

Electronic device circuit breaker - CBM E8 24DC/0.5-10A NO-R - 2905744

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Multi-channel, electronic device circuit breaker with active current limitation for protecting eight 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.

Your advantages

- ✓ 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 80 A possible
- ✓ Sophisticated remote signaling concept enables monitoring from any location
- ✓ Slim design



Key Commercial Data

| | |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 pc |
| GTIN |  4 046356 992367 |
| GTIN | 4046356992367 |

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 (amsl (above mean sea level)) |
| Shock (operation) | 30g (IEC 60068-2-27, Test Ea) |
| Vibration (operation) | 5 Hz ... 24.9 Hz (Amplitude ±1.6 mm; in accordance with IEC 60068-2-6, Test Fc) |
| | 24.9 Hz ... 150 Hz (Acceleration 4g; in accordance with IEC 60068-2-6, Test Fc with additional resonance frequency testing in accordance with DNV GL) |
| 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 | 8 |
| Protection class | III |
| 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. 80 A DC (for double supply IN+ with at least 2 x 6 mm ²) |
| | max. 70 A DC (for UL 2367) |
| | 0.5 / 1 / 2 / 4 / 6 / 10 A DC (adjustable per output channel) |
| Measuring tolerance I | typ. 40 % (0.5 A ... 1 A) |
| | typ. 10 % (2 - 10 A) |
| Feedback resistance | max. 35 V DC |
| Fail-safe element | 15 A DC (per output channel) |
| Active current limitation | typ. 2.0 x I_N (0.5 - 1 A) |
| | typ. 1.5 x I_N (2 - 10 A) |
| Efficiency | > 99 % |
| Closed circuit current I_0 | typ. 50 mA |
| Power dissipation | 1.2 W (No-load operation) |
| | 17.2 W (Nominal operation) |
| Module initialization time | 3.3 s |
| Waiting time after switch off of a channel | 10 s (at overload / short circuit) |
| Temperature derating | 40 A DC (at 70 °C (65 °C for UL 2367)) |
| | 50 A DC (at 60 °C) |
| | 60 A DC (at 50 °C) |

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Electrical data

| | |
|-------------------------------------|------------------------------------------------------|
| | 70 A DC (at 40 °C) |
| | 80 A DC (at 40 °C) |
| | 70 A DC (at 40 °C for UL 2367) |
| Tripping method | E (electronic) |
| Required backup fuse | not required, integrated failsafe element |
| Dielectric strength | max. 30 V DC (Load circuit) |
| MTBF (IEC 61709, SN 29500) | 1304293 h (at 25 °C) |
| | 858501 h (at 40 °C) |
| | 440048 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 (Reset with falling edge) |
| Current consumption reset input | typ. 0.4 mA (at 24 V DC) |

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 DC |

Signaling

| | |
|--------------------------|------------------------------------------------------------------------------------------------|
| Channel LED off | off (Channel switched off) |
| Channel LED green | lit (Channel switched on) |
| | flashing (Channel switched on, programming mode active) |
| Channel LED yellow | lit (Channel switched on, channel load $> 80\%$) |
| Channel LED yellow-green | flashing (Channel switched on, nominal current assistant active) |
| Channel LED red | lit (Channel switched off, over- or undervoltage active) |
| | ON temporarily (Channel switched off, 10 s cool-down phase, overload or short-circuit release) |

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Signaling

| | |
|------------------------|----------------------------------------------------------------------------------------------------------------------|
| | flashing (Channel switched off, ready to be switched back on, overload or short-circuit release) |
| Channel LED red-yellow | flashing (Channel switched on, overload mode, capacity approximately 110 ... 130% , shutdown after 30 s) |
| Channel LED red-green | flashing (Channel switched off, programming mode active, current adjustment after overload or short-circuit release) |
| DC OK LED off | off (No supply voltage) |
| DC OK LED green | lit (Operating voltage in nominal range 18 ... 30 V) |
| DC OK LED yellow | lit (Undervoltage active, voltage ≤ 17.8 V, active channels switched off and channel LEDs are lit red) |
| | flashing (Undervoltage shutdown inactive, device was in undervoltage shutdown) |
| DC OK LED red | lit (Overvoltage shutdown active, voltage ≥ 30.5 V, channels switched off and channel LEDs are lit red) |
| | flashing (Overvoltage shutdown inactive, device was in overvoltage shutdown) |

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 |
| 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 |

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Technical data

Standards and Regulations

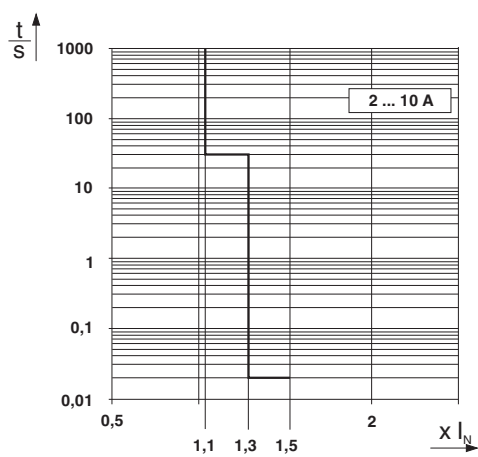
| | |
|--|---------------|
| | EN 60068-2-6 |
| | EN 60068-2-11 |
| | EN 60068-2-78 |

