

# Converter - QUINT-PS/ 24DC/ 24DC/20 - 2320102

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QUINT DC/DC converter, with SFB technology, primary-switched, input: 24 V DC, output: 24 V DC/20 A

## 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.

## 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
- 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	0
Minimum order quantity	1
Catalog page	Page 609 (IF-2011)
GTIN	 4 046356 481892
Weight per Piece (excluding packing)	1967.7 GRM
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. 28 A (24 V, IBOOST)
Inrush surge current	< 26 A (typical)
Power failure bypass	> 10 ms (24 V DC)

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## Technical data

### Input data

Permissible backup fuse	B40
Permissible backup fuse	B50
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)
Output current	20 A (-25 °C ... 60 °C)
Output current	25 A (with POWER BOOST, -25°C ... 40°C permanently, UOUT = 24 V DC)
Output current	120 A (SFB technology, 12 ms)
Magnetic fuse tripping	B16
Magnetic fuse tripping	C6
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%)
Control deviation	< 2 % (change in load, dynamic 10% ... 90%)
Control deviation	< 0.1 % (change in input voltage $\pm$ 10%)
Residual ripple	< 20 mVPP
Peak switching voltages nominal load	< 10 mVPP (20 MHz)
Maximum power dissipation NO-Load	2.2 W
Power loss nominal load max.	39 W

### General data

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
Net weight	1.7 kg
Efficiency	> 92 %
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)	$\leq$ 95 % (at 25 °C, no condensation)

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## Technical data

### General data

Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	Can be aligned: Horizontally 0 mm, vertically 50 mm
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	Screw connection
Conductor cross section solid min.	0.5 mm <sup>2</sup>
Conductor cross section solid max.	16 mm <sup>2</sup>
Conductor cross section stranded min.	0.5 mm <sup>2</sup>
Conductor cross section stranded max.	16 mm <sup>2</sup>
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 <sup>2</sup>
Conductor cross section solid max.	6 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	4 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	12
Conductor cross section AWG/kcmil max	10
Stripping length	8 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
Note on status display	UOUT < 0.9 x UN: LED flashing
Conductor cross section solid min.	0.2 mm <sup>2</sup>

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## Technical data

### Signaling

Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
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

### etim

ETIM 4.0	EC002542
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### unspsc

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

## Approvals

### Certificates

## Converter - QUINT-PS/ 24DC/ 24DC/20 - 2320102

### Approvals

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#### Certification

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

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#### Certification EX

UL Listed / cUL Listed / cULus Listed

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#### Certification submitted

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### Approval details

UL Recognized

cUL Recognized

IECEE CB Scheme

UL Listed

cUL Listed

cULus Recognized

cUL Listed

### Accessories

#### Accessories

Assembly adapters - UWA 182/52 - 2938235



Universal wall adapter

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## Accessories

Assembly adapters - QUINT-PS-ADAPTERS7/2 - 2938206



Assembly adapter for QUINT POWER 10A on S7-300 rail

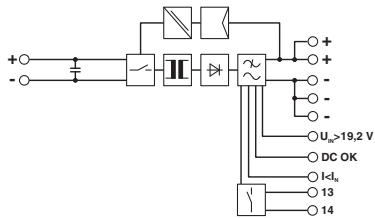
Electronic housing - UTA 107 - 2853983



Universal DIN rail adapter, for screwing on switchgear

## Drawings

Block diagram



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