

Circuit Breaker for Equipment thermal, 2 pole, Push button actuation, with undervoltage



See below:

### Approvals and Compliances

#### Description

- Thermal circuit breaker
- 1 or 2 pole thermal overload protection
- Positively trip-free release
- High configurability
- Snap-in or flange mounted
- Quick connect terminal 6.3 x 0.8 mm or screw clamp terminal M3.5 x 6 mm (lineside P1, P2)

#### Applications

- Power tools
- Industrial appliances
- Power supplies

#### Weblinks

[pdf data sheet](#), [html datasheet](#), [General Product Information](#), [Distributor-Stock-Check](#), [Detailed request for product](#), [Product News](#)

#### Technical Data

|                                                    |                                                                                                                                                                                                                                                                        |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated Voltage AC                                   | AC 240 VAC                                                                                                                                                                                                                                                             |
| Rated Voltage DC                                   | 60 VDC                                                                                                                                                                                                                                                                 |
| Rated current range AC                             | 0.05 - 20 A                                                                                                                                                                                                                                                            |
| Conditional short circuit capacity I <sub>nc</sub> | IEC 60934: PC1, AC 240 V: 1 kA                                                                                                                                                                                                                                         |
| Short circuit capacity I <sub>cn</sub>             | IEC 60934:<br>At I <sub>n</sub> < 3 A/ 240 VAC: 10xI <sub>n</sub> (max. 3 Zykl.)<br>At I <sub>n</sub> ≥ 3 A/ 240 VAC: 300A (max. 3 Zykl.)<br>At I <sub>n</sub> < 3 A/ 60 VDC: 10xI <sub>n</sub> (max. 3 Zykl.)<br>At I <sub>n</sub> ≥ 3 A/ 48 VDC: 120A (max. 3 Zykl.) |
| Degree of Protection                               | from front side IP40 acc. to IEC 60529                                                                                                                                                                                                                                 |
| Dielectric Strength                                | 4 kV                                                                                                                                                                                                                                                                   |
| Insulation Resistance                              | 500 VDC > 100 MΩ                                                                                                                                                                                                                                                       |
| Lifetime                                           | mechanical: 50'000 switching cycles<br>AC: 1 x I <sub>r</sub> :<br>50'000 switching cycles<br>DC: 1 x I <sub>r</sub> :<br>50'000 switching cycles                                                                                                                      |

|                           |                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------|
| Overload                  | AC: min. 40 trips<br>@ 6 x I <sub>r</sub><br>DC: min. 50 trips<br>@ 4 x I <sub>r</sub>                          |
| Allowable Operation Temp. | -10 °C to 55 °C                                                                                                 |
| Vibration Resistance      | ± 0.75 mm @ 5 - 60 Hz<br>acc. to IEC 60068-2-6, test Fc<br>10 G @ 60 - 500 Hz<br>acc. to IEC 60068-2-6, test Fc |
| Shock Resistance          | 30 G / 18 ms<br>acc. to IEC 60068-2-27, test Ea                                                                 |
| Possible Tripping Types   | Thermal<br>Undervoltage release<br>Remote trip<br>Mechanical lock-out latch                                     |
| Actuation Type            | Pushbutton                                                                                                      |
| Weight                    | 45 - 60g                                                                                                        |

#### Approvals and Compliances

Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [Details about Approvals](#)

SCHURTER products are designed for use in industrial environments. They have approvals from independent testing bodies according to national and international standards. Products with specific characteristics and requirements such as required in the automotive sector according to IATF 16949, medical technology according to ISO 13485 or in the aerospace industry can be offered exclusively with customer-specific, individual agreements by SCHURTER.

## Approvals

The approval mark is used by the testing authorities to certify compliance with the safety requirements placed on electronic products.

