

CAPAROC PM IOL - Power module



1115670

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Power module with IO-Link interface for supplying the CAPAROC circuit breaker system with 12 or 24 V DC for up to 20 channels. For DIN rail installation via the CAPAROC current rails.

Your advantages

- The benchmark that you can customize by selecting single signals and resets all the way to IO-Link and PROFINET communication
- Particularly easy operation for everyone with tool-free assembly, direct feed-in to the busbar, and clear operating states
- Exceptionally easy design-in with the comprehensive digital data packet

Commercial data

Item number	1115670
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL11
Product key	CLA231
GTIN	4063151040901
Weight per piece (including packing)	129.3 g
Weight per piece (excluding packing)	92 g
Customs tariff number	85363030
Country of origin	DE

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Technical data

Product properties

Product type	Device circuit breakers
Product family	CAPAROC
Number of slots	2

Insulation characteristics

Protection class	III
Pollution degree	2

Electrical properties

General

Operating voltage	10 V DC ... 30 V DC
Rated voltage	12 V DC
	24 V DC
Rated current I_N	45 A DC (Total current input)
Tripping method	E (electronic)
Feedback resistance	max. 35 V DC
Dielectric strength	35 V DC (Load circuit)
Efficiency	> 99 %
Closed circuit current I_0	typ. 12 mA (no load at 24 V)
Power dissipation	typ. 0.27 W (no load at 24 V)
	< 1.5 W (in nominal operation at 24 V and 45 A)
Temperature derating	45 A (Total current at 40 °C)
	30 A (Total current at 65 °C)
MTBF (IEC 61709, SN 29500)	13826266.85 h (at 25 °C with 21 % load)
	5534344.72 h (at 40 °C with 34.25% load)
	687502.35 h (at 65 °C with 100% load)
Voltage drop	5 mV (at 10 A)

Load circuit

Undervoltage switch-off	≤ 9.2 V DC (active)
	≥ 10.2 V DC (inactive)
Overvoltage switch-off	≥ 30.5 V DC (active)
	≤ 29.5 V DC (inactive)

Reset

Current consumption	typ. 0.5 mA (at 24 V DC)
Pulse length	≥ 50 ms

Connection data

Main circuit IN+

Connection method	Push-in connection
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Stripping length	18 mm
Conductor cross section rigid	0.5 mm ² ... 16 mm ²
Conductor cross section AWG	20 ... 8
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.5 mm ² ... 16 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.5 mm ² ... 16 mm ²

Main circuit IN-

Connection method	Push-in connection
Stripping length	18 mm
Conductor cross section rigid	0.5 mm ² ... 16 mm ²
Conductor cross section AWG	20 ... 8
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.5 mm ² ... 16 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.5 mm ² ... 16 mm ²

IO-Link

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.2 mm ² ... 0.75 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.2 mm ² ... 1.5 mm ²

Interfaces

IO-Link

Interface type	IO-Link
Specification	V1.1
Reverse polarity protection	yes
Transmission speed	230.4 kbps (COM3)
Cycle Time	min. 20 ms
Amount of process data	8 Byte (Input data) 3 Byte (Output data)
Nominal voltage for I/O supply	24 V DC
Current consumption	typ. 30 mA (IO-Link L+)
IO-Link Vendor ID	176 _{dec} , 00 B0 _{hex}
Maximum system extension	≤ 20 (Channels)

Signaling

IO-Link LED off	off (No communication)
IO-Link LED green	flashing (IO-Link connection exists)
Power (PWR) LED green	lit (Supply voltage OK)
Power (PWR) LED red	lit (Supply voltage outside the nominal range) flashing (System topology changed)

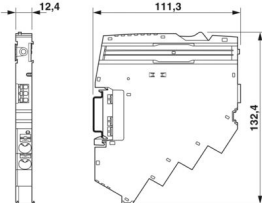
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Dimensions

Dimensional drawing	
Width	12.4 mm
Height	132.4 mm
Depth	111.3 mm (incl. DIN rail 7.5 mm)

