

## Description

Miniaturised single pole thermal circuit breaker with switching function optional (push-push actuation). Reliable snap-acting and trip-free mechanism. Approved to CBE standard EN/IEC 60934. S-type, TO. Blade terminals fitting into sockets for rail mounting.

## Typical applications

Protection of loads in power distribution systems in control cabinets and process control.

## Features and benefits

- Easy mounting due to plug-in design matching standard terminal blocks
- Fine grading of current ratings, particularly in the range of small ratings
- Very small width of only 8.2 mm
- Universally suitable for AC and DC applications

## Your benefits

- Space-savings of more than 50 % compared to MCBs
- Significantly higher system availability than provided by fuses thanks to resetability
- Rating options selectable for optimum equipment protection

## Preferred types – for more details on all configurations please see order numbering code

Preferred types are E-T-A products most frequently used by E-T-A customers. We manufacture E-T-A preferred types in particularly high

volumes. Our preferred types are supplied at shorter lead times than non-standard versions.

| Preferred types | Standard current ratings (A) |   |     |   |     |   |   |   |   |   |    |
|-----------------|------------------------------|---|-----|---|-----|---|---|---|---|---|----|
|                 | 0.5                          | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 |
| 1180-01-        | x                            | x | x   | x | x   | x | x | x | x | x | x  |

## Approvals



## Information online

The current data sheet is available on our website:  
[www.e-t-a.de/e004](http://www.e-t-a.de/e004)

## Konfor Compliances



1180-...

## Technical data

|                                                     |                                                                                                                                                                   |                          |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Voltage rating                                      | AC 250 V; DC 65 V<br>(UL, UL Canada: AC 250 V; DC 72 V)                                                                                                           |                          |
| Current ratings                                     | 0.1...10 A                                                                                                                                                        |                          |
| Typical life                                        | 6,000 operations at 1 x I <sub>N</sub> (low-inductance)<br>3,000 operations at 1 x I <sub>N</sub> (inductive)<br>500 operations at 2 x I <sub>N</sub> (inductive) |                          |
| Ambient temperature                                 | -20...+60 °C (T 60) -4...+140 °F                                                                                                                                  |                          |
| Insulation co-ordination<br>(IEC 60664 and 60664 A) | rated impulse<br>withstand voltage<br>2.5 kV<br>reinforced insulation in operating area                                                                           | pollution<br>degree<br>2 |
| Dielectric strength<br>(IEC 60664 and 60664 A)      | test voltage<br>operating area<br>AC 3,000 V<br>installation area<br>AC 1,500 V                                                                                   |                          |
| Insulation resistance                               | > 100 MΩ (DC 500 V)                                                                                                                                               |                          |

## Technical data

|                                               |                                                                                                                |                                                                                                               |                                                                         |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Interrupting capacity I <sub>cn</sub>         | 0.1...5 A<br>6...10 A<br>0.1...0.7 A<br>0.8...6 A<br>7...10 A                                                  | 6 x I <sub>N</sub><br>8 x I <sub>N</sub><br>25 x I <sub>N</sub><br>10 x I <sub>N</sub><br>20 x I <sub>N</sub> | AC 250 V, DC 65 V<br>AC 250 V, DC 65 V<br>DC 30 V<br>DC 30 V<br>DC 30 V |
| Interrupting capacity<br>(UL 1077)            | AC 250 V<br>DC 72 V                                                                                            | 2,000 A<br>2,000 A                                                                                            |                                                                         |
| Degree of protection<br>(IEC 60529/DIN 40050) | operating area IP40<br>terminal area IP00                                                                      |                                                                                                               |                                                                         |
| Vibration<br>without terminal block           | 5 g (57-500 Hz) ± 0.38 mm (10-57 Hz)<br>to IEC 60068-2-6, test Fc,<br>10 frequency cycles/axis and to EN 50155 |                                                                                                               |                                                                         |
| Shock<br>without terminal block               | 25 g (11 ms)<br>to IEC 60068-2-27, test Ea                                                                     |                                                                                                               |                                                                         |
| Corrosion                                     | 96 hours at 5 % salt mist,<br>to IEC 60068-2-11, test Ka                                                       |                                                                                                               |                                                                         |
| Humidity                                      | 240 hours at 95 % RH<br>to IEC 60068-2-78, test Cab                                                            |                                                                                                               |                                                                         |
| Mass                                          | approx. 10 g                                                                                                   |                                                                                                               |                                                                         |