Approval Reference Type: TA45

| Approval Logo                                                                    | Certificates                  | Certification Body | Description                              |
|----------------------------------------------------------------------------------|-------------------------------|--------------------|------------------------------------------|
|  | <a href="#">VDE Approvals</a> | VDE                | VDE Certificate Number: 40019880         |
|  | <a href="#">UL Approvals</a>  | UL                 | UL File Number: E71572                   |
|  | <a href="#">CCC Approvals</a> | CCC                | CCC Certificate Number: 2013010307660082 |

## Product standards

Product standards that are referenced

| Organization                                                                     | Design                | Standard          | Description                                                           |
|----------------------------------------------------------------------------------|-----------------------|-------------------|-----------------------------------------------------------------------|
|  | Designed according to | IEC 60934         | Circuit-breakers for equipment (CBE)                                  |
|  | Designed according to | UL 1077           | Standard for Supplementary Protectors for Use in Electrical Equipment |
|  | Designed according to | CSA C22.2 No. 235 | Supplementary Protectors                                              |
|  | Designed according to | GB 17701          | Circuit-breaker for equipment                                         |

## Application standards

Application standards where the product can be used

| Organization                                                                      | Design                         | Standard     | Description                                                                                     |
|-----------------------------------------------------------------------------------|--------------------------------|--------------|-------------------------------------------------------------------------------------------------|
|  | Designed for applications acc. | IEC/UL 60950 | IEC 60950-1 includes the basic requirements for the safety of information technology equipment. |

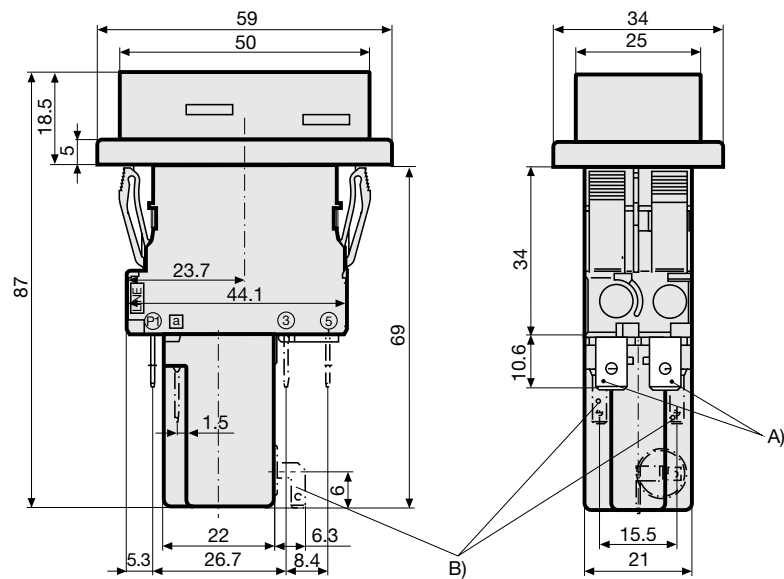
## Compliances

The product complies with following Guide Lines

| Identification                                                                     | Details                                      | Initiator   | Description                                                                                                                                                                                           |
|------------------------------------------------------------------------------------|----------------------------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <a href="#">CE declaration of conformity</a> | SCHURTER AG | The CE marking declares that the product complies with the applicable requirements laid down in the harmonisation of Community legislation on its affixing in accordance with EU Regulation 765/2008. |
|  | <a href="#">RoHS</a>                         | SCHURTER AG | Directive RoHS 2011/65/EU, Amendment (EU) 2015/863                                                                                                                                                    |
|  | <a href="#">China RoHS</a>                   | SCHURTER AG | The law SJ / T 11363-2006 (China RoHS) has been in force since 1 March 2007. It is similar to the EU directive RoHS.                                                                                  |
|  | <a href="#">REACH</a>                        | SCHURTER AG | On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as "REACH") entered into force.                               |