Material specifications

Color	light grey (RAL 7035)
Material	PA 6
	PA 6
	PA 6
	PC
Flammability rating according to UL 94	V-0

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-30 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Altitude	≤ 4000 m (amsl)
Humidity test	96 h, 95 % RH, 40 °C
Shock (operation)	30g (11 ms period, half-sine shock pulse, according to IEC 60068-2-27)
	25g (6 ms duration, half-sine shock pulse in accordance with IEC 60068-2-27, continuous shock)
Vibration (operation)	5g (10 ... 150 Hz / 10 cycles / axis / X, Y, Z)

Approvals

UL approval

Identification	UL/C-UL Listed UL 508
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Corrosive gas test

Identification	ISA S71.04.2013 G3 Harsh Group A
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Standards and regulations

Standards/specifications	EN 61000-6-2
Note	EMC – Immunity for industrial areas
Standards/specifications	EN 61000-6-3

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Note	EMC – Emission for residential, business and commercial properties and small operations
Standards/specifications	EN 60068-2-78
Note	Environmental influences – Moisture and heat, constant
Standards/specifications	EN 50178
Note	Equipping power installations with electronic equipment

Mounting

Mounting type	pluggable onto CAPAROC CR... current rail
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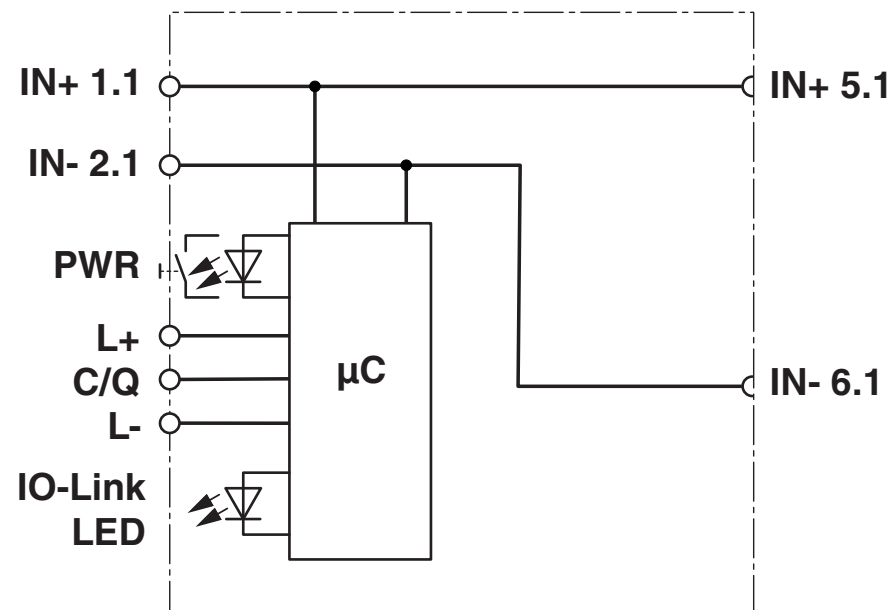
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Drawings

