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

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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/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.

### 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
- 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 STK
GTIN	 4 046356 482035

### 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

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### Technical data

#### 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 (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	24 V DC
Input voltage range	18 V DC ... 32 V DC
Inrush surge current	< 15 A (typical)
Power failure bypass	> 10 ms (24 V DC)
Input fuse	15 A (internal (device protection))
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 ( $I_{Boost}$ )	6.25 A (-25 °C ... 40 °C permanent, $U_{OUT} = 24$ V DC )
Selective Fuse Breaking ( $I_{SFB}$ )	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 7.2 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	< 20 mV <sub>PP</sub>
Peak switching voltages nominal load	< 10 mV <sub>PP</sub> (20 MHz)
Maximum power dissipation in no-load condition	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)
	1 kV (routine test)
Protection class	III
	> 890000 h (40 °C)

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## Technical data

### General

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 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
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 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
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 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
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

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### Technical data

#### Standards and Regulations

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
Shipbuilding approval	Germanischer Lloyd (EMC 1)
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	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

#### Approvals

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

## Approvals

### Approvals

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

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### Ex Approvals

UL Listed / cUL Listed / cULus Listed

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### Approvals submitted

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## Approval details

UL Recognized

UL Listed

cUL Recognized

cUL Listed

IECEE CB Scheme

GL

ABS

BV

RINA

NK

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## Approvals

LR

DNV	
mm <sup>2</sup> /AWG/kcmil	4
Nominal current I <sub>N</sub>	15 A
Nominal voltage U <sub>N</sub>	750 V

EAC

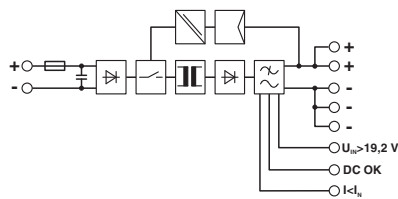
EAC

cULus Recognized

cULus Listed

## Drawings

Block diagram



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