# EC-E4 2A - Electronic circuit breaker

0903033

https://www.phoenixcontact.com/us/products/0903033

Please be informed that the data shown in this PDF document is generated from our Online Catalog. Please find the complete data in the user documentation. Our General Terms of Use for Downloads are valid.

Electronic circuit breaker, signal contact: 1 N/C contact, nominal current: 2 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 | 0903033 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales Key | CL04 |
| Product Key | CLA131 |
| Catalog Page | Page 386 (C-4-2019) |
| GTIN | 4046356328081 |
| Weight per Piece (including packing) | 68.033 g |
| Weight per Piece (excluding packing) | 68.033 g |
| Customs tariff number | 85362010 |
| Country of origin | DE |

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

### 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 |

### 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 $I_N$ | 2 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 | 130 mV (at $I_N$) |

Load circuit

| | |
|---|---|
| Max. capacitive load | 20000 µF |

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/C 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 |
| 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

| | |
|---|---|
| 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

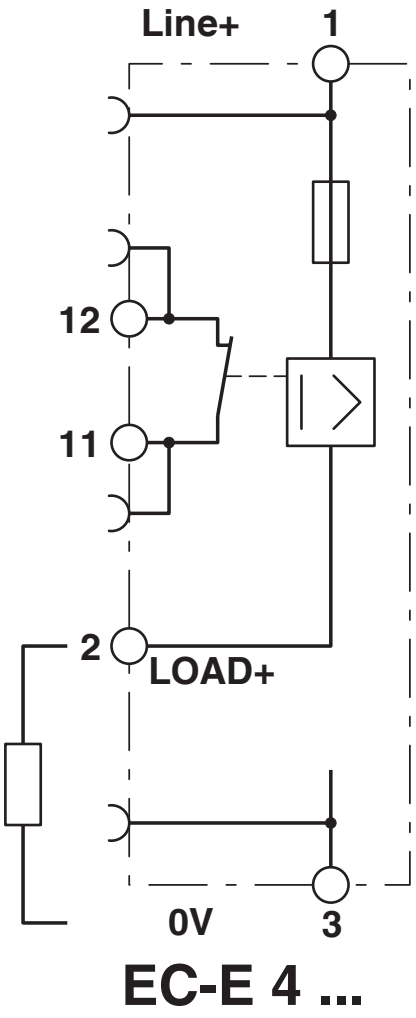
| | |
|---|---|
| Standards/specifications | UL 508 |
| Standards/specifications | CSA 22.2 |
| Standards/specifications | UL 2367 |
| Standards/specifications | CSA 22.2 |
| Standards/specifications | CSA 22.2 |
| Standards/specifications | UL 1604 |

## Mounting

| | |
|---|---|
| Mounting type | DIN rail: 35 mm |

## Drawings

Circuit diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/0903033

**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

## Classifications

### ECLASS

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

### ETIM

| | |
|---|---|
| ETIM 8.0 | 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” |

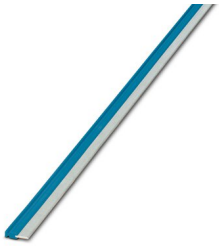
## Accessories

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

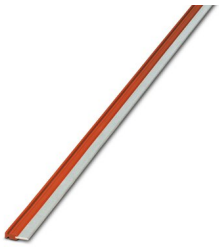
Max. current carrying capacity: 1 A

When signal contacts are connected in series 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

Max. current carrying capacity: 1 A

When signal contacts are connected in series Imax = 0.5 A

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

## 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)

## 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

## 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)

## 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

## 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

## 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

## 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)

## 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)

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

## 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




Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com