## Preferred types

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|-----------------|------------------------------|---|-----|---|-----|---|---|---|---|---|----|
|                 | 0.5                          | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 |
| 1180-01-        | x                            | x | x   | x | x   | x | x | x | x | x | x  |

## Ordering information

### Type No.

**1180** single pole thermal circuit breaker, plug-in mounting

### Versions

**01** with switching function, without label

**02** reset function only, without label

### Current rating range

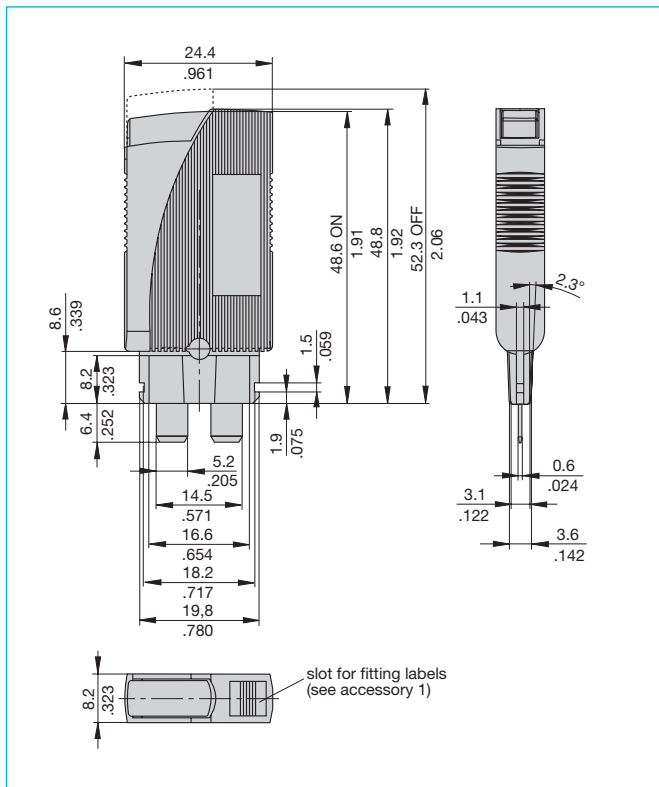
**0.1...10 A**

**1180 - 01 - 1 A** ordering example

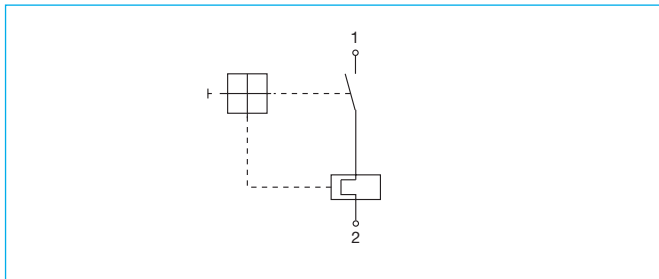
## Approvals

| Authority | Standard                | Rated voltage                  | Current ratings              |
|-----------|-------------------------|--------------------------------|------------------------------|
| VDE       | IEC/EN 60934            | AC 250 V<br>DC 65 V            | 0.1 A...10 A<br>0.1 A...10 A |
| UL        | UL 1077<br>C22.2 No 235 | AC 250 V / 50/60 Hz<br>DC 72 V | 0.1 A...10 A<br>0.1 A...10 A |
| CSA       | C22.2 No 235            | AC 250 V<br>DC 72 V            | 0.1 A...10 A<br>0.1 A...10 A |
| CQC       | GB/T17701               | AC 250 V,<br>DC 65 V           | 0.1...10 A                   |

