

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



1-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. With fixed nominal current. For DIN rail installation via the CAPAROC current rails.

## Your advantages

- The benchmark that you can tailor with channel-precise design with integrated potential distribution
- Easy operation for everyone through tool-free assembly, uninterrupted installation, and transparent operating state
- Exceptionally easy design-in with the narrowest of space requirements and four protected outputs

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1157285       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL11          |
| Product key                          | CLA232        |
| GTIN                                 | 4063151161804 |
| Weight per piece (including packing) | 77.46 g       |
| Weight per piece (excluding packing) | 71.4 g        |
| Customs tariff number                | 85363010      |
| Country of origin                    | DE            |

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## Technical data

### Notes

#### General

|      |                                                                           |
|------|---------------------------------------------------------------------------|
| Note | LABS release – in accordance with test specification VW PV 3. 10.7:2005-0 |
|------|---------------------------------------------------------------------------|

### Product properties

|                     |                         |
|---------------------|-------------------------|
| Product type        | Device circuit breakers |
| Product family      | CAPAROC                 |
| Number of positions | 1                       |
| No. of channels     | 1                       |
| Number of slots     | 1                       |

#### Data management status

|                  |    |
|------------------|----|
| Article revision | 03 |
|------------------|----|

#### Insulation characteristics

|                  |     |
|------------------|-----|
| Protection class | III |
| Pollution degree | 2   |

### Electrical properties

#### General

|                                  |                                                                                                                     |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Operating voltage                | 10 V DC ... 30 V DC                                                                                                 |
| Rated voltage                    | 12 V DC                                                                                                             |
|                                  | 24 V DC                                                                                                             |
| Rated current $I_N$              | 4 A DC                                                                                                              |
| Rated current (pre-adjusted)     | 4 A                                                                                                                 |
| Rated surge voltage              | 0.5 kV                                                                                                              |
| Tripping method                  | E (electronic)                                                                                                      |
| Required backup fuse             | Only required if $I_{max}$ of the power supply > the short-circuit switching capacity. Integrated failsafe element. |
| Short-circuit switching capacity | 300 A                                                                                                               |
| Dielectric strength              | 35 V DC (Load circuit)                                                                                              |
| Fuse                             | electronic                                                                                                          |
| Efficiency                       | > 99 %                                                                                                              |
| Closed circuit current $I_0$     | typ. 8.5 mA (no load at 24 V)                                                                                       |
| Power dissipation                | typ. 0.2 W (no load at 24 V)                                                                                        |
|                                  | < 0.57 W (in nominal operation at 24 V and 4 A)                                                                     |
| Measuring tolerance I            | ± 15 % (typ.)                                                                                                       |
| MTBF (IEC 61709, SN 29500)       | 21274544 h (at 25 °C with 21 % load)                                                                                |
|                                  | 9809987 h (at 40 °C with 34.25% load)                                                                               |
|                                  | 1482752 h (at 40 °C with 100% load)                                                                                 |
| Voltage drop                     | 0.09 V (at 4 A)                                                                                                     |

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

|                   |                             |
|-------------------|-----------------------------|
| Fail-safe element | 5 A DC (per output channel) |
|-------------------|-----------------------------|

## Load circuit

|                         |                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------|
| Shutdown time           | 4 s (with overload $1.1 \dots 1.5 \times I_N$ )                                                 |
|                         | 1 s (with overload $1.5 \dots 2.0 \times I_N$ )                                                 |
|                         | 0.1 s (with overload $2.0 \dots 3.0 \times I_N$ )                                               |
|                         | typ. 10 ms (For short circuit $> 3.0 \times I_N$ )                                              |
| Undervoltage switch-off | $\leq 8.5$ V DC (active)                                                                        |
|                         | $\geq 9.2$ V DC (inactive)                                                                      |
| Overvoltage switch-off  | $\geq 32.5$ V DC (active)                                                                       |
|                         | $\leq 30.5$ V DC (inactive)                                                                     |
| Max. capacitive load    | $\leq 20000$ $\mu$ F (Depending on the current setting and the short-circuit current available) |
| Switch-on delay         | 50 ms (can be adapted with CAPAROC PM IOL and CAPAROC PM PN power modules)                      |

