

DC/DC converters - QUINT-PS/24DC/24DC/20 - 2320102

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Primary-switched QUINT DC/DC converter for DIN rail mounting, input: 24 V DC, output: 24 V DC/20 A, with integrated SFB (selective fuse breaking) technology, including mounted universal DIN rail adapter UTA 107

Product description

The QUINT 24 V/20 A DC/DC converter converts a DC voltage of 18 V ... 32 V to an adjustable, regulated, and electrically isolated 24 V output voltage. If no regulated and stable 24 V DC voltage is available to supply a load, the DC/DC converter ensures the adjustment of the 24 V load: from an unregulated DC voltage, an adjustable output voltage of 18 V ... 29.5 V is generated.

Product Features

- ✓ 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
- ✓ Support conversion to various voltage levels
- ✓ Constant voltage: output voltage regenerated even at the end of long cables
- ✓ Electrical isolation: for setting up independent supply systems



Key commercial data

| | |
|--------------------------------------|------------|
| Packing unit | 1 pc |
| Weight per Piece (excluding packing) | 1980.0 GRM |
| Custom tariff number | 85044030 |
| Country of origin | China |

Technical data

Dimensions

| | |
|----------------------------------|--------|
| Width | 82 mm |
| Height | 130 mm |
| Depth | 125 mm |
| Width with alternative assembly | 122 mm |
| Height with alternative assembly | 130 mm |
| Depth with alternative assembly | 85 mm |

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Technical data

Ambient conditions

| | |
|--|-------------------------------------|
| Degree of protection | IP20 |
| 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, non-condensing) |
| Noise immunity | EN 61000-6-2:2005 |

Input data

| | |
|------------------------------|--|
| Nominal input voltage | 24 V DC |
| Input voltage range | 18 V DC ... 32 V DC |
| Current consumption | 28 A (24 V, I _{BOOST}) |
| Inrush surge current | < 26 A (typical) |
| Power failure bypass | > 10 ms (24 V DC) |
| Choice of suitable fuses | 40 A ... 50 A (Characteristics B, C, D, K) |
| Type of protection | Transient surge protection |
| Protective circuit/component | Varistor |

Output data

| | |
|--------------------------------------|---|
| Nominal output voltage | 24 V DC ±1% |
| Setting range of the output voltage | 18 V DC ... 29.5 V DC (> 24 V constant capacity) |
| Output current | 20 A (-25 °C ... 60 °C) |
| | 25 A (with POWER BOOST, -25°C ... 40°C permanently, U _{OUT} = 24 V DC) |
| | 120 A (SFB technology, 12 ms) |
| 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 29 A |
| Control deviation | < 1 % (change in load, static 10 % ... 90 %) |
| | < 2 % (change in load, dynamic 10 % ... 90 %) |
| | < 0.1 % (change in input voltage ±10 %) |
| Residual ripple | < 20 mV _{PP} |
| Peak switching voltages nominal load | < 10 mV _{PP} (20 MHz) |
| Maximum power dissipation NO-Load | 2.2 W |
| Power loss nominal load max. | 39 W |

General

| | |
|---------------------------------|--------------------|
| Net weight | 1.7 kg |
| Efficiency | > 93 % |
| Insulation voltage input/output | 1.5 kV (type test) |

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Technical data

General

| | |
|--|--|
| | 1 kV (routine test) |
| Protection class | III |
| MTBF (IEC 61709, SN 29500) | > 554000 h (According to EN 29500) |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| Assembly instructions | Alignable: 5 mm horizontally, 15 mm next to active components, 50 mm vertically |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC |
| Standard – Electrical equipment of machines | EN 60204 |
| 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) |
| | EN 60204 (PELV) |
| Standard - Safe isolation | DIN VDE 0100-410 |
| UL approvals | UL/C-UL listed UL 508 |
| | UL/C-UL Recognized UL 60950 |
| | UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location) |

