

# CB E1 24DC/3A NC P - Electronic circuit breaker



2800917

<https://www.phoenixcontact.com/us/products/2800917>

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Electronic circuit breaker, 1-pos., active current limitation, 1 N/C contact, plug for base element.

## Your advantages

- Individually adjustable with protective plugs
- Protective plug with fixed nominal current value as protection against unintentional changes
- Active current limitation to improve the capacity of the upstream power supply
- Increased system transparency with integrated remote message function

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2800917       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL04          |
| Product key                          | CLA134        |
| GTIN                                 | 4046356690669 |
| Weight per piece (including packing) | 34.9 g        |
| Weight per piece (excluding packing) | 34 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).<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

|                     |                         |
|---------------------|-------------------------|
| Product type        | Device circuit breakers |
| Product family      | CB E                    |
| Type                | Male                    |
| Number of positions | 1                       |
| No. of channels     | 1                       |

### Insulation characteristics

|                     |   |
|---------------------|---|
| Degree of pollution | 2 |
|---------------------|---|

### Electrical properties

#### General

|                              |                                           |
|------------------------------|-------------------------------------------|
| Operating voltage            | 24 V DC                                   |
|                              | 18 V DC ... 30 V DC                       |
| Nominal current $I_N$        | 3 A                                       |
| Rated surge voltage          | 0.5 kV                                    |
| Tripping method              | E (electronic)                            |
| Required backup fuse         | not required, integrated failsafe element |
| Dielectric strength          | max. 30 V DC (Load circuit)               |
| Active current limitation    | typ. $1.25 \times I_N$                    |
| Fuse                         | electronic                                |
| Closed circuit current $I_0$ | typ. 8 mA (When switched on)              |
|                              | typ. 17 mA (With alarm output)            |
| Power dissipation            | 0.77 W (Nominal operation)                |
| Temperature derating         | 3 A (at 50 °C)                            |
| MTBF (IEC 61709, SN 29500)   | 8320000 h (at 25 °C with 80 % load)       |
|                              | 7410000 h (at 40 °C with 80 % load)       |
| Voltage drop                 | 120 mV (at $I_N$ )                        |
| Fail-safe element            | 6 A DC                                    |
| Contact switching type       | without electrical isolation              |

#### Load circuit

|                         |                                                |
|-------------------------|------------------------------------------------|
| Shutdown time           | 300 ms (see time/current characteristic curve) |
| Undervoltage switch-off | < 14 V (typ. OFF)                              |

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|                      |                  |
|----------------------|------------------|
|                      | > 17 V (typ. ON) |
| Max. capacitive load | 20000 $\mu$ F    |
| Switch-on delay      | typ. 2 ms        |

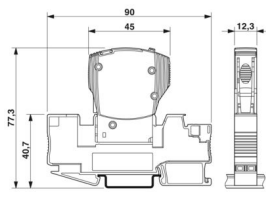
## Auxiliary contact

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

## Connection data

|                   |           |
|-------------------|-----------|
| Connection method | pluggable |
|-------------------|-----------|

## Dimensions

|                        |                                                                                     |
|------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing    |  |
| Width                  | 12.3 mm                                                                             |
| Height                 | 45 mm                                                                               |
| Depth                  | 52 mm                                                                               |
| Complete module width  | 12.3 mm                                                                             |
| Complete module height | 90 mm                                                                               |
| Complete module depth  | 77.3 mm                                                                             |

## Material specifications

|                                        |                  |
|----------------------------------------|------------------|
| Color                                  | gray (RAL 7042)  |
|                                        | black (RAL 9005) |
| Flammability rating according to UL 94 | V-0              |

## Environmental and real-life conditions

### Ambient conditions

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| Degree of protection                    | IP30 (Actuation area)                    |
| Ambient temperature (operation)         | -25 °C ... 50 °C (non-condensing)        |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C                         |
| Humidity test                           | 96 h, 95 % RH, 40 °C                     |
| Vibration (operation)                   | 3g (according to IEC 60068-2-6, Test Fc) |

## Approvals

### UL approval

|                |                  |
|----------------|------------------|
| Identification | UL Listed UL 508 |
|----------------|------------------|

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|  |                       |
|--|-----------------------|
|  | UL Recognized UL 2367 |
|--|-----------------------|

Shipbuilding approval

|                |        |
|----------------|--------|
| Identification | DNV GL |
|----------------|--------|

## Standards and regulations

|                          |                       |
|--------------------------|-----------------------|
| Standard designation     | EMV                   |
| Standards/specifications | EN 61000-6-3          |
| Note                     | Interference emission |
| Standard designation     | EMV                   |
| Standards/specifications | EN 61000-6-2          |
| Note                     | Noise immunity        |

## Mounting

|               |                 |
|---------------|-----------------|
| Mounting type | on base element |
|---------------|-----------------|

