CAPAROC PM EC - Feed-in module

1687560

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CRA-READY



Feed-in module with EtherCAT® interface for supplying the CAPAROC circuit breaker system with 12 V DC or 24 V DC. Additional system interface for communication with the power supply. For DIN rail installation via the CAPAROC current rails.

Product description

Further information about the CAPAROC product family can be found in the online manual at: phoenixcontact.com/caparoc-help

Your advantages

- The benchmark that you can customize by selecting single signals and resets all the way to EtherCAT® 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 for use in EtherCAT® applications

ELEKTROGERÄTE RÜCKNAHME

Commercial data

Item number	1687560
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CLA231
Product key	CLA231

GTIN	4067923247703
Weight per piece (including packing)	184.5 g
Weight per piece (excluding packing)	184.5 g
Customs tariff number	85363030
Country of origin	DE

Technical data

Notes

Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

General

Note	LABS release – in accordance with test specification VW PV 3. 10.7:2005-0
	When connecting the conductor, make sure that the CAPAROC modules are not pulled apart due to tensile force. Gaps must not be created between the modules.
	EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Product properties

Product type	Device circuit breakers
Product family	CAPAROC
Type	Plug-in module
Number of slots	4

Insulation characteristics

Protection class	III
Pollution degree	2

System properties

EtherCAT®

Device function	EtherCAT® SubDevice

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 (Total current input)
Rated surge voltage	0.5 kV
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. 46 mA (no load at 24 V)
Power dissipation	typ. 1.1 W (no load at 24 V)
	< 4.5 W (at 40 A)

Temperature derating	45 A (Total current at 60°C)
	20 A (Total current at 65 °C)
	45 A (Total current at 60°C, in accordance with UL)
MTBF (IEC 61709, SN 29500)	7242508.37 h (at 25 °C with 21 % load)
	3958056.77 h (at 40°C with 34.25% load)
	764697.81 h (at 60°C with 100% load)
Voltage drop	0.082 V (at 40 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)

Connection data

Main circuit IN+

Connection method	Push-in connection
Stripping length	18 mm
Conductor cross-section AWG	20 ... 8
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.5 mm² ... 16 mm²
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.5 mm² ... 16 mm²

Main circuit IN-

Connection method	Push-in connection
Stripping length	18 mm
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Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.5 mm² ... 16 mm²
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.5 mm² ... 16 mm²

System communication

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross-section rigid	0.2 mm² ... 1.5 mm²
Conductor cross-section AWG	24 ... 16
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.2 mm² ... 0.75 mm²
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.2 mm² ... 1.5 mm²

Interfaces

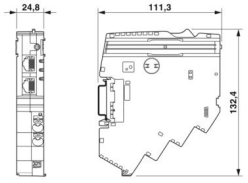
Maximum system extension	≤ 16 (CAPAROC modules alignable)
Interface type	Ethernet
Number	2
Transmission speed	10 Mbps 100 Mbps
Transmission physics	Ethernet in RJ45 twisted pair

Protocols supported	EtherCAT® SubDevice, CoE, FoE, EoE

Signaling

Power (PWR) LED green	lit (Supply voltage within the operating voltage range)
	3x flashing (Global programming lock deactivated)
Power (PWR) LED red	lit (Supply voltage outside the operating voltage range)
	5x flashing (Factory reset command accepted)
Power (PWR) LED yellow	lit (PWR button pressed)
	3x flashing (Global programming lock activated)
Ready (RDY) LED yellow	flashing (Firmware update is running)
Ready (RDY) LED green	lit (Firmware started successfully)
Error (ERR) LED red	off (No communication error. The device's EtherCAT® communication is working perfectly.)
	flashing quickly (Invalid configuration/general configuration error Possible reason:A state change triggered by the main device is not possible due to register or object settings.The most common reason is an outdated module slot configuration.)
	flashing (Local error: The SubDevice application has changed the EtherCAT® state independently. Possible reason 1: A host watchdog timeout has occurred.Possible reason 2: Incorrect module configuration occurred during operation. Module replaced by wrong module.)
	two flashes (Watchdog timeout of the application)
Run (RUN) LED green	off (Device is in the INIT state)
	flashing quickly (2.5 Hz) (Device is in the PRE-OPERATIONAL state)
	flashing (Device is in the SAFE-OPERATIONAL state)
	lit (Device is in the OPERATIONAL state)

Dimensions

Dimensional drawing	
Width	24.8 mm
Height	132.4 mm
Depth	111.3 mm (incl. DIN rail 7.5 mm)

Material specifications

Color	light gray (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
	-30 °C ... 60 °C (in acc. with UL)
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 Hz ... 150 Hz / 10 cycles / axis / X, Y, Z)

Approvals

UL approval

Identification	UL/C-UL Listed UL 508
	UL 121201 Class I, Division 2, Groups A, B, C, D, T4A

