

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

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.



Multi-channel electronic circuit breaker for protecting four loads at 24 V DC in the event of overload and short circuit. With electronic locking of the set nominal currents. For installation on DIN rails.

Your advantages

- Easy device replacement without replanning, thanks to compact design and options for individual adjustments
- Circuits can be adjusted without any tools by means of one single pushable LED button
- Optimum protection for cables and sensors as well as NEC Class 2 circuits by means of an additional internal output fuse
- Reliable protection against unintentional adjustment of current values, thanks to electronic locking
- Status LEDs in traffic light colors enable instantaneous determination of operating states

Commercial data

| | |
|--------------------------------------|---------------------|
| Item number | 2906031 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CL14 |
| Product key | CLA152 |
| Catalog page | Page 374 (C-4-2019) |
| GTIN | 4055626149349 |
| Weight per piece (including packing) | 133.35 g |
| Weight per piece (excluding packing) | 119.51 g |
| Customs tariff number | 85362010 |
| Country of origin | US |

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

Technical data

Notes

General

| | |
|------|---|
| Note | Repeated hard short circuits can reduce the melting integral of the integrated backup fuse. |
|------|---|

Product properties

| | |
|---------------------|----------------------------|
| Product type | Device circuit breakers |
| Product family | CBMC |
| Type | DIN rail module, one-piece |
| Number of positions | 1 |
| No. of channels | 4 |

Insulation characteristics

| | |
|------------------|-----|
| Protection class | III |
| Pollution degree | 2 |

Electrical properties

General

| | |
|--|---|
| Operating voltage | 18 V DC ... 30 V DC |
| Rated voltage | 24 V DC |
| Rated current I_N | max. 16 A DC (IN+) max. 40 A DC (per terminal position when bridging additional devices via IN+) |
| Rated current I_N | 1 / 2 / 3 / 4 A DC (adjustable per output channel) |
| Rated current (pre-adjusted) | 4 A |
| Rated surge voltage | 0.5 kV |
| Tripping method | E (electronic) |
| Feedback resistance | max. 35 V DC |
| Required backup fuse | Only required if I_{max} of the power supply > the short-circuit switching capacity. Integrated failsafe element. |
| Short-circuit switching capacity | 300 A |
| Dielectric strength | max. 35 V DC (Load circuit) |
| Fuse | electronic |
| Efficiency | > 99 % |
| Closed circuit current I_0 | typ. 25 mA |
| Power dissipation | typ. 0.6 W (No-load operation) < 4 W (Nominal operation) |
| Module initialization time | 1.6 s |
| Waiting time after switch off of a channel | 5 s (at overload / short circuit) |
| Measuring tolerance I | ± 15 % |
| MTBF (IEC 61709, SN 29500) | 11764705 h (at 25 °C with 21 % load) 5319148 h (at 40 °C with 34.25% load) |

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

| | |
|-------------------|-----------------------------------|
| | 846023 h (at 60°C with 100% load) |
| Fail-safe element | 4 A DC (per output channel) |

Load circuit

| | |
|-------------------------|---|
| Shutdown time | ≤ 10 ms (for short circuit > 2.0 x I _N) |
| | 1 s (1.2 ... 2.0 x I _N) |
| Undervoltage switch-off | ≤ 17.8 V DC (active) |
| | ≥ 18.8 V DC (inactive) |
| Overvoltage switch-off | ≥ 30.5 V DC (active) |
| | ≤ 29.5 V DC (inactive) |
| Max. capacitive load | 30000 µF (Depending on the current setting and the short-circuit current available) |

Indicator/remote signaling

| | |
|--------------------|---------------------------|
| Connection name | Remote indication circuit |
| Switching function | N/O contact |
| Operating voltage | 0 V DC ... 30 V DC |
| Operating current | 100 mA DC |

Connection data

Main circuit IN+

| | |
|---|--|
| Connection method | Push-in connection |
| Stripping length | 15 mm |
| Conductor cross section rigid | 0.2 mm ² ... 10 mm ² |
| Conductor cross section AWG | 24 ... 8 |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 4 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 6 mm ² |

