

## 阅读申明

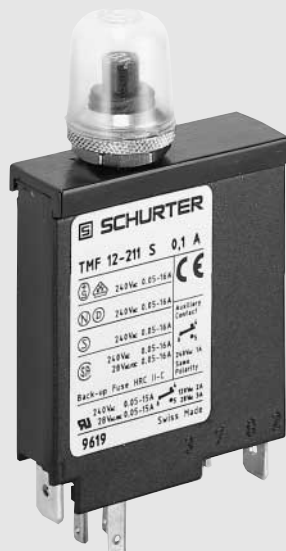
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## TM12 Series

- Thermal magnetic release
- Positively trip-free
- Reset or manual actuation



The TM12 circuit breaker for equipment (CBE) is a single pole, thermal-magnetically operated device providing small size, low cost and reliable trip-free operation on overloads and short circuits within the maximum breaking capacity. It is intended primarily for the protection of circuit control functions in sensitive instruments etc. It is not generally suitable for line protection unless the prospective short circuit current is less than 200 A at 240 V a.c. (400 A at 28 V d.c.).

Threaded neck and flange mounting types are available each with optional push on/push off mechanism, shunt terminal and auxiliary contact. There is also a choice of screw clamp terminals on certain types.

The well proven mechanism is designed to open the contacts in the event of overloads. A bimetal strip is heated by the overcurrent and deflects, thereby releasing the latch mechanism. If the overcurrent is sufficiently high, the magnetic release will operate and open the circuit instantaneously. Two characteristics are available. The more commonly used T characteristic has operating limits between 8-12 times the rated current. The optional F characteristic operates at a lower current levels of 4-8 times the rated current.

In case of overloads, the contacts will open even if the reset button is manually held in the closed position. This is known as a trip-free feature. The contacts open and close with a snap action and the tripped state is clearly shown by the increased projection of the reset button. After the opening operation, the reset button has to be fully depressed, then released, to effect a closing of the contact.

It is impossible to «tease» the contacts by gentle pressure on the reset button.

### Available options

- Fast and slow magnetic tripping characteristics
- Flange type
- Threaded neck type
- Type of actuation: reset or manual ON/OFF (push/push)
- Terminals: quick connect or screw clamp terminals
- Independent auxiliary contact (change-over contact)
- Shunt terminal
- Setting indication on reset button indicates the position of the contacts

### Special features

- Competitive pricing
- Quick connect terminals
- Choice of mounting styles
- Positively trip-free
- Insensitive to shock or vibration
- UL, CSA, VDE and other approvals

## Effect of ambient temperature

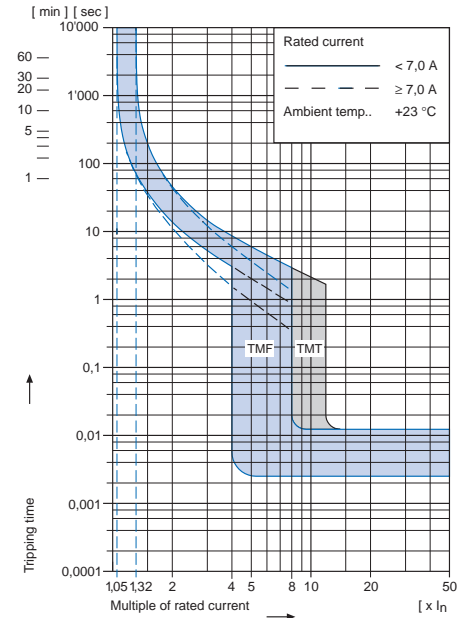
The unit is calibrated for an ambient temperature of +23°C. To determine the rated current for a lower or higher ambient temperature, use a correction factor from the table below:

| Ambient temperature [°C] | Correction factor |
|--------------------------|-------------------|
| -5                       | 0,87              |
| 0                        | 0,90              |
| +10                      | 0,95              |
| +23                      | 1,00              |
| +30                      | 1,05              |
| +40                      | 1,12              |
| +50                      | 1,20              |
| +60                      | 1,30              |

### Example

Rated current at +23°C                    5,0 A  
 Ambient temperature                    +50°C  
 Correction factor                        1,2  
 Chosen rated current at  
 +50°C ambient temperature  
**5,0 A x 1,2 = 6,0 A**

