

1584245  
<https://www.phoenixcontact.com/us/products/1584245>

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.



Redundancy module ESSENTIAL DIODE, DIN rail mounting, 12 V DC ... 48 V DC, 2x 10 A DC

Product description

A safe redundant system is the result of the parallel connection of two power supply units that are decoupled from one another. To further increase system availability, ESSENTIAL DIODE provides the solution: decoupling with diode.

Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1584245       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CM33          |
| Product key                          | CMB543        |
| GTIN                                 | 4067923078031 |
| Weight per piece (including packing) | 421 g         |
| Weight per piece (excluding packing) | 345 g         |
| Customs tariff number                | 85363030      |
| Country of origin                    | CN            |

# PS-EE-2G-DIODE/12-48DC/2X10/SC - Redundancy module



1584245

<https://www.phoenixcontact.com/us/products/1584245>

## Technical data

### Input data

|                                 |                               |
|---------------------------------|-------------------------------|
| Nominal input voltage range     | 12 V DC ... 48 V DC           |
| Input voltage range             | 10 V DC ... 60 V DC           |
| Voltage type of supply voltage  | DC                            |
| Nominal input current ( $I_N$ ) | 2x 10 A DC (-20 °C ... 45 °C) |
|                                 | 1x 20 A DC (-20 °C ... 45 °C) |
| Reverse polarity protection     | yes, < 60 V                   |
| Voltage drop, input/output      | typ. 0.75 V                   |
| Transient surge protection      | Varistor                      |

### Output data

|                                  |                                       |
|----------------------------------|---------------------------------------|
| Efficiency                       | $\geq 94\%$ ( $\geq 12\text{ V DC}$ ) |
|                                  | $\geq 96\%$ ( $\geq 24\text{ V DC}$ ) |
|                                  | $\geq 98\%$ ( $\geq 48\text{ V DC}$ ) |
| Nominal output voltage           | $U_{in} - 0,8\text{ V}$               |
| Nominal output current ( $I_N$ ) | 20 A                                  |
| Derating                         | 60 °C ... 70 °C (2 % / K)             |

### Connection data

#### Conductor connection

|                                              |                                                      |
|----------------------------------------------|------------------------------------------------------|
| Connection method                            | Screw connection                                     |
| rigid                                        | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>            |
| flexible                                     | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>            |
| flexible with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>           |
|                                              | 1.5 mm <sup>2</sup> (recommended)                    |
| flexible with ferrule with plastic sleeve    | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>           |
|                                              | 1.5 mm <sup>2</sup> (recommended)                    |
| rigid (AWG)                                  | 24 ... 10 (Cu)                                       |
| Stripping length (starr/flexibel)            | 8 mm (rigid/flexible/ferrule without plastic sleeve) |
| Stripping length (Aderendhülse)              | 11 mm (Ferrule with plastic sleeve)                  |
| Tightening torque (EU)                       | 0.5 Nm ... 0.6 Nm                                    |
| Drive form screw head                        | Slotted L                                            |

#### Conductor connection

|                                              |                                            |
|----------------------------------------------|--------------------------------------------|
| Connection method                            | Screw connection                           |
| rigid                                        | 0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> |
| flexible                                     | 0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> |
| flexible with ferrule without plastic sleeve | 0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> |
|                                              | 4 mm <sup>2</sup> (recommended)            |
| flexible with ferrule with plastic sleeve    | 0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> |
|                                              | 4 mm <sup>2</sup> (recommended)            |

# PS-EE-2G-DIODE/12-48DC/2X10/SC - Redundancy module



1584245

<https://www.phoenixcontact.com/us/products/1584245>

|                                   |                                                       |
|-----------------------------------|-------------------------------------------------------|
| rigid (AWG)                       | 20 ... 6 (Cu)                                         |
| Stripping length (starr/flexibel) | 10 mm (rigid/flexible/ferrule without plastic sleeve) |
| Stripping length (Aderendhülse)   | 13 mm (Ferrule with plastic sleeve)                   |
| Tightening torque (EU)            | 1.2 Nm ... 1.5 Nm                                     |
| Drive form screw head             | Slotted L                                             |

## Conductor connection

|                                              |                                                       |
|----------------------------------------------|-------------------------------------------------------|
| Connection method                            | Push-in connection                                    |
| rigid                                        | 0.2 mm² ... 1.5 mm²                                   |
| flexible                                     | 0.2 mm² ... 1.5 mm²                                   |
| flexible with ferrule without plastic sleeve | 0.25 mm² ... 1.5 mm²                                  |
| flexible with ferrule with plastic sleeve    | 0.25 mm² ... 0.75 mm²                                 |
| rigid (AWG)                                  | 24 ... 16 (Cu)                                        |
| Stripping length (starr/flexibel)            | 10 mm (rigid/flexible/ferrule without plastic sleeve) |
| Stripping length (Aderendhülse)              | 99 mm (Ferrule with plastic sleeve)                   |