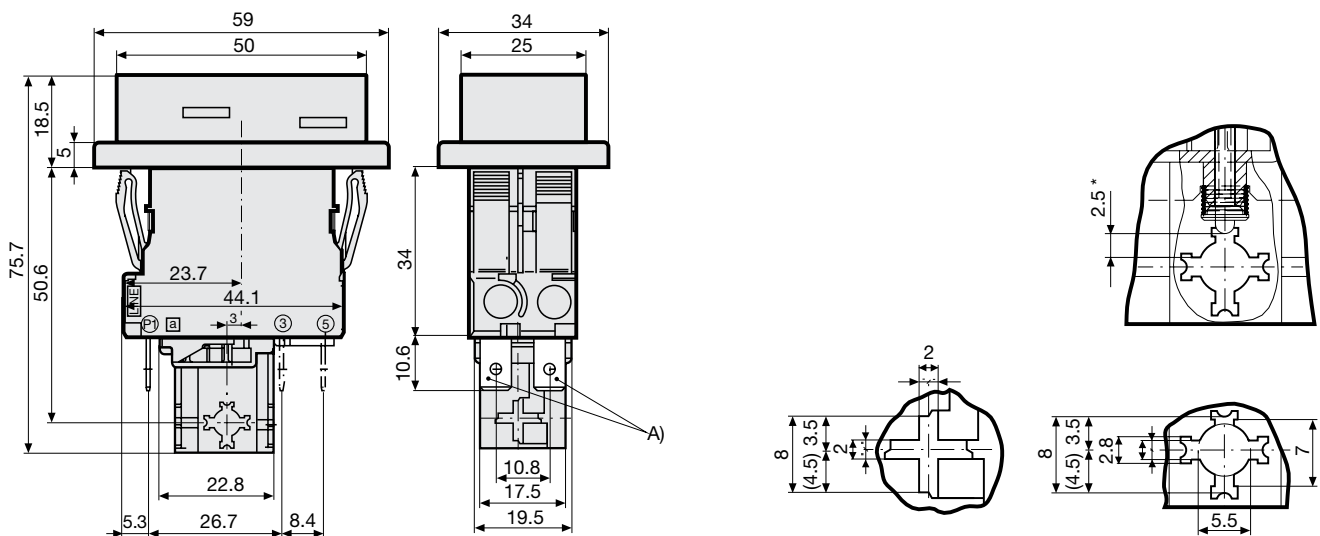
### Dimension [mm]

Snap-in type and quick connect terminal  
 Undervoltage release, remote trip release



A) Quick connect terminal, IEC 61210, A6.3-0.8 mm  
 B) Quick connect terminal, IEC 61210, A2.8-0.8 mm

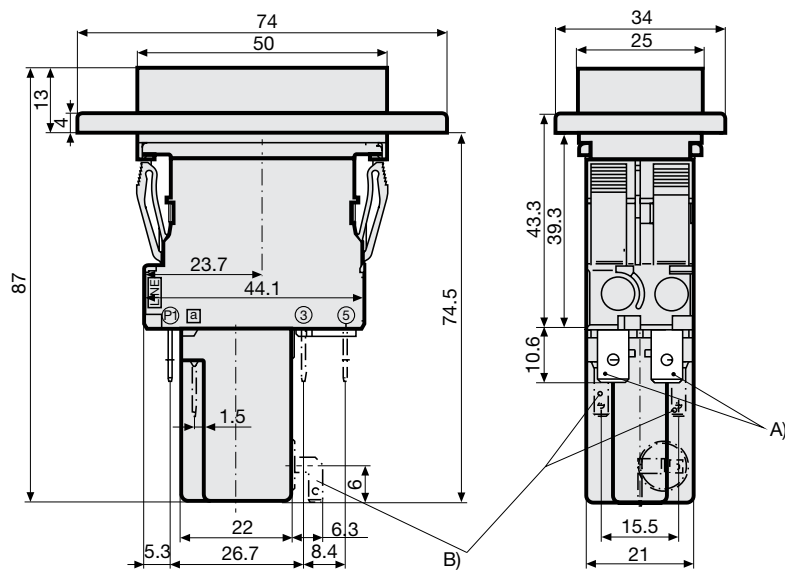
Snap-in type and quick connect terminal  
 Mechanical lock-out latch