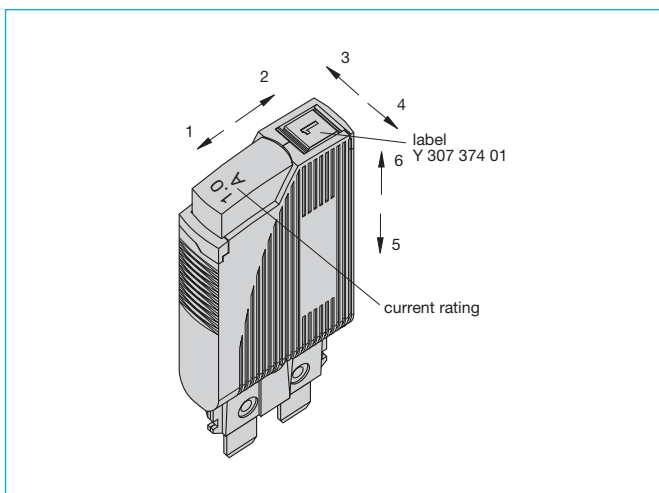
## Dimensions



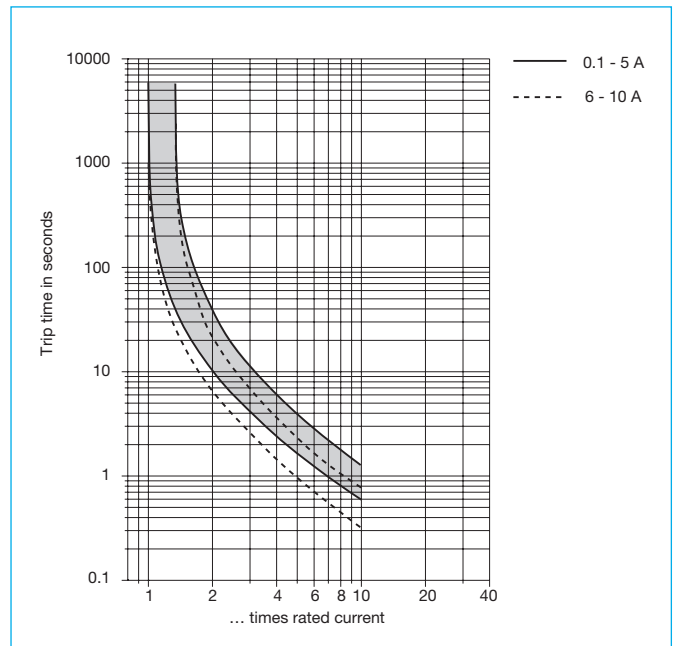
## Internal connection diagram



## Shock directions



## Typical time/current characteristics at +23 °C/+73.4 °F



The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

| Ambient temperature °F<br>°C | -4<br>-20 | +14<br>-10 | +32<br>0 | +73.4<br>+23 | +104<br>+40 | 122<br>+50 | +140<br>+60 |
|------------------------------|-----------|------------|----------|--------------|-------------|------------|-------------|
| Derating factor              | 0.76      | 0.84       | 0.92     | 1            | 1.08        | 1.16       | 1.24        |

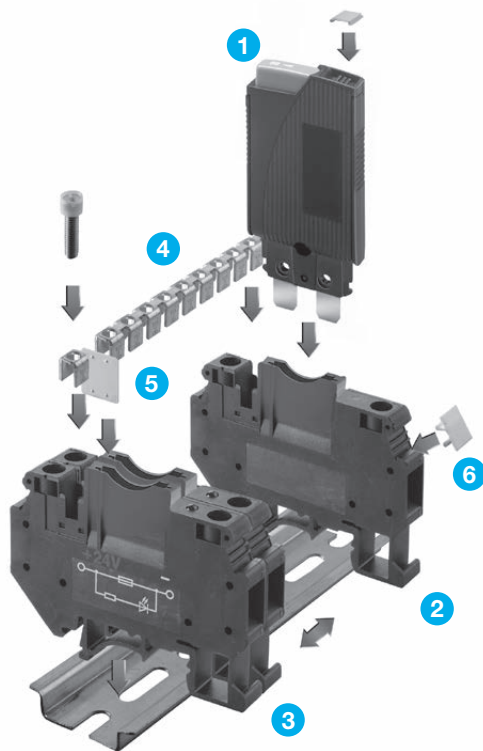
**Note:** When several devices are mounted together, each device should only carry 80 % of its rating or it must be overrated accordingly.