Main circuit IN-

| | |
|---|--|
| Connection method | Push-in connection |
| Stripping length | 10 mm |
| Conductor cross section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 24 ... 12 |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 2.5 mm ² |

Main circuit OUT

| | |
|---|--|
| Connection method | Push-in connection |
| Stripping length | 10 mm |
| Conductor cross section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 24 ... 12 |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 2.5 mm ² |

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

Remote indication circuit

| | |
|---|--|
| Stripping length | 10 mm |
| Conductor cross section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 24 ... 12 |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 2.5 mm ² |

Signaling

| | |
|--------------------|---|
| Channel LED off | off (Channel switched off) |
| Channel LED yellow | lit (Channel switched on, channel load > 80%) flashing (Programming mode active) |
| Channel LED green | lit (Channel switched on) |
| Channel LED red | lit (Channel switched off, over- or undervoltage active) ON temporarily (Channel switched off, 5 s cool-down phase, overload or short-circuit release) flashing (Channel switched off, ready to be switched back on, overload or short-circuit release) two flashes (Channel switched off, device total current limit 40 A exceeded) |

Dimensions

| | |
|---------------------|-------------------------------|
| Dimensional drawing | |
| Width | 36 mm |
| Height | 90 mm |
| Depth | 98 mm (incl. DIN rail 7.5 mm) |

Material specifications

| | |
|--|--------------------------------|
| Color | light grey (RAL 7035) |
| Material | PC PA 6.6 PA 6.3T POM |
| Flammability rating according to UL 94 | V-0 |

Environmental and real-life conditions

Ambient conditions

| | |
|---------------------------------|------------------|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25 °C ... 60 °C |

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

| | |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Altitude | ≤ 3000 m up to 52 °C (amsl) |
| | ≤ 4000 m up to 46 °C (amsl) |
| Humidity test | 96 h, 95 % RH, 40 °C |
| Shock (operation) | 30g (IEC 60068-2-27, Test Ea) |
| Vibration (operation) | 10 Hz ... 57.6 Hz (Amplitude ±0.35 mm; in accordance with IEC 60068-2-6, Test Fc) |
| | 57.6 Hz ... 150 Hz (Acceleration 5g; in accordance with IEC 60068-2-6, Test Fc) |

Approvals

UL approval

| | |
|----------------|----------------------------------|
| Identification | UL/C-UL Listed UL 508 |
| | UL Recognized UL 2367 |
| | NEC Class 2 according to UL 1310 |

Corrosive gas test

| | |
|----------------|----------------------------------|
| Identification | ISA S71.04.2013 G3 Harsh Group A |
|----------------|----------------------------------|

Standards and regulations

| | |
|--------------------------|---|
| Standards/specifications | EN 61000-6-2 |
| Note | EMC – Immunity for industrial areas |
| Standards/specifications | EN 61000-6-3 |
| Note | EMC – Emission for residential, business and commercial properties and small operations |
| Standards/specifications | EN 60068-2-6 |
| Note | Environmental influences – Vibrations (sinusoidal) |
| Standards/specifications | EN 60068-2-27 |
| Note | Environmental influences – Shocks |
| Standards/specifications | EN 60068-2-78 |
| Note | Environmental influences – Moisture and heat, constant |
| Standards/specifications | EN 50178 |
| Note | Equipping power installations with electronic equipment |