A) Quick connect terminal, IEC 61210, A6.3-0.8 mm

\*) max. switching stroke

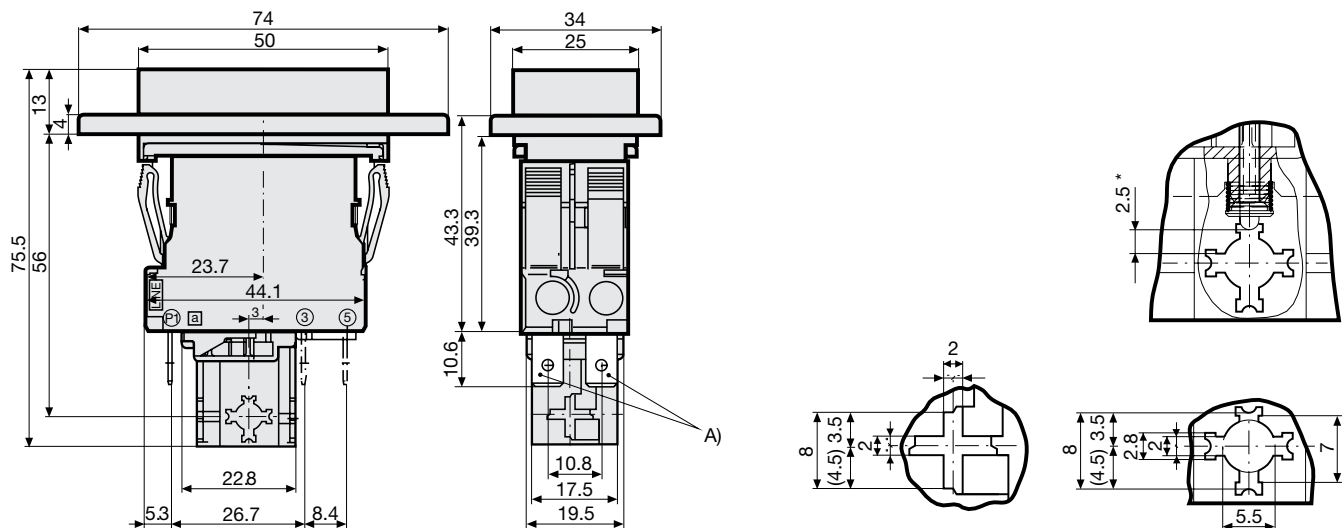
Flange type and quick connect terminal  
Undervoltage release, remote trip release



A) Quick connect terminal, IEC 61210, A6.3-0.8 mm

B) Quick connect terminal, IEC 61210, A2.8-0.8 mm

Flange type and quick connect terminal  
Mechanical lock-out latch

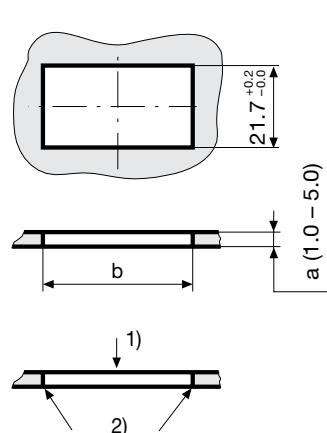


A) Quick connect terminal, IEC 61210, A6.3-0.8 mm

\*) max. switching stroke

## Cut-out and pin-out

Cut-out snap-in type



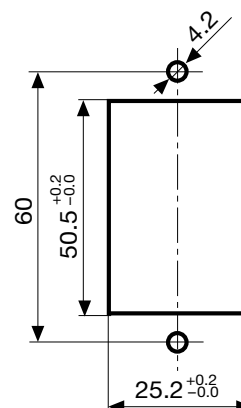
| a   | b           |
|-----|-------------|
| 1.0 | 44,5...45,0 |
| 1.5 | 44,5...45,0 |
| 2.0 | 44,7...45,2 |
| 2.5 | 44,7...45,2 |
| 3.0 | 44,8...45,3 |
| 4.0 | 44,9...45,4 |
| 5.0 | 45,0...45,5 |

1) Assemble

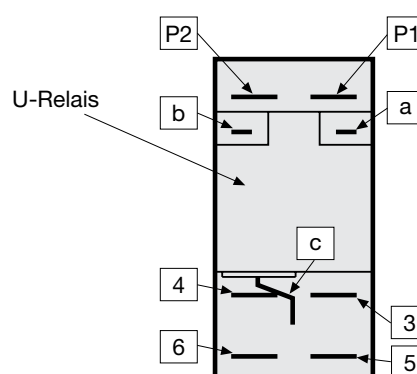
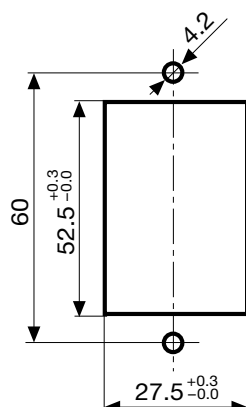
2) edge must be sharp

Cut-out flange type/ Installation from rear with AZZ05 cover

Cut-out flange type / Installation from rear

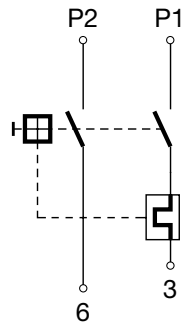


Pin-out

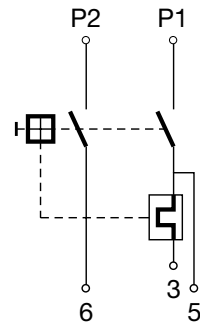


Diagrams

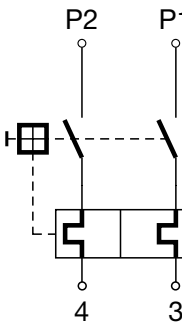
1 pole thermal overload protection



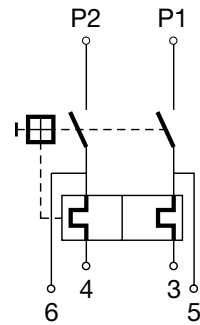
1 pole thermal overload protection, Shunt terminal