## Connection data

### Fuse-protected output

|                                                                       |                                          |
|-----------------------------------------------------------------------|------------------------------------------|
| Connection method                                                     | Push-in connection                       |
| Stripping length                                                      | 10 mm                                    |
| Conductor cross section flexible                                      | $0.2 \text{ mm}^2 \dots 4 \text{ mm}^2$  |
| Conductor cross section rigid                                         | $0.2 \text{ mm}^2 \dots 4 \text{ mm}^2$  |
| Conductor cross section AWG                                           | 24 ... 12                                |
| Conductor cross section, flexible, with ferrule, with plastic sleeve  | $0.25 \text{ mm}^2 \dots 4 \text{ mm}^2$ |
| Conductor cross section flexible, with ferrule without plastic sleeve | $0.25 \text{ mm}^2 \dots 4 \text{ mm}^2$ |

## Signaling

|                    |                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------|
| Channel LED off    | off (Channel switched off)                                                                       |
| Channel LED yellow | lit (Channel switched on, channel load $> 80\%$ )                                                |
|                    | flashing (Programming mode active)                                                               |
|                    | two flashes (Check the installation, no communication to power module)                           |
| Channel LED green  | lit (Channel switched on)                                                                        |
| Channel LED red    | lit (Channel switched off, over- or undervoltage active)                                         |
|                    | ON temporarily (Channel switched off, 5 s cool-down phase, overload or short-circuit release)    |
|                    | flashing (Channel switched off, ready to be switched back on, overload or short-circuit release) |

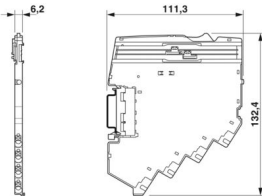
## Dimensions

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Width               | 6.2 mm                                                                             |
| Height              | 132.4 mm                                                                           |
| Depth               | 111.3 mm (incl. DIN rail 7.5 mm)                                                   |

## Material specifications

|                                        |                       |
|----------------------------------------|-----------------------|
| Color                                  | light gray (RAL 7035) |
| Material                               | PA 6                  |
|                                        | PA 6                  |
|                                        | PA 6                  |
|                                        | PC                    |
| Flammability rating according to UL 94 | V-0                   |

## Environmental and real-life conditions

### Ambient conditions

|                                         |                                                                                                                                                             |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Degree of protection                    | IP20                                                                                                                                                        |
| Ambient temperature (operation)         | -30 °C ... 65 °C (The temperature range of the power module must be taken into consideration)                                                               |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C                                                                                                                                            |
| Altitude                                | ≤ 4000 m (amsl)                                                                                                                                             |
| Humidity test                           | 96 h, 95 % RH, 40 °C                                                                                                                                        |
| Shock (operation)                       | 30g (11 ms period, half-sine shock pulse, according to IEC 60068-2-27)                                                                                      |
|                                         | 25g (6 ms duration, half-sine shock pulse in accordance with IEC 60068-2-27, continuous shock)                                                              |
|                                         | 15g (6 ms duration, half-sine shock pulse in accordance with IEC 60068-2-27, continuous shock. If more than six CAPAROC E1 modules are used in the system.) |
| Vibration (operation)                   | 5g (10 ... 150 Hz / 10 cycles / axis / X, Y, Z)                                                                                                             |

## Approvals

### UL approval

|                |                                                       |
|----------------|-------------------------------------------------------|
| Identification | UL/C-UL Listed UL 508                                 |
|                | UL Recognized UL 2367                                 |
|                | UL 121201 Class I, Division 2, Groups A, B, C, D, T4A |
|                | NEC Class 2 according to UL 1310                      |

### Corrosive gas test

|                |                                  |
|----------------|----------------------------------|
| Identification | ISA S71.04.2013 G3 Harsh Group A |
|----------------|----------------------------------|

