

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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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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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

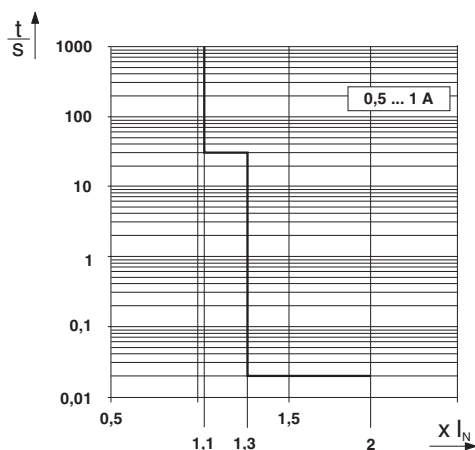
Standards/specifications	EN 61000-6-2
	EN 61000-6-3
	EN 60068-2-6
	EN 60068-2-11
	EN 60068-2-78

Environmental Product Compliance

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

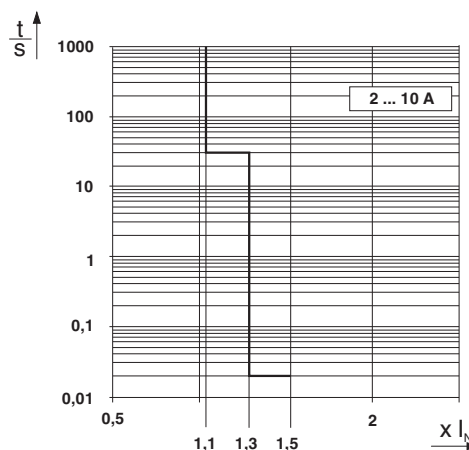
Drawings

Diagram



Trigger characteristic in the DC range

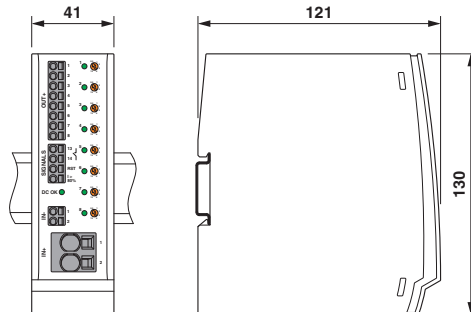
Diagram



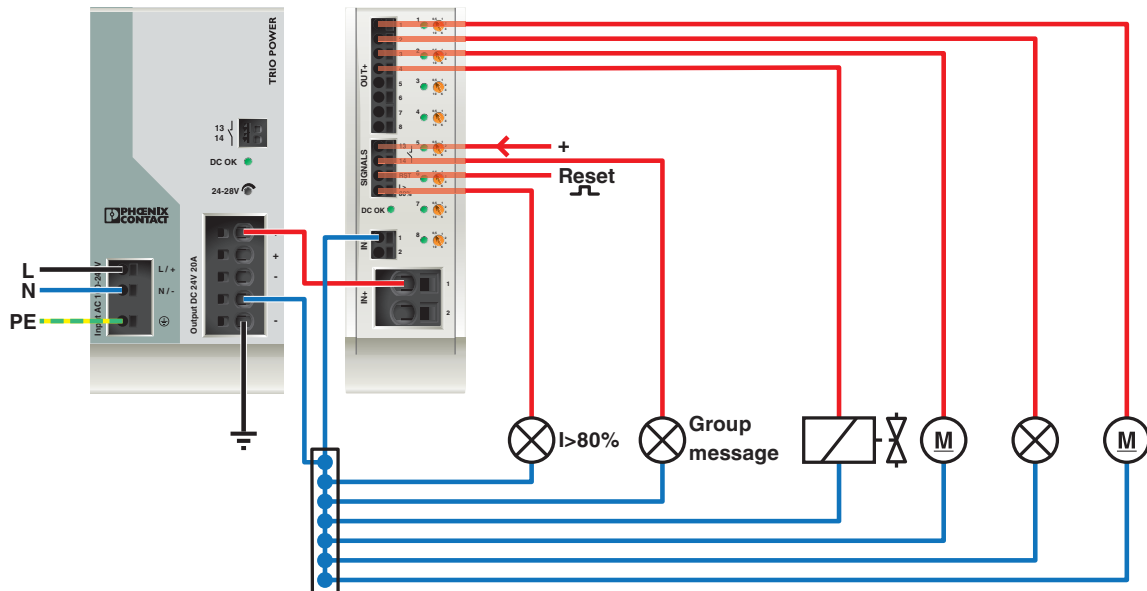
Trigger characteristic in the DC range

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