

DC/DC converters - QUINT-PS/24DC/24DC/ 5 - 2320034

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Primary-switched QUINT DC/DC converter for DIN rail mounting, input: 24 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 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
- 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

package_quantity	1
GTIN	4046356482035

Technical data

Dimensions

Width	32 mm
Height	130 mm
Depth	125 mm
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)
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

DC/DC converters - QUINT-PS/24DC/24DC/ 5 - 2320034

Technical data

Input data

Nominal input voltage	24 V DC
Input voltage range	18 V DC ... 32 V DC
Current consumption	7 A (24 V, I _{BOOST})
Inrush surge current	< 15 A (typical)
Power failure bypass	> 10 ms (24 V DC)
Input fuse	15 A (internal (device protection))
Choice of suitable fuses	10 A ... 16 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	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)
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 7.2 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 ±10 %)
Residual ripple	< 20 mV _{PP}
Peak switching voltages nominal load	< 10 mV _{PP} (20 MHz)
Maximum power dissipation NO-Load	2.4 W
Power loss nominal load max.	11.4 W

General

Net weight	0.7 kg
Efficiency	> 92 %
Insulation voltage input/output	1.5 kV (type test)
Insulation voltage input/output	1 kV (routine test)
Protection class	III
MTBF (IEC 61709, SN 29500)	> 890000 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 60204-1
Standard - Electrical safety	EN 60950-1/VDE 0805 (SELV)

DC/DC converters - QUINT-PS/24DC/24DC/ 5 - 2320034

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General

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 60204-1 (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.	24
Conductor cross section AWG/kcmil 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 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
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.	24
Conductor cross section AWG/kcmil max	12

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Technical data

Signaling

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

classifications

eCl@ss

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
eCl@ss 7.0	27210901
eCl@ss 8.0	27210901

ETIM

ETIM 4.0	EC002542
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

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

Approval details


DC/DC converters - QUINT-PS/24DC/24DC/ 5 - 2320034

approvals

UL Listed 

cUL Listed 


cULus Listed  us

UL Recognized 



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IECEE CB Scheme 

GL

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BV

RINA


NK


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approvals

LR

DNV	
Nominal voltage UN	750 V
Nominal current IN	15 A
mm ² /AWG/kcmil	4

cULus Recognized  US



accessories

Power supply

QUINT-PS/ 1AC/24DC/10 - 2866763



QUINT-PS/ 3AC/24DC/10 - 2866705



Redundancy module

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



DC/DC converters - QUINT-PS/24DC/24DC/ 5 - 2320034

accessories

Assembly adapter

UTA 107/30 - 2320089



UWA 182/52 - 2938235



QUINT-PS-ADAPTERS7/1 - 2938196



Thermomagnetic device circuit breakers

CB TM1 1A SFB P - 2800836



CB TM1 2A SFB P - 2800837



DC/DC converters - QUINT-PS/24DC/24DC/ 5 - 2320034

accessories

CB TM1 12A SFB P - 2800844



CB TM1 16A SFB P - 2800845



Drawings

Block diagram

