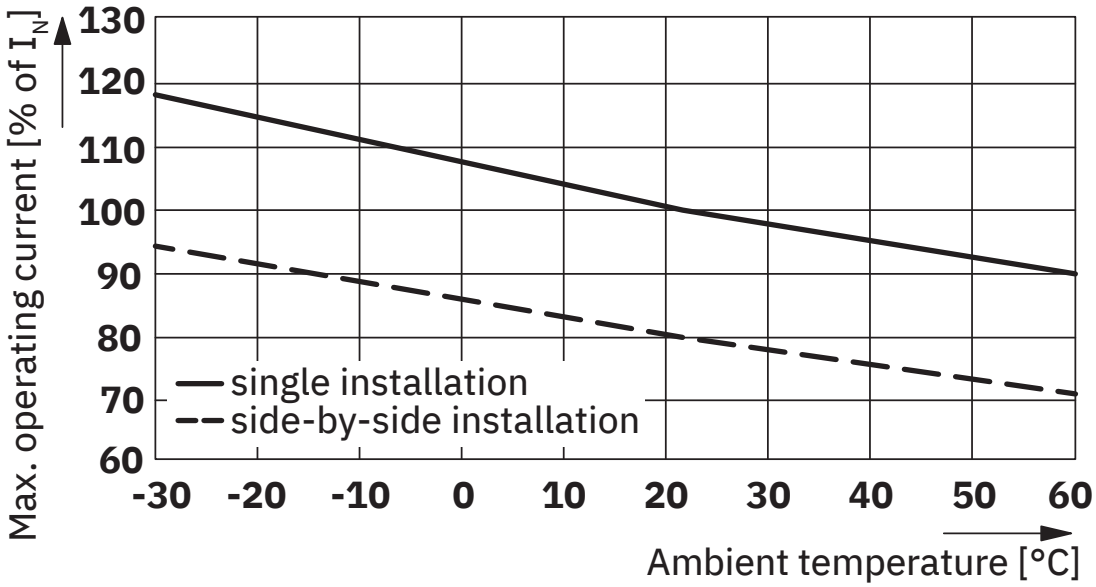
Tripping characteristic in the AC range

Diagram



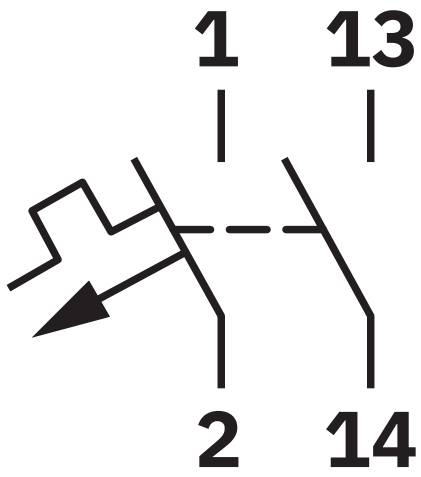
Trigger characteristic in the DC range

Diagram



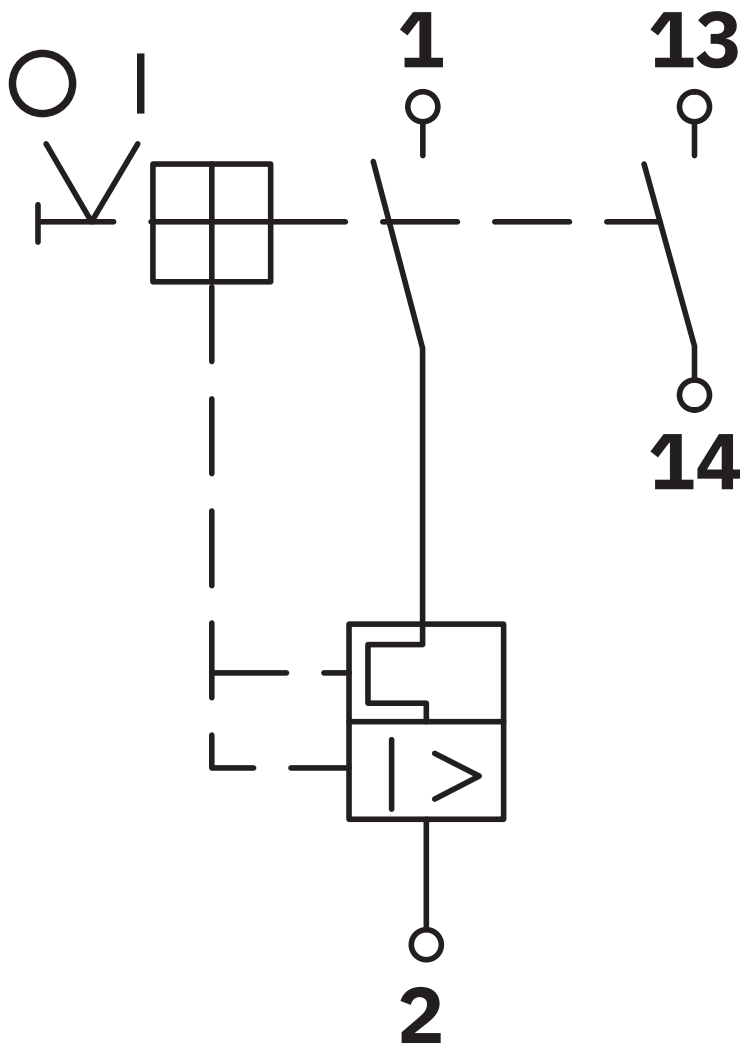
Operating current correction factor

Circuit diagram



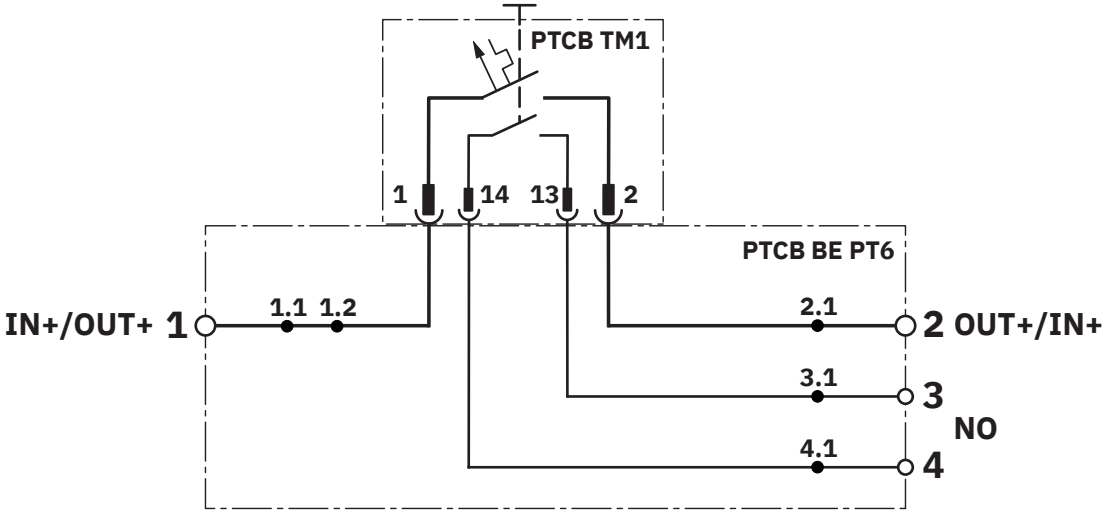
Graphic symbol

Circuit diagram



Graphic symbol

Block diagram



Approvals

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cULus Recognized
Approval ID: E140459

CSA
Approval ID: 80247832

VDE Zeichengenehmigung
Approval ID: 40060968

CCA
Approval ID: CCA/DE1 35015

Classifications

ECLASS

ECLASS-13.0	27140401
ECLASS-15.0	27140401

ETIM

ETIM 10.0	EC003538

UNSPSC

UNSPSC 21.0	39121410

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions

China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%

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