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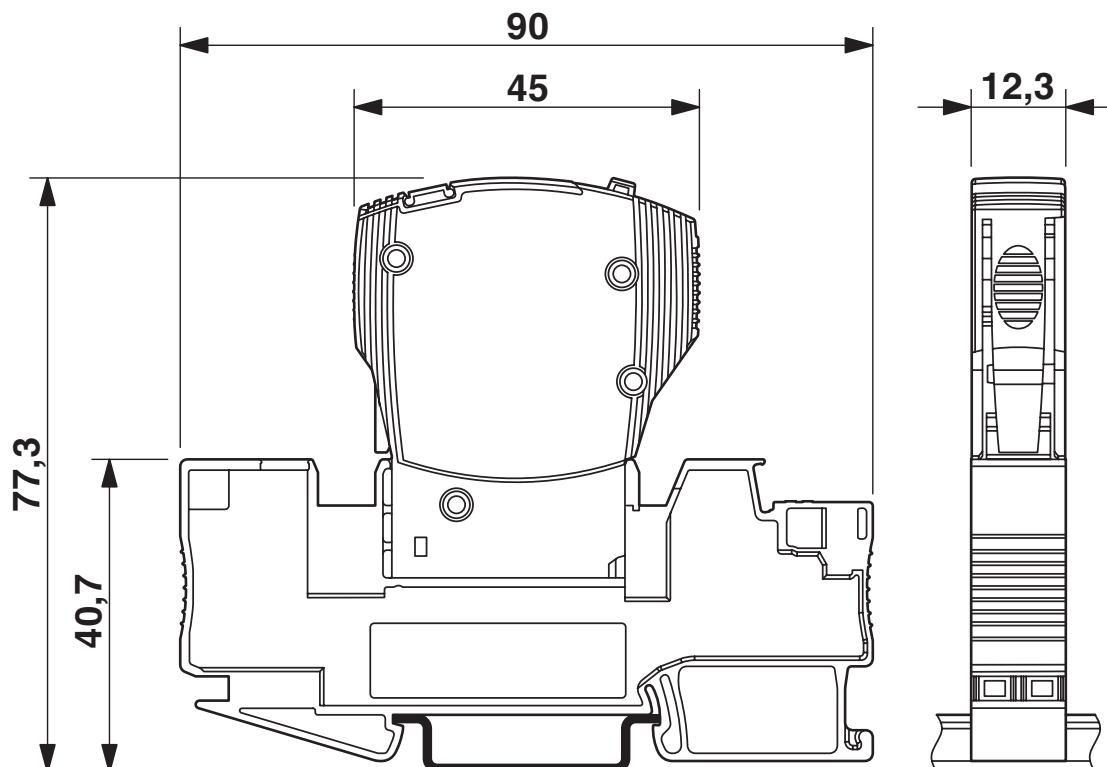
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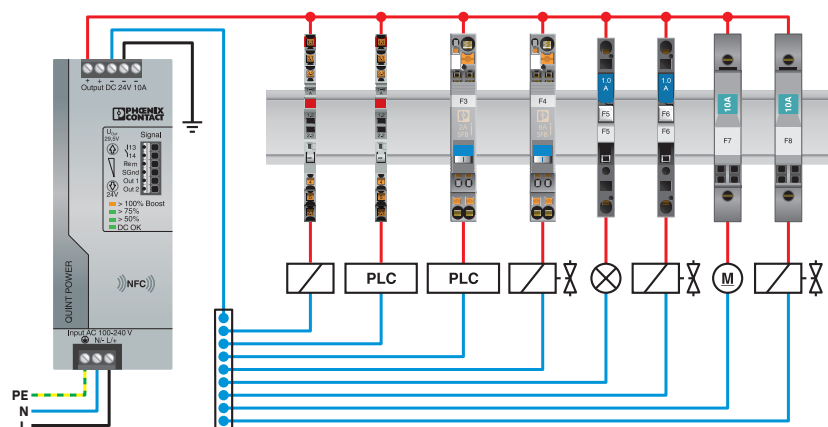
## Drawings

Dimensional drawing



The figure shows the complete module consisting of a base element and connector

Application drawing

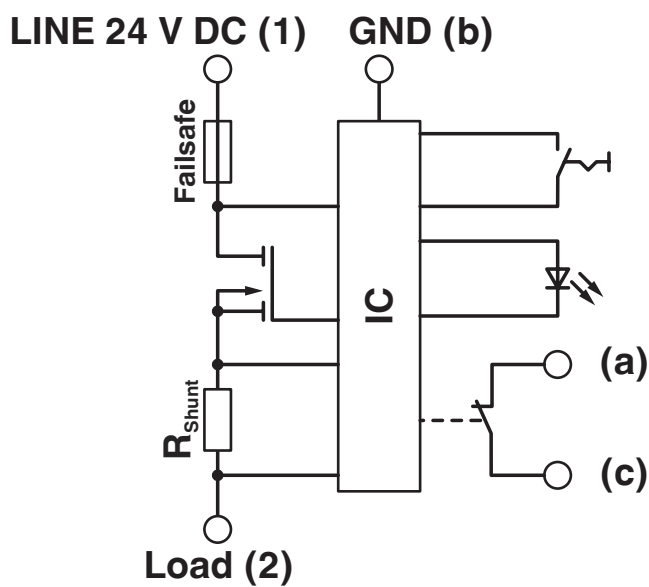


Diagram



Trigger characteristic

Circuit diagram



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## Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2800917>



**UL Recognized**

Approval ID: FILE E 317172



**DNV GL**

Approval ID: TAE00003KA



**cULus Listed**

Approval ID: E123528

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27140401 |
| ECLASS-15.0 | 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                                | fcc9acde-bbfe-4a52-8876-3dff640c2f58 |

### EF3.0 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 2.811 kg CO2e |
|---------|---------------|

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