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

1115649

https://www.phoenixcontact.com/de/produkte/1115649

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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 10 A via LED button. For DIN rail installation via the CAPAROC current rails.

Your advantages

- The benchmark that you can tailor with channel-precise design with integrated potential distribution
- Easy operation for everyone through tool-free assembly, uninterrupted installation, and transparent operating state
- Exceptionally easy design-in with the narrowest of space requirements and four protected outputs

Commercial Data

Item number	1115649
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	L1 - Schutzschalter
Product Key	CLA232
GTIN	4063151039967
Weight per Piece (including packing)	95 g
Weight per Piece (excluding packing)	95 g
Customs tariff number	85363010
Country of origin	DE

Technical Data

Notes

General

Note	LABS release – in accordance with test specification VW PV 3. 10.7:2005-0

Product properties

Product type	Device circuit breakers
Product family	CAPAROC
Number of positions	1
No. of channels	1
Number of slots	1

Insulation characteristics

Protection class	III
Pollution degree	2

Electrical properties

No. of channels	1

General

Operating voltage	10 V DC ... 30 V DC
Rated voltage	12 V DC
	24 V DC
Rated current I_N	10 A DC
Rated current I_N	1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 A DC (adjustable per output channel)
Rated current (pre-adjusted)	4 A
Rated surge voltage	0.5 kV
Tripping method	E (electronic)
Required backup fuse	Only required if I_{max} of the power supply > the short-circuit switching capacity. Integrated failsafe element.
Short-circuit switching capacity	300 A
Dielectric strength	35 V DC (Load circuit)
Fuse	electronic
Efficiency	> 99 %
Closed circuit current I_0	typ. 8.5 mA (no load at 24 V)
Power dissipation	typ. 0.2 W (no load at 24 V)
	< 1.6 W (in nominal operation at 24 V and 10 A)
Measuring tolerance I	± 15 % (typ.)
Temperature derating	10 A (Total current at 40°C)
	7 A (Total current at 65 °C)
MTBF (IEC 61709, SN 29500)	18685596 h (at 25 °C with 21 % load)
	7871572 h (at 40°C with 34.25% load)

	1102033 h (at 40°C with 100% load)
Voltage drop	0.14 V (at 10 A)
Fail-safe element	15 A DC (per output channel)

Load circuit

Shutdown time	4 s (with overload 1.1…1.5 x I_N)
	1 s (with overload 1.5…2.0 x I_N)
	0.1 s (with overload 2.0…3.0 x I_N)
	typ. 10 ms (For short circuit > 3.0 x I_N)
Undervoltage switch-off	≤ 8.5 V DC (active)
	≥ 9.2 V DC (inactive)
Overvoltage switch-off	≥ 32.5 V DC (active)
	≤ 30.5 V DC (inactive)
Max. capacitive load	≤ 20000 µF (Depending on the current setting and the short-circuit current available)

Connection data

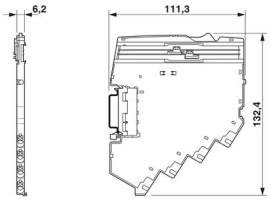
Fuse-protected output

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section flexible	0.2 mm² ... 4 mm²
Conductor cross section solid	0.2 mm² ... 4 mm²
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 4 mm²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm² ... 4 mm²

LED signaling

Channel LED off	off (Channel switched off)
Channel LED yellow	lit (Channel switched on, channel load > 80%)
	flashing (Programming mode active)
	two flashes (Check the installation, no communication to power module)
Channel LED green	lit (Channel switched on)
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)

Dimensions

Dimensional drawing	
Width	6.2 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 (The temperature range of the power module must be taken into consideration)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Altitude	≤ 4000 m (amsl (above mean sea level))
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)
	15g (6 ms duration, half-sine shock pulse in accordance with IEC 60068-2-27, continuous shock. If more than six CAPAROC E1 modules are used in the system.)
Vibration (operation)	5g (10 ... 150 Hz / 10 cycles / axis / X, Y, Z)

Approval data

UL approval

Identification	UL/C-UL Listed UL 508
	UL Recognized UL 2367
	UL 121201 Class I, Division 2, Groups A, B, C, D, T4A

