# DC/DC converters - QUINT-PS/24DC/48DC/ 5 - 2320128

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QUINT DC/DC converter, with SFB technology, primary-switched, input: 24 V DC, output: 48 V DC/5 A

## Product description

The QUINT 48 V/5 A DC/DC converter converts a DC voltage of 18 V ... 32 V to an adjustable, regulated, and electrically isolated 48 V output voltage. If no regulated and stable 48 V DC voltage is available to supply a load, the DC/DC converter ensures the adjustment of the 48 V load: from an unregulated DC voltage, an adjustable output voltage of 30 V ... 56 V is generated.

## Why buy this product

- Reliable starting of difficult loads, thanks to the static POWER BOOST power reserve with up to 125% nominal current permanently
- Preventive function monitoring indicates critical operating states before errors occur
- Constant voltage: output voltage regenerated even at the end of long cables
- Electrical isolation: for setting up independent supply systems
- Support conversion to various voltage levels

## Key commercial data

| | |
|---|---|
| Packing unit | 0 |
| Minimum order quantity | 1 |
| Catalog page | Page 609 (IF-2011) |
| GTIN | 4 046356 481908 |
| Custom tariff number | 85044082 |
| Country of origin | CHINA |

## Technical data

### Input data

| | |
|---|---|
| Nominal input voltage | 24 V DC |
| DC input voltage range | 18 V DC ... 32 V DC |
| DC input voltage range | 14 V DC ... 18 V DC (Consider derating during operation) |
| DC frequency range | 0 Hz |
| Current consumption | Typ. 14 A (24 V DC) |
| Inrush surge current | < 15 A (typical) |
| Power failure bypass | > 12 ms (24 V DC) |
| Input fuse | 25 A (internal (device protection)) |
| Permissible backup fuse | B16 |

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## Technical data

### Input data

| | |
|---|---|
| Permissible backup fuse | B20 |
| Type of protection | Transient surge protection |
| Protective circuit/component | Varistor |

### Output data

| | |
|---|---|
| Nominal output voltage | 48 V DC ±1% |
| Setting range of the output voltage | 30 V DC ... 56 V DC (> 48 V constant capacity) |
| Output current | 5 A (-25 °C ... 60 °C) |
| Output current | 6.25 A (with POWER BOOST, -25 °C ... 40 °C permanently, UOUT = 48 V DC) |
| Output current | 30 A (SFB technology, 12 ms) |
| Magnetic fuse tripping | C2 |
| Derating | 60 °C ... 70 °C (2.5%/K) |
| Connection in parallel | Yes, for redundancy and increased capacity |
| Connection in series | Yes |
| Max. capacitive load | Unlimited |
| Current limitation | Approximately 7 A |
| Control deviation | < 1 % (change in load, static 10% ... 90%) |
| Control deviation | < 2 % (change in load, dynamic 10% ... 90%) |
| Control deviation | < 0.1 % (change in input voltage ±10%) |
| Residual ripple | < 20 mVPP |
| Peak switching voltages nominal load | < 10 mVPP (20 MHz) |
| Maximum power dissipation NO-Load | 5.2 W |
| Power loss nominal load max. | 21 W |

### General data

| | |
|---|---|
| Width | 48 mm |
| Height | 130 mm |
| Depth | 125 mm |
| Width with alternative assembly | 122 mm |
| Height with alternative assembly | 130 mm |
| Depth with alternative assembly | 51 mm |
| Net weight | 0.9 kg |
| Efficiency | > 92.5 % |
| Insulation voltage input/output | 1 kV (routine test) |
| Insulation voltage input/output | 1.5 kV (type test) |
| Degree of protection | IP20 |
| Protection class | III |
| MTBF (IEC 61709, SN 29500) | > 500000 h |
| Ambient temperature (operation) | -25 °C ... 70 °C (> 60 °C derating) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, no condensation) |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| Assembly instructions | Can be aligned: Horizontally 0 mm, vertically 50 mm |

