

DC/DC converters - QUINT-PS/24DC/24DC/20 - 2320102

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Primary-switched QUINT DC/DC converter for DIN rail mounting with SFB (Selective Fuse Breaking) Technology, input: 24 V DC, output: 24 V DC/20 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.

Your advantages

- ✓ 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
GTIN	 4 046356 481892
GTIN	4046356481892
Weight per Piece (excluding packing)	1,980.000 g
Custom tariff number	85044030
Country of origin	China

Technical data

Dimensions

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Technical data

Dimensions

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

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 (start-up type tested)	-40 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Climatic class	3K3 (in acc. with EN 60721)
Degree of pollution	2

Input data

Nominal input voltage range	24 V DC
Input voltage range	18 V DC ... 32 V DC
Current consumption	28 A (24 V, I _{BOOST})
Inrush surge current	< 26 A (typical)
Mains buffering	> 10 ms (24 V DC)
Choice of suitable circuit breakers	40 A ... 50 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 (U _{Set})	18 V DC ... 29.5 V DC (> 24 V DC, constant capacity restricted)
Nominal output current (I _N)	20 A (-25 °C ... 60 °C)
POWER BOOST (I _{Boost})	25 A (-25°C ... 40°C permanent, U _{OUT} = 24 V DC)
Selective Fuse Breaking (I _{SFB})	120 A (12 ms)
Derating	60 °C ... 70 °C (2.5%/K)
Connection in parallel	Yes, for redundancy and increased capacity
Connection in series	yes
Protection against surge voltage on the output	< 35 V DC
Max. capacitive load	Unlimited
Active current limitation	approx. 29 A
Control deviation	< 1 % (change in load, static 10 % ... 90 %)

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Output data

	< 2 % (change in load, dynamic 10 % ... 90 %)
	< 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 in no-load condition	2.2 W
Power loss nominal load max.	39 W

General

Net weight	1.7 kg
Efficiency	> 93 %
Insulation voltage input/output	1.5 kV (type test) 1 kV (routine test)
Protection class	III
Degree of protection	IP20
	> 554000 h (40 °C)
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	alignable: $P_N \geq 50\%$, 5 mm horizontally, 15 mm next to active components, 50 mm vertically alignable: $P_N < 50\%$, 0 mm horizontally, 40 mm vertically top, 20 mm vertically bottom

Connection data, input

Connection method	Screw connection
Conductor cross section solid min.	0.5 mm ²
Conductor cross section solid max.	16 mm ²
Conductor cross section flexible min.	0.5 mm ²
Conductor cross section flexible max.	16 mm ²
Conductor cross section AWG min.	8
Conductor cross section AWG max.	6
Stripping length	10 mm
Screw thread	M3

Connection data, output

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	6 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	4 mm ²
Conductor cross section AWG min.	12
Conductor cross section AWG max.	10

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Technical data

Connection data, output

Stripping length	8 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
Screw thread	M3

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise immunity	EN 61000-6-2:2005
Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-2
Contact discharge	4 kV (Test Level 2)
Standards/regulations	EN 61000-4-3
Frequency range	80 MHz ... 1 GHz
Test field strength	10 V/m
Frequency range	1.4 GHz ... 2 GHz
Test field strength	3 V/m
Standards/regulations	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-4-5
Signal	1 kV (Test Level 2 - asymmetrical)
Standards/regulations	EN 61000-6-3
	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz
Voltage	10 V (Test Level 3)
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 (PELV)
Standard - Safe isolation	DIN VDE 0100-410
Shipbuilding approval	DNV GL (EMC B)
UL approvals	UL/C-UL listed UL 508