2 pole thermal overload protection



2 pole thermal overload protection, Shunt terminal



Effect of ambient temperature

The units are calibrated for an ambient temperature of +23°C. To determine the rated current for a lower or higher ambient temperature, use a correction factor (typical value) from the table below:

| Ambient Temperature [°C] | Correction factor |
|--------------------------|-------------------|
| -10                      | 0.89              |
| -5                       | 0.91              |
| 0                        | 0.92              |
| +23                      | 1.00              |
| +30                      | 1.03              |
| +40                      | 1.08              |
| +55                      | 1.16              |

Example: Rated current = 5 A, Environmental temperature = 40 °C, --> Correction factor = 1.08, Resulting current = 5.5 A --> Fount to next higher rated current: 6 A

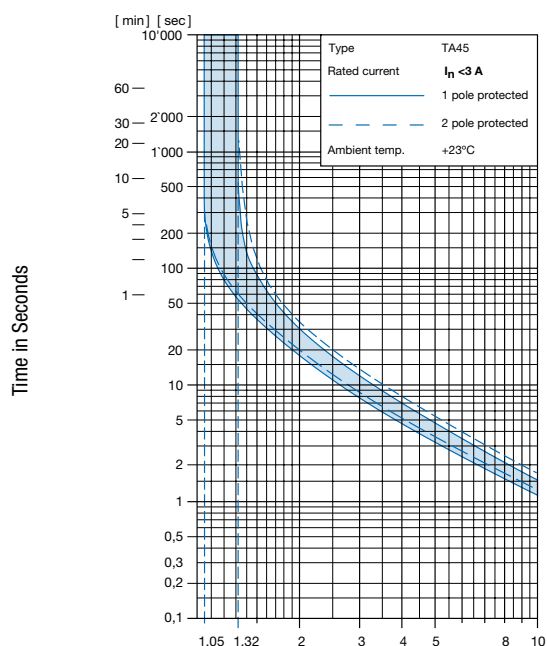
Undervoltage release

|                                         |         |         |         |        |        |        |                     |
|-----------------------------------------|---------|---------|---------|--------|--------|--------|---------------------|
| Max. operating voltage                  |         |         |         |        |        |        | 1.1 Ue              |
| Rated operating voltage Ue              | 5 V     | 12 V    | 24 V    | 48 V   | 120 V  | 240 V  | 400 V <sup>1)</sup> |
| Current consumption (± 10%)             | 10.5 mA | 16.5 mA | 17.0 mA | 3.2 mA | 3.7 mA | 3.1 mA | 2.65 mA             |
| Highest reset level                     |         |         |         |        |        |        | 0.85 Ue             |
| Lowest trip level                       |         |         |         |        |        |        | 0.20 Ue             |
| Trip delay                              |         |         |         |        |        |        | 20 ms - 50 ms       |
| Impulse withstand voltage (1.2 / 50 µs) |         |         |         |        |        |        | ≥4 kV               |
| 1) only for 3pole                       |         |         |         |        |        |        |                     |

Remote trip

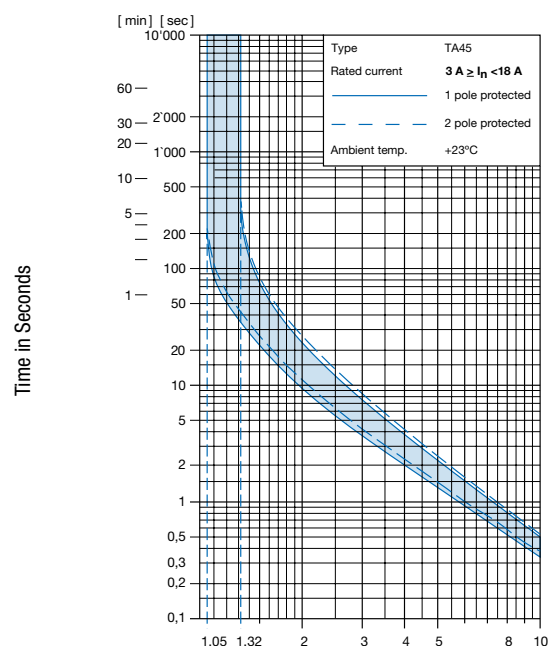
|                                                      |                                       |           |
|------------------------------------------------------|---------------------------------------|-----------|
| Permissible impuls duration of the make contact (no) | Between terminal C and P1             | unlimited |
| Electrical load of the make contact (no)             | Current max. 12 mA / power max. 1.1 W |           |

