

# 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	1 pc
Sales key	CL04
Product key	CLA131
GTIN	4046356450287
Weight per piece (including packing)	70.5 g
Weight per piece (excluding packing)	70.493 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.
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### 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
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### Electrical properties

Fuse type	Automatic device
Maximum power dissipation for nominal condition	$\leq 0.76$ VA
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. $1.8 \times I_N$
Active current limitation	active
Fuse	electronic
Closed-circuit current range $I_0$	typ. 25 mA $\pm$ 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 $I_N$ )
Contact switching type	without electrical isolation

### Load circuit

Max. capacitive load	20000 $\mu$ F
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Switch-on delay	typ. 0.5 s
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## Auxiliary 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 mm <sup>2</sup>
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## Line+ / LOAD+ /0V

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

## Auxiliary contact

Connection method	Screw connection
Screw thread	M3
Tightening torque	... 0.5 Nm
Stripping length	8 mm
Conductor cross-section flexible (ferrule without plastic sleeve)	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Flexible conductor cross-section (ferrule with plastic sleeve)	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>

## Line+/LOAD+/0V

Connection method	Screw connection
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Screw thread	M4
Tightening torque	1.2 Nm
Stripping length	10 mm
Conductor cross-section flexible	0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Conductor cross-section rigid	0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Conductor cross-section AWG	20 ... 6
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.5 mm <sup>2</sup> ... 10 mm <sup>2</sup>
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.5 mm <sup>2</sup> ... 10 mm <sup>2</sup>

## 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 mm <sup>2</sup> ... 2.5 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>

## 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

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

## Mounting

Mounting type	DIN rail: 35 mm
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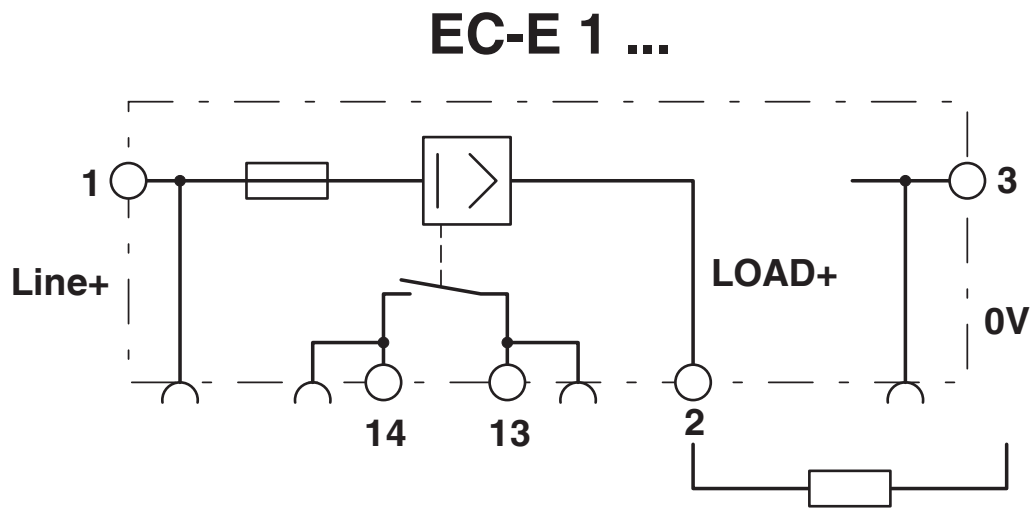
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## Drawings

Circuit diagram



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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



**cULus Listed**

Approval ID: E123528



**UL Recognized**

Approval ID: FILE E 324415



**CSA**

Approval ID: 2840117

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## Classifications

### ECLASS

ECLASS-13.0	27140401
ECLASS-15.0	27140401

### ETIM

ETIM 10.0	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-25
	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	6191de83-f32d-4f56-abb5-c3f523f7890f

### EF3.1 Climate Change

CO2e kg	4.633 kg CO2e
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