## Signaling

### LED signaling

|                    |                                 |
|--------------------|---------------------------------|
| Types of signaling | DC OK (green)                   |
| Signal threshold   | Input1 OK (LED lights up green) |
|                    | Input2 OK (LED lights up green) |

### Signal output Relay 13/14

|                           |               |
|---------------------------|---------------|
| Connection labeling       | 3.1, 3.2      |
| Switch contact (floating) | N/O contact   |
| Digital                   | 30 V DC       |
|                           | 1 A           |
| Signal option             | Redundancy OK |

### Signal output Relay 23/24

|                           |               |
|---------------------------|---------------|
| Connection labeling       | 3.3, 3.4      |
| Switch contact (floating) | N/O contact   |
| Digital                   | 30 V DC       |
|                           | 1 A           |
| Signal option             | Redundancy OK |

## Electrical properties

|                                            |          |
|--------------------------------------------|----------|
| Insulation voltage input/output            | 500 V AC |
| Insulation voltage input, output / housing | 500 V AC |

## Product properties

|                            |                     |
|----------------------------|---------------------|
| Product type               | Redundancy module   |
| Product family             | ESSENTIAL DIODE     |
| MTBF (IEC 61709, SN 29500) | > 2992278 h (25 °C) |
|                            | > 1874605 h (40 °C) |

# PS-EE-2G-DIODE/12-48DC/2X10/SC - Redundancy module



1584245

<https://www.phoenixcontact.com/us/products/1584245>

|     |                     |
|-----|---------------------|
|     | > 1594343 h (45 °C) |
| LED | yes                 |

## Insulation characteristics

|                     |     |
|---------------------|-----|
| Protection class    | III |
| Degree of pollution | 2   |

## Dimensions

### Item dimensions

|        |        |
|--------|--------|
| Width  | 40 mm  |
| Height | 124 mm |
| Depth  | 126 mm |

### Installation dimensions

|                                  |               |
|----------------------------------|---------------|
| Installation distance right/left | 10 mm / 10 mm |
| Installation distance top/bottom | 30 mm / 30 mm |

## Mounting

|                   |                                                 |
|-------------------|-------------------------------------------------|
| Mounting type     | DIN rail mounting                               |
| Assembly note     | alignable: 10 mm horizontally, 30 mm vertically |
| Mounting position | horizontal DIN rail NS 35, EN 60715             |

## Material specifications

|                                                                    |                                             |
|--------------------------------------------------------------------|---------------------------------------------|
| Flammability rating according to UL 94 (housing / terminal blocks) | V0                                          |
| Housing material                                                   | Metal                                       |
| Housing material                                                   | Aluminum (AlMg3) / sheet steel, zinc-plated |
| Foot latch material                                                | Sheet steel, zinc-plated                    |

## Environmental and real-life conditions

### Ambient conditions

|                                                |                                                                               |
|------------------------------------------------|-------------------------------------------------------------------------------|
| Degree of protection                           | IP20                                                                          |
| Ambient temperature (operation)                | -20 °C ... 70 °C (Derating: > 45°C; 2.5%/K )                                  |
| Ambient temperature (storage/transport)        | -40 °C ... 85 °C                                                              |
| Maximum altitude                               | ≤ 5000 m (> 2000 m, Derating: 10 %/1000 m)                                    |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing)                                             |
| Dry heat (IEC 60068-2-2)                       | 70 °C (16 h)                                                                  |
| Humid heat cyclic (IEC 60068-2-30)             | 55 °C (95 %, 2 x 23 h)                                                        |
| Cold (IEC 60068-2-1)                           | - 25 °C (16 h)                                                                |
| Shock (operation)                              | 18 ms, 30g, per spatial direction (IEC 60068-2-27)                            |
| Vibration (operation)                          | < 15 Hz, amplitude ±2.5 mm (IEC 60068-2-6)<br>15 Hz ... 150 Hz, 2.3g, 90 min. |

## Standards and regulations

# PS-EE-2G-DIODE/12-48DC/2X10/SC - Redundancy module



1584245

<https://www.phoenixcontact.com/us/products/1584245>

## Electrical safety

|                          |                    |
|--------------------------|--------------------|
| Standard designation     | Electrical safety  |
| Standards/specifications | IEC 61010-1 (SELV) |

## Protective extra-low voltage

|                          |                              |
|--------------------------|------------------------------|
| Standard designation     | Protective extra-low voltage |
| Standards/specifications | IEC 61010-1 (SELV)           |

## Approvals

### UL

|                |                           |
|----------------|---------------------------|
| Identification | UL/C-UL Listed UL 61010-1 |
|----------------|---------------------------|

### UL

|                |                               |
|----------------|-------------------------------|
| Identification | UL/C-UL Listed UL 61010-2-201 |
|----------------|-------------------------------|

