

DC/DC converters - QUINT4-PS/24DC/24DC/10/PT - 2910120

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QUINT DC/DC converter for DIN rail mounting, with selectable output characteristic curve and SFB (Selective Fuse Breaking) Technology, ATEX approval, input: 24 V DC, output: 24 V DC / 10 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

- ✓ Most powerful output side: easy system expansion, reliable heavy load startup and miniature circuit breaker tripping
- ✓ Most comprehensive signaling: preventive function monitoring reports critical operating states before errors occur
- ✓ Free selection between Push-in and screw connection
- ✓ Available pre-configured: from a batch quantity of just 1



Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 537498
GTIN	4055626537498

Technical data

Dimensions

Width	50 mm
Height	130 mm
Depth	125 mm
Width with alternative assembly	122 mm
Height with alternative assembly	130 mm
Depth with alternative assembly	53 mm

Ambient conditions

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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)
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 (EN 60721)
Degree of pollution	2
Installation height	≤ 5000 mm (> 2000 m, observe derating)

Input data

Nominal input voltage range	24 V DC
Input voltage range	24 V DC -25 % ... +40 %
Dielectric strength maximum	35 V DC (60 s)
Current consumption	13.8 A (24 V DC)
Inrush current	typ. 1.5 A
Mains buffering time	typ. 11 ms (24 V DC)
Input fuse	30 A (slow-blow, internal)
Choice of suitable circuit breakers	16 A ... 20 A (Characteristic B, C, D, K or comparable)

Output data

Nominal output voltage	24 V DC
Setting range of the output voltage (U_{Set})	24 V DC ... 29.5 V DC (> 24 V DC, constant capacity)
Nominal output current (I_N)	10 A
Static Boost ($I_{Stat.Boost}$)	12.5 A
Dynamic Boost ($I_{Dyn.Boost}$)	20 A (5 s)
Selective Fuse Breaking (I_{SFB})	60 A (15 ms)
Connection in parallel	Yes, for redundancy and increased capacity
Connection in series	yes
Feedback resistance	≤ 35 V DC
Output overvoltage protection	≤ 32 V DC
Control deviation	< 1 % (change in load, static 10 % ... 90 %)
	< 3 % (Dynamic load change 10 % ... 90 %, 10 Hz)
	< 0.1 % (change in input voltage ±10 %)
Residual ripple	< 50 mV _{pp}
Output power	240 W
Typical response time	300 ms (from SLEEP MODE)
Maximum power dissipation in no-load condition	< 5 W
Power loss nominal load max.	< 16 W

General

Net weight	0.8 kg
Efficiency	typ. 93.3 % (24 V DC)

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General

Insulation voltage input/output	4 kV DC (type test)
	2 kV DC (routine test)
Protection class	Special with SELV input and output
Degree of protection	IP20
MTBF (IEC 61709, SN 29500)	> 1380000 h (25 °C)
	> 800000 h (40 °C)
	> 340000 h (60 °C)
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	Push-in 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.	6 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	10
Stripping length	10 mm

Connection data, output

Connection method	Push-in 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.	6 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	10
Stripping length	10 mm

Connection data for signaling

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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Standards and Regulations

Noise emission	Additional basic standard EN 61000-6-5 (immunity in power station), IEC/EN 61850-3 (energy supply)
Noise immunity	Immunity according to EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone), IEC/EN 61850-3 (energy supply)
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 (Test Level 3)
Frequency range	1.4 GHz ... 2 GHz
Test field strength	3 V/m (Test Level 2)
Standards/regulations	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz
Voltage	10 V (Test Level 3)
Conducted noise emission	EN 55016 EN 61000-6-4 (Class A)
Standards/regulations	EN 61000-4-8
	EN 61000-4-29
	EN 61000-4-9
	EN 61000-4-16
	EN 61000-4-18
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Standard – Safety extra-low voltage	EN 61010-1 (SELV)
	IEC 61010-2-201 (PELV)
EMC requirements, power plant	IEC 61850-3
	EN 61000-6-5
Shipbuilding approval	DNV GL
UL approvals	UL Listed UL 61010-1
	UL Listed UL 61010-2-201
	UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location)
Shock	18 ms, 30g, in each space direction (according to IEC 60068-2-27)
Vibration (operation)	5 Hz ... 100 Hz resonance search 2.3g, 90 min., resonance frequency 2.3g, 90 min. (according to DNV GL Class C)
Approval - requirement of the semiconductor industry with regard to mains voltage dips	EN 61000-4-29
ATEX	# II 3 G Ex ec ic nC IIC T4 Gc X
	II 3 G Ex ec ic nC IIC T4 Gc X
IECEX	IECEX SIQ 19.0001X
	Ex ec ic nC IIC T4 Gc
Overvoltage category (EN 61010-1)	II