## Time-Current-Curves



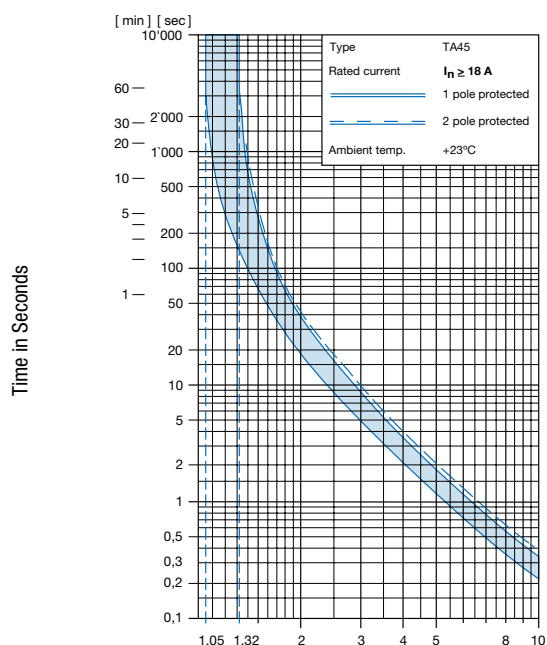
Multiple of Rated Current  $I_n$

Reference Temperature +23°



Multiple of Rated Current  $I_n$

Reference Temperature +23°



Multiple of Rated Current  $I_n$

Reference Temperature +23°

## Config. Code

TA45 - AK2 W F 120 A2 - AZM11

The characters are placeholders for the correspondingly keys of selections from the key tables.

