

QUINT-DIODE/48DC/2X20/1X40 - Redundancy module



2320160

<https://www.phoenixcontact.com/us/products/2320160>

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DIN rail diode module 48 V DC/2x20 A or 1x40 A. Uniform redundancy up to the consumer.



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, QUINT DIODE provides the solution: decoupling with diode.

Your advantages

- Flexible
- Rugged design
- Consistent redundancy up to the load

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2320160 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CM18 |
| Product key | CMRQ44 |
| GTIN | 4046356524759 |
| Weight per piece (including packing) | 974 g |
| Weight per piece (excluding packing) | 751 g |
| Customs tariff number | 85363030 |
| Country of origin | IN |

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Technical data

Input data

DC operation

| | |
|---------------------------------|--|
| Nominal input voltage range | 48 V DC |
| Input voltage range | 30 V DC ... 56 V DC |
| Voltage type of supply voltage | DC |
| Reverse polarity protection | yes, < 120 V |
| Nominal input current (I_N) | 2x 20 A (-25 °C ... 60 °C) 1x 40 A (-25 °C ... 60 °C) |
| Maximum current I_{max} | 2x 30 A (-25 °C ... 40 °C) 1x 60 A (-25 °C ... 40 °C) |
| Transient surge protection | Varistor |
| Voltage drop, input/output | 0.7 V |
| Nominal input voltage range | 48 V DC |
| Input voltage range | 30 V DC ... 56 V DC |
| Input voltage range DC | 30 V DC ... 56 V DC |

Output data

| | |
|----------------------------------|--|
| Efficiency | > 97 % |
| Nominal output voltage | $U_{in} - 0,7 V$ |
| Nominal output current (I_N) | 40 A (Increasing power) 20 A (Redundancy) |
| Derating | 60 °C ... 70 °C (2.5 %/K) |
| Power loss nominal load max. | 14 W ($I_{OUT} = 20 A$) |
| Connection in series | no |
| Derating | 60 °C ... 70 °C 2.5 %/K |

Connection data

Input

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross-section, rigid min. | 0.2 mm ² |
| Conductor cross-section, rigid max. | 6 mm ² |
| Conductor cross-section flexible min. | 0.2 mm ² |
| Conductor cross-section flexible max. | 4 mm ² |
| Conductor cross-section AWG min. | 12 |
| Conductor cross-section AWG max. | 10 |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

Output

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| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross-section, rigid min. | 0.5 mm ² |
| Conductor cross-section, rigid max. | 16 mm ² |
| Conductor cross-section flexible min. | 0.5 mm ² |
| Conductor cross-section flexible max. | 16 mm ² |
| Conductor cross-section AWG min. | 10 |
| Conductor cross-section AWG max. | 6 |
| Stripping length | 10 mm |
| Screw thread | M4 |
| Tightening torque, min | 1.2 Nm |
| Tightening torque max | 1.5 Nm |

Electrical properties

| | |
|--|--------|
| Insulation voltage input, output / housing | 1000 V |
|--|--------|

Product properties

| | |
|----------------------------|-------------------|
| Product type | Redundancy module |
| Product family | QUINT DIODE |
| MTBF (IEC 61709, SN 29500) | 40000000 h |
| LED | no |

Insulation characteristics

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

Dimensions

| | |
|------------------|----------|
| Width | 50 mm |
| Height | 130 mm |
| Depth | 125 mm |
| Horizontal pitch | 2.8 Div. |

Installation dimensions

| | |
|----------------------------------|---------------|
| Installation distance right/left | 5 mm / 5 mm |
| Installation distance top/bottom | 50 mm / 50 mm |

Mounting

| | |
|-------------------|---|
| Mounting type | DIN rail mounting |
| Assembly note | alignable: $P_N \geq 50\%$, 5 mm horizontally, 15 mm next to active components, 50 mm vertically alignable: $P_N < 50\%$, 0 mm horizontally, 40 mm vertically top, 20 mm vertically bottom |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |

Material specifications

| | |
|--|-------|
| Flammability rating according to UL 94 (housing / terminal blocks) | V0 |
| Housing material | Metal |

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| | |
|------------------|--------------------------|
| Housing material | Steel sheet, zinc-plated |
|------------------|--------------------------|

