

Electronic device circuit breaker - CBMC E4 24DC/1-4A+ IOL - 2910410

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Multi-channel electronic circuit breaker with IO-Link interface 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.

Why buy this product

- ✓ Circuits can be adjusted without any tools by means of one single pushable LED button
- ✓ System transparency, thanks to comprehensive diagnostics capabilities
- ✓ Worldwide access to the device, thanks to integration into your IO-Link infrastructure
- ✓ Secure locking, thanks to interlock
- ✓ Plan service calls more efficiently since regular service interval calls can be performed conveniently via the interface.
- ✓ Convenient error diagnostics, thanks to precise error categorization and recording
- ✓ Autonomous operation since the device is fully functional even without the IO-Link interface connection



Key Commercial Data

Packing unit	1 STK
GTIN	 4 055626 448558
GTIN	4055626448558

Technical data

Dimensions

Height	90 mm
Width	36 mm
Depth	98 mm

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Humidity test	96 h, 95% RH, 40°C
Altitude	≤ 2000 m (amsl (above mean sea level))
Shock (operation)	30g (IEC 60068-2-27, Test Ea)

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Ambient conditions

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	4
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. 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)
Measuring tolerance I	± 15 %
Feedback resistance	max. 35 V DC
Fail-safe element	15 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	not required, integrated failsafe element
Dielectric strength	max. 35 V DC (Load circuit)
Contact type	without electrical isolation
MTBF (IEC 61709, SN 29500)	6896552 h (at 25°C with 21% load)
	2597403 h (at 40°C with 34.25% load)
	443066 h (at 35°C with 100% load)
Shutdown time load circuit	≤ 10 ms (for short circuit > $2.0 \times I_N$)
	1 s ($1.2 \dots 2.0 \times I_N$)
Undervoltage shutdown load circuit	≤ 17.8 V DC (active)
	≥ 18.8 V DC (inactive)

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Surge voltage 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)

Interface

Interface type	IO-Link
Specification	V1.1
Reverse polarity protection	Yes
Transmission speed	230.4 kbps (COM3)
Cycle Time	min. 40 ms
Amount of process data	8 Byte (Input data)
	3 Byte (Output data)
Nominal voltage for I/O supply	24 V DC
Current consumption	max. 30 mA (IO-Link L+)
IO-Link Vendor ID	176 _{dec} , 00 B0 _{hex}
IO-Link Device ID	393520 _{dec} , 06 01 30 _{hex}

Signaling

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)
IO-Link LED off	off (No communication)
IO-Link LED green	flashing (IO-Link connection exists)

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
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

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Connection data

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
	EN 60068-2-6
	EN 60068-2-27
	EN 60068-2-78
	EN 50178
	UL 508
	UL 2367
	UL 1310 Class 2 Power Units

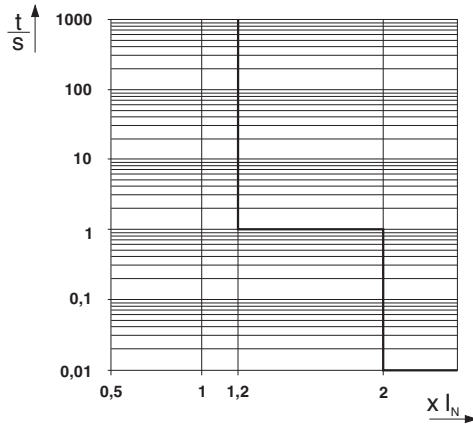
Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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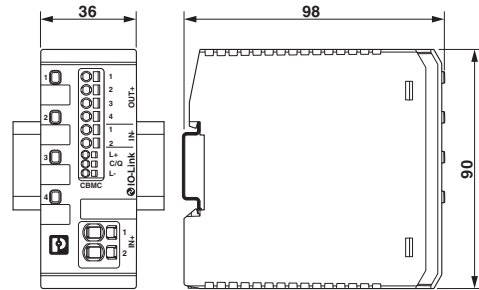
Drawings

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Diagram

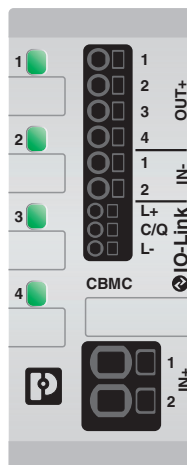


Dimensional drawing



Trigger characteristic in the DC range

Product drawing



Approvals

Approvals

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UL Recognized / UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

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Approvals

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

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