TA45 - **AK2** W F 120 A2 - AZM11 = Basic function

| Basic function                                                                                                                | Configuration key |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 2-pole, push button, 1pole overload protection, quick connect terminal, snap-in type, push button gasket IP40                 | ABL               |
| 2-pole, push button, 1pole overload protection, shunt terminal, quick connect terminal, snap-in type, push button gasket IP40 | ABM               |
| 2-pole, push button, 2pole overload protection, quick connect terminal, snap-in type, push button gasket IP40                 | ABN               |
| 2-pole, push button, 2p overload protection, shunt terminal, quick connect terminal, snap-in type, push button gasket IP40    | ABP               |
| 2-pole, push button, 1pole overload protection, quick connect terminal, snap-in type, push button gasket IP65                 | ABU               |
| 2-pole, push button, 1pole overload protection, shunt terminal, quick connect terminal, snap-in type, push button gasket IP65 | ABV               |
| 2-pole, push button, 2pole overload protection, quick connect terminal, snap-in type, push button gasket IP65                 | ABW               |
| 2-pole, push button, 2p overload protection, shunt terminal, quick connect terminal, snap-in type, push button gasket IP65    | ABX               |
| 2-pole, push button, 1pole overload protection, screw connection, snap-in type, push button gasket IP40                       | AEL               |
| 2-pole, push button, 1p overload protection, shunt terminal, screw connection, snap-in type, push button gasket IP40          | AEM               |
| 2-pole, push button, 2pole overload protection, screw connection, snap-in type, push button gasket IP40                       | AEN               |
| 2-pole, push button, 2p overload protection, shunt terminal, screw connection, snap-in type, push button gasket IP40          | AEP               |
| 2-pole, push button, 1pole overload protection, screw connection, snap-in type, push button gasket IP65                       | AEU               |
| 2-pole, push button, 1p overload protection, shunt terminal, screw connection, snap-in type, push button gasket IP65          | AEV               |
| 2-pole, push button, 2pole overload protection, screw connection, snap-in type, push button gasket IP65                       | AEW               |
| 2-pole, push button, 2p overload protection, shunt terminal, screw connection, snap-in type, push button gasket IP65          | AEX               |
| 2-pole, push button, 1pole overload protection, quick connect terminal, flange type, push button gasket IP40                  | AHL               |
| 2-pole, push button, 1pole overload protection, shunt terminal, quick connect terminal, flange type, push button gasket IP40  | AHM               |
| 2-pole, push button, 2pole overload protection, quick connect terminal, flange type, push button gasket IP40                  | AHN               |
| 2-pole, push button, 2p overload protection, shunt terminal, quick connect terminal, flange type, push button gasket IP40     | AHP               |
| 2-pole, push button, 1pole overload protection, quick connect terminal, flange type, push button gasket IP65                  | AHU               |
| 2-pole, push button, 1pole overload protection, shunt terminal, quick connect terminal, flange type, push button gasket IP65  | AHV               |
| 2-pole, push button, 2pole overload protection, quick connect terminal, flange type, push button gasket IP65                  | AHW               |
| 2-pole, push button, 2p overload protection, shunt terminal, quick connect terminal, flange type, push button gasket IP65     | AHX               |
| 2-pole, push button, 1pole overload protection, screw connection, flange type, push button gasket IP40                        | AJL               |
| 2-pole, push button, 1p overload protection, shunt terminal, screw connection, flange type, push button gasket IP40           | AJM               |
| 2-pole, push button, 2pole overload protection, screw connection, flange type, push button gasket IP40                        | AJN               |
| 2-pole, push button, 2p overload protection, shunt terminal, screw connection, flange type, push button gasket IP40           | AJP               |
| 2-pole, push button, 1pole overload protection, screw connection, flange type, push button gasket IP65                        | AJU               |
| 2-pole, push button, 1p overload protection, shunt terminal, screw connection, flange type, push button gasket IP65           | AJV               |
| 2-pole, push button, 2pole overload protection, screw connection, flange type, push button gasket IP65                        | AJW               |
| 2-pole, push button, 2p overload protection, shunt terminal, screw connection, flange type, push button gasket IP65           | AJX               |

TA45 - AK2 **W** F 120 A2 - AZM11 = Actuator colour

| Actuator colour         | Configuration key |
|-------------------------|-------------------|
| Front Black: Green/Red  | T                 |
| Front Yellow: Green/Red | U                 |
| Front Grey: Green/Red   | V                 |

TA45 - AK2 W **F** 120 A2 - AZM11 = Legend

| Legend        | Configuration key                                                                       |
|---------------|-----------------------------------------------------------------------------------------|
| embossed      |  F   |
| white printed |  H   |
| black printed |  K   |
| white printed |  L   |
| black printed |  M   |
| white printed |  P   |
| black printed |  R  |
| white printed |  S |
| black printed |  T |

TA45 - AK2 W F **120** A2 - AZM11 = Rated current

| Rated current | Configuration key |
|---------------|-------------------|
| 0.05 A        | Z05               |
| 0.1 A         | J01               |
| 0.2 A         | J02               |
| 0.3 A         | J03               |
| 0.4 A         | J04               |
| 0.5 A         | J05               |
| 0.6 A         | J06               |
| 0.7 A         | J07               |
| 0.8 A         | J08               |
| 0.9 A         | J09               |
| 1.0 A         | J10               |
| 1.1 A         | J11               |
| 1.2 A         | J12               |
| 1.3 A         | J13               |
| 1.4 A         | J14               |
| 1.5 A         | J15               |
| 1.6 A         | J16               |
| 1.7 A         | J17               |
| 1.8 A         | J18               |
| 1.9 A         | J19               |
| 2.0 A         | J20               |

