EC-E1 0,5A - Electronic circuit breaker

0903022

https://www.phoenixcontact.com/us/products/0903022

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Electronic circuit breaker, signal contact: 1 N/O contact, nominal current: 0.5 A

Your advantages

- Error-free short-circuit detection even across long cable paths with the electronics characteristic curve
- Active current limitation to improve the capacity of the upstream power supply
- Increased system transparency with integrated floating remote indication contact (N/O)

Commercial data

Item number	0903022
Packing unit	6 pc
Minimum order quantity	6 pc
Sales key	CL04
Product key	CLA131
Catalog page	Page 386 (C-4-2019)
GTIN	4046356450287
Weight per piece (including packing)	69.016 g
Weight per piece (excluding packing)	69.016 g
Customs tariff number	85362010
Country of origin	DE

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Technical data

Notes

General	When mounted in rows without convection cooling, the nominal device current should only be led to a maximum of 80% due to the thermal effect during continuous operation (100% operating factor).
	Special precautionary measures must be taken in systems or machines, to prevent components from restarting (e.g., use of a safety PLC).
	Parallel connection of multiple circuit breakers is not permitted.

Product properties

Product type	Device circuit breakers
Product family	EC-E
Type	DIN rail module, one-piece
Number of positions	1
No. of channels	1

Insulation characteristics

Degree of pollution	2

Electrical properties

Fuse type	Automatic device
Switching capacity I_{CN}	Active current limitation
Fuse	electronic

General

Operating voltage	24 V DC
	18 V DC ... 32 V DC
Nominal current I_N	0.5 A
Rated surge voltage	0.5 kV
Tripping method	E (electronic)
Required backup fuse	not required, integrated failsafe element
Dielectric strength	max. 32 V DC (Load circuit)
Switch off	Typ. 1.8 x I_N
Active current limitation	active
Fuse	electronic
Closed-circuit current range I0	typ. 25 mA ±5 mA (When switched on)
MTBF (IEC 61709, SN 29500)	7430000 h (at 25 °C with 80 % load)
	6590000 h (at 40 °C with 80 % load)
Voltage drop	70 mV (at I_N)

Load circuit

Max. capacitive load	20000 µF

Auxiliary contact

PHŒNIX CONTACT

Contact connection type	floating signal contact
Minimum operating voltage U_{min} DC	10 V DC
Maximum operating voltage U_{max} DC	30 V DC
Minimum operating current I_{min}	10 mA
Max. operating current I_{max}	0.5 A

Indicator/remote signaling

Connection name	Auxiliary contact
Switching function	N/O contact

Connection data

Nominal cross section	16.00 mm²

Line+ / LOAD+ /0V

Screw thread	M4
Tightening torque	... 1.2 Nm
Stripping length	10 mm
Conductor cross section rigid	0.5 mm² ... 16 mm²
Cross section AWG	20 ... 6 (converted acc. to IEC)
Conductor cross section flexible	0.5 mm² ... 16 mm²
Conductor cross section, flexible [AWG]	20 ... 6 (converted acc. to IEC)
Conductor cross-section flexible (ferrule without plastic sleeve)	0.5 mm² ... 10 mm²
Flexible conductor cross section (ferrule with plastic sleeve)	0.5 mm² ... 10 mm²
2 conductors with same cross section, solid	0.5 mm² ... 4 mm²
2 conductors with the same cross-section AWG rigid	20 ... 12 (converted acc. to IEC)
2 conductors with same cross section, flexible	0.5 mm² ... 4 mm²
2 conductors with the same cross-section AWG flexible	20 ... 12 (converted acc. to IEC)
2 conductors with same cross section, flexible, with ferrule without plastic sleeve	0.5 mm² ... 2.5 mm²
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm² ... 6 mm²
Nominal cross section	16 mm²

Auxiliary contact

Screw thread	M3
Tightening torque	... 0.5 Nm
Stripping length	8 mm
Conductor cross-section flexible (ferrule without plastic sleeve)	0.25 mm² ... 2.5 mm²
Flexible conductor cross section (ferrule with plastic sleeve)	0.25 mm² ... 2.5 mm²

Line+/LOAD+/0V

Connection method	Screw connection
Screw thread	M4
Tightening torque	1.2 Nm
Stripping length	10 mm
Conductor cross section flexible	0.5 mm² ... 16 mm²

Conductor cross section rigid	0.5 mm² ... 16 mm²
Conductor cross section AWG	20 ... 6
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.5 mm² ... 10 mm²
Conductor cross section flexible, with ferrule without plastic sleeve	0.5 mm² ... 10 mm²

Auxiliary contact

Connection method	Screw connection
Screw thread	M3
Tightening torque	0.5 Nm
Stripping length	8 mm
Conductor cross section AWG	24 ... 14
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 2.5 mm²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm² ... 2.5 mm²

Dimensions

Width	12.5 mm
Height	83 mm
Height NS 35/15	90.5 mm
Height NS 35/7,5	83 mm
Depth	80 mm

Material specifications

Color	black (RAL 9005)
Flammability rating according to UL 94	V0

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (Housing)
Ambient temperature (operation)	0 °C ... 50 °C (non-condensing)
Ambient temperature (storage/transport)	-20 °C ... 70 °C
Humidity test	96 h, 95 % RH, 40 °C

Standards and regulations

Standards/specifications	UL 508
Standards/specifications	CSA 22.2
Note	No. 14
Standards/specifications	UL 2367
Standards/specifications	CSA 22.2
Note	No. 142
Standards/specifications	CSA 22.2
Note	No. 213
Standards/specifications	UL 1604