## Tripping characteristics TMF + TMT



## Technical data

### Main circuit

|  |                            |                   |
|--|----------------------------|-------------------|
| Rated voltage $U_e$                        | See approvals, page 195    | AC 240 V; DC 28 V |
| Rated current $I_n$                        | See approvals, page 195    | AC/DC 0,05 – 16 A |
| Conditional short circuit current $I_{nc}$ | EN 60 934<br>PC1, AC 240 V | 1000 A            |
| Short circuit capacity $I_{cn}$            | AC 240 V<br>AC/DC 28 V     | 200 A<br>400 A    |

### Auxiliary circuit

|                     |                                   |                          |
|---------------------|-----------------------------------|--------------------------|
| Rated voltage $U_e$ | See approvals, page 195           | AC 120 V, 240 V; DC 28 V |
| Rated current $I_n$ | See approvals, page 195           | 1,0; 2,0; 3,0 A          |
| Class of protection | Between live and accessible parts | II                       |
|                     | Other parts                       | I                        |

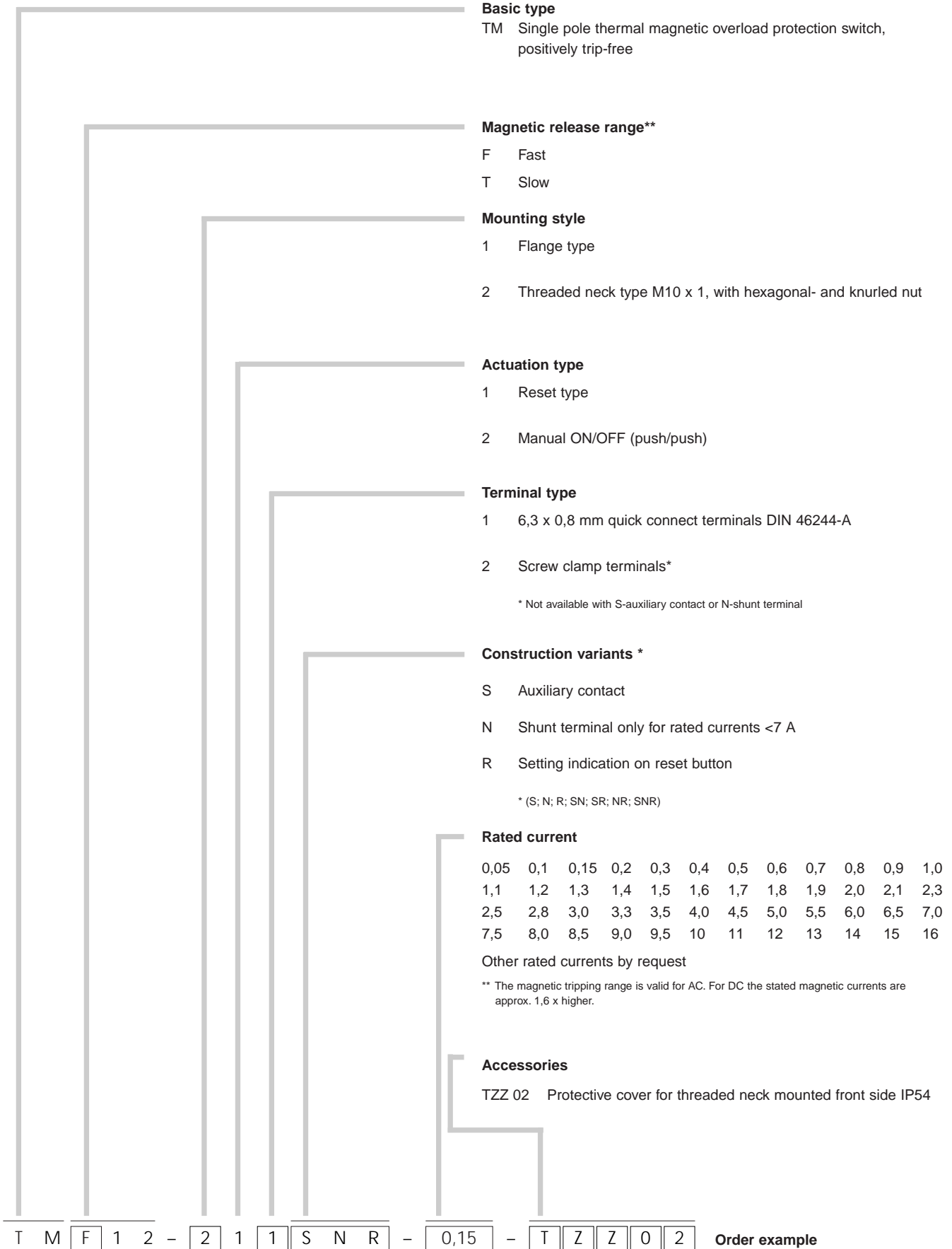
**Technical data (continued)**

|                                 |   |                          |
|---------------------------------|---|--------------------------|
| Degree of protection            | Accessible range<br>Termination range   | IP40<br>IP00             |
| Dielectric strength             | Accessible range  | AC 4000 V                |
| Insulation resistance           | DC 500 V  | >100 MΩ                  |
| Endurance                       | Number of cycles at 6 x I <sub>n</sub> (AC)<br>Number of cycles at I <sub>n</sub> | R-type 40<br>S-type 5000 |
| Permissible ambient temperature |   | -5°C to +60°C            |
| Vibration resistance            | IEC 68-2-6, Test Fc,<br>1 mm amplitude 5-60 Hz, 60-500 Hz                         | 10 g                     |
