

# EC-E1 1A - Electronic circuit breaker



0903023

<https://www.phoenixcontact.com/us/products/0903023>

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Electronic circuit breaker, signal contact: 1 N/O contact, nominal current: 1 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	0903023
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CL04
Product Key	CLA131
Catalog Page	Page 386 (C-4-2019)
GTIN	4046356327992
Weight per Piece (including packing)	68.916 g
Weight per Piece (excluding packing)	68.25 g
Customs tariff number	85362010
Country of origin	DE

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## Technical Data

### Notes

General	<p>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).</p> <p>Special precautionary measures must be taken in systems or machines, to prevent components from restarting (e.g., use of a safety PLC).</p> <p>Parallel connection of multiple circuit breakers is not permitted.</p>
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### Product properties

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

### Insulation characteristics

Degree of pollution	2
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### Electrical properties

No. of channels	1
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 $I_N$	1 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	80 mV (at $I_N$ )

### Load circuit

Max. capacitive load	20000 $\mu$ F
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## Auxiliary contact

Type of contact	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

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, solid	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

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
Screw thread	M4
Tightening torque	1.2 Nm
Stripping length	10 mm

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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
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
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
Flammability rating according to UL 94	V0
Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21))	120 °C
Relative insulation material temperature index (Elec., UL 746 B)	130 °C

## 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
Standards/specifications	UL 2367
Standards/specifications	CSA 22.2
Standards/specifications	CSA 22.2
Standards/specifications	UL 1604

# EC-E1 1A - Electronic circuit breaker



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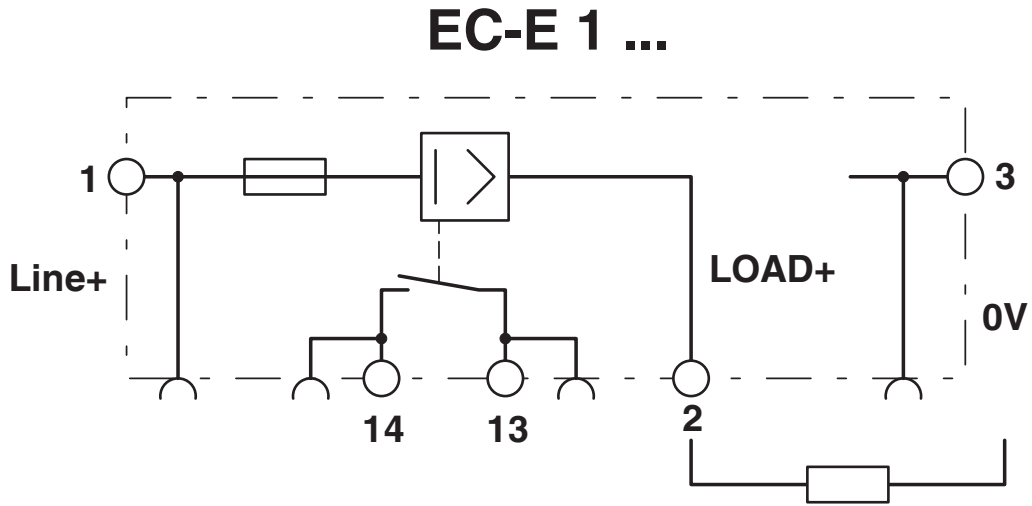
<https://www.phoenixcontact.com/us/products/0903023>