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## Technical data

### General data

| | |
|---|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC |
| Noise immunity | EN 61000-6-2:2005 |
| Standard – Electrical equipment of machines | EN 60204 |
| Standard - Safety of transformers | EN 61558-2-17 |
| Standard - Electrical safety | EN 60950-1/VDE 0805 (SELV) |
| Shipbuilding approval | Germanischer Lloyd (EMC 1) |
| Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations | EN 50178/VDE 0160 (PELV) |
| Standard – Safety extra-low voltage | EN 60950-1 (SELV) |
| Standard – Safety extra-low voltage | EN 60204 (PELV) |
| Standard - Safe isolation | DIN VDE 0100-410 |
| UL approvals | UL/C-UL listed UL 508 |
| UL approvals | UL/C-UL Recognized UL 60950 |
| UL approvals | UL listed ANSI/ISA-12.12.01 class I, division 2, groups A, B, C, D |

### Connection data, input

| | |
|---|---|
| Connection method | Pluggable screw connection |
| Conductor cross section solid min. | 0.2 mm² |
| Conductor cross section solid max. | 2.5 mm² |
| Conductor cross section stranded min. | 0.2 mm² |
| Conductor cross section stranded max. | 2.5 mm² |
| Conductor cross section AWG/kcmil min. | 24 |
| Conductor cross section AWG/kcmil max | 12 |
| Stripping length | 8 mm |
| Screw thread | M3 |

### Connection data, output

| | |
|---|---|
| Connection method | Pluggable screw connection |
| Conductor cross section solid min. | 0.2 mm² |
| Conductor cross section solid max. | 2.5 mm² |
| Conductor cross section stranded min. | 0.2 mm² |
| Conductor cross section stranded max. | 2.5 mm² |
| Conductor cross section AWG/kcmil min. | 24 |
| Conductor cross section AWG/kcmil max | 12 |
| Stripping length | 7 mm |

### Signaling

| | |
|---|---|
| Output name | DC OK active |
| Output description | UOUT > 0.9 x UN: High signal |
| Maximum inrush current | < 20 mA (short-circuit resistant) |
| Status display | "DC OK" LED green |
| Conductor cross section solid min. | 0.2 mm² |
| Conductor cross section solid max. | 2.5 mm² |
| Conductor cross section stranded min. | 0.2 mm² |
| Conductor cross section stranded max. | 2.5 mm² |

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## Technical data

### Signaling

| | |
|---|---|
| Conductor cross section AWG/kcmil min. | 24 |
| Conductor cross section AWG/kcmil max | 12 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |
| Screw thread | M3 |
| Output name | POWER BOOST, active |
| Output description | IOUT < IN: High signal |
| Maximum inrush current | < 20 mA (short-circuit resistant) |
| Status display | "BOOST" LED yellow/IOUT > IN : LED on |
| Output name | UIN OK, active |
| Output description | UIN > 19.2 V: High signal |
| Maximum inrush current | ≤ 20 mA (short-circuit resistant) |
| Status display | LED "UIN < 19.2 V" yellow/UIN < 19.2 V DC: LED on |
| Output name | DC OK floating |
| Output description | Relay |
| Output voltage | ≤ 30 V AC/DC |
| Maximum inrush current | ≤ 100 mA |
| Note on status display | UOUT > 0.9 x UN: Contact closed |

## Classifications

### eclass

| | |
|---|---|
| eCl@ss 4.0 | 27250311 |
| eCl@ss 4.1 | 27250311 |
| eCl@ss 5.0 | 27242213 |
| eCl@ss 5.1 | 27242213 |
| eCl@ss 6.0 | 27049005 |
| eCl@ss 7.0 | 27049005 |

### etim

| | |
|---|---|
| ETIM 4.0 | EC002542 |

### unspsc

| | |
|---|---|
| UNSPSC 6.01 | 30211502 |
| UNSPSC 7.0901 | 39121004 |
| UNSPSC 11 | 39121004 |
| UNSPSC 12.01 | 39121004 |
| UNSPSC 13.2 | 39121004 |

## Approvals

### Approvals

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## Approvals

Approvals

UL Recognized / UL Listed / cUL Recognized / cUL Listed / IECEE CB Scheme / GL / ABS / BV / cULus Recognized / cUL Listed

Ex Approvals

UL Listed / cUL Listed / cULus Recognized

Approvals submitted

## Approval details

UL Recognized

UL Listed

cUL Recognized

cUL Listed

IECEE CB Scheme

GL

ABS

BV

cULus Recognized

cUL Listed

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## Accessories

### Accessories

Assembly adapters - UWA 182/52 - 2938235

Universal wall adapter

Assembly adapters - QUINT-PS-ADAPTERS7/1 - 2938196

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

Assembly adapters - UTA 107/30 - 2320089

Universal DIN rail adapter

## Drawings

Block diagram