

2866378

<https://www.phoenixcontact.com/pc/products/2866378>

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QUINT DC/DC converter, primary-switched, input: 24 V DC, output: 24 V DC/10 A



Product Description

The QUINT DC-DC converter 24 V/10 A converts the DC voltage from 18 V ... 32 V to an adjustable, controlled and galvanically separated 24 V output voltage. If no regulated and stable 24 V DC voltage is available to supply a load, DC-DC converters ensure the adjustment of the 24 V load: A non-regulated DC voltage is converted to an adjustable output voltage of 22.5 V ...28.5 V.

Due to electrical isolation, the DC voltage circuits are electrically isolated from each other in a safe way. With a design width of only 80 mm, the housing is extremely slim. The floating DC-OK output and an LED are available for signaling.

DC/DC converters - QUINT-PS- 24DC/24DC/10



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Commercial Data

Item number	2866378
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	CMDQ43
Catalog Page	Page 598 (IF-2009)
GTIN	4017918987169
Weight per Piece (including packing)	1,364.3 g
Weight per Piece (excluding packing)	1,364.3 g
Customs tariff number	85044030
Country of origin	CN

Technical Data

Input data

Input voltage	24 V DC
Nominal input voltage range	24 V DC
Input voltage range	18 V DC ... 32 V DC
Wide-range input	no
Input voltage range DC	18 V DC ... 32 V DC
Inrush current	< 20 A (typical)
Inrush current integral (I^2t)	0.3 A ² s
Frequency range DC	0 Hz
Mains buffering time	> 3 ms (24 V DC)
Current consumption	typ. 11.4 A (24 V)
Protective circuit	Transient surge protection; Varistor
Typical response time	< 1 s
Input fuse	25 A (slow-blow, internal)

Output data

Efficiency	> 88 %
Nominal output voltage	24 V DC \pm 1 %
Setting range of the output voltage (U_{Set})	22.5 V DC ... 28.5 V DC (> 24 V DC, constant capacity restricted)
Nominal output current (I_N)	10 A (-25 °C ... 60 °C)
Derating	60 °C ... 70 °C (2.5%/K)
Feedback voltage resistance	35 V DC
Protection against overvoltage at the output (OVP)	< 35 V DC
Max. capacitive load	unlimited
Active current limitation	Approx. 18 A
Control deviation	< 1 % (change in load, static 10 % ... 90 %) < 2 % (change in load, dynamic 10 % ... 90 %) < 0.1 % (change in input voltage \pm 10 %)
Residual ripple	< 60 mV _{PP}
Output power	240 W
Maximum no-load power dissipation	< 2 W
Power loss nominal load max.	< 28 W
Rise time	< 2 ms (U_{OUT} (10 % ... 90 %))
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	yes

Signal: DC OK active

Output description	$U_{OUT} > 21.5$ V: High signal
Maximum switching voltage	\leq 24 V DC
Output voltage	+ 24 V DC
Continuous load current	\leq 40 mA

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Signal: DC OK floating

Output description	$U_{OUT} > 21.5 \text{ V}$: Contact closed
Maximum switching voltage	$\leq 30 \text{ V AC/DC}$
Continuous load current	$\leq 1 \text{ A}$

Signal: DC OK active

Output description	$U_{OUT} > 21.5 \text{ V}$: High signal
Maximum switching voltage	$\leq 24 \text{ V DC}$
Output voltage	+ 24 V DC
Continuous load current	$\leq 40 \text{ mA}$

Signal: DC OK floating

Output description	$U_{OUT} > 21.5 \text{ V}$: Contact closed
Maximum switching voltage	$\leq 30 \text{ V AC/DC}$
Continuous load current	$\leq 1 \text{ A}$

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 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
Stripping length	7 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

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 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
Stripping length	7 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Signal

Conductor cross section solid min.	0.2 mm ²
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Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

LED signaling

Types of signaling	LED
	Active switching output
Operating voltage display	Green LED

Signal output: DC OK active

Status display	"DC OK" LED green
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Signal output: DC OK floating

Status display	"DC OK" LED green
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Electrical properties

Number of phases	1.00
Insulation voltage input/output	1 kV (routine test)
	1.5 kV (type test)

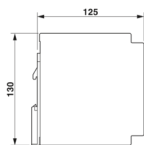
Product properties

Product type	DC/DC converters
MTBF (IEC 61709, SN 29500)	> 500000 h

Insulation characteristics

Protection class	III
Degree of pollution	2

Dimensions

Dimensional drawing	
Width	80 mm
Height	130 mm
Depth	125 mm

Installation dimensions

Installation distance right/left	0 mm / 0 mm (≤ 70 °C)
Installation distance right/left (active)	15 mm / 15 mm (≤ 70 °C)

Installation distance top/bottom	50 mm / 50 mm ($\leq 70\text{ °C}$)
Installation distance top/bottom (active)	50 mm / 50 mm ($\leq 70\text{ °C}$)

Alternative assembly

Width	122 mm
Height	130 mm
Depth	83 mm

Mounting

Assembly instructions	alignable: horizontally 0 mm, vertically 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715
With protective coating	No

Material specifications

Color	aluminium
Housing material	Metal
Type of housing	AluNox (AlMg1)

Environmental and real-life conditions

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
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	95 % (at 25 °C, non-condensing)
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.

