

Electronic circuit breaker - CBMC E4 24DC/1-4A NO - 2906031

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Multi-channel electronic circuit breaker for protecting four loads at 24 V DC in the event of overload and short circuit. With electronic locking of the set nominal currents. For installation on DIN rails.

Your advantages

- ✓ Easy device replacement without replanning, thanks to compact design and options for individual adjustments
- ✓ Circuits can be adjusted without any tools by means of one single pushable LED button
- ✓ Optimum protection for cables and sensors as well as NEC Class 2 circuits by means of an additional internal output fuse
- ✓ Reliable protection against unintentional adjustment of current values, thanks to electronic locking
- ✓ Status LEDs in traffic light colors enable instantaneous determination of operating states



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 pc |
| GTIN |  4 055626 149349 |
| GTIN | 4055626149349 |
| Weight per Piece (excluding packing) | 119.510 g |
| Weight per piece (including packing) | 136.200 g |
| Custom tariff number | 85363090 |
| Country of origin | Germany |
| Sales Key | L1 - Circuit Breaker |
| Note | Made to Order (non-returnable) |

Technical data

Dimensions

| | |
|--------|-------------------------------|
| Height | 90 mm |
| Width | 36 mm |
| Depth | 98 mm (incl. DIN rail 7.5 mm) |

Ambient conditions

| | |
|---------------------------------|------------------|
| Ambient temperature (operation) | -25 °C ... 60 °C |
|---------------------------------|------------------|

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Ambient conditions

| | |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Humidity test | 96 h, 95 % RH, 40 °C |
| Altitude | ≤ 3000 m up to 52 °C (amsl (above mean sea level)) |
| | ≤ 4000 m up to 46 °C (amsl (above mean sea level)) |
| Shock (operation) | 30g (IEC 60068-2-27, Test Ea) |
| Vibration (operation) | 10 Hz ... 57.6 Hz (Amplitude ±0.35 mm; in accordance with IEC 60068-2-6, Test Fc) |
| | 57.6 Hz ... 150 Hz (Acceleration 5g; in accordance with IEC 60068-2-6, Test Fc) |
| Degree of protection | IP20 |

General

| | |
|--|----------------------------|
| Flammability rating according to UL 94 | V-0 |
| Mounting type | DIN rail: 35 mm |
| Color | light grey RAL 7035 |
| Number of positions | 1 |
| Protection class | III |
| Degree of pollution | 2 |
| Type | DIN rail module, one-piece |

Electrical data

| | |
|--|---|
| Fuse type | electronic |
| Rated surge voltage | 0.5 kV |
| Operating voltage | 18 V DC ... 30 V DC |
| Rated voltage | 24 V DC |
| Rated current I_N | max. 16 A DC (IN+) |
| | max. 40 A DC (per terminal position when bridging additional devices via IN+) |
| | 1 / 2 / 3 / 4 A DC (adjustable per output channel) |
| Rated current (pre-adjusted) | 4 A |
| Measuring tolerance I | ± 15 % |
| Feedback resistance | max. 35 V DC |
| Fail-safe element | 4 A DC (per output channel) |
| Efficiency | > 99 % |
| Closed circuit current I_0 | typ. 33 mA |
| Power dissipation | typ. 0.8 W (No-load operation) |
| | < 4 W (Nominal operation) |
| Module initialization time | 1.6 s |
| Waiting time after switch off of a channel | 5 s (at overload / short circuit) |
| 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 |

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Electrical data

| | |
|--|---|
| Dielectric strength | max. 35 V DC (Load circuit) |
| MTBF (IEC 61709, SN 29500) | 11764705 h (at 25 °C with 21 % load) |
| | 5319148 h (at 40°C with 34.25% load) |
| | 846023 h (at 60°C with 100% load) |
| Shutdown time load circuit | ≤ 10 ms (for short circuit > 2.0 x I _N) |
| | 1 s (1.2 ... 2.0 x I _N) |
| Undervoltage switch-off load circuit | ≤ 17.8 V DC (active) |
| | ≥ 18.8 V DC (inactive) |
| Overvoltage switch-off shutdown load circuit | ≥ 30.5 V DC (active) |
| | ≤ 29.5 V DC (inactive) |
| Max. capacitive load load circuit | 30000 µF (Depending on the current setting and the short-circuit current available) |