Environmental and real-life conditions

Ambient conditions

| | |
|--|--|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40 °C ... 70 °C (> 60 °C Derating: 2,5 %/K) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Maximum altitude | ≤ 5000 m |
| 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) 15 Hz ... 150 Hz, 2.3g, 90 min. |
| Temp code | T4 (-25 ... +70 °C; > 60 °C, Derating: 2,5 %/K) |

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 | EN 60950-1/VDE 0805 (SELV) |
| Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment | EN 50178 |
| Standard – Safety extra-low voltage | IEC 60950-1 (SELV) and EN 60204-1 (PELV) |
| Standard - Safe isolation | DIN VDE 0100-410 |

Approvals

| | |
|--------------|---|
| UL approvals | UL/C-UL listed UL 508 |
| | UL/C-UL Recognized UL 60950-1 |
| | UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D T3C ... T4 (Hazardous Location) |

Conformity/Approvals

| | |
|-------|--------------------------|
| ATEX | ⊕ II 3 G Ex ec IIC T4 Gc |
| | DEKRA 20ATEX0041 X |
| IECEX | Ex ec IIC T4 Gc |
| | IECEX DEK 20.0022X |

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 |

Surge voltage load (surge)

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| | |
|--|--|
| Standards/regulations | EN 61000-4-5 |
| Surge voltage load (surge) | |
| Input | 2 kV (level 3 - asymmetrical: conductor to ground) |
| | 1 kV (Level 2 - symmetrical: Conductor to conductor) |
| Output | 2 kV (level 3 - asymmetrical: conductor to ground) |
| | 1 kV (Level 2 - symmetrical: Conductor to conductor) |
| Comments | Criterion A |
| Surge current load (surge) | |
| Standards/regulations | EN 61000-4-5 |
| Surge current load (surge) | |
| Input | 2 kV (level 3 - asymmetrical: conductor to ground) |
| | 1 kV (Level 2 - symmetrical: Conductor to conductor) |
| Output | 2 kV (level 3 - asymmetrical: conductor to ground) |
| | 1 kV (Level 2 - symmetrical: Conductor to conductor) |
| 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 |

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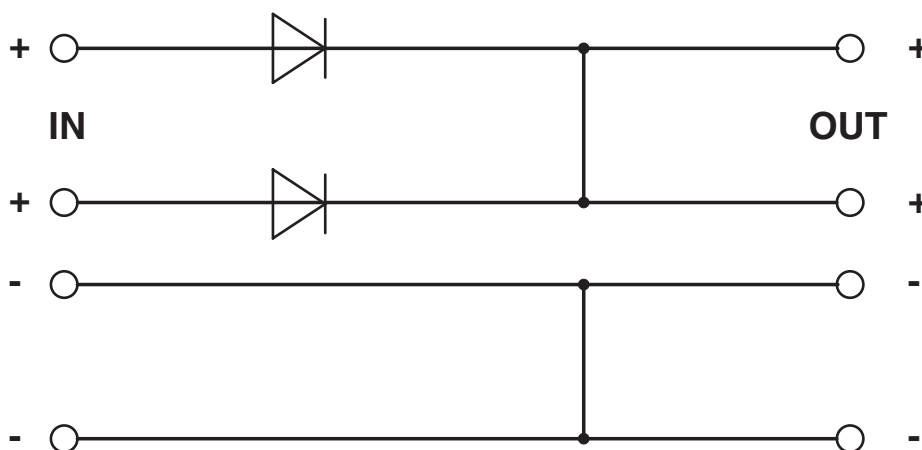


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Drawings

Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2320160>



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: FILE E 123528

DNV

Approval ID: TAA000011F



ATEX
Approval ID: DEKRA 20ATEX0041 X



EAC Ex
Approval ID: KZ 7500525010102095



IECEx
Approval ID: DEK 20.0022X



cUL Listed
Approval ID: FILE E 199827



UL Listed
Approval ID: E199827

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INMETRO

Approval ID: DNV 22.0238 X



NEPSI-EX

Approval ID: GYJ20.1591X



CCC

Approval ID: 2024322303006214

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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 |
| 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 | 20e8c3a7-e01e-4802-afb9-802122140ec1 |

EF3.1 Climate Change

| | |
|---------|----------------|
| CO2e kg | 27.659 kg CO2e |
|---------|----------------|

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