

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

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Primary-switched QUINT DC/DC converter for DIN rail mounting, input: 12 V DC, output: 24 V DC/5 A, with integrated SFB (selective fuse breaking) technology, including mounted universal DIN rail adapter UTA 107/30

Product description

The QUINT 24 V/5 A DC/DC converter converts the DC voltage from 9 V ... 18 V to an adjustable, controlled, 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
- ✓ 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 PCE
GTIN	 4 046356 482240
Custom tariff number	85044082
Country of origin	CHINA

Technical data

Dimensions

Width	32 mm
Height	130 mm
Depth	125 mm
Width with alternative assembly	122 mm

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Technical data

Dimensions

Height with alternative assembly	130 mm
Depth with alternative assembly	35 mm

Input data

Nominal input voltage	12 V DC
Nominal input voltage range	9 V DC ... 18 V DC
Input voltage range DC	9 V DC ... 18 V DC
Current consumption	15 A (12 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 $\pm 1\%$
Setting range of the output voltage	18 V DC ... 29.5 V DC (> 24 V constant capacity)
Output current	5 A (-25 °C ... 60 °C)
Output current	6.25 A (with POWER BOOST, -25°C ... 40°C permanently, $U_{OUT} = 24$ V DC)
Output current	30 A (SFB technology, 12 ms)
Magnetic fuse tripping	B2
Magnetic fuse tripping	B4
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 6.9 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	< 75 mV _{pp}
Peak switching voltages nominal load	< 10 mV _{pp} (20 MHz)
Maximum power dissipation NO-Load	2 W
Power loss nominal load max.	13.5 W

General data

Net weight	0.7 kg
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Technical data

General data

Efficiency	> 90 %
Insulation voltage input/output	1.5 kV (type test)
Insulation voltage input/output	1 kV (routine test)
Degree of protection	IP20
Protection class	III
MTBF (IEC 61709, SN 29500)	> 1005000 h (According to EN 29500)
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	Alignable: 5 mm horizontally, 15 mm next to active components, 50 mm vertically
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Noise immunity	EN 61000-6-2:2005
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)
Standard – Safety extra-low voltage	EN 60204-1 (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 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 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.	18
Conductor cross section AWG/kcmil max	12
Stripping length	8 mm
Screw thread	M3

Connection data, output

Connection method	Pluggable screw connection
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Technical data

Connection data, output

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.	18
Conductor cross section AWG/kcmil max	12
Stripping length	7 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
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.	18
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	$U_{IN} > 9.6$ V: high signal
Maximum inrush current	< 20 mA (short-circuit resistant)
Status display	LED " $U_{IN} < 9.6$ V" yellow/ $U_{IN} < 9.6$ V DC: LED on

Classifications

ETIM

ETIM 4.0	EC002540
ETIM 5.0	EC002046

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Classifications

UNSPSC

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

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

Approvals

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

Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approvals submitted

Approval details

IECEE CB Scheme 

UL Recognized 

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Approvals

UL Listed 

cUL Recognized 

cUL Listed 

cULus Recognized 

cULus Listed 

Accessories

Accessories

Power supply unit - QUINT-PS/ 1AC/12DC/15 - 2866718



Primary-switched QUINT power supply for DIN rail mounting, input: 1-phase, output: 12 V DC/15 A, with integrated SFB (selective fuse breaking) technology, including mounted universal DIN rail adapter UTA 107

Power supply unit - QUINT-PS/ 1AC/12DC/20 - 2866721



Primary-switched QUINT power supply for DIN rail mounting, input: 1-phase, output: 12 V DC/20 A, with integrated SFB (selective fuse breaking) technology, including mounted universal DIN rail adapter UTA 107

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Accessories

Redundancy module - QUINT-ORING/24DC/2X10/1X20 - 2320173



Active QUINT redundancy module for DIN rail mounting with integrated SFB (selective fuse breaking) technology and monitoring functions, input: 24 V DC, output: 24 V DC/2 x 10 A or 1 x 20 A, including mounted universal DIN rail adapter UTA 107/30

Assembly adapters - UTA 107/30 - 2320089



Universal DIN rail adapter

Assembly adapters - UWA 182/52 - 2938235



Universal wall adapter

Thermomagnetic device circuit breaker - CB TM1 1A SFB P - 2800836



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

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



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

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Accessories

Thermomagnetic device circuit breaker - CB TM1 2A SFB P - 2800837



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

Thermomagnetic device circuit breaker - CB TM1 12A SFB P - 2800844



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

Thermomagnetic device circuit breaker - CB TM1 16A SFB P - 2800845



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

Drawings

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Block diagram