Remote indication contact

| | |
|---|--|
| Connection name | Remote indication circuit |
| Switching function | N/O contact |
| Stripping length | 10 mm |
| Conductor cross section solid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 24 ... 12 |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 2.5 mm ² |
| DC operating voltage | 0 V DC ... 30 V DC |
| DC operating current | 100 mA DC |

Signaling

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|--------------------|--|
| Channel LED off | off (Channel switched off) |
| Channel LED green | lit (Channel switched on) |
| Channel LED yellow | lit (Channel switched on, channel load > 80%) |
| | flashing (Programming mode active) |
| 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, device total current limit 40 A exceeded) |

Connection data

| | |
|--|--|
| Connection name | Main circuit IN+ |
| Connection method | Push-in connection |
| Stripping length | 15 mm |
| Conductor cross section solid | 0.2 mm ² ... 10 mm ² |
| Conductor cross section AWG | 24 ... 8 |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 4 mm ² |

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Technical data

Connection data

| | |
|---|--|
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 6 mm ² |
| Connection name | Main circuit IN- |
| Connection method | Push-in connection |
| Stripping length | 10 mm |
| Conductor cross section solid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 24 ... 12 |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 2.5 mm ² |
| Connection name | Main circuit OUT |
| Connection method | Push-in connection |
| Stripping length | 10 mm |
| Conductor cross section solid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 24 ... 12 |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 2.5 mm ² |

Standards and Regulations

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

Conformance/approvals

| | |
|----------------|----------------------------------|
| Designation | UL approval |
| Identification | UL/C-UL Listed UL 508 |
| | UL Recognized UL 2367 |
| | NEC Class 2 according to UL 1310 |

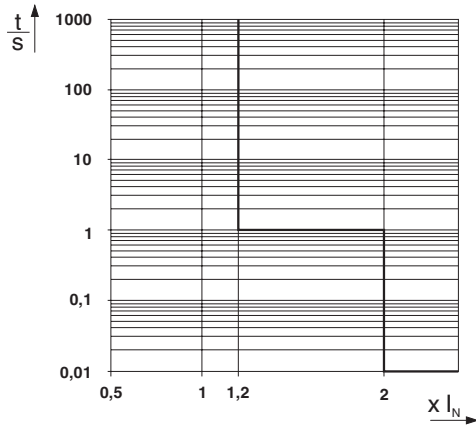
Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