Standards and regulations

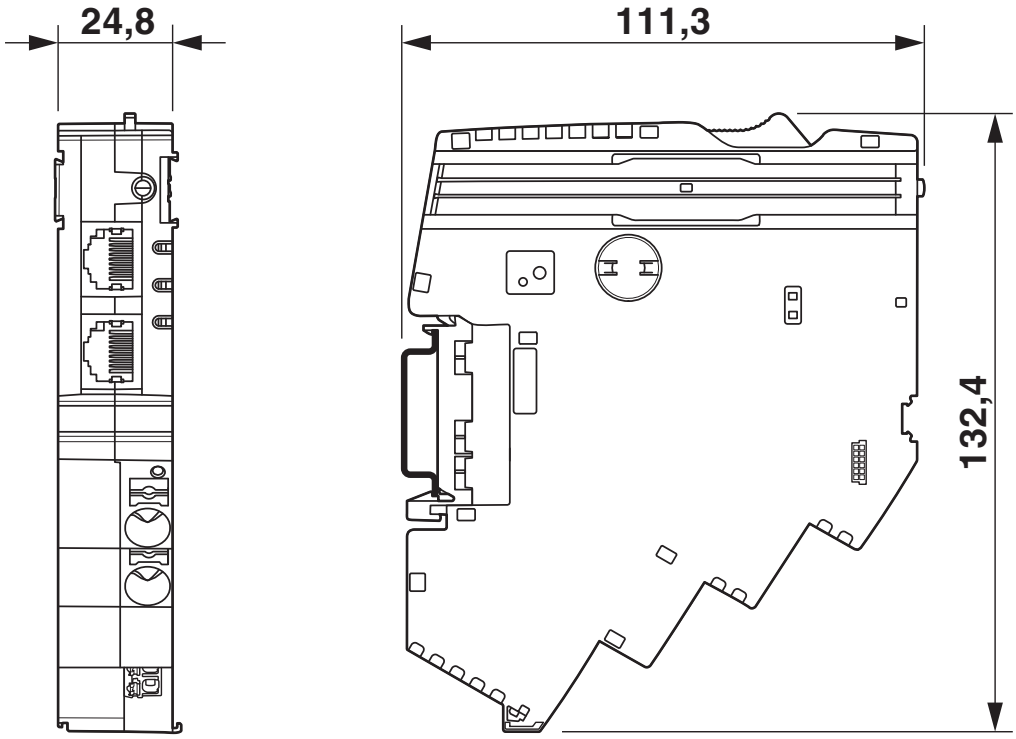
Standards/specifications	EN 61000-6-2
Note	EMC – Immunity for industrial areas
Standards/specifications	EN 61000-6-4
Note	EMC – Immunity for industrial areas
Standards/specifications	EN 61000-6-8
Note	EMC interference emission for professional devices that are used in business and commercial areas as well as in small businesses
Standards/specifications	EN 60068-2-78
Note	Environmental influences – Moisture and heat, constant
Standards/specifications	EN 50178
Note	Equipping power installations with electronic equipment
Standards/specifications	EN 60068-2-6
Note	Environmental influences – Vibrations (sinusoidal)
Standards/specifications	EN 60068-2-27
Note	Environmental influences – Shocks