## Standard current ratings and typical internal resistance values

| Current rating (A) | Internal resistance (Ω) | Current rating (A) | Internal resistance (Ω) |
|--------------------|-------------------------|--------------------|-------------------------|
| 0.1                | 81                      | 2                  | 0.25                    |
| 0.2                | 22                      | 2.5                | 0.18                    |
| 0.25               | 14                      | 3                  | 0.11                    |
| 0.3                | 8.7                     | 3.5                | 0.08                    |
| 0.4                | 5.5                     | 4                  | 0.07                    |
| 0.5                | 3.4                     | 5                  | ≤ 0.05                  |
| 0.6                | 2.5                     | 6                  | ≤ 0.05                  |
| 0.7                | 1.7                     | 7                  | ≤ 0.05                  |
| 0.8                | 1.5                     | 8                  | ≤ 0.05                  |
| 1                  | 0.9                     | 10                 | ≤ 0.05                  |
| 1.5                | 0.4                     |                    |                         |

This is a metric design and millimeter dimensions take precedence ( $\frac{\text{mm}}{\text{inch}}$ )

## Accessories - Terminal block with screw terminals



**1 Label** for circuit breaker 1180, surface for marking 4.5 x 5 mm  
(packaging quantity 120 pcs)  
**Y 307 374 01**

**2 Terminal block** for DIN rail mounting, with screw terminals  
up to 6 mm<sup>2</sup> conductor, width 8.2 mm,  
dimensions 64 x 42.5 x 8.2 mm,  
headroom over the upper rail edge with circuit breaker fitted  
(OFF position) 84 mm.  
Approvals: UL File E197598  
**X 222 233 01**

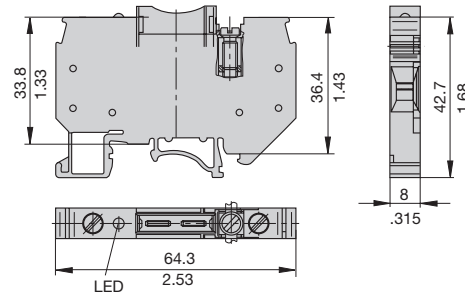
**3 Terminal block** for DIN rail mounting see item 2,  
but with LED DC 24 V (lighted after tripping);  
current rating LED 2 mA  
Approvals: UL File E197598  
**X 222 233 02**

**4 Bus connection** for potential bridging of several terminal blocks  
see item 2 and 3 (10-pole, separable, mounting hardware  
included), max. current rating 34 A  
**X 222 232 01**