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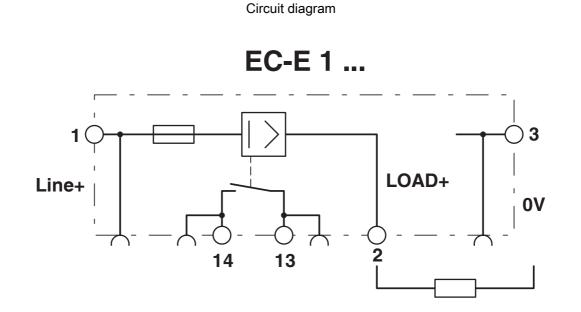https://www.phoenixcontact.com/us/products/0903022

Mounting

Mounting type	DIN rail: 35 mm

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Drawings

Circuit diagram

EC-E 1 ...

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Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/0903022

UL Recognized
Approval ID: FILE E 317172

DNV GL
Approval ID: TAE00002HC

UL Listed
Approval ID: FILE E 140324

cUL Listed
Approval ID: FILE E 140324

UL Recognized
Approval ID: FILE E 324415

CSA
Approval ID: 2840117

cULus Listed

Classifications

ECLASS

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

ETIM

ETIM 9.0	EC003538

UNSPSC

UNSPSC 21.0	39121400

Environmental product compliance

REACh SVHC	Lead 7439-92-1

China RoHS	Environmentally Friendly Use Period = 25;
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Accessories

> ℹ️ Note: Applying some accessories below might limit this product.

FBST 500-PLC BU - Continuous plug-in bridge

2966692

https://www.phoenixcontact.com/us/products/2966692

Continuous plug-in bridge, length: 500 mm, color: blue

ℹ️ Max. current carrying capacity: 1 A

When signal contacts are connected in series Imax = 0.5 A

FBST 500-PLC RD - Continuous plug-in bridge

2966786

https://www.phoenixcontact.com/us/products/2966786

Continuous plug-in bridge, length: 500 mm, color: red

ℹ️ Max. current carrying capacity: 1 A

When signal contacts are connected in series Imax = 0.5 A

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FBST 500 TMC-N GY - Continuous plug-in bridge

0901028

https://www.phoenixcontact.com/us/products/0901028

Continuous plug-in bridge, mounting type: Plug-in mounting

ⓘ Max. current carrying capacity: 50 A

Current carrying capacity with two supplies I_{max} = 63 A

NS 35/ 7,5 PERF 2000MM - DIN rail perforated

0801733

https://www.phoenixcontact.com/us/products/0801733

DIN rail perforated, Pack of 25 (50 m), acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, Standard profile, color: silver

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NS 35/ 7,5 CU UNPERF 2000MM-VPE 10 - DIN rail, unperforated

0801762

https://www.phoenixcontact.com/us/products/0801762

DIN rail, unperforated, Pack of 10 (20 m), acc. to EN 60715, material: Copper, uncoated, Standard profile, color: copper-colored

NS 35/15 UNPERF 2000MM - DIN rail, unperforated

1201714

https://www.phoenixcontact.com/us/products/1201714

DIN rail, unperforated, Pack of 25 (50 m), similar to EN 60715, material: Steel, galvanized, passivated with a thick layer, Standard profile, color: silver

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UC-TMF 12 - Marker for terminal blocks

0819233

https://www.phoenixcontact.com/us/products/0819233

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 5.1 mm, Number of individual labels: 40

ZBF 12:UNBEDRUCKT - Zack Marker strip, flat

0809735

https://www.phoenixcontact.com/us/products/0809735

Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 12 mm, lettering field size: 5.15 x 12.15 mm, Number of individual labels: 5

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CLIPFIX 35-5 - End bracket

3022276

https://www.phoenixcontact.com/us/products/3022276

Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, with parking option for FBS...5, FBS...6, KSS 5, KSS 6, width: 5.15 mm, color: gray

E/UK 1 - End bracket

1201413

https://www.phoenixcontact.com/us/products/1201413

End clamps, for supporting the ends of double-level and three-level terminal blocks, width: 10 mm, color: gray

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NS 35/15 CU UNPERF 2000MM-VPE 10 - DIN rail, unperforated

1201895

https://www.phoenixcontact.com/us/products/1201895

DIN rail, unperforated, Pack of 10 (20 m), similar to EN 60715, material: Copper, uncoated, Standard profile, color: copper-colored

NS 35/15-2,3 UNPERF 2000MM-VPE 10 - DIN rail, unperforated

1201798

https://www.phoenixcontact.com/us/products/1201798

DIN rail, unperforated, Pack of 10 (20 m), acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, Standard profile 2.3 mm, color: silver

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NS 35/15 AL UNPERF 2000MM - DIN rail, unperforated

1201756

https://www.phoenixcontact.com/us/products/1201756

DIN rail, unperforated, similar to EN 60715, material: Aluminum, uncoated, Standard profile, color: silver

NS 35/15 PERF 2000MM - DIN rail perforated

1201730

https://www.phoenixcontact.com/us/products/1201730

DIN rail perforated, Pack of 25 (50 m), similar to EN 60715, material: Steel, galvanized, passivated with a thick layer, Standard profile, color: silver

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UCT-TMF 12 - Marker for terminal blocks

0829214

https://www.phoenixcontact.com/us/products/0829214

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: 11.2 x 4.7 mm, Number of individual labels: 30

SZS 0,6X3,5 - Screwdriver

1205053

https://www.phoenixcontact.com/us/products/1205053

Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

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