## Standards and regulations

|                          |                                                                                         |
|--------------------------|-----------------------------------------------------------------------------------------|
| Standards/specifications | EN 61000-6-2                                                                            |
| Note                     | EMC – Immunity for industrial areas                                                     |
| Standards/specifications | EN 61000-6-3                                                                            |
| Note                     | EMC – Emission for residential, business and commercial properties and small operations |
| Standards/specifications | EN 60068-2-78                                                                           |
| Note                     | Environmental influences – Moisture and heat, constant                                  |
| Standards/specifications | EN 50178                                                                                |
| Note                     | Equipping power installations with electronic equipment                                 |
| Standards/specifications | EN 60068-2-6                                                                            |
| Note                     | Environmental influences – Vibrations (sinusoidal)                                      |
| Standards/specifications | EN 60068-2-27                                                                           |
| Note                     | Environmental influences – Shocks                                                       |

## Mounting

|               |                                           |
|---------------|-------------------------------------------|
| Mounting type | pluggable onto CAPAROC CR... current rail |
|---------------|-------------------------------------------|

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker

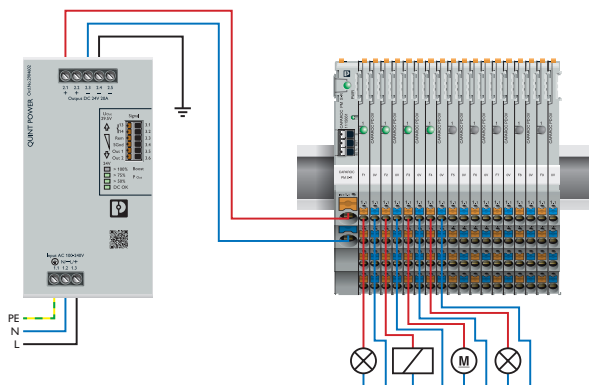
1157285

<https://www.phoenixcontact.com/us/products/1157285>

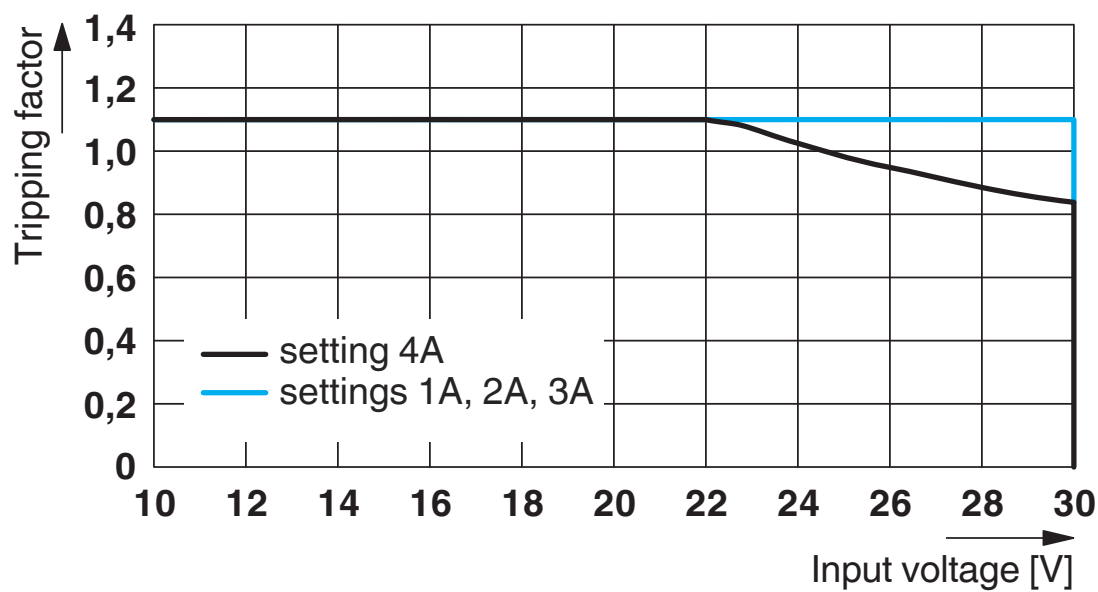


## Drawings

Application drawing



Diagram



Tripping characteristic according to the input voltage

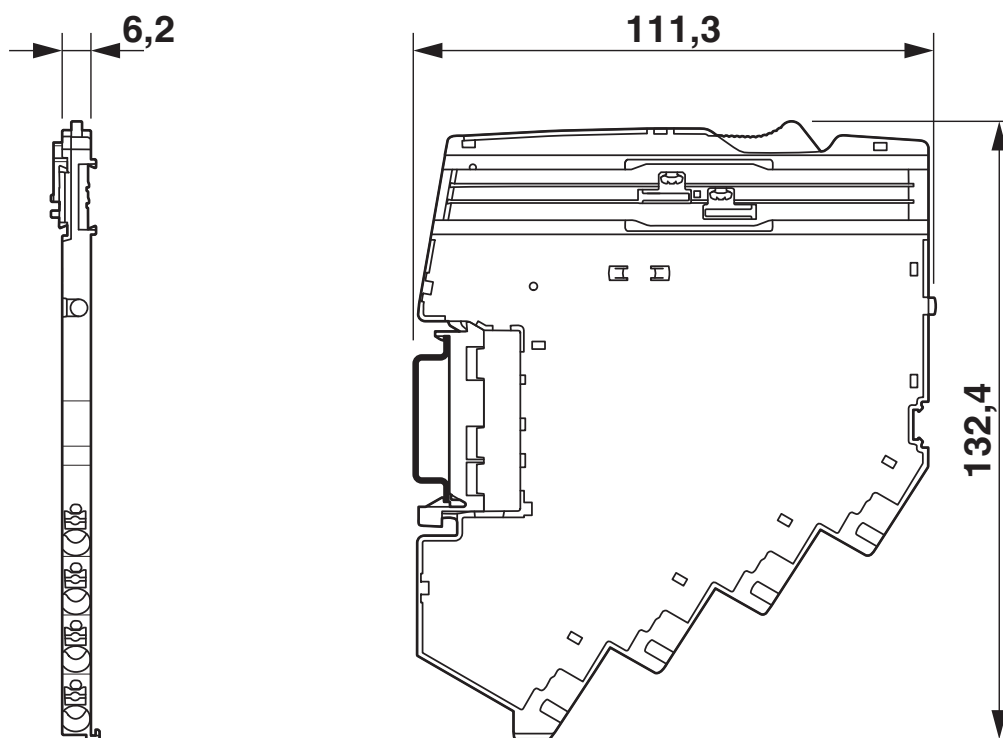
# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



