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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

DC/DC converters - QUINT-PS/48DC/24DC/ 5 - 2320144

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Primary-switched QUINT DC/DC converter for DIN rail mounting with SFB (Selective Fuse Breaking) Technology, input: 48 V DC, output: 24 V DC/5 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

Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	858.8 g
Custom tariff number	85044030
Country of origin	China

Technical data

Dimensions

Width	32 mm
Height	130 mm
Depth	125 mm

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Technical data

Dimensions

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: 2,5 %/K)
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

Input data

Nominal input voltage range	48 V DC
Input voltage range	30 V DC ... 60 V DC
Inrush surge current	< 5 A (typical)
Power failure bypass	> 14 ms (48 V DC)
Input fuse	10 A (slow-blow, internal)
Choice of suitable circuit breakers	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 DC, constant capacity restricted)
Nominal output current	5 A (-25 °C ... 60 °C)
POWER BOOST	6.25 A (-25°C ... 40°C permanent, U_{OUT} = 24 V DC)
SFB technology current reserve	30 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	Approximately 6.9 A
Control deviation	< 1 % (change in load, static 10 % ... 90 %)
	< 2 % (change in load, dynamic 10 % ... 90 %)
	< 0.1 % (change in input voltage ±10 %)
Residual ripple	< 25 mV_{PP}
Peak switching voltages nominal load	< 5 mV_{PP} (20 MHz)
Maximum power dissipation in no-load condition	2.7 W
Power loss nominal load max.	11 W

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Technical data

General

Net weight	0.7 kg
Efficiency	> 91.5 %
Insulation voltage input/output	1.5 kV (type test)
	1 kV (routine test)
Protection class	III
	> 995000 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

Connection data, input

Connection method	Pluggable screw connection
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
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 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	7 mm
Screw thread	M3

Connection data for signaling

Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12

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Technical data

Connection data for signaling

Screw thread	M3

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Shock	30g in each direction, according to IEC 60068-2-27
Noise immunity	EN 61000-6-2:2005
Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-6
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)
	EN 60204-1 (PELV)
Standard - Safe isolation	DIN VDE 0100-410
UL approvals	UL/C-UL listed UL 508
	UL/C-UL Recognized UL 60950
	UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location)
Vibration (operation)	< 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)
Rail applications	EN 50121-4

Classifications

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

ETIM

ETIM 4.0	EC002540
ETIM 5.0	EC002046

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Classifications

UNSPSC

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

Approvals

Approvals

Approvals

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

Ex Approvals

UL Listed / cUL Listed / UL Listed / cUL Listed / cULus Listed

Approvals submitted

Approval details

UL Recognized

UL Listed

cUL Recognized

cUL Listed

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Approvals

IECEE CB Scheme

GL

EAC

LR

RINA

NK

EAC

BV

DNV

mm²/AWG/kcmil	4
Nominal current IN	15 A
Nominal voltage UN	750 V

UL Recognized

UL Listed

cUL Recognized

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Approvals

cUL Listed

LR

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BV

DNV

mm²/AWG/kcmil	4
Nominal current IN	15 A
Nominal voltage UN	750 V

ABS

ABS

NK

RINA

IECEE CB Scheme

cULus Recognized

cULus Listed

Drawings

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Block diagram