Mounting

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

CBMC E4 24DC/1-4A NO - Electronic circuit breaker

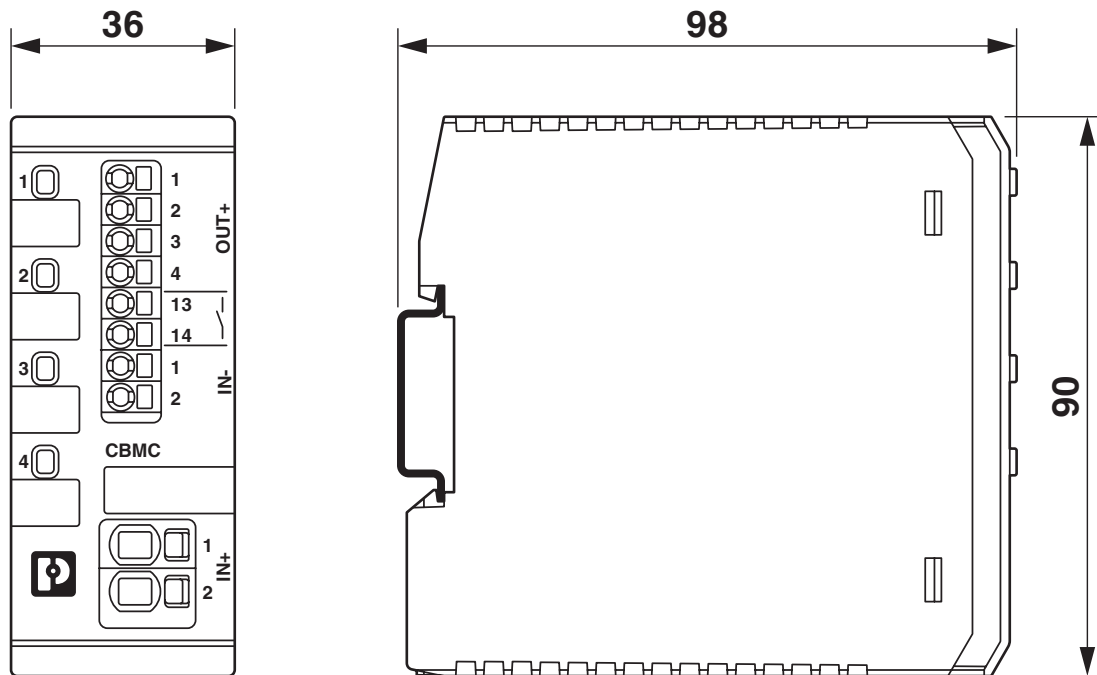


2906031

<https://www.phoenixcontact.com/us/products/2906031>

Drawings

Dimensional drawing



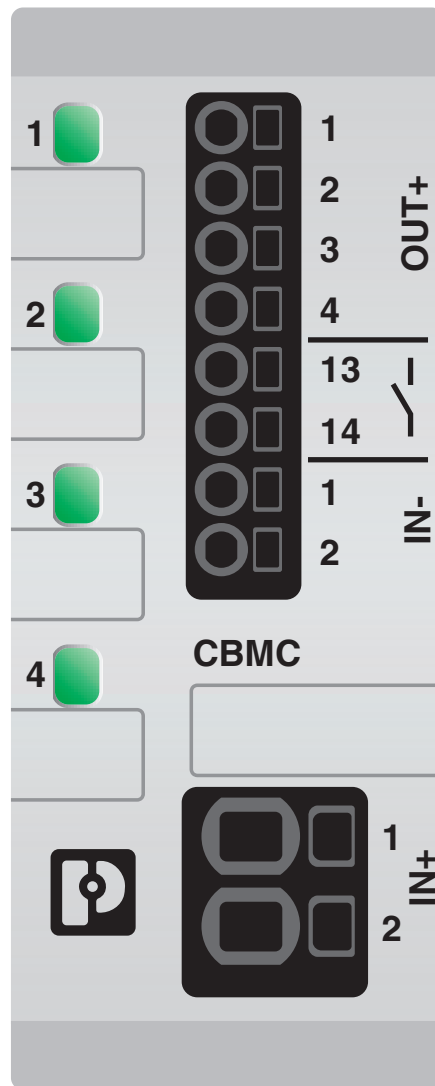
CBMC E4 24DC/1-4A NO - Electronic circuit breaker

