

## DC/DC converter, with protective coating - QUINT-PS/24DC/24DC/10/CO - 2320555

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Primary-switched QUINT DC/DC converter for DIN rail mounting with SFB (Selective Fuse Breaking) Technology, with protective coating, input: 24 V DC, output: 24 V DC/10 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
- ✓ Optimum protection with dip coating for 100 % humidity



### Key commercial data

|                                      |            |
|--------------------------------------|------------|
| Packing unit                         | 1 pc       |
| Weight per Piece (excluding packing) | 1160.0 GRM |
| Custom tariff number                 | 85044030   |
| Country of origin                    | China      |

### Technical data

#### Dimensions

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## Technical data

### Dimensions

|                                  |        |
|----------------------------------|--------|
| 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  |

### Ambient conditions

|  |  |
|--|--|
| Degree of protection                           | IP20   |
| Ambient temperature (operation)                | -25 °C ... 70 °C (> 60 °C derating, 2.5 %/K, startup at -40°C type-tested) |
| Ambient temperature (storage/transport)        | -40 °C ... 85 °C   |
| Max. permissible relative humidity (operation) | 100 % (at 25 °C, non-condensing)   |
| Noise immunity                                 | EN 61000-6-2:2005  |

### Input data

|                              |  |
|------------------------------|--|
| Nominal input voltage range  | 24 V DC                                    |
| Input voltage range          | 18 V DC ... 32 V DC                        |
| Inrush surge current         | < 15 A (typical)                           |
| Power failure bypass         | > 12 ms (24 V DC)                          |
| Input fuse                   | 25 A (internal (device protection))        |
| Choice of suitable fuses     | 16 A ... 20 A (Characteristics B, C, D, K) |
| Type of protection           | Transient surge protection                 |
| Protective circuit/component | Varistor                                   |

### Output data

|                                     |  |
|-------------------------------------|--|
| Nominal output voltage              | 24 V DC $\pm$ 1 %  |
| Setting range of the output voltage | 18 V DC ... 29.5 V DC (> 24 V constant capacity)               |
| Nominal output current              | 10 A (-25 °C ... 60 °C)  |
| POWER BOOST                         | 12.5 A (-25°C ... 40°C permanent, U <sub>OUT</sub> = 24 V DC ) |
| SFB technology current reserve      | 60 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           | Approx. 18 A   |
| Control deviation                   | < 1 % (change in load, static 10 % ... 90 %)                   |
|                                     | < 2 % (change in load, dynamic 10 % ... 90 %)                  |

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## Technical data

### Output data

|                                      |  |
|--------------------------------------|--|
|                                      | < 0.1 % (change in input voltage $\pm 10$ %) |
| Residual ripple                      | < 20 mV <sub>PP</sub>                        |
| Output current                       | 10 A (-25 °C ... 60 °C)                      |
| Peak switching voltages nominal load | < 10 mV <sub>PP</sub> (20 MHz)               |
| Maximum power dissipation NO-Load    | 1.6 W  |
| Power loss nominal load max.         | 24 W   |

### General

|  |  |
|--|--|
| Net weight   | 0.9 kg   |
| Efficiency   | > 92 %   |
| Insulation voltage input/output  | 1.5 kV (type test)<br>1 kV (routine test)  |
| Protection class   | III<br>> 763000 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  |
| Electromagnetic compatibility  | Conformance with EMC Directive 2004/108/EC   |
| ATEX   | # II 3 G Ex nA nC IIC T4 Gc<br>TÜV 13 ATEX 090493 X  |
| IECEX  | Ex nA nC IIC T4 Gc<br>IECEX TUN 13.0007 X  |
| 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)<br>EN 60204 (PELV)   |
| Standard - Safe isolation  | DIN VDE 0100-410   |
| Rail applications  | EN 50121-4   |
| UL approvals   | UL/C-UL listed UL 508<br>UL/C-UL Recognized UL 60950<br>UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location) |

### Connection data, input

|                                    |                            |
|------------------------------------|----------------------------|
| Connection method                  | Pluggable screw connection |
| Conductor cross section solid min. | 0.2 mm <sup>2</sup>        |

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## Technical data

### Connection data, input

|                                       |                     |
|---------------------------------------|---------------------|
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup> |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 24                  |
| 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 <sup>2</sup>        |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup>        |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup>        |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup>        |
| Conductor cross section AWG min.      | 24                         |
| Conductor cross section AWG max.      | 12                         |
| Stripping length                      | 7 mm                       |
| Screw thread                          | M3                         |

## 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                            |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup>                          |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup>                          |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup>                          |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup>                          |
| Conductor cross section AWG min.      | 24   |
| Conductor cross section AWG 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 |

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## Technical data

### Signaling

|                        |   |
|------------------------|---|
| Output name            | $U_{IN}$ OK, active   |
| Output description     | $U_{IN} > 19.2$ V: High signal                                |
| Maximum inrush current | $\leq 20$ 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         | $\leq 30$ V AC/DC   |
| Maximum inrush current | $\leq 100$ mA   |
| Note on status display | $U_{OUT} > 0.9 \times U_N$ : Contact closed                   |

## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27040702 |
| eCl@ss 4.1 | 27040702 |
| eCl@ss 5.0 | 27242213 |
| eCl@ss 5.1 | 27049002 |
| eCl@ss 6.0 | 27049002 |
| eCl@ss 7.0 | 27049002 |
| eCl@ss 8.0 | 27210901 |

### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC001039 |
| ETIM 4.0 | EC002540 |
| ETIM 5.0 | EC002046 |

### UNSPSC

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

## Approvals

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## Approvals

### Approvals

UL Recognized / UL Listed / cUL Recognized / cUL Listed / GL / EAC / LR / RINA / NK / EAC / cULus Recognized / cULus Listed

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### Ex Approvals

UL Listed / cUL Listed / IECEx / ATEX / cULus Listed


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### Approvals submitted

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### Approval details

UL Recognized 

UL Listed 

cUL Recognized 

cUL Listed 

GL

EAC

LR


RINA

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## Approvals

NK

EAC

cULus Recognized 

cULus Listed 

## Drawings

Block diagram