Mounting

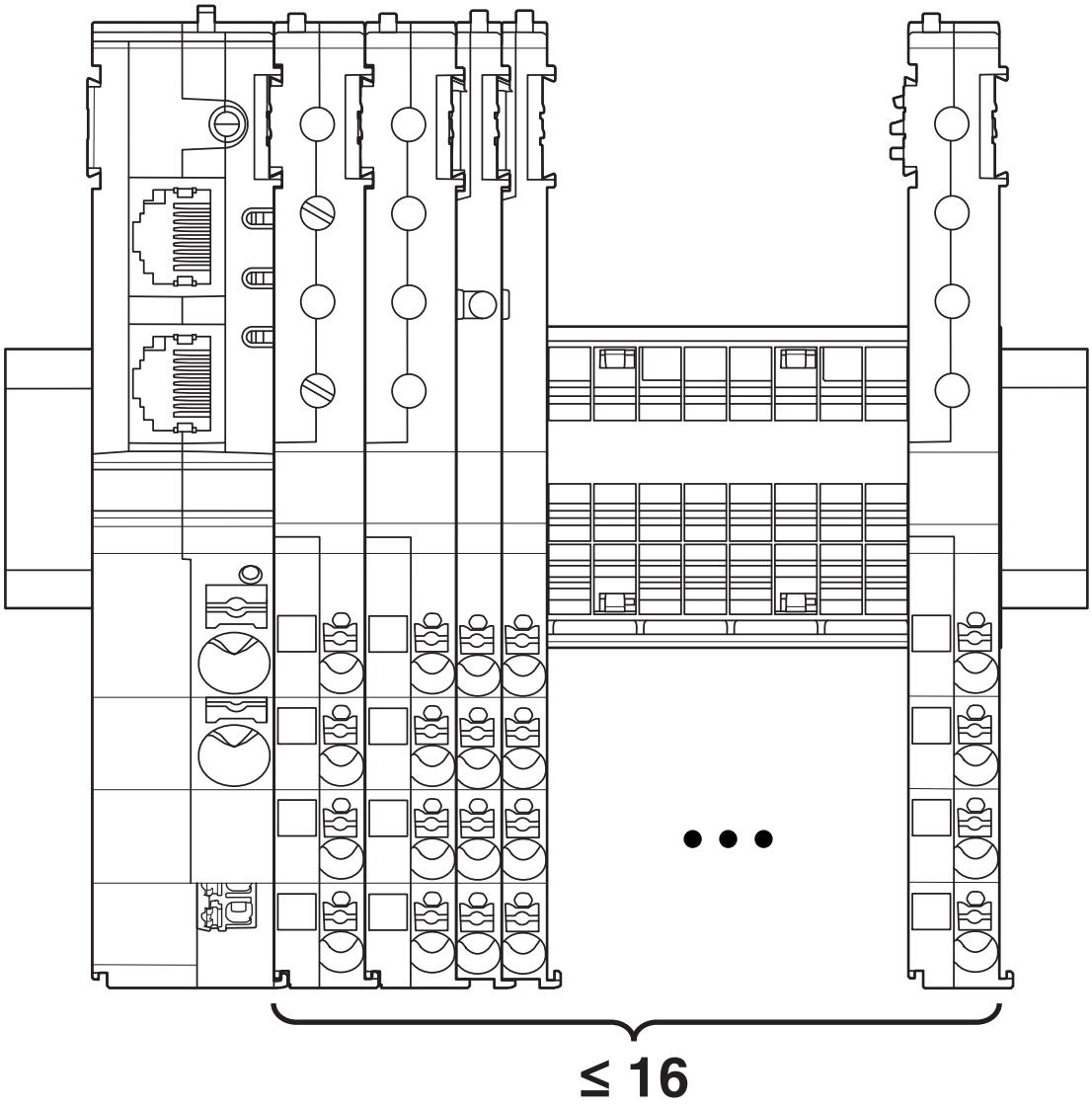
Mounting type	pluggable onto CAPAROC CR… current rail

Drawings

Dimensional drawing

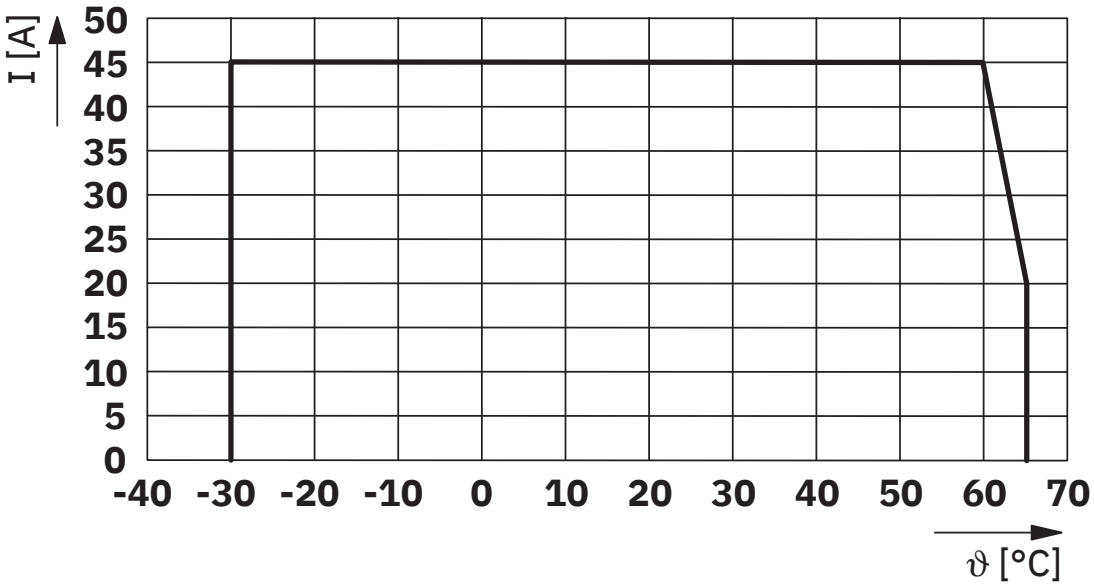


Schematic diagram



When using the feed-in module, max. 16 circuit breaker modules can be set. Any number of extra potential distribution modules can be added.

Diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/gb/products/1687560

UL Listed
Approval ID: E123528

cUL Listed
Approval ID: E123528

EtherCAT
Approval ID: 0x84_009

cULus Listed
Approval ID: E483407

Classifications

ECLASS

ECLASS-13.0	27140401
ECLASS-15.0	27140401

ETIM

ETIM 10.0	EC003538

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)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)

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