### CB scheme

|                |                                                       |
|----------------|-------------------------------------------------------|
| Identification | CB scheme (IEC 61010-1, IEC 61010-2-201, IEC 62368-1) |
|----------------|-------------------------------------------------------|

## EMC data

|                               |                                                   |
|-------------------------------|---------------------------------------------------|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU         |
| Low Voltage Directive         | Conformance with Low Voltage Directive 2014/35/EC |
| Noise immunity                | EN 61000-6-2:2019                                 |

### Fast transients (burst)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-4 |
|-----------------------|--------------|

### Fast transients (burst)

|          |                                    |
|----------|------------------------------------|
| Input    | 1 kV (Test Level 2 - asymmetrical) |
| Output   | 1 kV (Test Level 2 - asymmetrical) |
| Signal   | 1 kV (Test Level 3 - asymmetrical) |
| Comments | Criterion A                        |

### Surge voltage load (surge)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-5 |
|-----------------------|--------------|

### Surge voltage load (surge)

|          |                                     |
|----------|-------------------------------------|
| Input    | 0.5 kV (Test Level 2 - symmetrical) |
|          | 1 kV (Test Level 2 - asymmetrical)  |
| Output   | 0.5 kV (Test Level 2 - symmetrical) |
|          | 1 kV (Test Level 2 - asymmetrical)  |
| Signal   | 1 kV (Test Level 2 - asymmetrical)  |
| Comments | Criterion A                         |

### Conducted interference

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-6 |
|-----------------------|--------------|

### Conducted interference

# PS-EE-2G-DIODE/12-48DC/2X10/SC - Redundancy module



1584245

<https://www.phoenixcontact.com/us/products/1584245>

|                     |                     |
|---------------------|---------------------|
| Input/output/signal | asymmetrical        |
| Frequency range     | 150 kHz ... 80 MHz  |
| Comments            | Criterion A         |
| Voltage             | 10 V (Test Level 3) |

## Criteria

|             |                                                                                      |
|-------------|--------------------------------------------------------------------------------------|
| Criterion A | Normal operating behavior within the specified limits.                               |
| Criterion B | Temporary impairment to operational behavior that is corrected by the device itself. |

# PS-EE-2G-DIODE/12-48DC/2X10/SC - Redundancy module



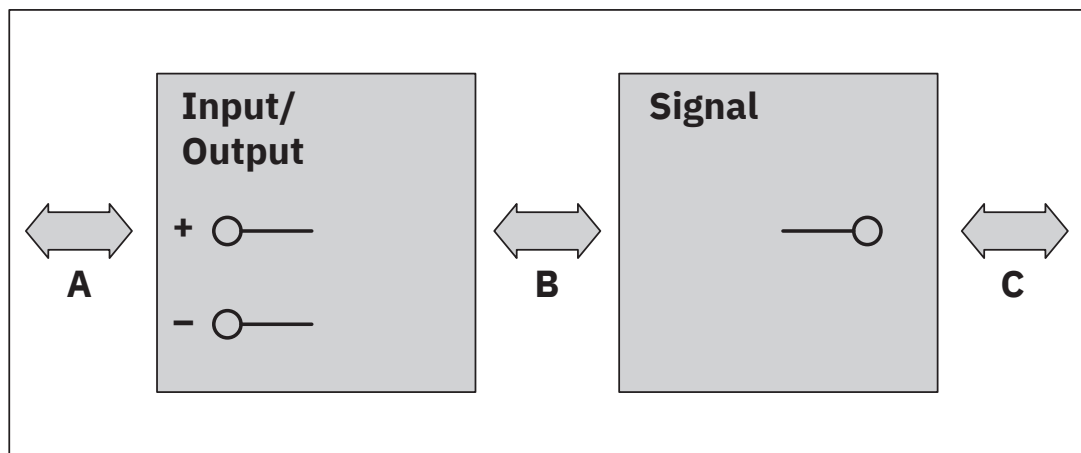
1584245

<https://www.phoenixcontact.com/us/products/1584245>

## Drawings

Schematic diagram

### Housing



Test sections, insulation voltage

# PS-EE-2G-DIODE/12-48DC/2X10/SC - Redundancy module



1584245

<https://www.phoenixcontact.com/us/products/1584245>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1584245>



**IECEE CB Scheme**

Approval ID: SG PSB-MS-00390



**cULus Listed**

Approval ID: 2023-12-12-E123528



# PS-EE-2G-DIODE/12-48DC/2X10/SC - Redundancy module



1584245

<https://www.phoenixcontact.com/us/products/1584245>

## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27371010 |
| ECLASS-15.0 | 27371010 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC000683 |
|-----------|----------|

# PS-EE-2G-DIODE/12-48DC/2X10/SC - Redundancy module



1584245

<https://www.phoenixcontact.com/us/products/1584245>

## 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) |
|-------------------------------------|----------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 15.67 kg CO2e |
|---------|---------------|

Phoenix Contact 2026 © - 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](mailto:info@phoenixcon.com)