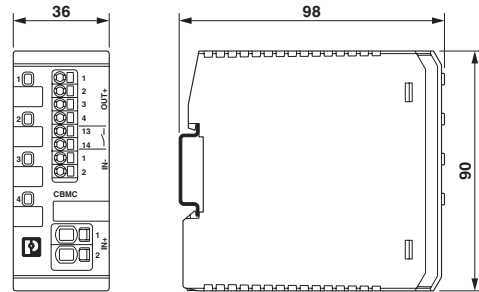
Drawings

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Diagram

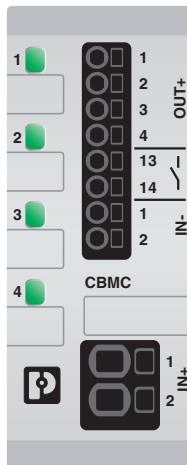


Dimensional drawing



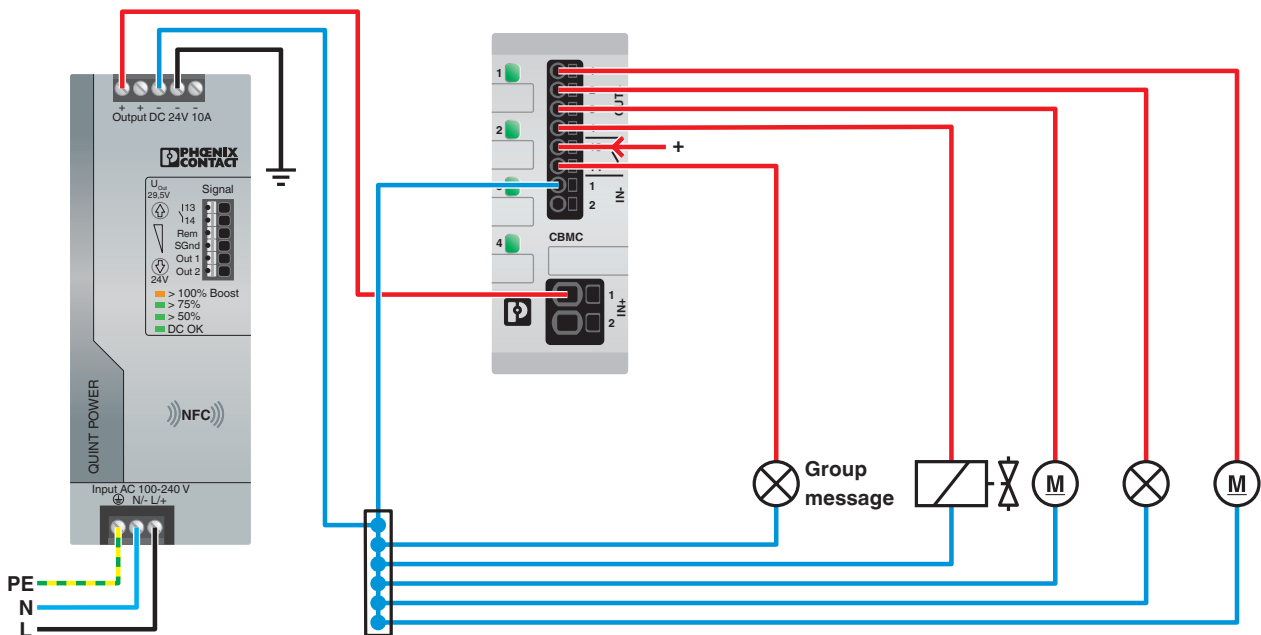
Trigger characteristic in the DC range

Product drawing

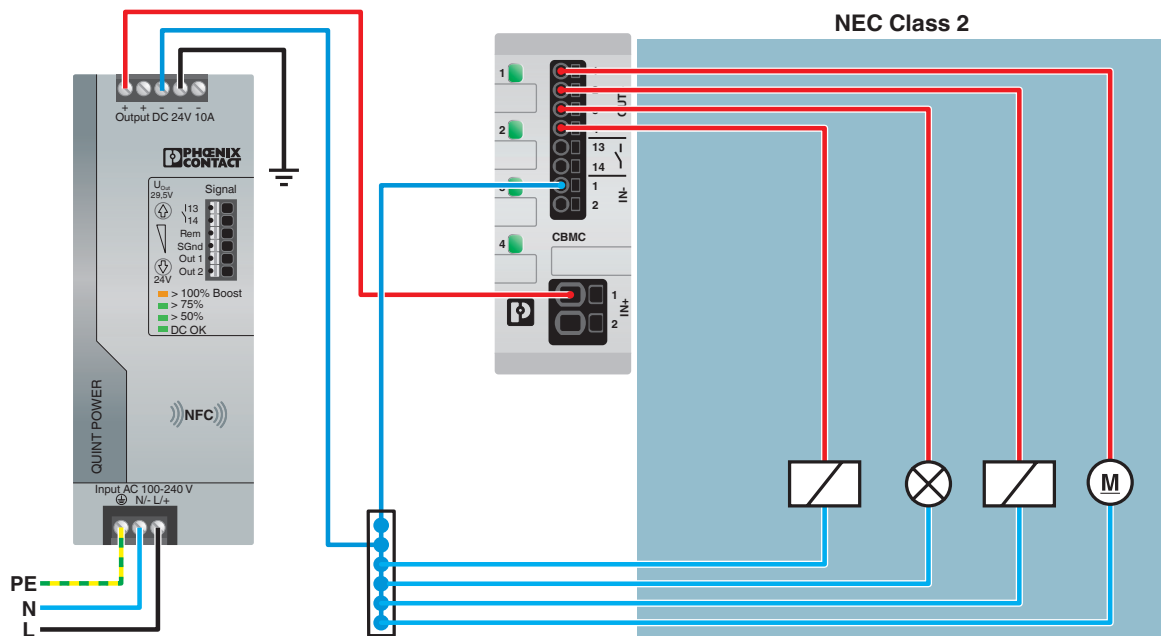


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Application drawing



Application drawing



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Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 27140401 |
| eCl@ss 11.0 | 27140401 |
| eCl@ss 4.0 | 27141100 |
| eCl@ss 4.1 | 27141100 |
| eCl@ss 5.0 | 27141100 |
| eCl@ss 5.1 | 27141100 |
| eCl@ss 6.0 | 27141100 |
| eCl@ss 7.0 | 27141116 |
| eCl@ss 9.0 | 27141116 |

ETIM

| | |
|----------|----------|
| ETIM 6.0 | EC000899 |
| ETIM 7.0 | EC003538 |

UNSPSC

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|-------------|----------|
| UNSPSC 13.2 | 39121410 |
| UNSPSC 18.0 | 39121410 |
| UNSPSC 19.0 | 39121410 |
| UNSPSC 20.0 | 39121410 |
| UNSPSC 21.0 | 39121410 |

Approvals

Approvals

Approvals

UL Recognized / UL Listed / UL Recognized / cUL Listed / EAC / cULus Listed

Ex Approvals

Approval details

| | | |
|---------------|--|--|
| UL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm E317172-20150319 |
|---------------|--|--|

| | | |
|-----------|--|---|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm FILE E 123528 |
|-----------|--|---|

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Approvals

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|---------------|--|---|---------------|
| UL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 317172 |
|---------------|--|---|---------------|

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|------------|--|---|---------------|
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 123528 |
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| EAC | | | RU C- DE.*09.B.00169 |
|-----|--|--|-------------------------|

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|--------------|--|--|--|
