

QUINT-ORING/24DC/2X10/1X20 - Redundancy module, with protective coating



2320173

<https://www.phoenixcontact.com/us/products/2320173>

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Active QUINT redundancy module for DIN rail mounting with Auto Current Balancing ACB technology and monitoring functions, input: 24 V DC, output: 24 V DC/2 x 10 A or 1 x 20 A, including mounted UTA 107/30 universal DIN rail adapter

Product Description

The Auto Current Balancing ACB technology of the QUINT ORING modules doubles the service life of redundantly operated power supplies by evenly utilizing the power supply units. The load current is automatically distributed symmetrically.

Your advantages

- Service life of the redundant solution is doubled, thanks to uniform distribution of the load
- Save energy
- Permanent monitoring of redundancy
- Consistent redundancy up to the load

Commercial Data

| | |
|--------------------------------------|---------------------|
| Item number | 2320173 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales Key | CM18 |
| Product Key | CMRQ43 |
| Catalog Page | Page 302 (C-4-2019) |
| GTIN | 4046356524902 |
| Weight per Piece (including packing) | 633.4 g |
| Weight per Piece (excluding packing) | 400 g |
| Customs tariff number | 85049090 |
| Country of origin | CN |

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Technical Data

Input data

DC operation

| | |
|---------------------------------|--|
| Nominal input voltage range | 24 V DC |
| Input voltage range | 18 V DC ... 28 V DC (SELV) |
| Input voltage range DC | 18 V DC ... 28 V DC (SELV) |
| Voltage type of supply voltage | DC |
| Reverse polarity protection | < yes60 V |
| Nominal input current (I_N) | 2x 10 A (-25 °C ... 60 °C) 1x 20 A (-25 °C ... 60 °C) |
| Maximum current I_{max} | 2x 15 A (-25°C ... 40°C) 1x 30 A (-25°C ... 40°C) 60 A (12 ms, SFB Technology) |
| Transient surge protection | Varistor |
| Voltage drop, input/output | 0.1 V ($I_{OUT} = 20$ A) |

Output data

| | |
|--|--|
| Efficiency | > 98 % |
| Nominal output voltage | 0.1 V (< DC input) |
| Output voltage | U_{IN} - |
| Nominal output current (I_N) | 20 A (Increasing power) 10 A (Redundancy) |
| Derating | 60 °C ... 70 °C (2.5%/K) |
| Protection against overvoltage at the output (OVP) | < 32 V DC |
| Power loss nominal load max. | 2 W ($I_{OUT} = 20$ A) |
| Connection in series | No |

Signal: Redundancy OK, 13/14

| | |
|---------------------------|--------------------------------|
| Output description | Group contact |
| Maximum switching voltage | max. 30 V AC/DC |
| Maximum inrush current | ≤ 100 mA (short-circuit-proof) |

Signal: ACB (Auto Current Balancing) OK, 23/24

| | |
|---------------------------|---|
| Output description | Contact closed: $\Delta U_{IN} \leq 300$ mV |
| Maximum switching voltage | max. 30 V AC/DC |
| Maximum inrush current | ≤ 100 mA (short-circuit-proof) |

Connection data

Input

| | |
|-------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross section, rigid min. | 0.2 mm ² |

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| | |
|---------------------------------------|---------------------|
| Conductor cross section, rigid max. | 4 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |
| Conductor cross section AWG min. | 24 |
| Conductor cross section AWG max. | 12 |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

Output

| | |
|---------------------------------------|---------------------|
| 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. | 10 |
| Stripping length | 7 mm |
| Screw thread | M3 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

Signal

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross section, rigid min. | 0.2 mm ² |
| Conductor cross section, rigid max. | 4 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |
| Conductor cross section AWG min. | 24 |
| Conductor cross section AWG max. | 12 |
| Stripping length | 10 mm |
| Screw thread | M3 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

Signaling

| | |
|--------------------|--|
| Types of signaling | Relay contact, floating, current limited |
|--------------------|--|

Signal output: Redundancy OK, 13/14

| | |
|------------------------|-------------------|
| Status display | LED redundancy OK |
| Note on status display | green |
| Color | green |