2906031

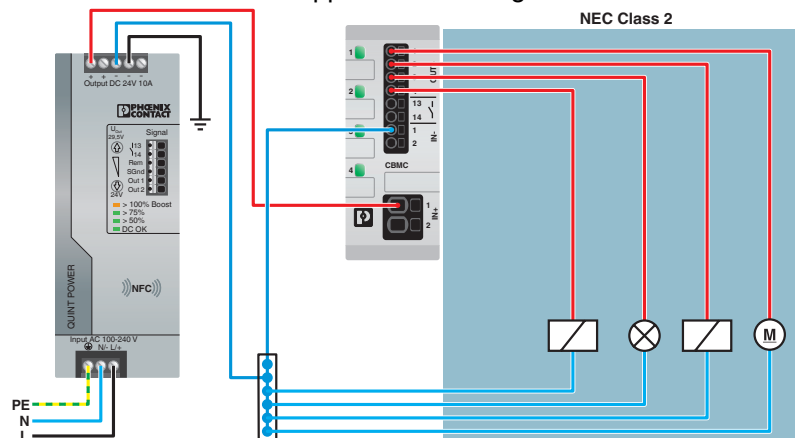
<https://www.phoenixcontact.com/us/products/2906031>



Product drawing



Application drawing



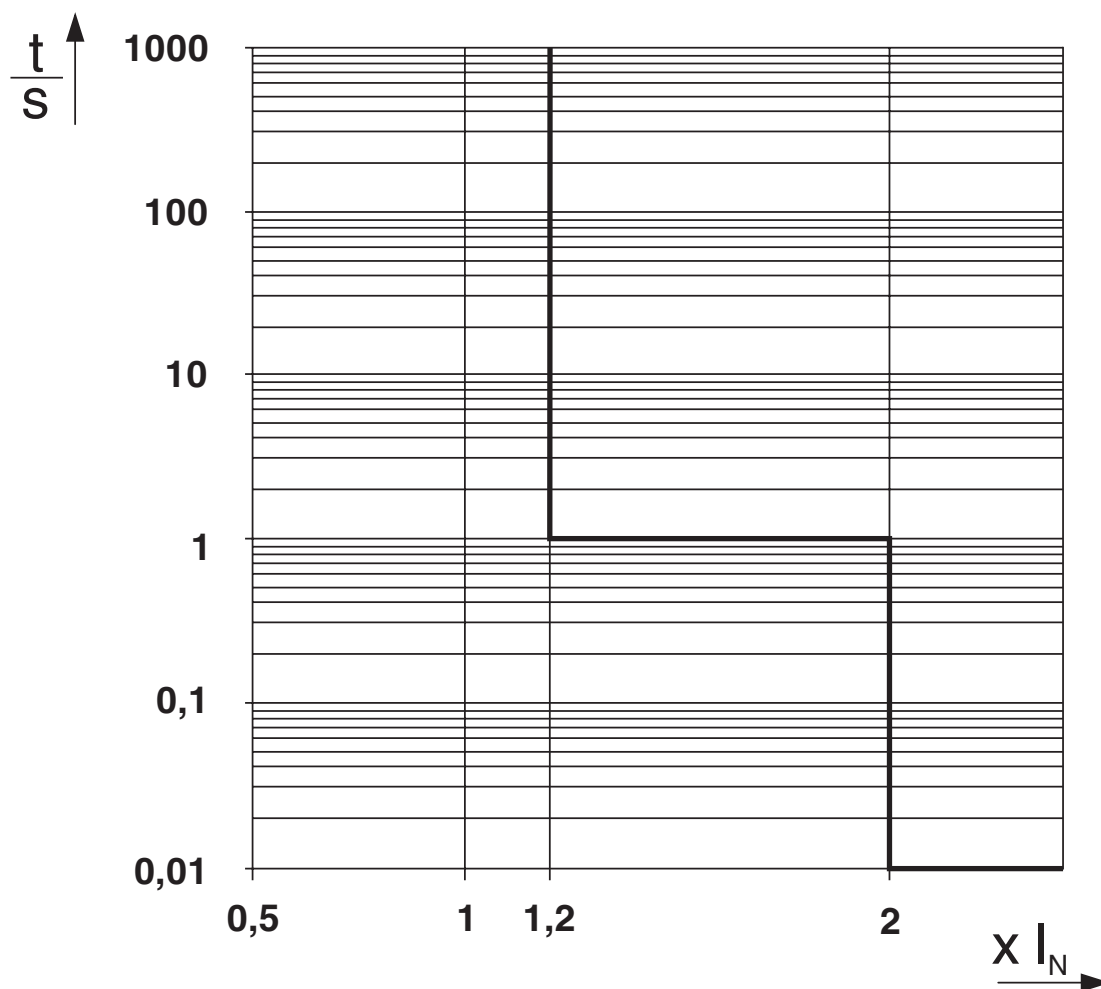
CBMC E4 24DC/1-4A NO - Electronic circuit breaker