Standards and regulations

Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard - Electrical safety	EN 60950-1/VDE 0805 (SELV)
Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment	EN 50178
Standard – Safety extra-low voltage	EN 60950-1 (SELV) EN 60204 (PELV)
Standard - Safe isolation	DIN VDE 0100-410
Standard - Safety of transformers	EN 61558-2-17

Approval data

Shipbuilding approval	DNV GL (EMC A), ABS
UL approvals	UL/C-UL listed UL 508 UL/C-UL Recognized UL 60950-1

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	UL/C-UL Listed UL 1604 Class I, Division 2, Groups A, B, C, D
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EMC data

Electromagnetic compatibility	Conformance with EMC directive 89/336/EC
Noise immunity	EN 61000-6-2:2005

Electrostatic discharge

Standards/regulations	EN 61000-4-2
Housing	Level 3

Electrostatic discharge

Contact discharge	8 kV
Discharge in air	8 kV
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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Electromagnetic HF field

Frequency range	80 MHz ... 2 GHz
Test field strength	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4
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Fast transients (burst)

Input	2 kV (Level 3 - asymmetrical)
Output	2 kV (Level 3 - asymmetrical)
Signal	1 kV (Level 2 - asymmetrical)

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
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Conducted interference

Standards/regulations	EN 61000-4-6
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Conducted interference

I/O/S	Level 3 - asymmetrical
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

Voltage dips

Standards/regulations	EN 61000-4-11
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Emitted interference

Standards/regulations	EN 61000-6-3
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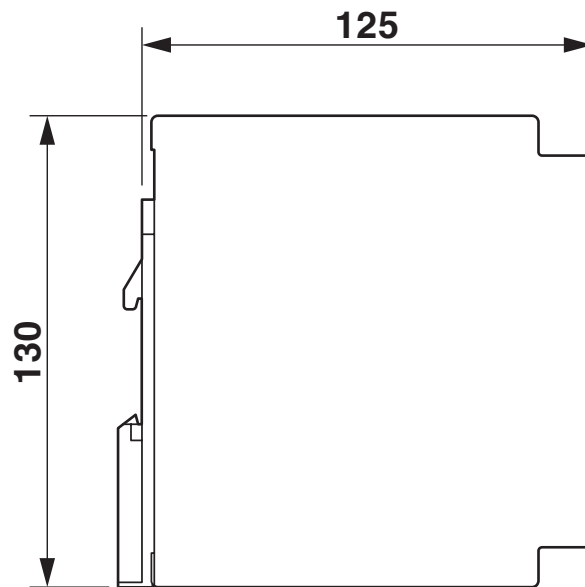
Radio interference voltage in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential

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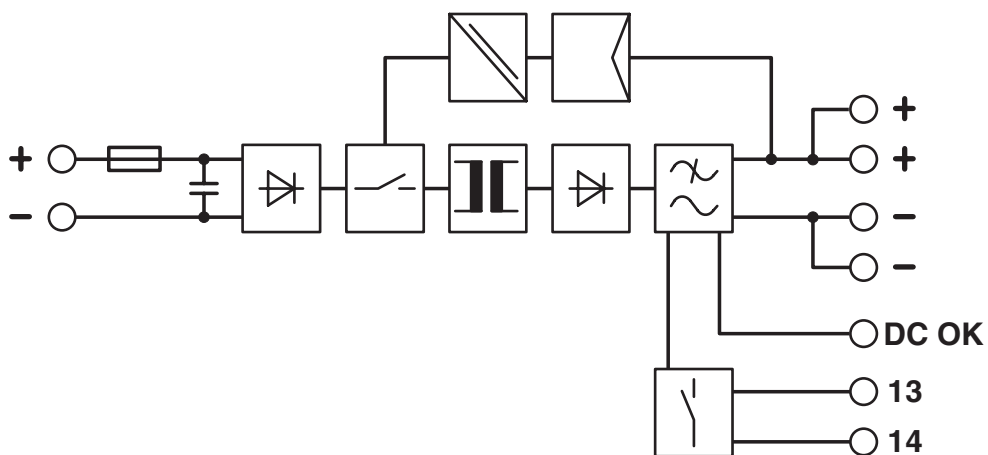
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Drawings

Dimensional drawing



Block diagram




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Approvals

 cUL Recognized

 UL Recognized

 EAC


 DNV GL

 EAC

 UL Listed

 cUL Listed


 UL Recognized

 cUL Recognized

 cUL Listed

 UL Listed

 DNV GL


 EAC

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 EAC

 cUL Listed

 UL Listed

 UL Listed

 cUL Listed

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Classifications

ECLASS

ECLASS-9.0	27210901
ECLASS-10.0.1	27210901
ECLASS-11.0	27210901

ETIM

ETIM 8.0	EC002046
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UNSPSC

UNSPSC 21.0	
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 25;
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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