Signal output: ACB (Auto Current Balancing) OK, 23/24

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| | |
|------------------------|---------------------|
| Status display | ACB OK LED |
| Note on status display | LED bar graph green |
| Color | green |
| Note on status display | LED bar graph green |

Electrical properties

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

Product properties

| | |
|----------------------------|----------------------------------|
| Product type | Component for protective circuit |
| Product family | QUINT ORING |
| MTBF (IEC 61709, SN 29500) | > 1000000 h (40 °C) |
| LED | yes |

Insulation characteristics

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

Dimensions

| | |
|--------|--------|
| Width | 32 mm |
| Height | 130 mm |
| Depth | 125 mm |

Installation dimensions

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

Alternative assembly

| | |
|--------|--------|
| Width | 122 mm |
| Height | 130 mm |
| Depth | 35 mm |

Mounting

| | |
|-----------------------|---|
| Mounting type | DIN rail mounting |
| Assembly instructions | 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 |
| Type of housing | Aluminum (AlMg3) |
| Hood version | Galvanized sheet steel, free from chrome (VI) |

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

Environmental and real-life conditions

Ambient conditions

| | |
|--|--|
| 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 |
| Ambient temperature (start-up type tested) | -40 °C |
| Maximum altitude | 2000 m |
| Climatic class | 3K3 (in acc. with EN 60721) |
| Max. permissible relative humidity (operation) | ≤ 100 % (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 t _v = 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 | EN 60950-1/VDE 0805 (SELV) |
| Standard – Safety extra-low voltage | IEC 60950-1 (SELV) and EN 60204-1 (PELV) |
| Noxious gas test | ISA-S71.04-1985 G3 Harsh Group A |

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 (Hazardous Location) |

Conformity/Approvals

| | |
|-------|-----------------------------|
| ATEX | □ II 3 G Ex ec nC IIC T4 Gc |
| | DEKRA 20ATEX0136 X |
| IECEX | Ex ec nC IIC T4 Gc |
| | DEK 20.0082X |

EMC data

| | |
|-------------------------------------|---|
| 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 |
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |

Electrostatic discharge

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

Electrostatic discharge

| | |
|-------------------|----------------------|
| Contact discharge | 8 kV (Test Level 4) |
| Discharge in air | 15 kV (Test Level 4) |
| Comments | Criterion B |

Electromagnetic HF field

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

Electromagnetic HF field

| | |
|---------------------|-----------------------|
| Frequency range | 80 MHz ... 1 GHz |
| Test field strength | 20 V/m (Test Level 3) |
| Frequency range | 1 GHz ... 2 GHz |
| Test field strength | 10 V/m (Test Level 3) |
| Frequency range | 2 GHz ... 3 GHz |
| Test field strength | 10 V/m (Test Level 3) |
| Comments | Criterion A |

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) |
| Signal | 2 kV (Test Level 4 - asymmetrical) |
| Comments | Criterion B |

Surge voltage load (surge)

| | |
|-----------------------|------------------------------------|
| Standards/regulations | EN 61000-4-5 |
| Input | 1 kV (Test Level 2 - symmetrical) |
| | 2 kV (Test Level 3 - asymmetrical) |
| Output | 1 kV (Test Level 2 - symmetrical) |
| | 2 kV (Test Level 3 - asymmetrical) |
| Signal | 1 kV (Test Level 2 - asymmetrical) |
| Comments | Criterion B |

Conducted interference

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

Conducted interference

| | |
|-----------------|---------------------|
| I/O/S | asymmetrical |
| Frequency range | 0.15 MHz ... 80 MHz |
| Comments | Criterion A |
| Voltage | 10 V (Test Level 3) |

Emitted interference

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| | |
|--|--|
| 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. |