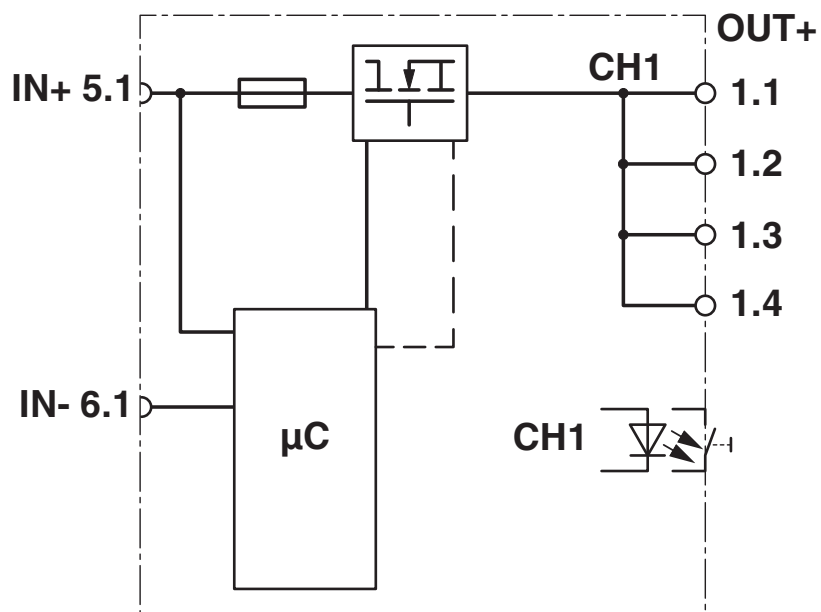
1157285

<https://www.phoenixcontact.com/us/products/1157285>

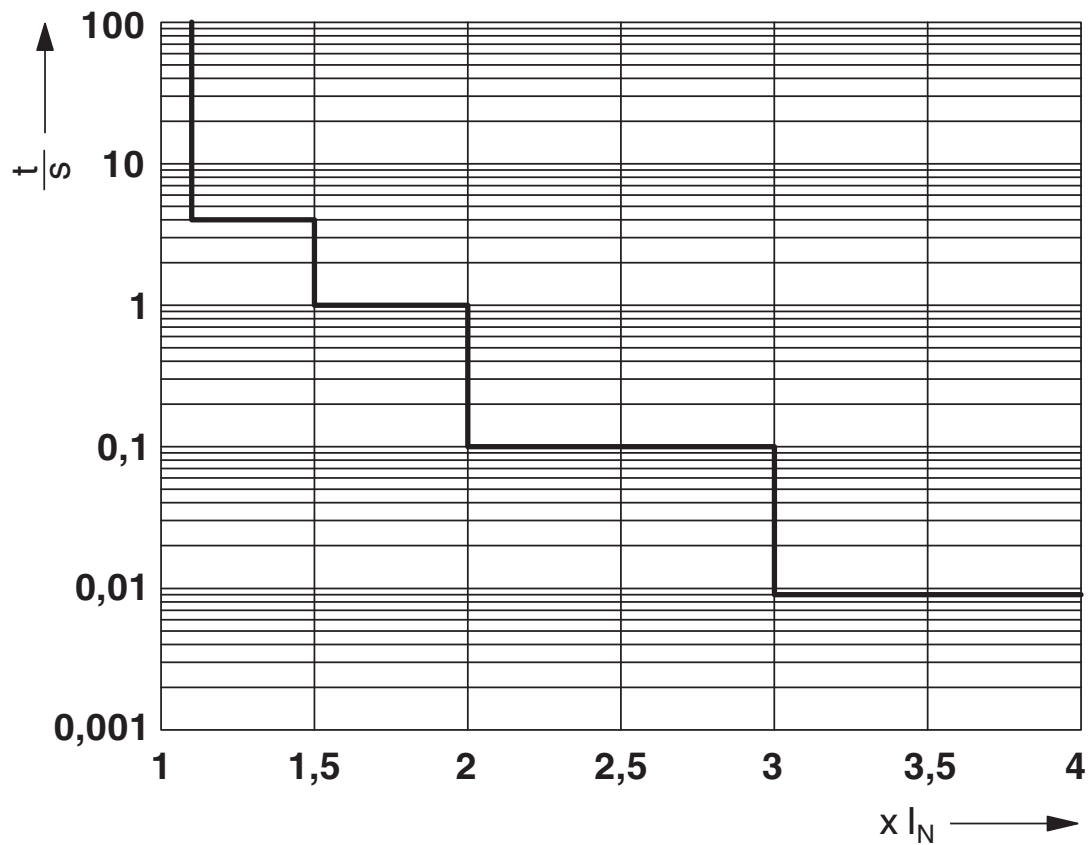
Dimensional drawing



Block diagram



Diagram



Trigger characteristic

Product drawing



# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1157285>



**UL Recognized**  
Approval ID: FILE E 317172



**UL Listed**  
Approval ID: E123528



**cUL Listed**  
Approval ID: E123528



**UL Recognized**  
Approval ID: FILE E 324415



**cUL Listed**  
Approval ID: FILE E 483407



**UL Listed**  
Approval ID: FILE E 483407

**cULus Listed**

**cULus Listed**

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27140401 |
| ECLASS-12.0 | 27140401 |
| ECLASS-13.0 | 27140401 |