Environmental Product Compliance

| | |
|------------|---------------------------------------------------------|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

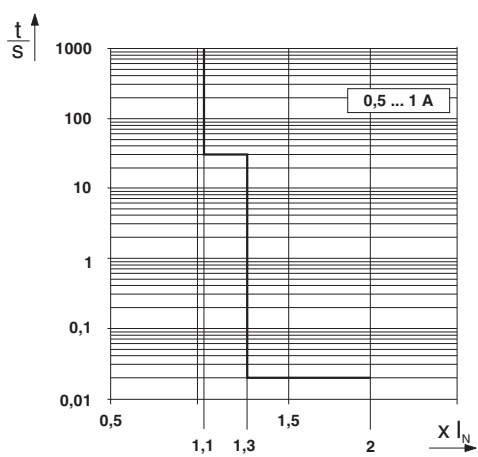
Drawings

Diagram



Trigger characteristic in the DC range

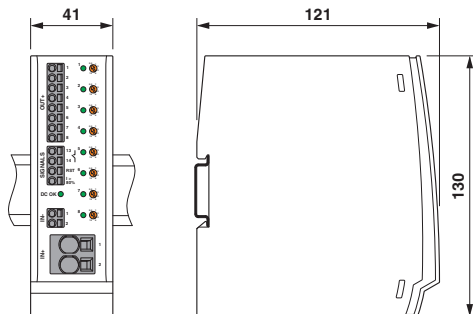
Diagram



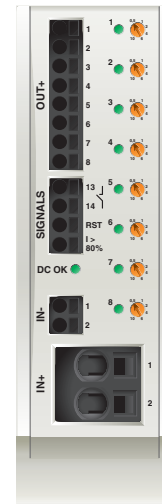
Trigger characteristic in the DC range

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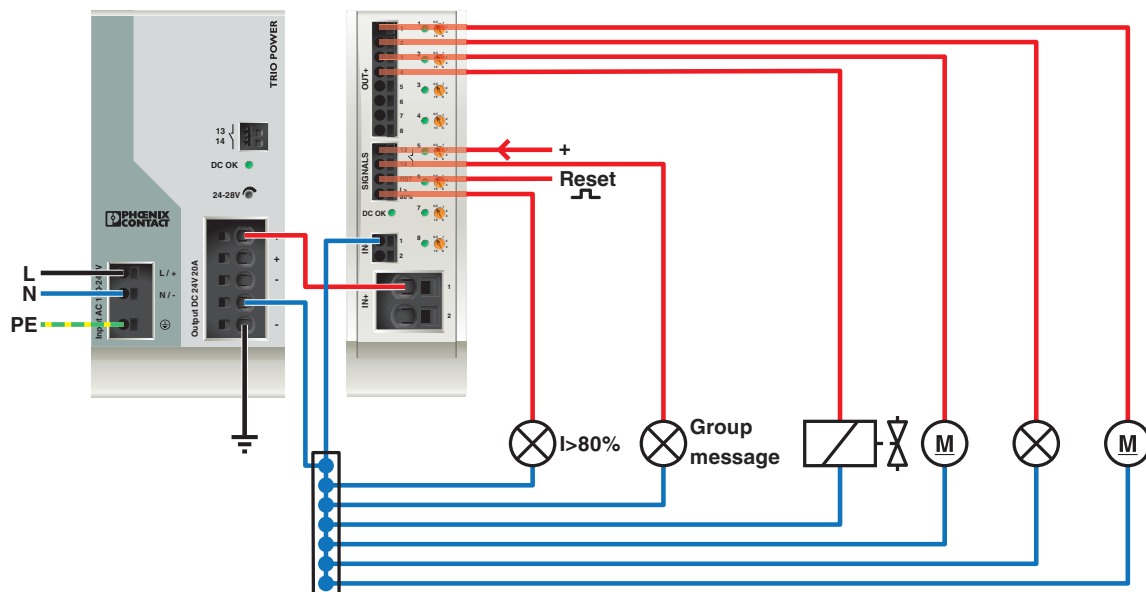
Dimensional drawing



Product drawing



Application drawing



Approvals

Approvals

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Approvals







Approvals

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

Ex Approvals

UL Recognized / UL Listed / cUL Listed / cULus Listed

Approval details

| | | | |
|---------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| DNV GL |  | http://exchange.dnv.com/tari/ | TAA00000U2 |
| UL 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 |
| cUL Listed |  | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 123528 |
| EAC |  | | RU C- DE.A*30.B01561 |
| cULus Listed |  | | |

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