# CAPAROC E4 12-24DC/1-10A - Electronic circuit breaker

1115658

https://www.phoenixcontact.com/gb/products/1115658

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CRA-READY



Four-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. Nominal current adjustable from 1 A to 10 A via LED button. For DIN rail installation via the CAPAROC current rails.

## Your advantages

- The benchmark that you can tailor with the individual combination of multi-channel protective modules
- Easy operation for everyone through tool-free assembly, uninterrupted installation, and transparent operating state
- Exceptionally easy design-in with four separately fused channels with the narrowest of space requirements of just 3 mm per channel

ELEKTROGERÄTE RÜCKNAHME

## Commercial data

| | |
|---|---|
| Item number | 1115658 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CLA234 |
| Product key | CLA234 |
| GTIN | 4063151040192 |
| Weight per piece (including packing) | 94 g |
| Weight per piece (excluding packing) | 86.4 g |

| | |
|---|---|
| Customs tariff number | 85363010 |
| Country of origin | DE |

## Technical data

### Notes

| | |
|---|---|
| Note on application | As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA. |

#### General

| | |
|---|---|
| Note | LABS release – in accordance with test specification VW PV 3. 10.7:2005-0 |
| | When using CAPAROC E1... modules, for continuous shock in accordance with IEC 60068-2-27 the 6 ms / 15g degree of severity applies |

### Product properties

| | |
|---|---|
| Product type | Device circuit breakers |
| Product family | CAPAROC |
| Type | Plug-in module |
| Number of positions | 1 |
| No. of channels | 4 |
| Number of slots | 2 |

#### 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 $I_N$ | 10 A (per channel) |
| Rated current $I_N$ | 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 A DC (adjustable per output channel) |
| Rated current (pre-adjusted) | 4 A |
| Rated surge voltage | 0.5 kV |
| Tripping method | E (electronic) |
| Feedback resistance | max. 35 V DC |
| Switch-on delay | 50 ms (each channel preset by default) |
| | can be adapted with CAPAROC PM IOL and CAPAROC PM PN power modules |
| 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. 20 mA (no load at 24 V) |
| Power dissipation | typ. 0.48 W (no load at 24 V) |
| | < 6 W (in nominal operation at 24 V and 10 A) |
| Waiting time after switch off of a channel | 5 s (at overload / short circuit) |
| Measuring tolerance I | ± 10 % (typ.) |
| Temperature derating | 16 A (Total current at 65 °C) |
| | 40 A (Total current at 25°C) |
| MTBF (IEC 61709, SN 29500) | 6325945.91 h (at 25 °C with 21 % load) |
| | 1812525.02 h (at 40°C with 34.25% load) |
| | 365459.81 h (at 25°C with 100% load) |
| Voltage drop | 0.14 V (at 10 A) |
| Fail-safe element | 15 A DC (per output channel) |
| Contact switching type | without electrical isolation |

Load circuit

| | |
|---|---|
| Shutdown time | 4 s (with overload 1.1…1.5 x $I_N$) |
| | 1 s (with overload 1.5…2.0 x $I_N$) |
| | 0.1 s (with overload 2.0…3.0 x $I_N$) |
| | ≤ 10 ms (For short circuit > 3.0 x $I_N$) |
| Undervoltage switch-off | ≤ 8.5 V DC (active) |
| | ≥ 9.2 V DC (inactive) |
| Overvoltage switch-off | ≥ 32.5 V DC (active) |
| | ≤ 30.5 V DC (inactive) |
| Max. capacitive load | ≤ 25000 µF (Depending on the current setting and the short-circuit current available) |

## Connection data

Fuse-protected output

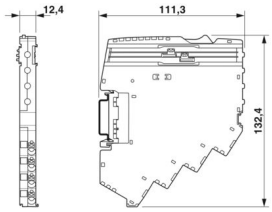
| | |
|---|---|
| Connection method | Push-in connection |
| Stripping length | 10 mm |
| Conductor cross-section flexible | 0.2 mm² ... 4 mm² |
| Conductor cross-section rigid | 0.2 mm² ... 4 mm² |
| Conductor cross-section AWG | 24 ... 12 |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm² ... 4 mm² |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm² ... 4 mm² |

## 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) |
| | two flashes (Channel switched off, system total current limit exceeded) |
| Channel LED red-yellow | flashing (Channel switched on, overload mode, capacity approximately 110 ... 150%, shutdown after 5 s) |
| Channel LED red-green | flashing (Channel switched off, programming mode active, current adjustment after overload or short-circuit release) |