Standards and regulations

Standards/specifications	EN 61000-6-2
Standards/specifications	EN 61000-6-3

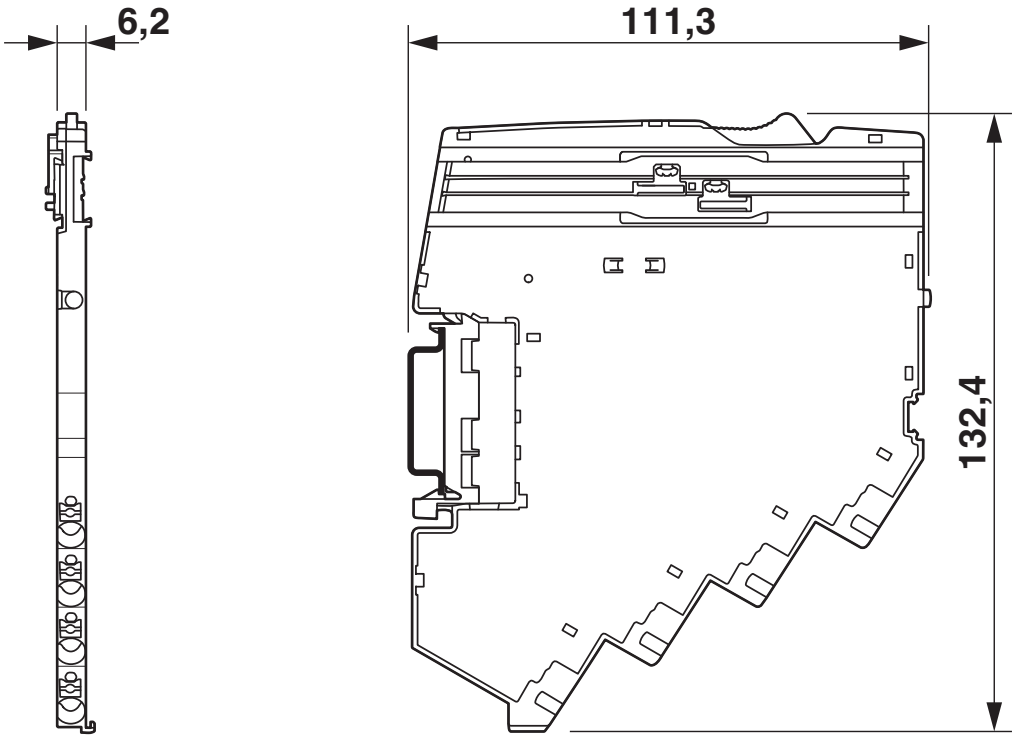
Standards/specifications	EN 60068-2-78
Standards/specifications	EN 50178
Standards/specifications	EN 60068-2-6
Standards/specifications	EN 60068-2-27

Mounting

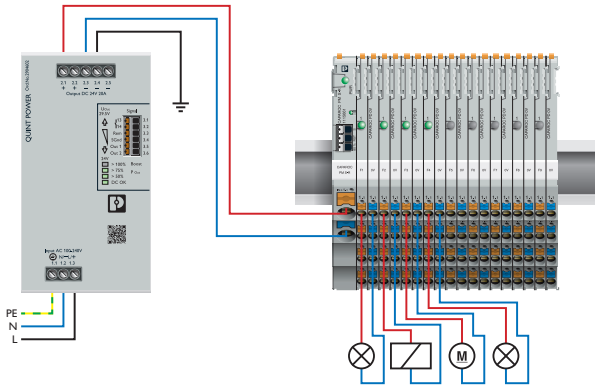
Mounting type	pluggable onto CAPAROC CR… current rail