| Shock resistance                | IEC 68-2-6, Test Ea   | 100 g                    |
| Type of actuation               | • Reset type<br>• Manual ON/OFF (push/push)                                       | R<br>S                   |
| Type of tripping                | • Thermal-magnetic<br>• Positively trip-free                                      | TM                       |
| Weight                          |   | approx. 33 g             |

**Approvals**

|  | Main circuit        |                  |                  | Auxiliary circuit |                  |                  |      |
|--|---------------------|------------------|------------------|-------------------|------------------|------------------|------|
|  | Rated current range | Rated voltage AC | Rated voltage DC | Rated current     | Rated voltage AC | Rated voltage DC |      |
|  | UL 1077             | 0,05 – 16 A      | 240 V            | 28 V              | 3 A              | 28 V             |      |
|  |                     |                  |                  |                   | 2 A              | 120 V            |      |
|  | CSA C 22,2          | 0,05 – 16 A      | 240 V            | 28 V              | 1 A              | 240 V            |      |
|  | VDE EN 60934        | 0,05 – 16 A      | 240 V            | 28 V              | 1 A              | 240 V            | 28 V |
|  | SEMKO               | 0,05 – 16 A      | 240 V            |                   | 1 A              | 240 V            |      |
|  | NEMKO               | 0,05 – 16 A      | 240 V            |                   | 1 A              | 240 V            |      |
|  | DEMKO               | 0,05 – 16 A      | 240 V            |                   | 1 A              | 240 V            |      |
|  | SEV EN 60934        | 0,05 – 16 A      | 240 V            | 28 V              | 1 A              | 240 V            | 28 V |

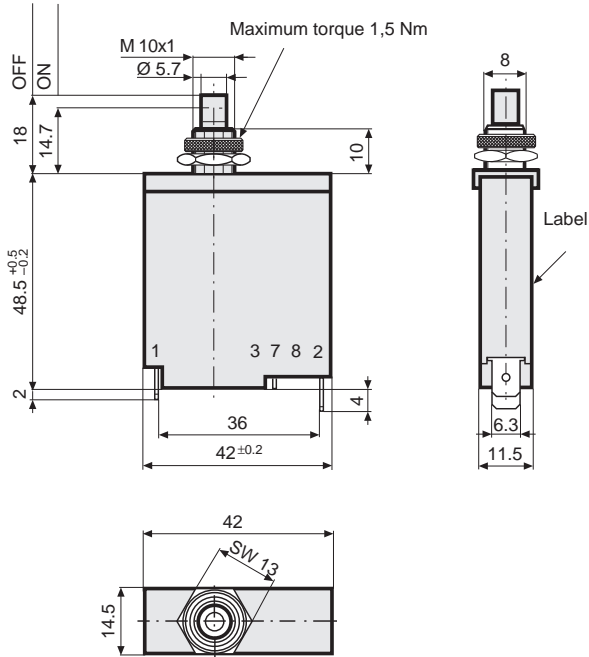
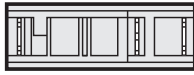
## Order code



