

CB TM1 0.5A F1 P - Thermal-magnetic device circuit breaker



2800857

<https://www.phoenixcontact.com/us/products/2800857>

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Thermal-magnetic device circuit breaker, 1-pos., tripping characteristic F1 (fast-blow), 1 changeover contact, plug for base element.

Your advantages

- Individually adjustable with protective plugs
- Fast tripping in the event of an error with the aid of the F1 characteristic curve
- Protective plug with fixed nominal current value as protection against unintentional changes
- Increased safety with electrical isolation in the event of errors

Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2800857       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL04          |
| Product key                          | CLA124        |
| GTIN                                 | 4046356690263 |
| Weight per piece (including packing) | 44.9 g        |
| Weight per piece (excluding packing) | 42 g          |
| Customs tariff number                | 85362010      |
| Country of origin                    | ID            |

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## Technical data

### Notes

|         |                                                                                                               |
|---------|---------------------------------------------------------------------------------------------------------------|
| General | When mounted in rows, the nominal device current can be limited to just 80% or must be oversized accordingly. |
|---------|---------------------------------------------------------------------------------------------------------------|

### Product properties

|                     |                                        |
|---------------------|----------------------------------------|
| Product type        | Thermomagnetic device circuit breakers |
| Product family      | CB TM                                  |
| Type                | Male                                   |
| Number of positions | 1                                      |
| No. of channels     | 1                                      |

### Insulation characteristics

|                     |   |
|---------------------|---|
| Degree of pollution | 2 |
|---------------------|---|

### Electrical properties

|           |                  |
|-----------|------------------|
| Fuse type | Automatic device |
|-----------|------------------|

### General

|                                                 |                                                                       |
|-------------------------------------------------|-----------------------------------------------------------------------|
| Rated voltage                                   | 50 V DC (IEC 60934)                                                   |
|                                                 | 50 V DC (UL 1077)                                                     |
|                                                 | 50 V DC (UL 508 - with plug-in base)                                  |
| Rated insulation voltage $U_i$                  | 277 V AC (UL 1077)                                                    |
|                                                 | 250 V AC (IEC 60934)                                                  |
| Rated current $I_N$                             | 0.5 A (IEC 60934)                                                     |
|                                                 | inductive load according to UL 1077                                   |
|                                                 | 0.5 A DC (low-induction load according to UL 1077)                    |
|                                                 | 0.5 A DC (inductive load according to UL 508 - with plug-in base)     |
|                                                 | 0.5 A DC (low-induction load according to UL 508 - with plug-in base) |
| Rated surge voltage                             | 2.5 kV (Increased insulation in actuation area)                       |
| Insulation resistance $R_{iso}$                 | > 100 M $\Omega$ (500 V DC)                                           |
| Auxiliary circuit                               | 277 V AC / 0.5 A (Low-induction)                                      |
|                                                 | 277 V AC / 1 A (Low-induction, maximum of 2000 cycles)                |
|                                                 | 50 V DC / 1 A (Low-induction)                                         |
| Type of actuation                               | S type                                                                |
| Tripping method                                 | TM (thermal-magnetic)                                                 |
| Tripping level                                  | Trip-free mechanism (positive)                                        |
| Device resistance                               | 4.9 $\Omega$                                                          |
| Switch-on delay                                 | typ. 2 ms                                                             |
| Required backup fuse                            | 15 A ( $I > I_{cn}$ )                                                 |
| Rated short-circuit switching capacity $I_{cn}$ | 600 A (50 V DC)                                                       |
| Short-circuit switching capacity                | 1000 A AC (277 V AC)                                                  |
|                                                 | 1000 A DC (50 V DC)                                                   |

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|                        |                                           |
|------------------------|-------------------------------------------|
| Dielectric strength    | 3000 V AC (Actuation area)                |
|                        | 1500 V AC (Main to auxiliary circuit)     |
|                        | 1500 V AC (Open main circuit)             |
|                        | 1000 V AC (Open auxiliary circuit)        |
| Switching cycles, max. | 6000 (at $1 \times I_n$ )                 |
| Fuse                   | F1 (fast blow)                            |
| Power dissipation      | 1.25 W (in nominal operation per channel) |
| Voltage drop           | 2.5 V (at $1 \times I_n$ )                |
| Contact switching type | 1 changeover contact                      |