2906031

<https://www.phoenixcontact.com/us/products/2906031>

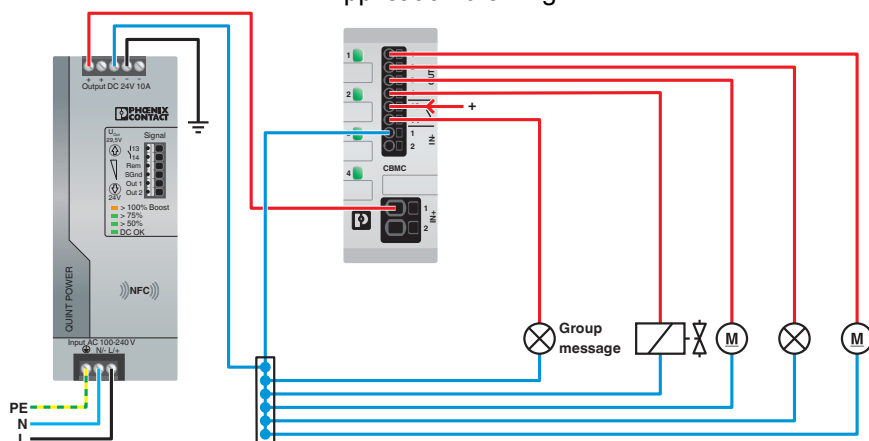


Diagram



Trigger characteristic in the DC range

Application drawing



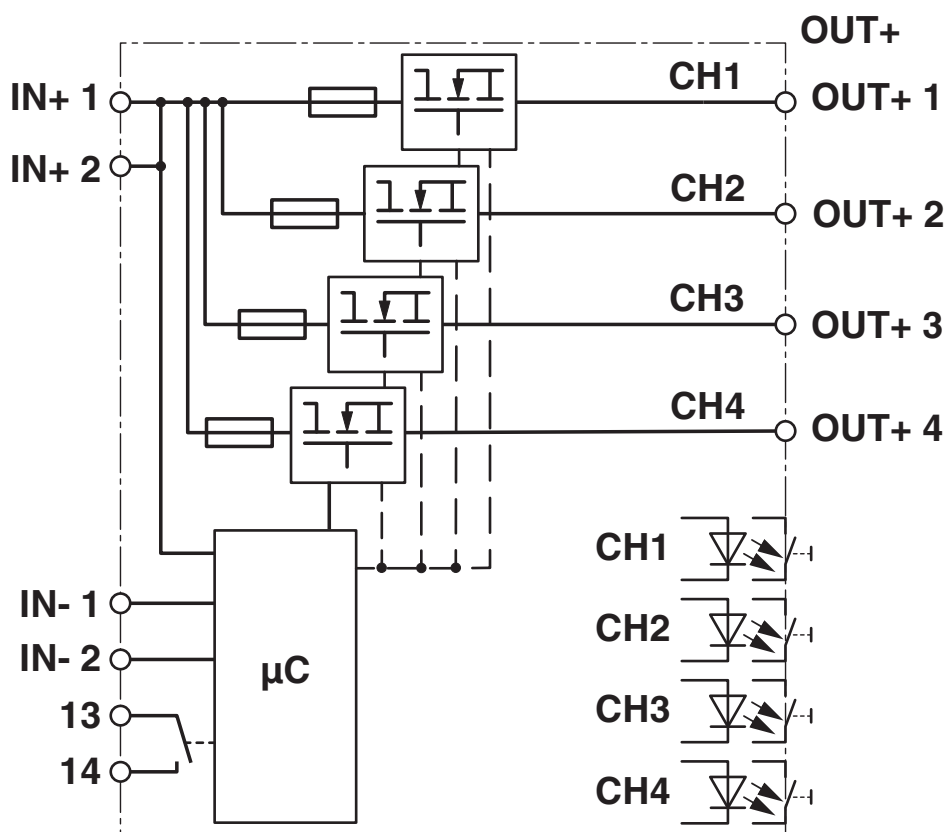
CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