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Technical data

Standards and Regulations

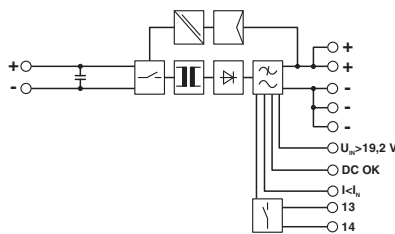
	UL/C-UL Recognized UL 60950-1
	UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location)
Shock	18 ms, 30g, in each space direction (according to IEC 60068-2-27)
Vibration (operation)	< 15 Hz, amplitude ± 2.5 mm (according to IEC 60068-2-6)
	15 Hz ... 150 Hz, 2.3g, 90 min.
Rail applications	EN 50121-4

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 25;
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Block diagram



Classifications

eCl@ss

eCl@ss 4.0	27250311
eCl@ss 4.1	27250311
eCl@ss 5.0	27242213
eCl@ss 5.1	27210900
eCl@ss 6.0	27210900
eCl@ss 7.0	27210901
eCl@ss 8.0	27210901
eCl@ss 9.0	27210901

ETIM

ETIM 4.0	EC002542
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Classifications

ETIM

ETIM 5.0	EC002046
ETIM 6.0	EC002046

UNSPSC

UNSPSC 6.01	30211502
UNSPSC 7.0901	39121004
UNSPSC 11	39121004
UNSPSC 12.01	39121004
UNSPSC 13.2	39121041

Approvals

Approvals

Approvals


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


Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approval details


UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 211944
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cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 211944
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IECEE CB Scheme		http://www.iecee.org/	DK-5535-M1
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Approvals

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 123528
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 123528
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EAC			RU C- DE.A*30.B.01082
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LR		http://www.lr.org/en	12/20030
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RINA		http://www.rina.org/en	ELE112814XG
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NK		http://www.classnk.or.jp/hp/en/	12A013
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EAC			EAC-Zulassung
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BV		http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials	27662/B0 BV
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DNV		http://exchange.dnv.com/tari/	TAA000010E
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Nominal voltage UN	750 V
Nominal current IN	15 A

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Approvals

mm ² /AWG/kcmil	4
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ABS	http://www.eagle.org/eagleExternalPortalWEB/	15-GD1363806-PDA
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cULus Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm
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cULus Listed

Accessories

Accessories

Assembly adapter

Assembly adapters - UWA 182/52 - 2938235



Universal wall adapter for securely mounting the power supply in the event of strong vibrations. The power supply is screwed directly onto the mounting surface. The universal wall adapter is attached at the top/bottom.

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



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

Mounting rail adapter

DIN rail adapter - UTA 107 - 2853983

Universal DIN rail adapter



Power supply

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Accessories

Power supply unit - QUINT-PS/1AC/24DC/40 - 2866789



Primary-switched QUINT POWER power supply for DIN rail mounting with SFB (Selective Fuse Breaking) Technology, input: 1-phase, output: 24 V DC/40 A

Power supply unit - QUINT-PS/3AC/24DC/40 - 2866802



Primary-switched QUINT POWER power supply for DIN rail mounting with SFB (Selective Fuse Breaking) Technology, input: 3-phase, output: 24 V DC/40 A

Redundancy module

Redundancy module, with protective coating - QUINT-ORING/24DC/2X20/1X40 - 2320186



Active QUINT redundancy module for DIN rail mounting with ACB (Auto Current Balancing) Technology and monitoring functions, input: 24 V DC/2x 20 A, output: 24 V DC/1 x 40 A, including mounted UTA 107/30 universal DIN rail adapter

Thermomagnetic device circuit breakers

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.

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.

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Accessories

Thermomagnetic device circuit breaker - CB TM1 3A SFB P - 2800838



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

Thermomagnetic device circuit breaker - CB TM1 4A SFB P - 2800839



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

Thermomagnetic device circuit breaker - CB TM1 5A SFB P - 2800840



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

Thermomagnetic device circuit breaker - CB TM1 6A SFB P - 2800841



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

Thermomagnetic device circuit breaker - CB TM1 8A SFB P - 2800842



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

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Accessories

Thermomagnetic device circuit breaker - CB TM1 10A SFB P - 2800843



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.