Connection data, input

| | |
|--|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.5 mm ² |
| Conductor cross section solid max. | 16 mm ² |
| Conductor cross section stranded min. | 0.5 mm ² |
| Conductor cross section stranded max. | 16 mm ² |
| Conductor cross section AWG/kcmil min. | 8 |
| Conductor cross section AWG/kcmil max | 6 |
| Stripping length | 10 mm |
| Screw thread | M3 |

Connection data, output

| | |
|--|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 6 mm ² |
| Conductor cross section stranded min. | 0.2 mm ² |
| Conductor cross section stranded max. | 4 mm ² |
| Conductor cross section AWG/kcmil min. | 12 |
| Conductor cross section AWG/kcmil max | 10 |

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Technical data

Connection data, output

| | |
|------------------|------|
| Stripping length | 8 mm |
|------------------|------|

Signaling

| | |
|--|---|
| Output name | DC OK active |
| Output description | $U_{OUT} > 0.9 \times U_N$: High signal |
| Maximum inrush current | < 20 mA (short-circuit resistant) |
| Status display | "DC OK" LED green |
| Note on status display | $U_{OUT} < 0.9 \times U_N$: LED flashing |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 mm ² |
| Conductor cross section stranded min. | 0.2 mm ² |
| Conductor cross section stranded max. | 2.5 mm ² |
| 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 | $I_{OUT} < I_N$: High signal |
| Maximum inrush current | < 20 mA (short-circuit resistant) |
| Status display | "BOOST" LED yellow/ $I_{OUT} > I_N$: LED on |
| Output name | U_{IN} OK, active |
| Output description | $U_{IN} > 19.2$ V: High signal |
| Maximum inrush current | ≤ 20 mA (short-circuit resistant) |
| Status display | LED " $U_{IN} < 19.2$ V" yellow/ $U_{IN} < 19.2$ 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 | $U_{OUT} > 0.9 \times U_N$: Contact closed |

Classifications

eCl@ss

| | |
|------------|----------|
| eCl@ss 4.0 | 27250311 |
| eCl@ss 4.1 | 27250311 |
| eCl@ss 5.0 | 27242213 |

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Classifications

eCl@ss

| | |
|------------|----------|
| eCl@ss 5.1 | 27210901 |
| eCl@ss 6.0 | 27210901 |
| eCl@ss 7.0 | 27210901 |
| eCl@ss 8.0 | 27210901 |

ETIM

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|----------|----------|
| ETIM 4.0 | EC002542 |
| ETIM 5.0 | EC002046 |

UNSPSC

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

Approvals

Approvals

Approvals


UL Recognized / cUL Recognized / IECCE CB Scheme / UL Listed / cUL Listed / cULus Recognized / cULus Listed

Ex Approvals

UL Listed / cUL Listed / cULus Listed

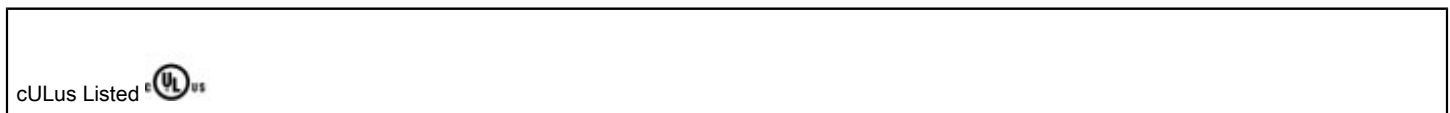
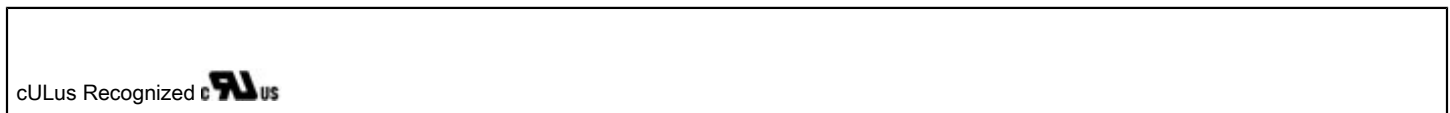
Approvals submitted

Approval details

| |
|---|
| UL Recognized  |
|---|

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Approvals



Drawings

Block diagram