| cULus Listed | | | |
|--------------|--|--|--|

Accessories

Additional products

Label - EML (10X7)R - 0816663



Label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: adhesive, lettering field size: 10 x 7 mm, Number of individual labels: 10000

Equipment marking - EML-ESD (20X7)R - 0830567



Equipment marking, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: adhesive, lettering field size: 20 x 7 mm, Number of individual labels: 4000

Power supply unit - QUINT4-PS/1AC/24DC/10 - 2904601



Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 1-phase, output: 24 V DC/10 A

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Accessories

Power supply unit - QUINT4-PS/1AC/24DC/20 - 2904602



Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 1-phase, output: 24 V DC/20 A

Power supply unit - QUINT4-PS/3AC/24DC/10 - 2904621



Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 3-phase, output: 24 V DC/10 A

Power supply unit - QUINT4-PS/3AC/24DC/20 - 2904622



Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 3-phase, output: 24 V DC/20 A

Power supply unit - TRIO-PS-2G/1AC/24DC/10 - 2903149



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single phase, output: 24 V DC/10 A

Power supply unit - TRIO-PS-2G/1AC/24DC/20 - 2903151



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single-phase, output: 24 V DC/20 A

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Accessories

Power supply unit - TRIO-PS-2G/3AC/24DC/5 - 2903153



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/5 A

Power supply unit - TRIO-PS-2G/3AC/24DC/10 - 2903154



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/10 A

Power supply unit - TRIO-PS-2G/3AC/24DC/20 - 2903155



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/20 A

Power supply unit - TRIO-PS-2G/3AC/24DC/40 - 2903156



Primary-switched TRIO power supply for DIN rail mounting, input: 3-phase, output: 24 V DC/40 A, dynamic boost, tool-free fast connection technology for solid and stranded conductors with ferrule
