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Electronic device circuit breaker - CBM E4 24DC/0.5-10A NO-R - 2905743

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

Why buy this product

- For protection against voltage dips caused by overload and short circuit
- Precise nominal current levels of 0.5 to 10 A
- Integrated dynamic current limitation
- Electronic locking mechanism to increase system safety
- Early warning when exceeding 80% of the set nominal current per channel
- Supply up to 40 A possible
- Sophisticated remote signaling concept enables monitoring from any location
- Slim design

Key Commercial Data

| | |
|--------------|---|
| Packing unit | 1 STK |
| GTIN |  4 046356 992350 |
| GTIN | 4046356992350 |

Technical data

Dimensions

| | |
|--------|--------|
| Height | 130 mm |
| Width | 41 mm |
| Depth | 121 mm |

Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -25 °C ... 70 °C (Startup at -40 C type-tested) |
| | -25 °C ... 65 °C (for UL 2367) |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C |

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Ambient conditions

| | |
|----------------------|---------------------|
| Humidity test | 240 h, 95% RH, 40°C |
| Altitude | 6000 m |
| Shock (operation) | 30g |
| Degree of protection | IP20 |

General

| | |
|---------------------|----------------------------------|
| Mounting type | DIN rail: 35 mm |
| Protection class | III |
| Degree of pollution | 2 |
| Design | Rail-mountable 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. 40 A DC |
| | max. 40 A DC (Per terminal position) |
| | 0.5 / 1 / 2 / 4 / 6 / 10 A DC (adjustable per output channel) |
| Measuring tolerance I | typ. 40 % (0.5 ... 1 A) |
| | typ. 10 % (2 - 10 A) |
| Rated insulation voltage U_i | 30 V (Load circuit) |
| Feedback resistance | max. 35 V DC |
| Switch-on delay | 0.1 s (per output channel) |
| | Remote indication contact |
| Required backup fuse | not required, integrated failsafe element |
| Internal output fuse | 15 A DC (per output channel) |
| Active current limitation | Typ. $2.0 \times I_N$ (0.5 - 1 A) |
| | Typ. $1.5 \times I_N$ (2 - 10 A) |
| Status display | LED (green, yellow, red) |
| Efficiency | > 99 % |
| Closed circuit current I_0 | typ. 42 mA |
| Power dissipation | 1 W (No-load operation) |
| | 9 W (Nominal operation) |
| Module initialization time | 3.3 s |
| Waiting time after switch off of a channel | 10 s (of overload / short circuit) |
| Temperature derating | 40 A DC (at 70°C (65°C for UL 2367)) |
| Tripping method | E (electronic) |
| Dielectric strength | max. 30 V DC (Load circuit) |
| Contact type | without electrical isolation |

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Electrical data

| | |
|-------------------------------------|--|
| MTBF (IEC 61709, SN 29500) | 2001962 h (at 25 °C) |
| | 1292135 h (at 40 °C) |
| | 653352 h (at 60 °C) |
| Shutdown time load circuit | 0.02 s ($> 1.3 \times I_N$) |
| | 30 s ($1,1 \dots 1,3 \times I_N$) |
| Undervoltage shutdown load circuit | ≤ 17.8 V DC (active) |
| | ≥ 19 V DC (inactive) |
| Surge voltage shutdown load circuit | ≥ 30.5 V DC (active) |
| | ≤ 29.5 V DC (inactive) |
| Max. capacitive load load circuit | 75000 μ F (per channel at 24 V DC) |
| Output voltage status output | 24 V DC |
| Output current status output | max. 20 mA (when $I > 80\%$ at at least one channel) |
| Input voltage reset input | 7 V DC ... 30 V DC (Falling edge) |
| Vibration resistance, frequency | 15 Hz ... 150 Hz |
| Vibration resistance, acceleration | 39.2 m/s ² |
| Vibration resistance, test duration | 90 min. |

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 | 1.5 mm ² ... 0.25 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 | 1 mA DC ... 100 mA |

Connection data

| | |
|---|---|
| Connection name | Main circuit IN+ |
| Connection method | Push-in connection |
| Stripping length | 18 mm |
| Conductor cross section solid | 0.75 mm ² ... 16 mm ² |
| Conductor cross section AWG | 20 ... 4 |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.75 mm ² ... 10 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.75 mm ² ... 16 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 |

