

# EC-E4 0,5A - Electronic circuit breaker



0903040  
<https://www.phoenixcontact.com/us/products/0903040>

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Electronic circuit breaker



## 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                          | 0903040             |
| Packing unit                         | 6 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | CL04                |
| Product key                          | CLA131              |
| Catalog page                         | Page 386 (C-4-2019) |
| GTIN                                 | 4046356457972       |
| Weight per piece (including packing) | 70.5 g              |
| Weight per piece (excluding packing) | 70.5 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> |
|---------|---|

### 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 |
|---------------------|---|

### Data management status

|                  |    |
|------------------|----|
| Article revision | 03 |
|------------------|----|

### 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. $1.8 \times I_N$                     |
| 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              |

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## 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                   |

## Indicator/remote signaling

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

## Connection data

|                       |                       |
|-----------------------|-----------------------|
| Nominal cross section | 16.00 mm <sup>2</sup> |
|-----------------------|-----------------------|

## 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

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

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|                          |          |
|--------------------------|----------|
| Standards/specifications | UL 2367  |
| 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 |
|---------------|-----------------|

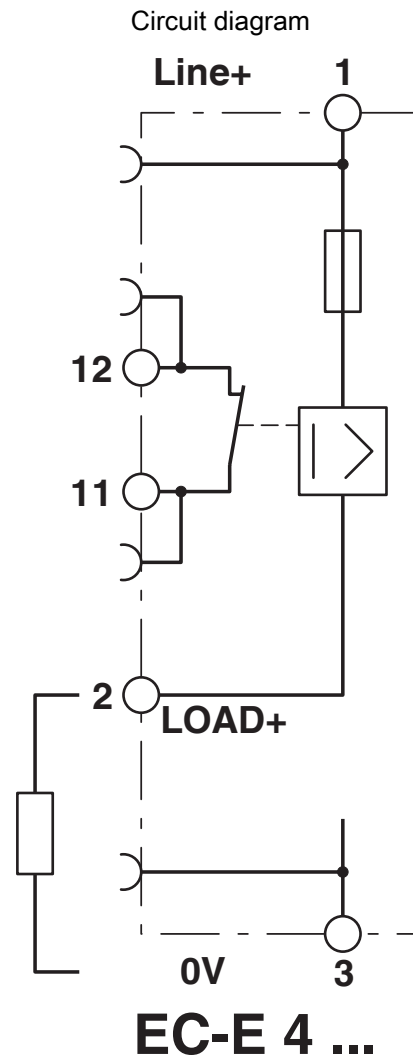
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## Drawings



# EC-E4 0,5A - Electronic circuit breaker




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## Approvals


To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/0903040>




**UL Recognized**  
Approval ID: FILE E 317172




**DNV GL**  
Approval ID: TAE00002HC



**UL Listed**  
Approval ID: E140324



**cUL Listed**  
Approval ID: E140324



**UL Recognized**  
Approval ID: FILE E 324415



**CSA**  
Approval ID: 2840117

**cULus Listed**

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## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | 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                                    | 3ca17972-bc24-4ec0-a660-52e11b941a98  |

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