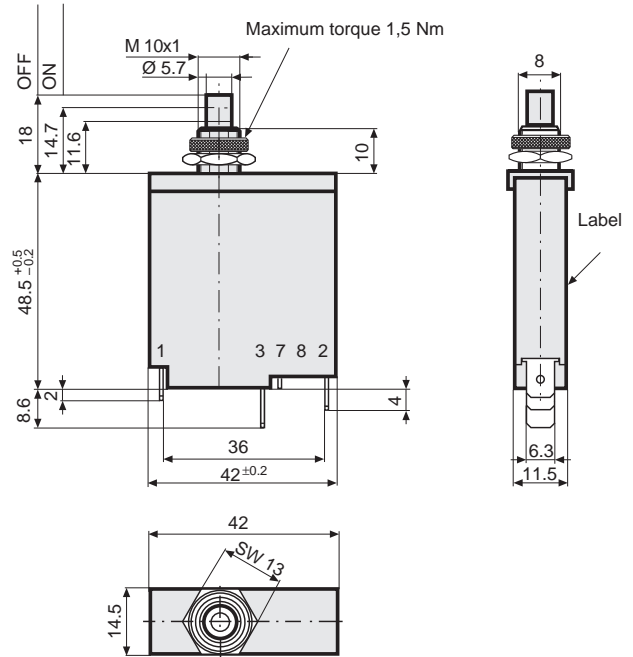
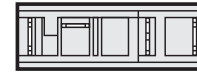
# 1 CIRCUIT BREAKERS FOR EQUIPMENT TM12

## Threaded neck type

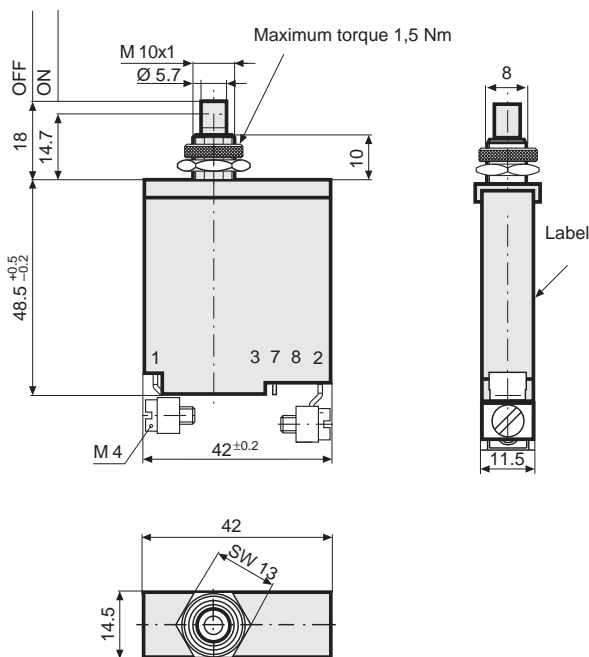
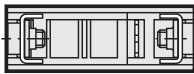
TMx12-211