Other rated currents on request



| Rated current | Configuration key | Release / lock-out latch                                                    | Configuration key |
|---------------|-------------------|-----------------------------------------------------------------------------|-------------------|
| 2.1 A         | J21               | Remote trip release, rated voltage 120 V AC                                 | A4                |
| 2.2 A         | J22               | Remote trip release, rated voltage 48 V AC / DC                             | A6                |
| 2.3 A         | J23               | Remote trip release, rated voltage 24 V AC / DC                             | A7                |
| 2.5 A         | J25               | Remote trip release, rated voltage 12 V AC / DC                             | A8                |
| 2.8 A         | J28               | without release / lock-out latch                                            | C0                |
| 3.0 A         | 030               | Undervoltage release with additional contact, rated voltage 240 V AC        | E2                |
| 3.5 A         | 035               | Undervoltage release with additional contact, rated voltage 230 V AC        | E3                |
| 4.0 A         | 040               | Undervoltage release with additional contact, rated voltage 120 V AC        | E4                |
| 4.5 A         | 045               | Undervoltage release with additional contact, rated voltage 48 V AC / DC    | E6                |
| 5.0 A         | 050               | Undervoltage release with additional contact, rated voltage 24 V AC / DC    | E7                |
| 6.0 A         | 060               | Undervoltage release with additional contact, rated voltage 12 V AC / DC    | E8                |
| 6.5 A         | 065               | Undervoltage release with additional contact, rated voltage 5 V AC / DC     | E9                |
| 7.0 A         | 070               | Mechanical lock-out latch                                                   | S0                |
| 7.5 A         | 075               | Undervoltage release, rated voltage 240 V AC                                | U2                |
| 8.0 A         | 080               | Undervoltage release, rated voltage 230 V AC                                | U3                |
| 9.0 A         | 090               | Undervoltage release, rated voltage 120 V AC                                | U4                |
| 10.0 A        | 100               | Undervoltage release, rated voltage 48 V AC / DC                            | U6                |
| 11.0 A        | 110               | Undervoltage release, rated voltage 24 V AC / DC                            | U7                |
| 12.0 A        | 120               | Undervoltage release, rated voltage 12 V AC / DC                            | U8                |
| 13.0 A        | 130               | Undervoltage release, rated voltage 5 V AC / DC                             | U9                |
| 14.0 A        | 140               | Undervoltage release with 2 additional contacts, rated voltage 240 V AC     | Z2                |
| 15.0 A        | 150               | Undervoltage release with 2 additional contacts, rated voltage 230 V AC     | Z3                |
| 16.0 A        | 160               | Undervoltage release with 2 additional contacts, rated voltage 120 V AC     | Z4                |
| 17.0 A        | 170               | Undervoltage release with 2 additional contacts, rated voltage 48 V AC / DC | Z6                |
| 18.0 A        | 180               | Undervoltage release with 2 additional contacts, rated voltage 24 V AC / DC | Z7                |
| 19.0 A        | 190               | Undervoltage release with 2 additional contacts, rated voltage 12 V AC / DC | Z8                |
| 20.0 A        | 200               | Undervoltage release with 2 additional contacts, rated voltage 5 V AC / DC  | Z9                |

Other rated currents on request

#### TA45 - AK2 W F 120 A2 - AZM11 = Release / lock-out latch

| Release / lock-out latch                    | Configuration key |
|---------------------------------------------|-------------------|
| Remote trip release, rated voltage 240 V AC | A2                |
| Remote trip release, rated voltage 230 V AC | A3                |

#### TA45 - AK2 W F 120 A2 - AZM11 = Accessories

| Factory mounted accessories | Configuration key |
|-----------------------------|-------------------|
|-----------------------------|-------------------|

Without cover

For subsequent fitting accessories see:

[https://www.schurter.com/pdf/english/typ\\_TA45-ACC.pdf](https://www.schurter.com/pdf/english/typ_TA45-ACC.pdf)

## Variants

| Thermal overload protection | Addition | connection type        | Mounting     | IP Protection Class Front Side | Actuator colour        | Legend        | Rated current | Accessories   | Config. Code    | Order Number |
|-----------------------------|----------|------------------------|--------------|--------------------------------|------------------------|---------------|---------------|---------------|-----------------|--------------|
| 2-pole                      |          | Quick connect terminal | Snap-in type | IP40                           | Front Black: Green/Red | white printed | 16.0 A        | Without cover | TA45-ABNTL160U3 | 4430.3602    |
| 1-pole                      |          | Quick connect terminal | Snap-in type | IP65                           | Front Black: Green/Red | embossed      | 16.0 A        | Without cover | TA45-ABUTF160E3 | 4430.3793    |

Availability for all products can be searched real-time: <https://www.schurter.com/en/Stock-Check/Stock-Check-SCHURTER>

**Packaging Unit** 1 Pcs

Accessories

Description



TA45-ACC  
Accessories to TA45

# Mouser Electronics

Authorized Distributor

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[4430.1986](#) [4430.2455](#) [4430.3967](#) [4430.4008](#) [4430.4022](#) [3-103-812](#)