

# Electronic device circuit breaker - CBMC E4 24DC/1-10A IOL - 2910411

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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 448572
GTIN	4055626448572
Weight per Piece (excluding packing)	125.000 g
Custom tariff number	85363030
Country of origin	Germany

## 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

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## Technical data

### Ambient conditions

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)
Degree of protection	IP20

### General

Flammability rating according to UL 94	V-0
Mounting type	DIN rail: 35 mm
Color	light grey RAL 7035
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 <sub>N</sub>	max. 40 A DC
	max. 40 A DC (per terminal position when bridging additional devices via IN+)
	1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 A DC (adjustable per output channel)
Measuring tolerance I	typ. 15 %
Rated insulation voltage U <sub>i</sub>	30 V (Load circuit)
Feedback resistance	max. 35 V DC
Fail-safe element	15 A DC (per output channel)
Efficiency	> 99 %
Closed circuit current I <sub>0</sub>	typ. 33 mA
Power dissipation	typ. 0.8 W (No-load operation)
	typ. 9 W (Nominal operation)
Module initialization time	1.6 s
Waiting time after switch off of a channel	5 s (of overload / short circuit)
Temperature derating	24 A DC (at 60°C)
	28 A DC (at 54°C)
	32 A DC (At 47°C)
	36 A DC (at 41°C)
	40 A DC (at 35°C)
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)

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## Technical data

### Electrical data

	443066 h (at 35°C with 100% load)
Shutdown time load circuit	≤ 10 ms (for short circuit > 2.0 x I <sub>N</sub> )
	1 s (1.2 ... 2.0 x I <sub>N</sub> )
Undervoltage shutdown load circuit	≤ 17.8 V DC (active)
	≥ 18.8 V DC (inactive)
Surge voltage shutdown load circuit	≥ 30.5 V DC (active)
	≤ 29.5 V DC (inactive)
Max. capacitive load load circuit	40000 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 <sub>dec</sub> , 00 B0 <sub>hex</sub>
IO-Link Device ID	393504 <sub>dec</sub> , 06 01 20 <sub>hex</sub>

### Connection data

Connection name	Main circuit IN+
Connection method	Push-in connection
Stripping length	15 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 10 mm <sup>2</sup>
Conductor cross section AWG	15 ... 8
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Connection name	Main circuit IN-
Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Connection name	Main circuit OUT
Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>

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## Technical data

### Connection data

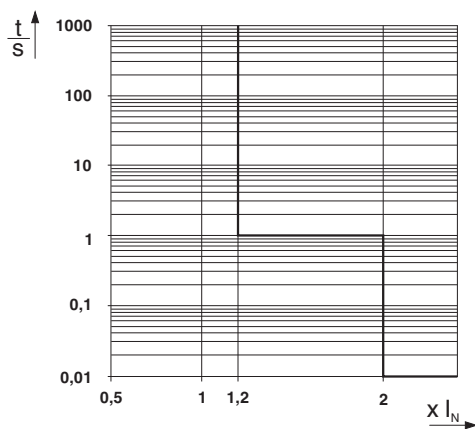
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>

### Standards and Regulations

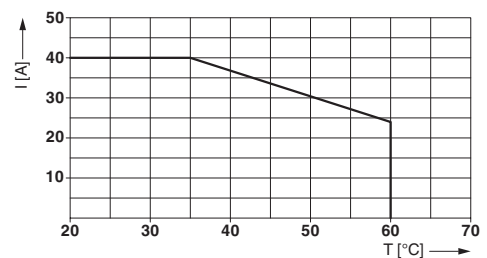
Standards/specifications	EN 61000-6-2
	EN 61000-6-3
	EN 60068-2-78
	UL 508
	UL 2367

## Drawings

Diagram



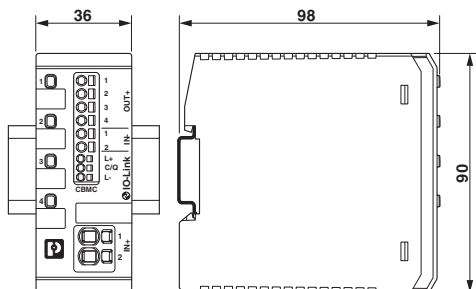
Diagram



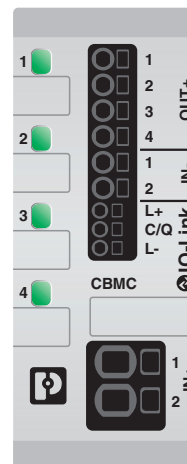
Trigger characteristic in the DC range

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Dimensional drawing



Product drawing



## Classifications

### eCl@ss

eCl@ss 5.1	27141116
eCl@ss 6.0	27141116
eCl@ss 8.0	27141116
eCl@ss 9.0	27141116

### ETIM

ETIM 5.0	EC000899
ETIM 6.0	EC000899

### UNSPSC

UNSPSC 13.2	39121410
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## Approvals

### Approvals

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Approvals

UL Recognized / UL Listed / cUL Listed / cULus Listed

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### Ex Approvals

### Approval details

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## Approvals

UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 317172
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UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
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cULus Listed			
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## Accessories

### Additional products

Label - EML (10X7)R - 0816663



Label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK S1.1, mounting type: adhesive, lettering field size: 10 x 7 mm

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



Equipment marking, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK S1.1, mounting type: adhesive, lettering field size: 20 x 7 mm

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

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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

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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

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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

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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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## Electronic device circuit breaker - CBMC E4 24DC/1-10A IOL - 2910411

### 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

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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

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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

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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

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