

# TRIO2-DIODE/12-24DC/2X20/1X40 - Redundancy module



2907379

<https://www.phoenixcontact.com/us/products/2907379>

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Redundancy module, 12 V - 24 V DC, 2 x 20 A, 1 x 40 A



## Product description

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

## Your advantages

- Quick and easy installation with Push-in connection technology
- Save energy
- Redundant wiring up to the load
- Permanent monitoring of redundancy
- Consistent redundancy up to the load

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2907379       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CM17          |
| Product key                          | CMRO43        |
| GTIN                                 | 4055626198279 |
| Weight per piece (including packing) | 439.2 g       |
| Weight per piece (excluding packing) | 377.94 g      |
| Customs tariff number                | 85363030      |
| Country of origin                    | CN            |

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## Technical data

### Input data

#### DC operation

|                                 |  |
|---------------------------------|--|
| Nominal input voltage range     | 12 V DC ... 24 V DC                                      |
| Input voltage range             | 10 V DC ... 30 V DC                                      |
| Voltage type of supply voltage  | DC   |
| Reverse polarity protection     | yes, < 60 V  |
| Nominal input current ( $I_N$ ) | 2x 20 A (-25 °C ... 60 °C)<br>1x 40 A (-25 °C ... 60 °C) |
| Maximum current $I_{max}$       | 2x 25 A (-25 °C ... 40 °C)<br>1x 50 A (-25 °C ... 40 °C) |
| Nominal input current ( $I_N$ ) | 2x 20 A (-25 °C ... 60 °C)<br>1x 40 A (-25 °C ... 60 °C) |
| Transient surge protection      | Varistor   |
| Voltage drop, input/output      | 0.5 V  |

### Output data

|                                  |                           |
|----------------------------------|---------------------------|
| Efficiency                       | > 97 %                    |
| Nominal output voltage           | $U_{in} - 0,5 V$          |
| Nominal output current ( $I_N$ ) | 40 A<br>20 A              |
| Derating                         | 60 °C ... 70 °C (2.5 %/K) |
| Power loss nominal load max.     | 10 W ( $I_{OUT} = 20 A$ ) |
| Connection in series             | no                        |

### Connection data

#### Input

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Push-in connection  |
| Conductor cross-section, rigid min.   | 0.2 mm <sup>2</sup> |
| Conductor cross-section, rigid max.   | 10 mm <sup>2</sup>  |
| Conductor cross-section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross-section flexible max. | 6 mm <sup>2</sup>   |
| Conductor cross-section AWG min.      | 12                  |
| Conductor cross-section AWG max.      | 8                   |
| Stripping length                      | 15 mm               |

#### Output

|                                       |                      |
|---------------------------------------|----------------------|
| Connection method                     | Screw connection     |
| Conductor cross-section, rigid min.   | 0.75 mm <sup>2</sup> |
| Conductor cross-section, rigid max.   | 16 mm <sup>2</sup>   |
| Conductor cross-section flexible min. | 0.75 mm <sup>2</sup> |
| Conductor cross-section flexible max. | 16 mm <sup>2</sup>   |

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|                                  |        |
|----------------------------------|--------|
| Conductor cross-section AWG min. | 8      |
| Conductor cross-section AWG max. | 4      |
| Stripping length                 | 18 mm  |
| Screw thread                     | M3     |
| Tightening torque, min           | 0.5 Nm |
| Tightening torque max            | 0.6 Nm |

## Electrical properties

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

## Product properties

|                            |                    |
|----------------------------|--------------------|
| Product type               | Redundancy module  |
| Product family             | TRIO DIODE         |
| MTBF (IEC 61709, SN 29500) | 82870031 h (25 °C) |
|                            | 50190012 h (40 °C) |
|                            | 26315113 h (60 °C) |
| LED                        | no                 |

## Insulation characteristics

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

## Dimensions

|        |        |
|--------|--------|
| Width  | 41 mm  |
| Height | 130 mm |
| Depth  | 115 mm |

## Installation dimensions

|                                  |               |
|----------------------------------|---------------|
| Installation distance right/left | 0 mm / 0 mm   |
| Installation distance top/bottom | 50 mm / 50 mm |

## Mounting

|                   |  |
|-------------------|--|
| Mounting type     | DIN rail mounting                              |
| Assembly note     | alignable: horizontally 0 mm, vertically 50 mm |
| Mounting position | horizontal DIN rail NS 35, EN 60715            |

## Material specifications

|  |                          |
|--|--------------------------|
| Flammability rating according to UL 94 (housing / terminal blocks) | V0                       |
| Housing material   | Metal                    |
| Type of housing  | Steel sheet, zinc-plated |
| Side element version   | Aluminum                 |

## Environmental and real-life conditions

### Ambient conditions

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|  |  |
|--|--|
| Degree of protection                           | IP20   |
| Ambient temperature (operation)                | -25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K)   |
| Ambient temperature (storage/transport)        | -40 °C ... 85 °C   |
| Climatic class                                 | 3K3 (in acc. with EN 60721)  |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing)  |
| Shock  | 18 ms, 30g, in each space direction (according to IEC 60068-2-27)                          |
| Vibration (operation)                          | < 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)<br>15 Hz ... 150 Hz, 2.3g, 90 min. |

## Standards and regulations

|  |  |
|--|--|
| Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations | EN 50178/VDE 0160 (PELV)                 |
| Standard - Electrical safety   | IEC 62368-1 (SELV)                       |
| Standard – Safety extra-low voltage  | IEC 62368-1 (SELV) und EN 60204-1 (PELV) |