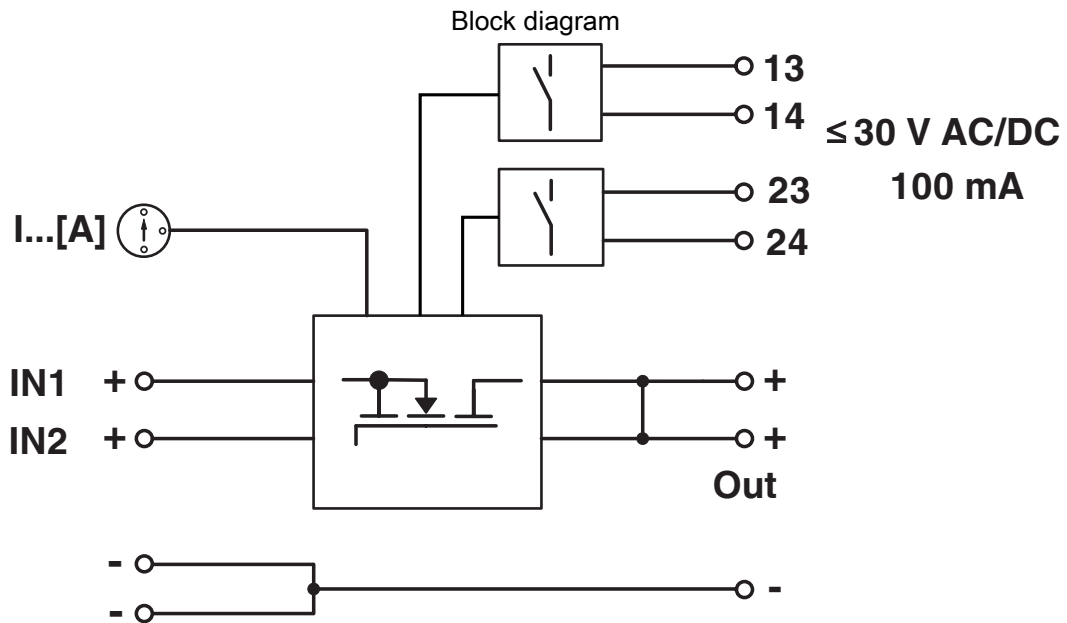
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Drawings



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Approvals



cUL Recognized
Approval ID: FILE E 211944



UL Recognized
Approval ID: FILE E 211944



EAC
Approval ID: EAC-Zulassung



LR
Approval ID: 14-20005



NK
Approval ID: TA19447M



EAC
Approval ID: EAC-Zulassung



UL Listed
Approval ID: FILE E 123528



cUL Listed
Approval ID: FILE E 123528



RINA
Approval ID: ELE362819XG



UL Recognized
Approval ID: FILE E 211944



cUL Recognized
Approval ID: FILE E 211944

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cUL Listed

Approval ID: FILE E 123528



UL Listed

Approval ID: FILE E 123528



NK

Approval ID: TA19447M



RINA

Approval ID: ELE362819XG



LR

Approval ID: 14-20005



EAC

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



EAC

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



ATEX

Approval ID: DEKRA 20ATEX0136 X



EAC Ex

Approval ID: RU C-DE.HB49.B.00004



IECEX

Approval ID: IECEX DEK 20.0082X



CCC

Approval ID: 2021322303003736



NEPSI

Approval ID: GYJ21.1003X

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cUL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827



cUL Listed

Approval ID: FILE E 199827



NEPSI

Approval ID: GYJ21.1003X



CCC

Approval ID: 2021322303003736



IECEX

Approval ID: IECEX DEK 20.0082X



EAC Ex

Approval ID: RU C-DE.HB49.B.00004



ATEX

Approval ID: DEKRA 20ATEX0136 X

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27371010 |
| ECLASS-13.0 | 27371010 |
| ECLASS-12.0 | 27371010 |

ETIM

| | |
|----------|----------|
| ETIM 8.0 | EC000683 |
|----------|----------|

UNSPSC

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

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Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 25; For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads" |

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Accessories

UTA 107/30 - Mounting adapter

2320089

<https://www.phoenixcontact.com/us/products/2320089>

Universal DIN rail adapter



UWA 182/52 - Mounting adapter

2938235

<https://www.phoenixcontact.com/us/products/2938235>

Universal wall adapter for securely mounting the device in the event of strong vibrations. The device is screwed directly onto the mounting surface. The universal wall adapter is attached on the top/bottom.



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QUINT-PS-ADAPTERS7/1 - Mounting adapter

2938196

<https://www.phoenixcontact.com/us/products/2938196>

Assembly adapter for QUINT-PS... power supply on S7-300 rail



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