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Technical data

Connection data

| | |
|---|--|
| 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

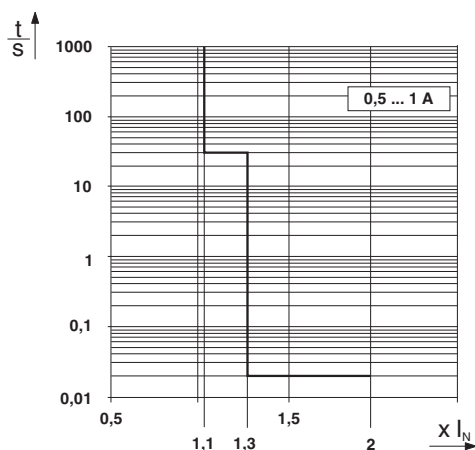
| | |
|--------------------------|---------------|
| Standards/specifications | EN 61000-6-2 |
| | EN 61000-6-3 |
| | EN 60068-2-6 |
| | EN 60068-2-11 |
| | EN 60068-2-78 |

Environmental Product Compliance

| | |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

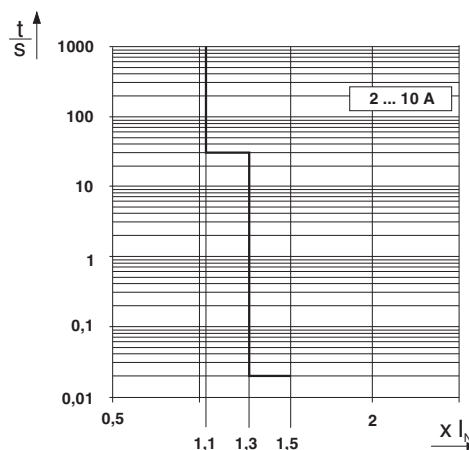
Drawings

Diagram



Trigger characteristic in the DC range

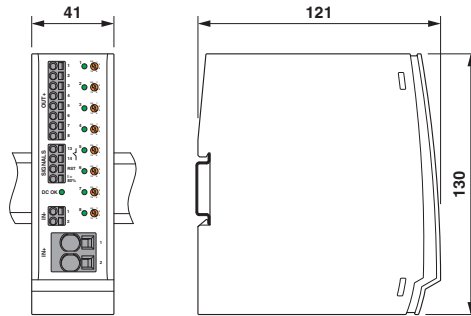
Diagram



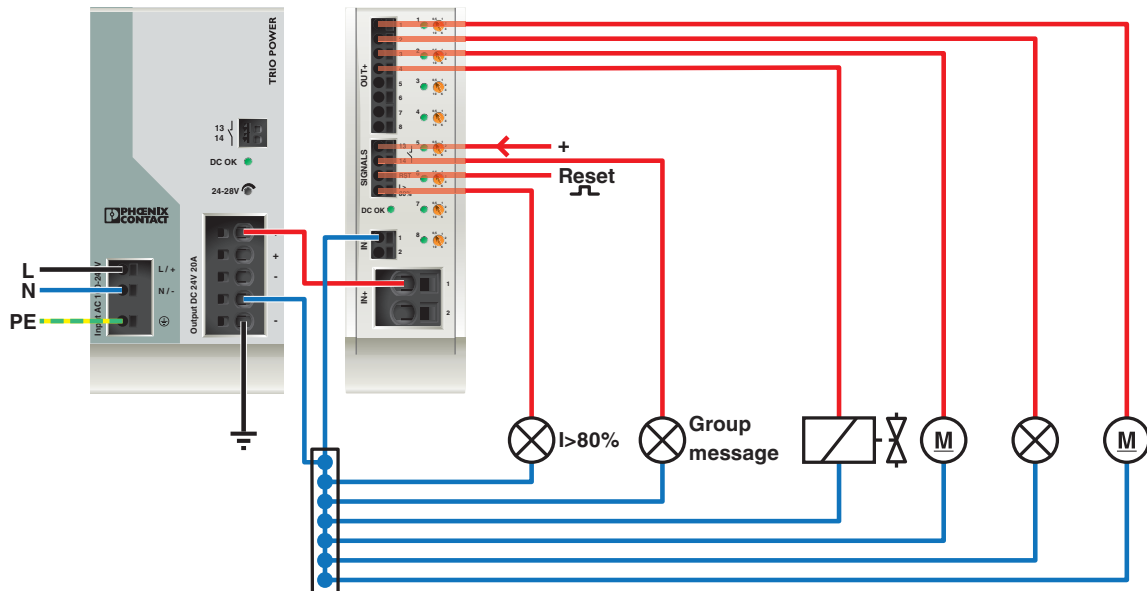
Trigger characteristic in the DC range

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Dimensional drawing



Application drawing



Approvals

Approvals

Approvals

UL Listed / cUL Listed / UL Recognized / EAC / DNV GL / cULus Listed

Ex Approvals

UL Recognized / UL Listed / cUL Listed / cULus Listed

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Approvals

Approval details

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

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

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

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|-----|--|--|-------------------------|
| EAC | | | RU C- DE.A*30.B01561 |
|-----|--|--|-------------------------|

| | | | |
|--------|--|---|------------|
| DNV GL | | http://exchange.dnv.com/tari/ | TAA00000U2 |
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| cULus Listed | | | |
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