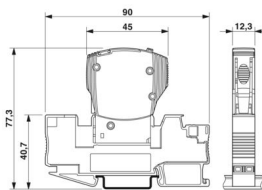
## Auxiliary contact

|                                        |       |
|----------------------------------------|-------|
| Minimum operating voltage $U_{min}$ DC | 10 V  |
| Maximum operating voltage $U_{max}$ DC | 240 V |
| Maximum operating voltage $U_{max}$ AC | 240 V |
| Minimum operating current $I_{min}$    | 10 mA |
| Max. operating current $I_{max}$       | 1 A   |

## Connection data

|                   |           |
|-------------------|-----------|
| Connection method | pluggable |
| Connection method | pluggable |

## Dimensions

|                        |                                                                                      |
|------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing    |  |
| Width                  | 12.3 mm                                                                              |
| Height                 | 45 mm                                                                                |
| Depth                  | 52 mm                                                                                |
| Complete module width  | 12.3 mm                                                                              |
| Complete module height | 90 mm                                                                                |
| Complete module depth  | 77.3 mm                                                                              |

## Material specifications

|                                        |                  |
|----------------------------------------|------------------|
| Color                                  | gray (RAL 7042)  |
|                                        | black (RAL 9005) |
| Flammability rating according to UL 94 | V-0              |
| Insulating material group              | II               |

## Mechanical properties

### Mechanical data

|                 |    |
|-----------------|----|
| Open side panel | No |
|-----------------|----|

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## Environmental and real-life conditions

### Ambient conditions

|                                         |                                                |
|-----------------------------------------|------------------------------------------------|
| Degree of protection                    | IP30 (Actuation area)                          |
| Ambient temperature (operation)         | -30 °C ... 60 °C                               |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C                               |
| Humidity test                           | 240 h, 95 % RH, 40 °C                          |
| Shock (operation)                       | 15g (According to IEC 60068-2-27, Test Ea)     |
| Vibration (operation)                   | 5g (in accordance with IEC 60068-2-6, Test Fc) |

## Approvals

### UL approval

|                |                            |
|----------------|----------------------------|
| Identification | UL Listed UL 508           |
|                | UL/C-UL Recognized UL 1077 |

### CSA

|                |                              |
|----------------|------------------------------|
| Identification | CSA CAN/CSA-C22.2 No. 235-04 |
|----------------|------------------------------|

### Shipbuilding approval

|                |        |
|----------------|--------|
| Identification | DNV GL |
|----------------|--------|

## Standards and regulations

|                          |          |
|--------------------------|----------|
| Standards/specifications | EN 60934 |
|--------------------------|----------|

## Mounting

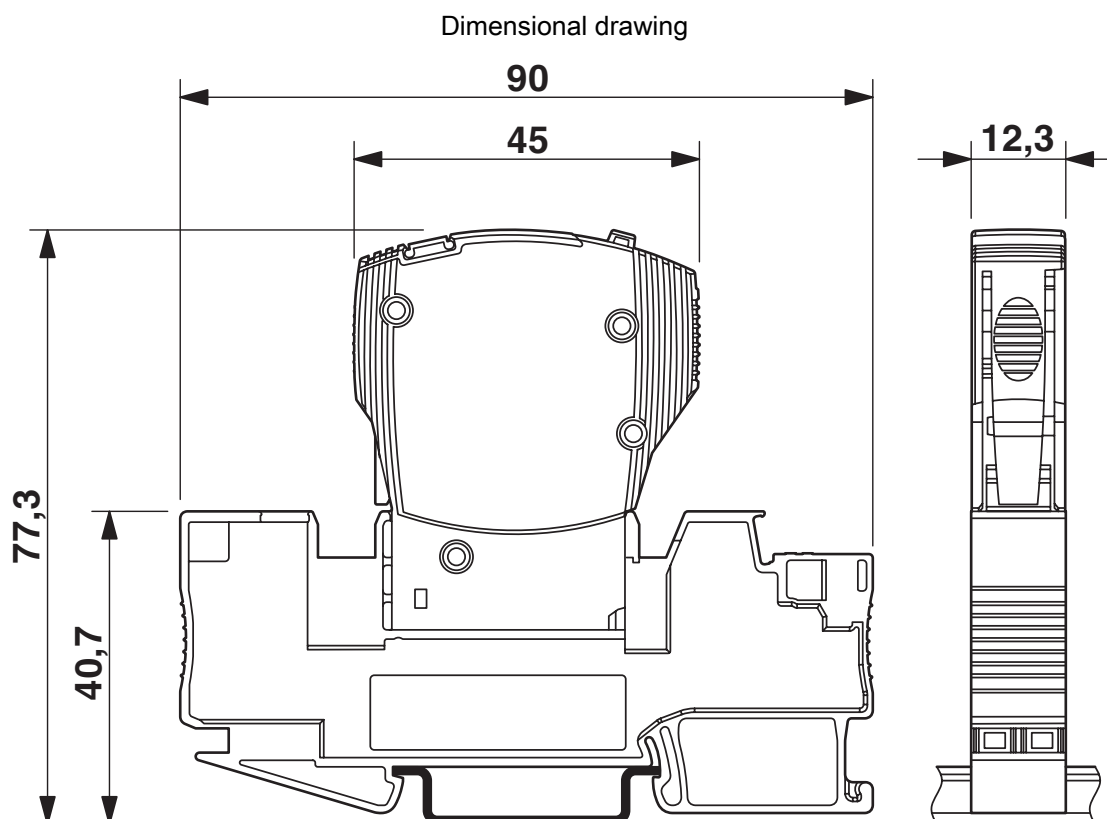
|               |                 |
|---------------|-----------------|
| Mounting type | on base element |
|---------------|-----------------|

