

# 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                         | 6 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL04          |
| Product key                          | CLA131        |
| 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

### 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          |
| Maximum power dissipation for nominal condition | $\leq 0.8$ VA             |
| Switching capacity $I_{CN}$                     | Active current limitation |
| Fuse                                            | electronic                |

### General

|                                    |                                           |
|------------------------------------|-------------------------------------------|
| Operating voltage                  | 24 V DC                                   |
|                                    | 18 V DC ... 32 V DC                       |
| Nominal current $I_N$              | 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 $I_N$ )                         |
| Contact switching type             | without electrical isolation              |

### Load circuit

|                      |               |
|----------------------|---------------|
| Max. capacitive load | 20000 $\mu$ F |
| Switch-on delay      | typ. 0.5 s    |

### 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                   |

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## Indicator/remote signaling

|                    |                   |
|--------------------|-------------------|
| Connection name    | Auxiliary contact |
| Switching function | N/O contact       |

## Connection data

|                       |                       |
|-----------------------|-----------------------|
| Nominal cross section | 16.00 mm <sup>2</sup> |
| Connection method     | Screw connection      |

## 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                           |
| 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                                   |

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|                                                                                           |                                            |
|-------------------------------------------------------------------------------------------|--------------------------------------------|
| 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               |
| 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 |
| Note                     | No. 14   |
| Standards/specifications | UL 2367  |
| Standards/specifications | CSA 22.2 |
| Note                     | No. 142  |
| Standards/specifications | CSA 22.2 |
| Note                     | No. 213  |

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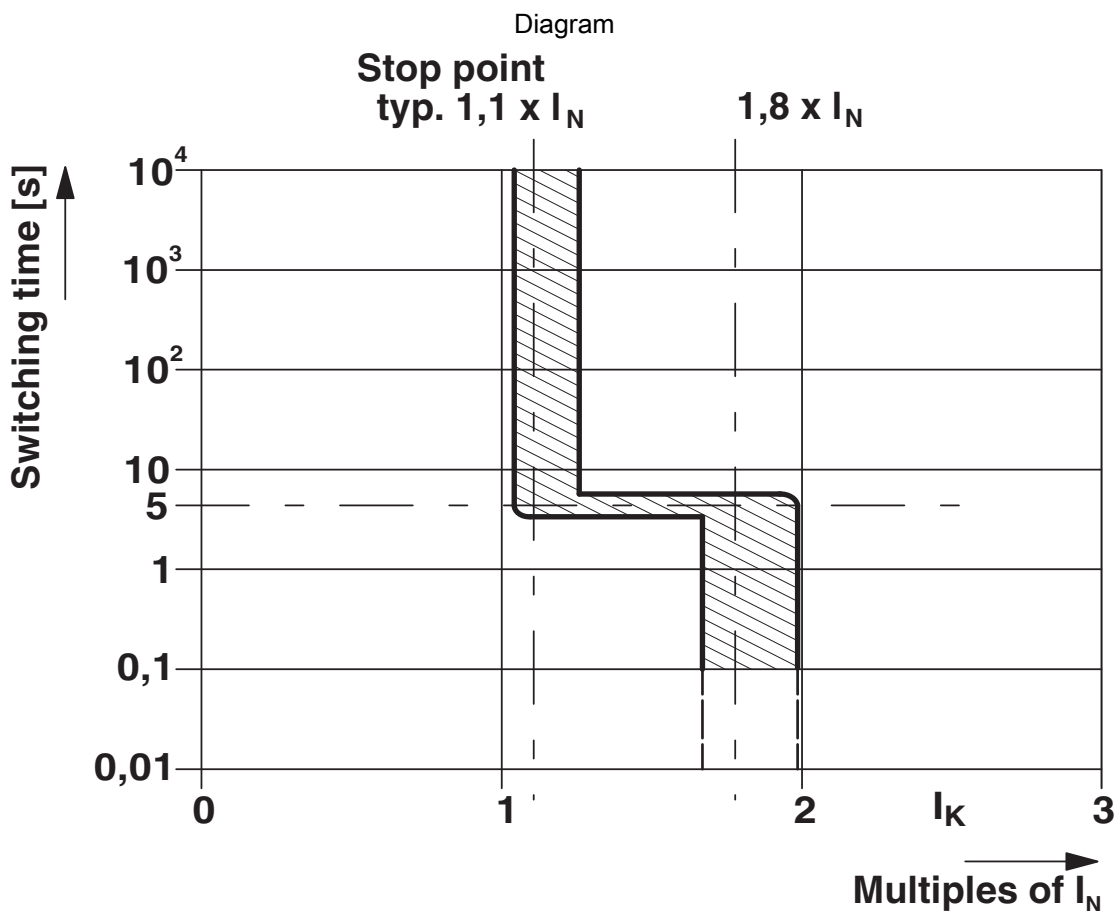
<https://www.phoenixcontact.com/us/products/0903023>

|                          |         |
|--------------------------|---------|
| Standards/specifications | UL 1604 |
|--------------------------|---------|

## Mounting

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

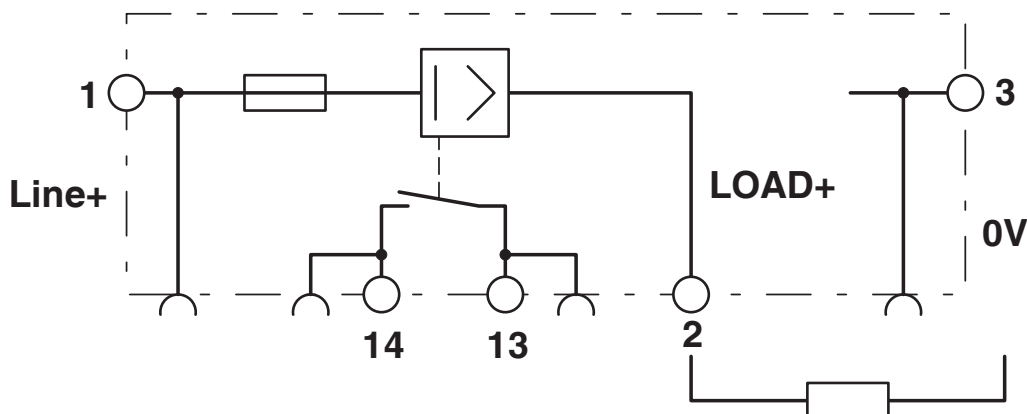
Drawings



Trigger characteristic

Circuit diagram

**EC-E 1 ...**



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/0903023>



**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 |
|-----------|----------|

### 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                                | ff3a2593-40e1-469d-ab72-cb42851bab8c |

### EF3.1 Climate Change

|         |             |
|---------|-------------|
| CO2e kg | 4.4 kg CO2e |
|---------|-------------|

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