## Dimensions

| | |
|---|---|
| Dimensional drawing |  |
| Width | 12.4 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) |
| Vibration (operation) | 5g (10 Hz ... 150 Hz / 10 cycles / axis / X, Y, Z) |

## Approvals

UL approval

| | |
|---|---|
| Identification | UL/C-UL Listed UL 508 |
| | UL Recognized UL 2367 |

Corrosive gas test

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

## Standards and regulations

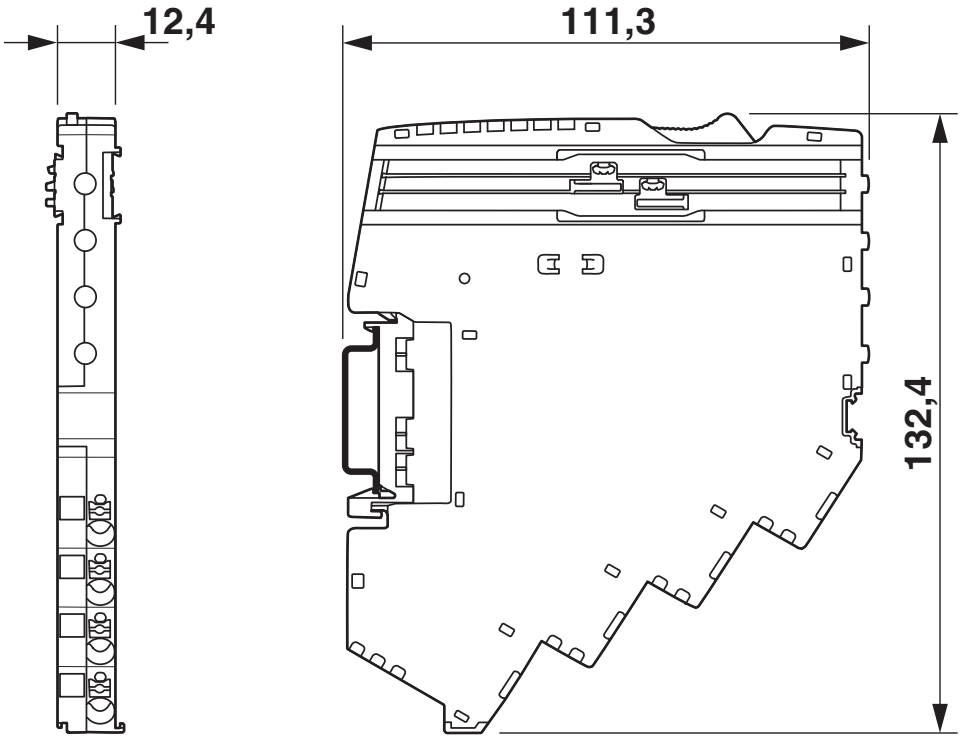
| | |
|---|---|
| Standards/specifications | EN 61000-6-2 |
| Note | EMC – Immunity for industrial areas |
| Standards/specifications | EN 61000-6-3 |
| Note | EMC – Emission for residential, business and commercial properties and small operations |
| Standards/specifications | EN 60068-2-78 |
| Note | 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 |