### ETIM

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

### UNSPSC

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

Environmental product compliance

EU RoHS

|                                         |              |
|-----------------------------------------|--------------|
| Fulfills EU RoHS substance requirements | Yes          |
| Exemption                               | 7(a), 7(c)-I |

China RoHS

|                                        |                                                                                                                                                                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-50                                                                                                                                                                                                                           |
|                                        | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | 337dc387-b238-4b4f-9035-9daf2082d1df |

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## Mandatory accessories

### CAPAROC CR 20 - Busbar

1110989

<https://www.phoenixcontact.com/us/products/1110989>

Busbar for CAPAROC system with 20 slots. For installation on a DIN rail.



---

### CAPAROC CR 8 - Busbar

1115672

<https://www.phoenixcontact.com/us/products/1115672>

Busbar for the CAPAROC system with 8 slots. For installation on a DIN rail.



# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## CAPAROC PM S-R - Power module

1115661

<https://www.phoenixcontact.com/us/products/1115661>



Power module with status output and reset input for supplying the CAPAROC circuit breaker system with 12 or 24 V DC. For DIN rail installation via the CAPAROC current rails.

---

## CAPAROC PM PN - Power module

1110986

<https://www.phoenixcontact.com/us/products/1110986>



Power module with PROFINET interface for supplying the CAPAROC circuit breaker system with 12 or 24 V DC. Additional system interface for communication with the power supply. For DIN rail installation via the CAPAROC current rails.

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## CAPAROC PM IOL - Power module

1115670

<https://www.phoenixcontact.com/us/products/1115670>



Power module with IO-Link interface for supplying the CAPAROC circuit breaker system with 12 or 24 V DC for up to 20 channels. For DIN rail installation via the CAPAROC current rails.

---

## CAPAROC PM EIP - Power module

1393553

<https://www.phoenixcontact.com/us/products/1393553>



Power module with EtherNet/IP™ interface for supplying the CAPAROC circuit breaker system with 12 V DC or 24 V DC. Additional system interface for communication with the power supply. For DIN rail installation via the CAPAROC current rails.

---

## Accessories

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## CAPAROC PD 0V - Potential distributors

1110987

<https://www.phoenixcontact.com/us/products/1110987>



Potential distributor with Push-in connections for directly connecting the 0 V return conductor in the CAPAROC system. For DIN rail installation via the CAPAROC current rails.

---

## UC-TMF 6 - Marker for terminal blocks

0818140

<https://www.phoenixcontact.com/us/products/0818140>



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 5.1 mm, Number of individual labels: 80

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## UC-TM 6 - Marker for terminal blocks

0818085

<https://www.phoenixcontact.com/us/products/0818085>



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

---

## UCT-TM 6 - Marker for terminal blocks

0828736

<https://www.phoenixcontact.com/us/products/0828736>



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 60

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## UCT-TMF 6 - Marker for terminal blocks

0828746

<https://www.phoenixcontact.com/us/products/0828746>



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.4 x 4.7 mm, Number of individual labels: 60

---

## CAPAROC CR EXT20 - Busbar

1115674

<https://www.phoenixcontact.com/us/products/1115674>



Extension busbar with 20 slots for the CAPAROC system. For installation on a DIN rail.

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## CAPAROC CR EXT8 - Busbar

1110990

<https://www.phoenixcontact.com/us/products/1110990>



Extension busbar with 8 slots for CAPAROC system. For installation on a DIN rail.

---

## CAPAROC CR EXT4 - Busbar

1110991

<https://www.phoenixcontact.com/us/products/1110991>



Extension busbar with 4 slots for the CAPAROC system. For installation on a DIN rail.

# CAPAROC E1 12-24DC/4A - Electronic circuit breaker



1157285

<https://www.phoenixcontact.com/us/products/1157285>

## CAPAROC CR CON - Metal part

1270955

<https://www.phoenixcontact.com/us/products/1270955>



Metal extension rails from connecting CAPAROC initial busbars.

---

Phoenix Contact 2024 © - all rights reserved

<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)