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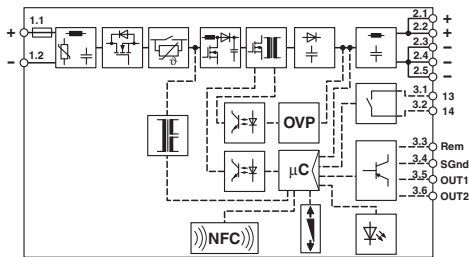
Technical data

Standards and Regulations

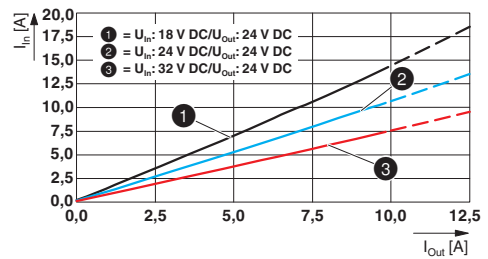
Overvoltage category (EN 62477-1)	III
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Drawings

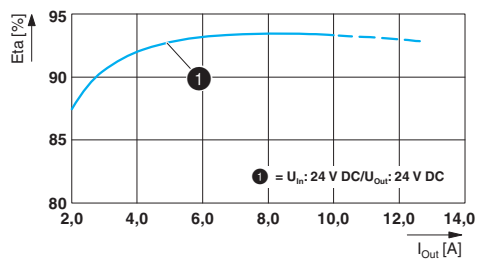
Block diagram



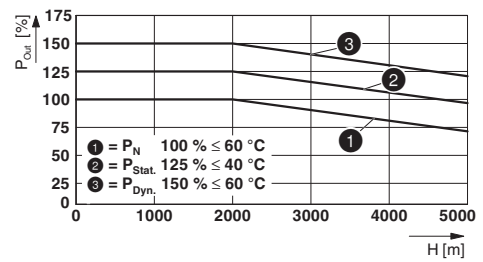
Diagram



Diagram

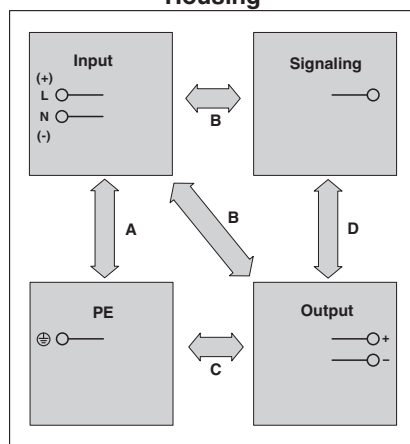


Diagram



Schematic diagram

Housing



Approvals

Approvals

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Approvals

Approvals

DNV GL / CSA / UL Listed / cUL Listed / CSAus / Type approved / cULus Listed / cCSAus

Ex Approvals

Approval details

DNV GL		http://exchange.dnv.com/tari/	TAA000027S
CSA		http://www.csagroup.org/services-industries/product-listing/	70212082
UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 123528
cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 123528
CSAus		http://www.csagroup.org/services-industries/product-listing/	70212082
Type approved			SI-SIQ BG 005/058
cULus Listed			
cCSAus			

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