Drawings

Dimensional drawing



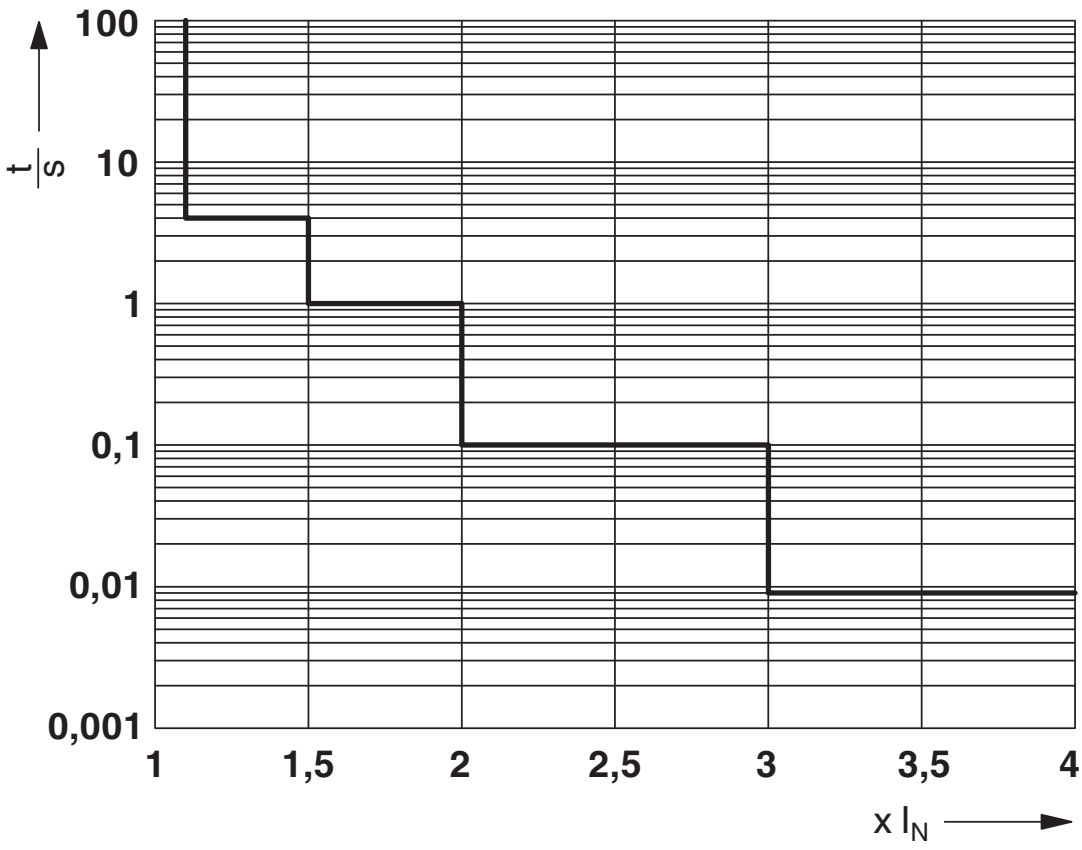
Application drawing



Product drawing

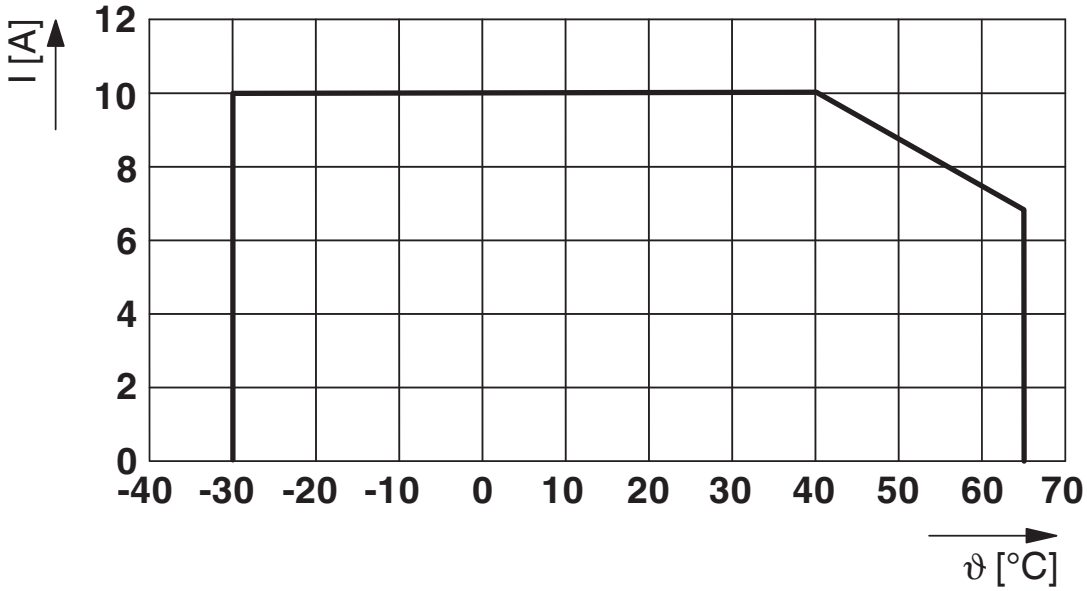


Diagram



Trigger characteristic

Diagram



Approvals

UL Recognized
Approval ID: FILE E 317172

UL Listed
Approval ID: FILE E 123528

cUL Listed
Approval ID: FILE E 123528

UL Recognized
Approval ID: FILE E 324415

cUL Listed
Approval ID: FILE E 483407

UL Listed
Approval ID: FILE E 483407

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Classifications

ECLASS

ECLASS-9.0	27141116
ECLASS-10.0.1	27140401
ECLASS-11.0	27140401
ECLASS-12.0	27140401

ETIM

ETIM 8.0	EC003538

UNSPSC

UNSPSC 21.0	39121400

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1

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.



CAPAROC PM S-R - Power module

1115661

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Power module with status output and reset input for supplying the CAPAROC circuit breaker system with 12 or 24 V DC. For DIN rail installation via the CAPAROC current rails.

CAPAROC PM PN - Power module

1110986

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Power module with PROFINET interface for supplying the CAPAROC circuit breaker system with 12 or 24 V DC. Additional system interface for communication with the power supply. For DIN rail installation via the CAPAROC current rails.

Accessories

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-TMF 6 - Marker for terminal blocks

0818140

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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: 6.2 mm, lettering field size: 5.6 x 5.1 mm, Number of individual labels: 80

UCT-TMF 6 - Marker for terminal blocks

0828746

https://www.phoenixcontact.com/de/produkte/0828746



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: 6.2 mm, lettering field size: 5.4 x 4.7 mm, Number of individual labels: 60

UC-TM 6 - Marker for terminal blocks

0818085

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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: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

UCT-TM 6 - Marker for terminal blocks

0828736

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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: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 60

CAPAROC CR EXT20 - Busbar

1115674

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

CAPAROC CR EXT8 - Busbar

1110990

https://www.phoenixcontact.com/de/produkte/1110990



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

CAPAROC CR EXT4 - Busbar

1110991

https://www.phoenixcontact.com/de/produkte/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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