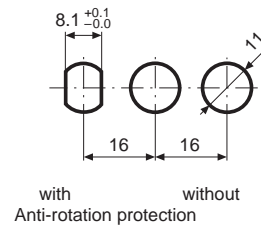
TMx12-211N



TMx12-212



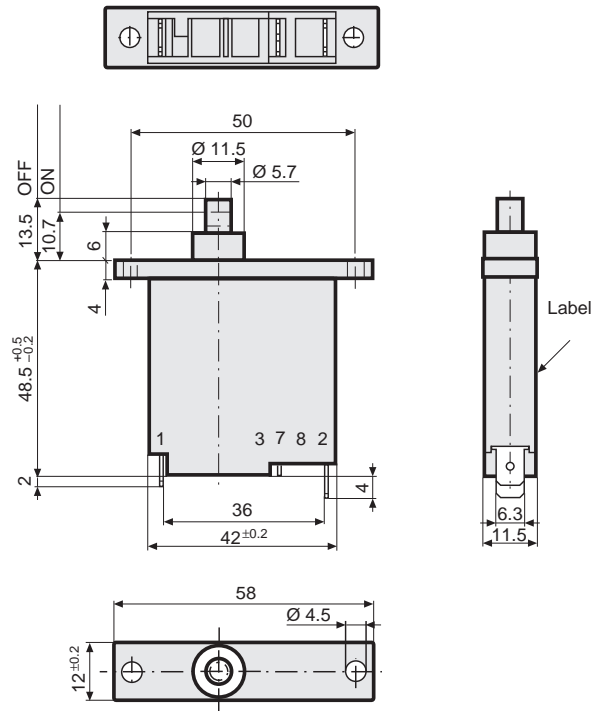
Cut-out



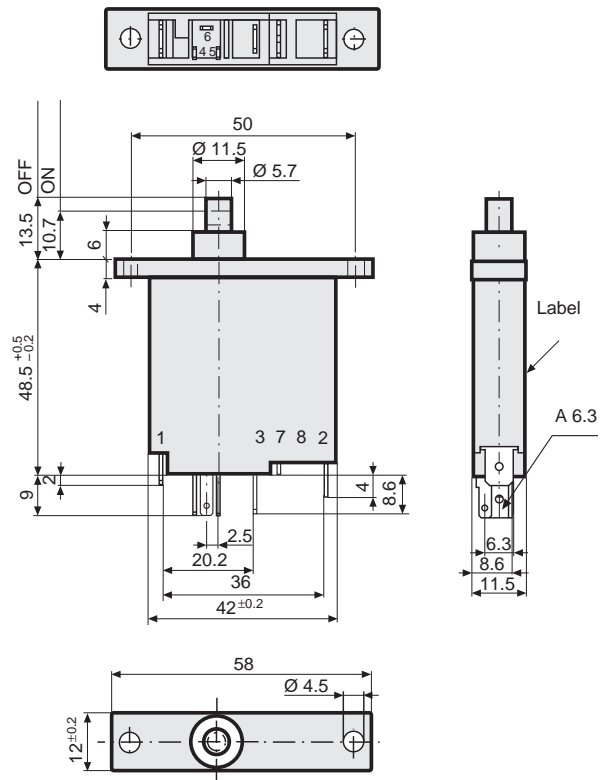
# 1 CIRCUIT BREAKERS FOR EQUIPMENT TM12

## Flange type

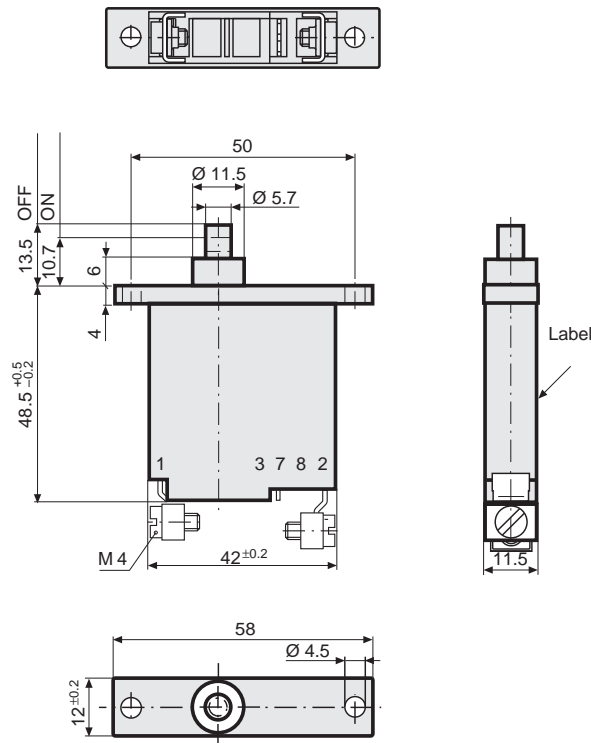
TMx12-111



TMx12-111SN

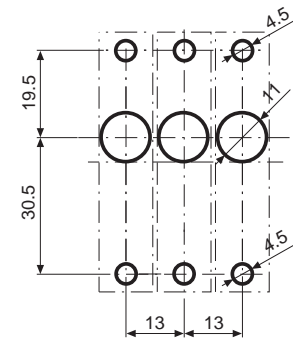


TMx12-112

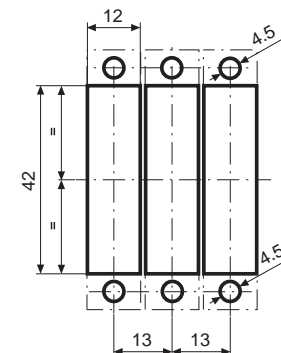


Cut-out

Installation from rear



Installation from front

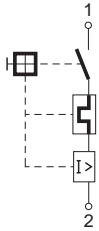


**1 CIRCUIT BREAKERS FOR EQUIPMENT TM12**

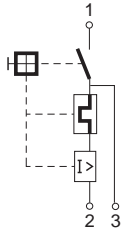
Schematic diagrams – accessories – colors

Schematic diagrams

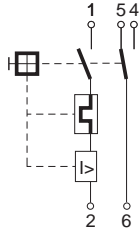
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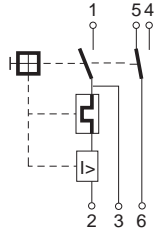
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TM12-...S

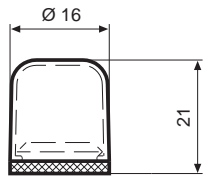


TM12-...SN



Accessories

Protective transparent cover  
Degree of protection IP54  
TZZ02



Colors