## Drawings

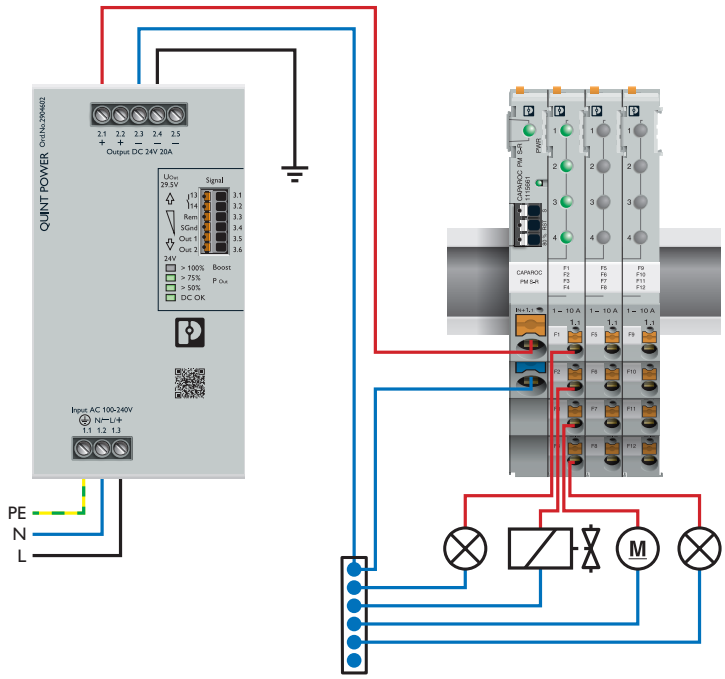
Dimensional drawing



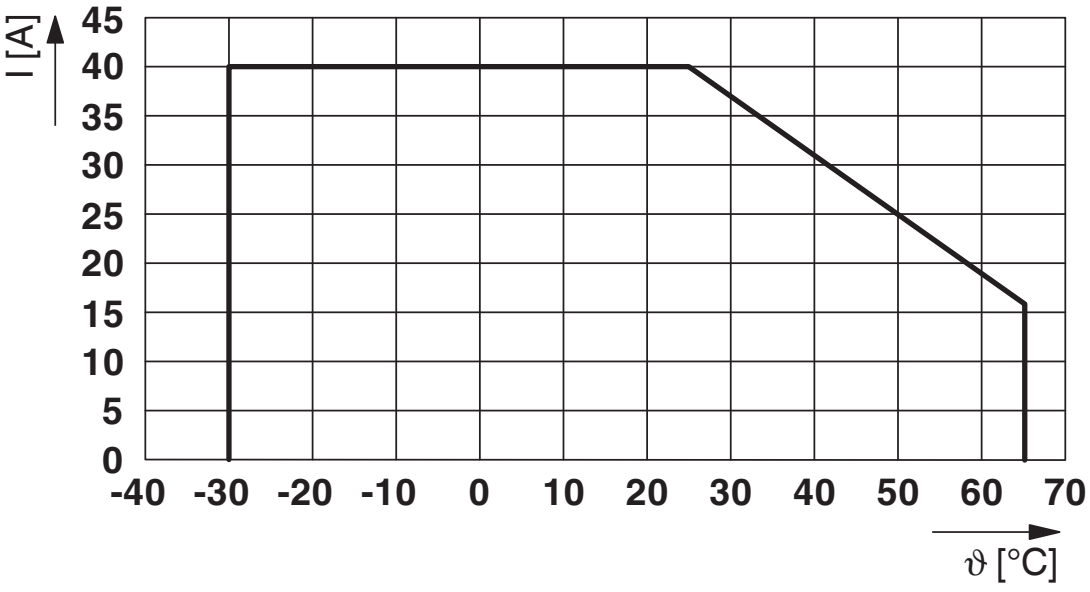

Product drawing



Application drawing

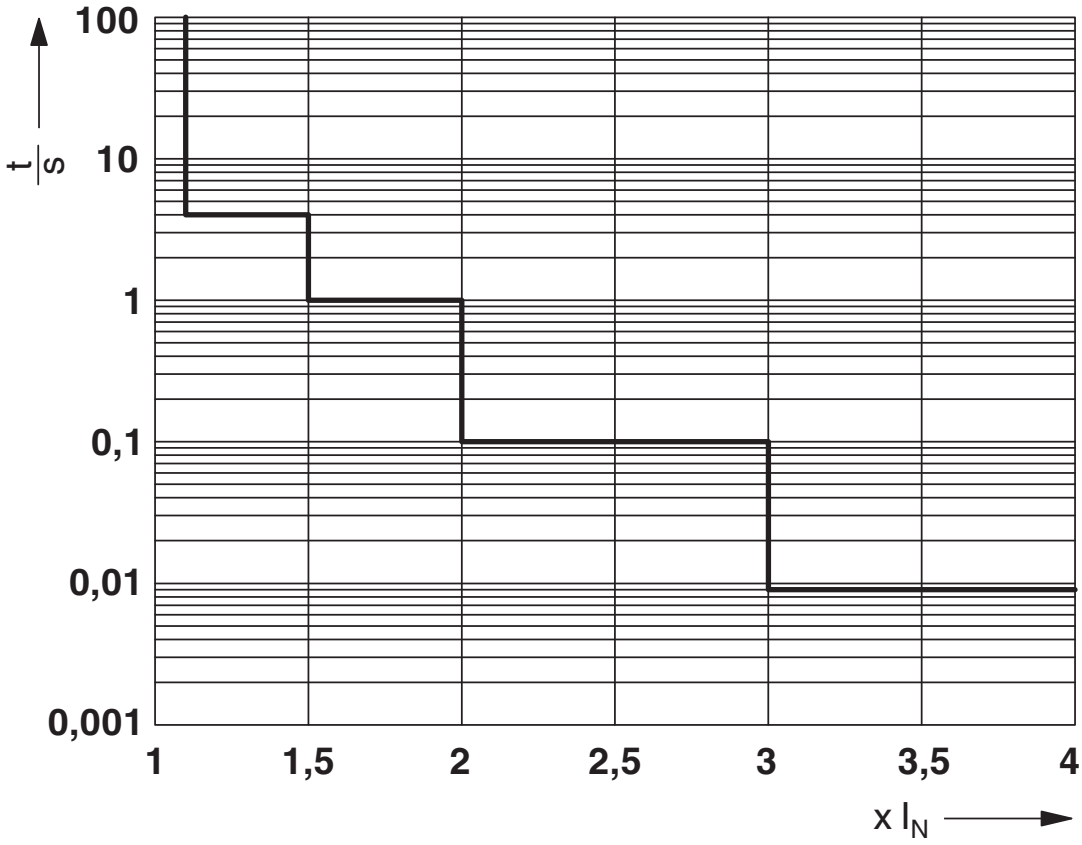



Diagram



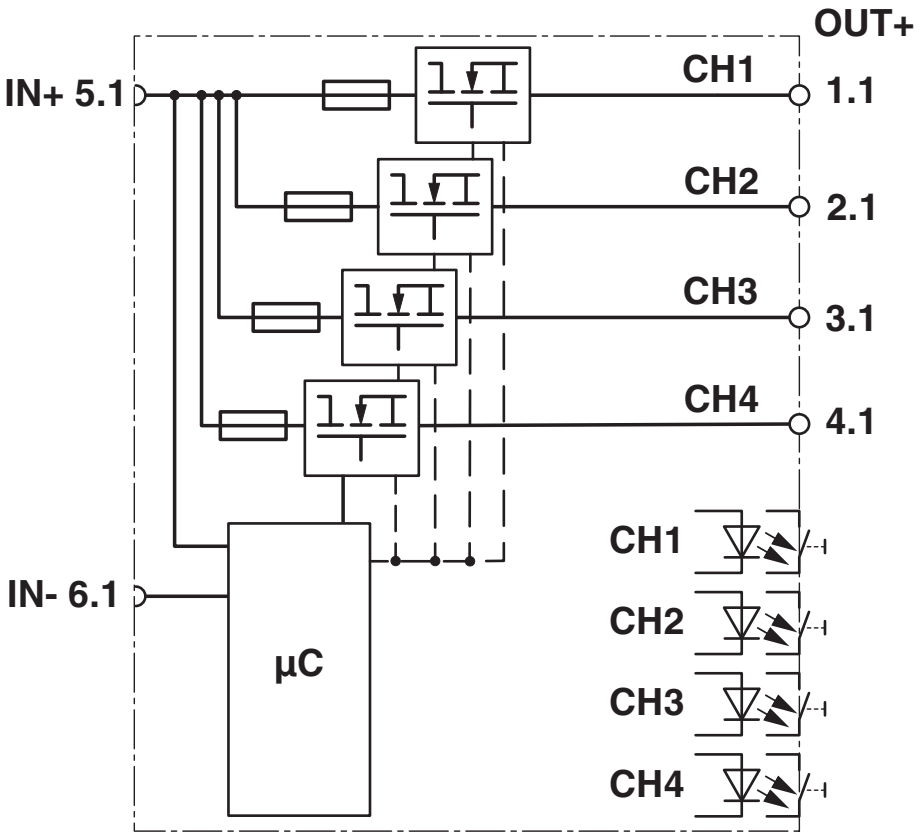

Max. permissible current in relation to the ambient temperature

Diagram




Trigger characteristic

Block diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/gb/products/1115658

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

**UL Listed**
Approval ID: E123528

**cUL Listed**
Approval ID: E123528

## Classifications

### ECLASS

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

### ETIM

| | |
|---|---|
| ETIM 10.0 | 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 | 93998b27-cb53-4fbc-98ab-c831cf83cb3d |


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