Product drawing



Block diagram



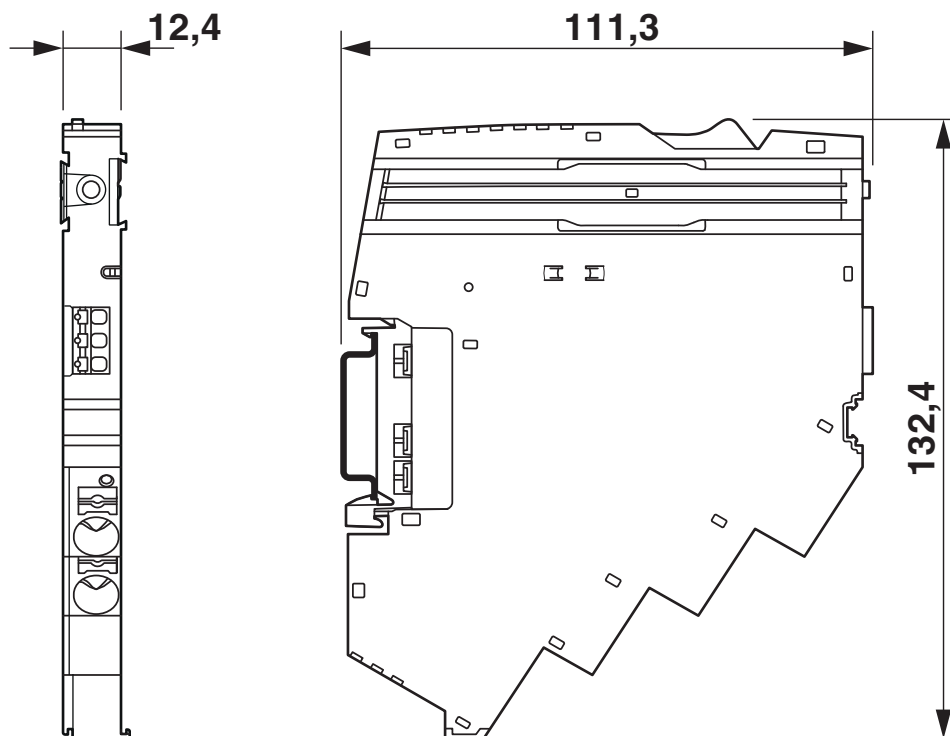
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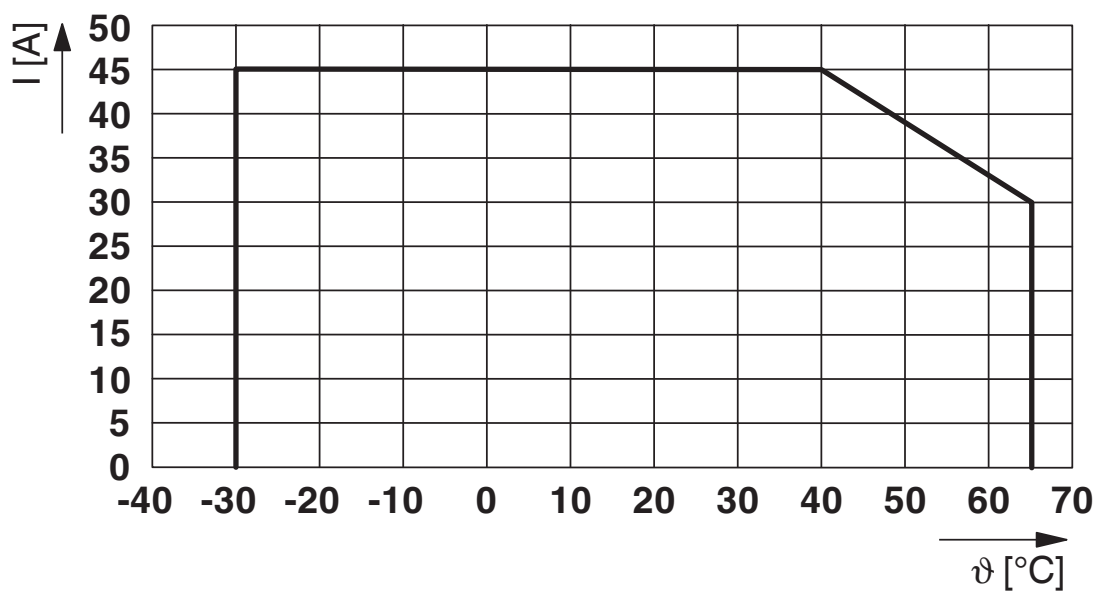
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Dimensional drawing



Diagram



Max. permissible current in relation to the ambient temperature

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1115670>



UL Listed
Approval ID: FILE E 123528



cUL Listed
Approval ID: FILE E 123528

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27140401
ECLASS-12.0	27140401
ECLASS-13.0	27140401

ETIM

ETIM 9.0	EC003538
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UNSPSC

UNSPSC 21.0	39121400
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Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I
China RoHS	
Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.
EU REACH SVHC	
REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	5447ed30-a625-4150-837d-b57361cfdd27

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Mandatory accessories

CAPAROC CR 20 - Busbar

1110989

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Busbar for CAPAROC system with 20 slots. For installation on a DIN rail.