## Mounting

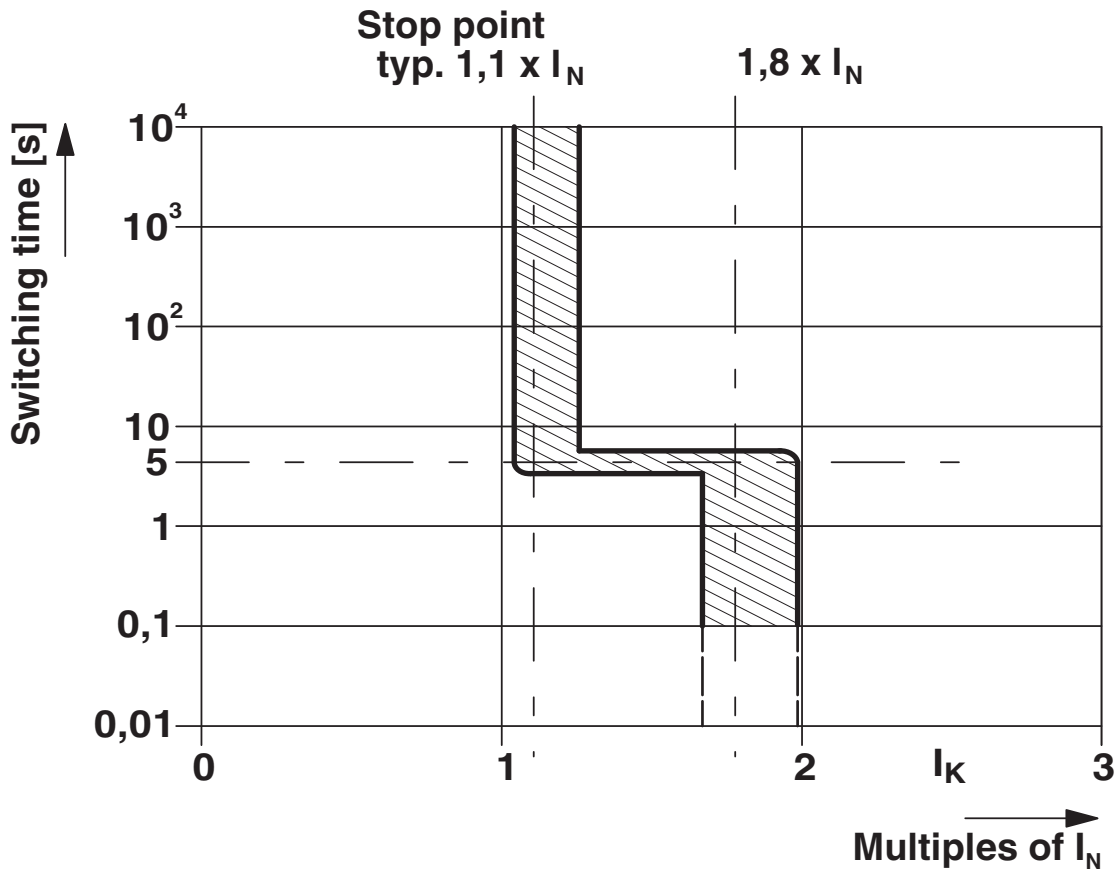
Mounting type	DIN rail: 35 mm
Connection method	Screw connection

Drawings

Circuit diagram



Diagram



Trigger characteristic

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## Approvals



**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

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## Classifications

### ECLASS

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

### ETIM

ETIM 8.0	EC003538
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### UNSPSC

UNSPSC 21.0	39121400
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## 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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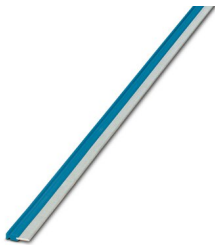
## Accessories

 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

 Max. current carrying capacity: 1 A

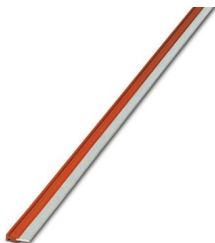
When signal contacts are connected in series  $I_{max} = 0.5 \text{ A}$

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### 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

 Max. current carrying capacity: 1 A

When signal contacts are connected in series  $I_{max} = 0.5 \text{ A}$

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0903023

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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, Color: gray

 Max. current carrying capacity: 50 A

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

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

0801733

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



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

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

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

1201714

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



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

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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

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## 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 clamp

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

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## E/UK 1 - End clamp

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

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0903023

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

1201798

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



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

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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



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0903023

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## NS 35/15 PERF 2000MM - DIN rail perforated

1201730

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



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

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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

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