

DC/DC converters - QUINT-PS/12DC/24DC/ 5 - 2320131

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Primary-switched QUINT DC/DC converter for DIN rail mounting with SFB (Selective Fuse Breaking) Technology, input: 12 V DC, output: 24 V DC/5 A

Product Description

QUINT DC/DC converter with maximum functionality

DC/DC converters alter the voltage level, regenerate the voltage at the end of long cables or enable the creation of independent supply systems by means of electrical isolation.

QUINT DC/DC converters magnetically and therefore quickly trip circuit breakers with six times the nominal current, for selective and therefore cost-effective system protection. The high level of system availability is additionally ensured, thanks to preventive function monitoring, as it reports critical operating states before errors occur.

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



Key Commercial Data

| | |
|--------------------------------------|----------|
| Packing unit | 1 pc |
| Weight per Piece (excluding packing) | 880.0 g |
| Custom tariff number | 85044030 |
| Country of origin | China |

Technical data

Dimensions

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

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Technical data

Dimensions

| | |
|----------------------------------|--------|
| Width with alternative assembly | 122 mm |
| Height with alternative assembly | 130 mm |
| Depth with alternative assembly | 35 mm |

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 |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing) |
| Noise immunity | EN 61000-6-2:2005 |

Input data

| | |
|------------------------------|-------------------------------------|
| Nominal input voltage range | 12 V DC |
| Input voltage range | 9 V DC ... 18 V DC |
| Inrush surge current | < 15 A (typical) |
| Power failure bypass | > 3 ms (12 V DC) |
| Input fuse | 25 A (internal (device protection)) |
| 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 DC, constant capacity restricted) |
| Nominal output current | 5 A (-25 °C ... 60 °C) |
| POWER BOOST | 6.25 A (-25°C ... 40°C permanent, U _{OUT} = 24 V DC) |
| SFB technology current reserve | 30 A (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 |
| Active current limitation | Approximately 6.9 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 | < 75 mV _{PP} |
| Peak switching voltages nominal load | < 10 mV _{PP} (20 MHz) |
| Maximum power dissipation in no-load condition | 2 W |
| Power loss nominal load max. | 13.5 W |

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Technical data

General

| | |
|---------------------------------|---|
| Net weight | 0.7 kg |
| Efficiency | > 90 % |
| Insulation voltage input/output | 1.5 kV (type test) |
| | 1 kV (routine test) |
| Protection class | III |
| | > 1005000 h (40°C) |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| Assembly instructions | Alignable: 5 mm horizontally, 15 mm next to active components, 50 mm vertically |

Connection data, input

| | |
|---------------------------------------|----------------------------|
| Connection method | Pluggable screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 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. | 18 |
| Conductor cross section AWG max. | 12 |
| Stripping length | 8 mm |
| Screw thread | M3 |

Connection data, output

| | |
|---------------------------------------|----------------------------|
| Connection method | Pluggable screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 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. | 18 |
| Conductor cross section AWG max. | 12 |
| Stripping length | 7 mm |
| Screw thread | M3 |

Connection data for signaling

| | |
|---------------------------------------|---------------------|
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 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 |

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Technical data

Connection data for signaling

| | |
|--------------|----|
| Screw thread | M3 |
|--------------|----|

Standards and Regulations

| | |
|--|--|
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC |
| Shock | 30g in each direction, according to IEC 60068-2-27 |
| Noise immunity | EN 61000-6-2:2005 |
| Connection in acc. with standard | CUL |
| Standards/regulations | EN 61000-4-3 |
| | EN 61000-4-4 |
| | EN 61000-4-6 |
| Standard – Electrical equipment of machines | EN 60204-1 |
| Standard - Electrical safety | EN 60950-1/VDE 0805 (SELV) |
| 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 60204-1 (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) |
| Vibration (operation) | < 15 Hz, amplitude ± 2.5 mm (according to IEC 60068-2-6) |
| Rail applications | EN 50121-4 |

Classifications

eCl@ss

| | |
|------------|----------|
| eCl@ss 4.0 | 27250311 |
| eCl@ss 4.1 | 27250311 |
| eCl@ss 5.0 | 27242213 |
| eCl@ss 5.1 | 27210901 |
| eCl@ss 6.0 | 27210901 |
| eCl@ss 7.0 | 27210901 |
| eCl@ss 8.0 | 27210901 |

ETIM

| | |
|----------|----------|
| ETIM 4.0 | EC002540 |
| ETIM 5.0 | EC002046 |

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Classifications

UNSPSC

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

Approvals

Approvals

Approvals

IECEE CB Scheme / UL Recognized / UL Listed / cUL Recognized / cUL Listed / GL / EAC / LR / RINA / NK / EAC / BV / DNV / ABS / cULus Recognized / cULus Listed

Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approvals submitted

Approval details

IECEE CB Scheme

UL Recognized

UL Listed

cUL Recognized

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Approvals

cUL Listed

GL

EAC

LR

RINA

NK

EAC

BV

DNV

| | |
|--------------------------------|-------|
| mm ² /AWG/kcmil | 4 |
| Nominal current I _N | 15 A |
| Nominal voltage U _N | 750 V |

ABS

cULus Recognized

cULus Listed

Drawings

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Block diagram