CAPAROC CR 8 - Busbar

1115672

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Busbar for the CAPAROC system with 8 slots. For installation on a DIN rail.



Accessories

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CAPAROC E1 12-24DC/1-4A - Electronic circuit breaker

1115415

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1-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. Nominal current adjustable from 1 A to 4 A via LED button. For DIN rail installation via the CAPAROC current rails.

CAPAROC E1 12-24DC/1-10A - Electronic circuit breaker

1115649

<https://www.phoenixcontact.com/us/products/1115649>



1-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. Nominal current adjustable from 1 A to 10 A via LED button. For DIN rail installation via the CAPAROC current rails.

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CAPAROC E1 12-24DC/1A - Electronic circuit breaker

1157288

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1-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. With fixed nominal current. For DIN rail installation via the CAPAROC current rails.

CAPAROC E1 12-24DC/2A - Electronic circuit breaker

1157290

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1-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. With fixed nominal current. For DIN rail installation via the CAPAROC current rails.

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CAPAROC E1 12-24DC/4A - Electronic circuit breaker

1157285

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1-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. With fixed nominal current. For DIN rail installation via the CAPAROC current rails.

CAPAROC E1 12-24DC/6A - Electronic circuit breaker

1157286

<https://www.phoenixcontact.com/us/products/1157286>



1-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. With fixed nominal current. For DIN rail installation via the CAPAROC current rails.

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CAPAROC E1 12-24DC/8A - Electronic circuit breaker

1157279

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1-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. With fixed nominal current. For DIN rail installation via the CAPAROC current rails.

CAPAROC E1 12-24DC/10A - Electronic circuit breaker

1157284

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1-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. With fixed nominal current. For DIN rail installation via the CAPAROC current rails.

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CAPAROC E2 12-24DC/1-4A - Electronic circuit breaker

1115655

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2-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. Nominal current adjustable from 1 A to 4 A via step switch. For DIN rail installation via the CAPAROC current rails.

CAPAROC E2 12-24DC/2-10A - Electronic circuit breaker

1110984

<https://www.phoenixcontact.com/us/products/1110984>



2-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. Nominal current adjustable from 2 A to 10 A via step switch. For DIN rail installation via the CAPAROC current rails.

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CAPAROC E4 12-24DC/1-4A - Electronic circuit breaker

1115657

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Four-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. Nominal current adjustable from 1 A to 4 A via LED button. For DIN rail installation via the CAPAROC current rails.

CAPAROC E4 12-24DC/1-10A - Electronic circuit breaker

1115658

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Four-channel electronic circuit breaker module for protecting 12 and 24 V DC loads against overload and short circuit. Nominal current adjustable from 1 A to 10 A via LED button. For DIN rail installation via the CAPAROC current rails.

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CAPAROC PD 0V - Potential distributors

1110987

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Potential distributor with Push-in connections for directly connecting the 0 V return conductor in the CAPAROC system. For DIN rail installation via the CAPAROC current rails.

UC-TM 12 - Marker for terminal blocks

0819194

<https://www.phoenixcontact.com/us/products/0819194>



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 12 mm, lettering field size: 11.45 x 10.5 mm, Number of individual labels: 40

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UCT-TM 12 - Marker for terminal blocks

0829144

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Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped, for terminal block width: 12 mm, lettering field size: 10.8 x 9.6 mm, Number of individual labels: 30

CAPAROC CR EXT20 - Busbar

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Extension busbar with 20 slots for the CAPAROC system. For installation on a DIN rail.

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CAPAROC CR EXT8 - Busbar

1110990

<https://www.phoenixcontact.com/us/products/1110990>



Extension busbar with 8 slots for CAPAROC system. For installation on a DIN rail.

CAPAROC CR EXT4 - Busbar

1110991

<https://www.phoenixcontact.com/us/products/1110991>



Extension busbar with 4 slots for the CAPAROC system. For installation on a DIN rail.

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CAPAROC CR CON - Metal part

1270955

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Metal extension rails from connecting CAPAROC initial busbars.

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