Block diagram



CBMC E4 24DC/1-4A NO - Electronic circuit breaker




2906031


<https://www.phoenixcontact.com/us/products/2906031>

Approvals


To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2906031>




UL Recognized
Approval ID: FILE E 317172



UL Recognized
Approval ID: E317172-20150319



UL Listed
Approval ID: FILE E 123528



cUL Listed
Approval ID: FILE E 123528

cULus Listed

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

Classifications

ECLASS

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

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC003538 |
|----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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-50 |
| | 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 | e774d08d-09d3-4721-a84f-fe03bf5450fd |

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

Accessories

EML (10X7)R - Label

0816663

<https://www.phoenixcontact.com/us/products/0816663>



Label, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, lettering field size: 10 x 7 mm, Number of individual labels: 10000

EML-ESD (20X7)R - Equipment marking

0830567

<https://www.phoenixcontact.com/us/products/0830567>



Equipment marking, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, lettering field size: 20 x 7 mm, Number of individual labels: 4000

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

QUINT4-PS/1AC/24DC/10 - Power supply unit

2904601

<https://www.phoenixcontact.com/us/products/2904601>



Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 1-phase, output: 24 V DC/10 A

QUINT4-PS/1AC/24DC/20 - Power supply unit

2904602

<https://www.phoenixcontact.com/us/products/2904602>



Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 1-phase, output: 24 V DC/20 A

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

QUINT4-PS/3AC/24DC/10 - Power supply unit

2904621

<https://www.phoenixcontact.com/us/products/2904621>



Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 3-phase, output: 24 V DC/10 A

QUINT4-PS/3AC/24DC/20 - Power supply unit

2904622

<https://www.phoenixcontact.com/us/products/2904622>



Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 3-phase, output: 24 V DC/20 A

CBMC E4 24DC/1-4A NO - Electronic circuit breaker



2906031

<https://www.phoenixcontact.com/us/products/2906031>

TRIO-PS-2G/1AC/24DC/10 - Power supply unit

2903149

<https://www.phoenixcontact.com/us/products/2903149>



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single phase, output: 24 V DC/10 A

TRIO-PS-2G/1AC/24DC/20 - Power supply unit

2903151

<https://www.phoenixcontact.com/us/products/2903151>



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single-phase, output: 24 V DC/20 A

CBMC E4 24DC/1-4A NO - Electronic circuit breaker

2906031

<https://www.phoenixcontact.com/us/products/2906031>



TRIO-PS-2G/3AC/24DC/5 - Power supply unit

2903153

<https://www.phoenixcontact.com/us/products/2903153>



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/5 A

TRIO-PS-2G/3AC/24DC/10 - Power supply unit

2903154

<https://www.phoenixcontact.com/us/products/2903154>



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/10 A

CBMC E4 24DC/1-4A NO - Electronic circuit breaker

2906031

<https://www.phoenixcontact.com/us/products/2906031>



TRIO-PS-2G/3AC/24DC/20 - Power supply unit

2903155

<https://www.phoenixcontact.com/us/products/2903155>



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/20 A

TRIO-PS-2G/3AC/24DC/40 - Power supply unit

2903156

<https://www.phoenixcontact.com/us/products/2903156>



Primary-switched TRIO power supply for DIN rail mounting, input: 3-phase, output: 24 V DC/40 A, dynamic boost, tool-free fast connection technology for solid and stranded conductors with ferrule

Phoenix Contact 2024 © - all rights reserved
<https://www.phoenixcontact.com>

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