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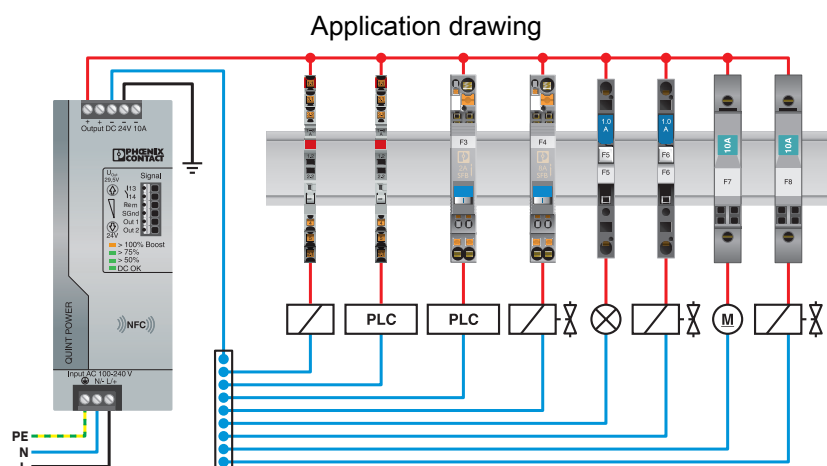
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## Drawings



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



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Application drawing



Diagram



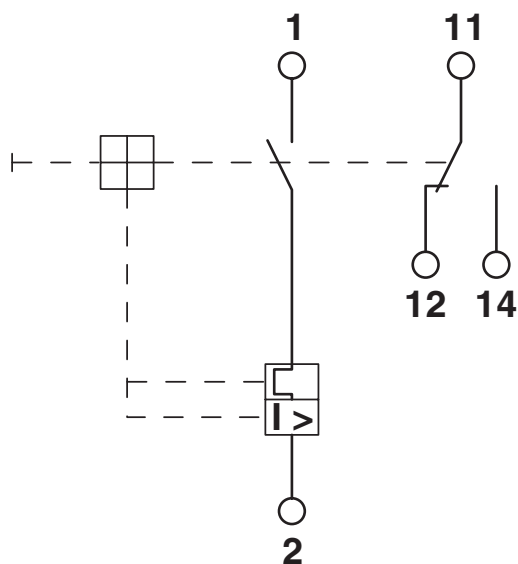
Trigger characteristic in the DC range

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Circuit diagram



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## Approvals

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**cUL Recognized**  
Approval ID: FILE E 140459



**UL Recognized**  
Approval ID: FILE E 140459



**DNV GL**  
Approval ID: TAE00003C7



**VDE Zeichengenehmigung**  
Approval ID: 40034683



**UL Listed**  
Approval ID: FILE E 172140



**CCC**  
Approval ID: 2025010307749779



**CSA**  
Approval ID: 2786957



**cUL Listed**  
Approval ID: FILE E 172140



**KC**  
Approval ID: SW05012-15003

**UAE-RoHS**

Approval ID: 22-09-50937

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Classifications

ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27140401 |
| ECLASS-15.0 | 27140401 |

ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC003538 |
|----------|----------|

UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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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%               |
| EF3.0 Climate Change                    |                                          |
| CO2e kg                                 | 6.247 kg CO2e                            |

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