**5 Insulation barriers** for insertion between two circuits  
(packaging quantity 10 pcs)  
**Y 307 373 01**

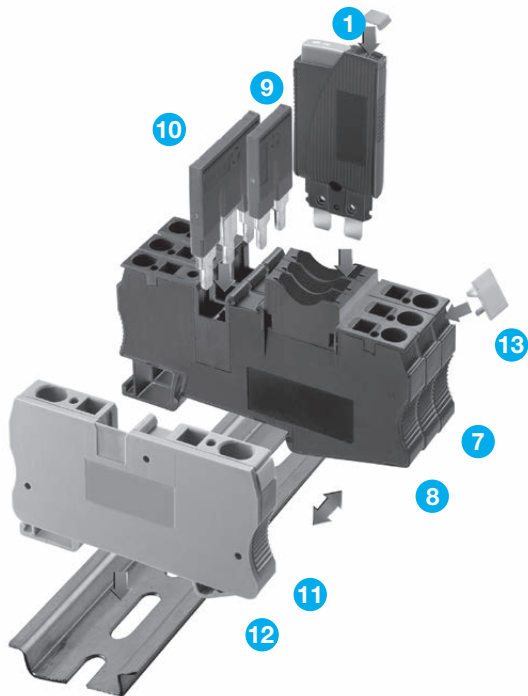
**6 Label** for terminal block, see item 2 and 3,  
surface for marking 8 x 10 mm  
(packaging quantity 10 pcs)  
**Y 307 375 01**

### Dimensions X 222 233 02



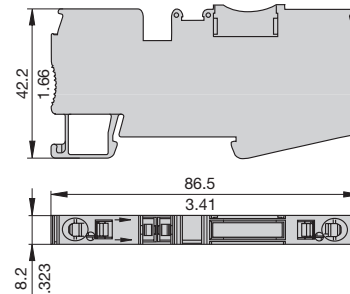
|                  |                                                                                                                                                                    |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vibration</b> | <b>with terminal block X 222 233 01 and X 222 233 02</b><br>5 g (57-500 Hz), ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc, 10 frequency cycles/axis and EN 50155 |
| <b>Shock</b>     | <b>with terminal block X 222 233 01 and X 222 233 02</b><br>25 g (11 ms)<br>to IEC 60068-2-27, test Ea                                                             |

## Accessories - Terminal block with spring-loaded terminals



- 1 Label** for circuit breaker 1180, surface for marking 4.5 x 5 mm (packaging quantity 120 pcs)  
**Y 307 374 01**
- 7 Terminal block** for DIN rail mounting, with spring-loaded terminals up to 4 mm<sup>2</sup> conductor, width 8.2 mm, dimensions 68.5 x 36.5 x 8.2 mm, headroom over the upper rail edge with circuit breaker fitted (OFF position) 82 mm.  
Approvals: UL File E197598  
**X 222 316 01**
- 8 Terminal block** for DIN rail mounting see item 7, but with LED DC 24 V (lighted after tripping); current rating LED 2 mA  
Approvals: UL File E197598  
**X 222 315 02**
- 9 Jumper 2pole**, max. current rating 32 A for terminal blocks items 7 and 8 and feed supply terminal item 11.  
**X 222 318 01**
- 10 Jumper 3pole**, max. current rating 32 A for terminal blocks items 7 and 8 and feed supply terminal item 11.  
**X 222 318 02**
- 11 Feed supply terminal** with spring-loaded terminals up to 6 mm<sup>2</sup> conductor, width 8.2 mm, suitable for use with jumpers items 9 and 10 (power distribution).  
**X 222 317 01**
- 12 Cover** for feed supply terminal item 11 for closing the open side at the end of an assembly.  
**Y 307 507 01**
- 13 Label** for terminal block items 7 and 8, and feed supply terminal item 11, surface for marking 7.5 x 5 mm (packaging quantity 50 pcs)  
**Y 307 508 01**

### Dimensions X 222 316 01



|                  |                                                                                                                                                                                                                                                       |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vibration</b> | <b>with terminal blocks X 222 316 01 and X 222 315 02</b><br>vibration axis 3-4:<br>3 g (57-500 Hz), ± 0.38 mm (10-57 Hz)<br>other axes:<br>5 g (57-500 Hz), ± 0.38 mm (10-57 Hz)<br>to IEC 60068-2-6, test Fc, 10 frequency cycles/axis and EN 50155 |
| <b>Shock</b>     | <b>with terminal blocks X 222 316 01 and X 222 315 02</b><br>25 g (11 ms)<br>to IEC 60068-2-27, test Ea                                                                                                                                               |

This is a metric design and millimeter dimensions take precedence ( $\frac{\text{mm}}{\text{inch}}$ )

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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