## Approvals

|              |                               |
|--------------|-------------------------------|
| UL approvals | UL/C-UL listed UL 508         |
|              | UL/C-UL Recognized UL 60950-1 |

## EMC data

|                                     |   |
|-------------------------------------|---|
| Electromagnetic compatibility       | Conformance with EMC Directive 2014/30/EU         |
| Low Voltage Directive               | Conformance with Low Voltage Directive 2014/35/EC |
| EMC requirements for noise emission | EN 61000-6-3                                      |
|                                     | EN 61000-6-4                                      |
| EMC requirements for noise immunity | EN 61000-6-1                                      |
|                                     | EN 61000-6-2                                      |

### Electrostatic discharge

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-2 |
|-----------------------|--------------|

### Electrostatic discharge

|                   |                     |
|-------------------|---------------------|
| Contact discharge | 4 kV (Test Level 3) |
| Discharge in air  | 8 kV (Test Level 3) |
| Comments          | Criterion B         |

### Electromagnetic HF field

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-3 |
|-----------------------|--------------|

### Electromagnetic HF field

|                     |                  |
|---------------------|------------------|
| Frequency range     | 80 MHz ... 1 GHz |
| Test field strength | 10 V/m           |
| Frequency range     | 1 GHz ... 2 GHz  |
| Test field strength | 10 V/m           |
| Frequency range     | 2 GHz ... 3 GHz  |
| Test field strength | 10 V/m           |
| Comments            | Criterion A      |

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## Fast transients (burst)

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

## Fast transients (burst)

|          |                                    |
|----------|------------------------------------|
| Input    | 2 kV (Test Level 3 - asymmetrical) |
| Output   | 2 kV (Test Level 3 - asymmetrical) |
| Comments | Criterion B                        |

## Surge voltage load (surge)

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

## Surge voltage load (surge)

|          |                                    |
|----------|------------------------------------|
| Input    | 1 kV (Test Level 3 - symmetrical)  |
|          | 2 kV (Test Level 4 - asymmetrical) |
| Output   | 1 kV (Test Level 2 - symmetrical)  |
|          | 2 kV (Test Level 3 - asymmetrical) |
| Comments | Criterion B                        |

## Conducted interference

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

## Conducted interference

|                     |                     |
|---------------------|---------------------|
| Input/output/signal | asymmetrical        |
| Frequency range     | 0.15 MHz ... 80 MHz |
| Comments            | Criterion A         |
| Voltage             | 10 V (Test Level 3) |

## Voltage dips

|                       |               |
|-----------------------|---------------|
| Standards/regulations | EN 61000-4-11 |
|-----------------------|---------------|

## Emitted interference

|  |  |
|--|--|
| Standards/regulations                            | EN 61000-6-3   |
| Radio interference voltage in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |
| Emitted radio interference in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |

## Criteria

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

# TRIO2-DIODE/12-24DC/2X20/1X40 - Redundancy module



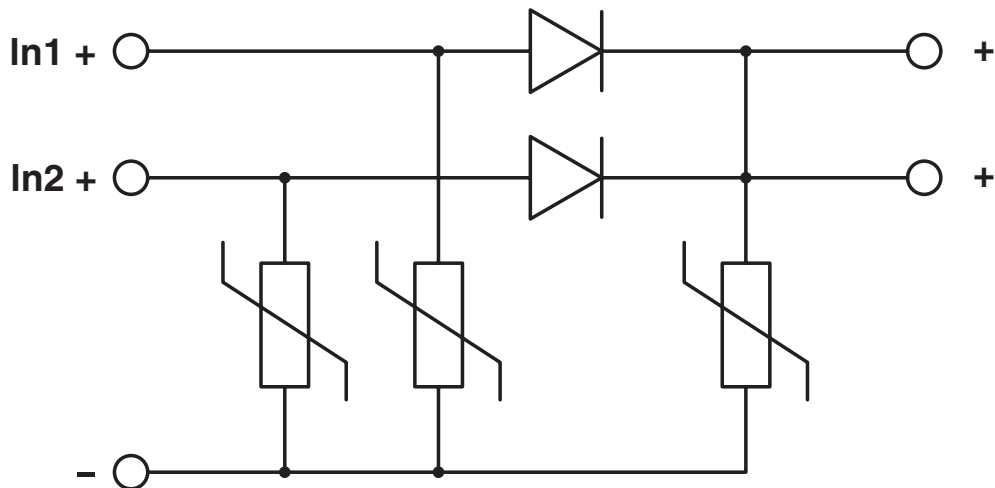
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## Drawings

Block diagram

**2x20 A**



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2907379>



**cUL Recognized**  
Approval ID: E211944



**UL Recognized**  
Approval ID: E211944



**EAC**  
Approval ID: RU S-DE.BL08.W.00764



**UL Listed**  
Approval ID: E123528



**cUL Listed**  
Approval ID: E123528

**DNV**

Approval ID: TAA000011F



**NK**  
Approval ID: TA25015M

|       | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|-------|-----------------------|-----------------------|-------------------|-----------------------------|
| keine | 500 V                 | 63 A                  | -                 | - 10                        |

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## Classifications

### ECLASS

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

### ETIM

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

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 32151500 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|   |                    |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|---|--------------------|

### China RoHS

|  |  |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E                                   |
|  | No hazardous substances above the limits |

### EU REACH SVHC

|                                     |                            |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 64.44 kg CO2e |
|---------|---------------|

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