

Redundancy module, with protective coating - QUINT4-S-ORING/12-24DC/1X40/+



2907753

<https://www.phoenixcontact.com/in/products/2907753>

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Active QUINT single redundancy module for DIN rail mounting, protective coating, input: 12 - 24 V DC, output: 12 - 24 V DC/1 x 40 A, incl. mounted UTA 107/30 universal DIN rail adapter

Product Description

Active redundancy module for superior system availability and maximum operational reliability. QUINT S-ORING enables the separate structuring of a redundant system. In combination with the new QUINT POWER power supply, the redundant system is monitored continuously.

Your advantages

- Consistent redundancy up to the load
- Input voltage and decoupling section monitored on a permanent basis
- Save energy by decoupling with MOSFET
- Protection against surge voltages in excess of 30 V DC at the output

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Commercial Data

Item number	2907753
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMR
Product Key	CMRI43
Catalog Page	Page 305 (C-4-2019)
GTIN	4055626231914
Weight per Piece (including packing)	561.4 g
Weight per Piece (excluding packing)	553.58 g
Customs tariff number	85049090
Country of origin	CN

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Technical Data

Input data

DC operation

Nominal input voltage range	12 V DC ... 24 V DC
Input voltage range	8 V DC ... 26 V DC (SELV)
Input voltage range DC	18 V DC ... 28 V DC (SELV)
Typical national grid voltage	12 V DC 24 V DC
Voltage type of supply voltage	DC
Current consumption	40 A
Static Boost ($I_{Stat.Boost}$)	45 A
Dynamic Boost ($I_{Dyn.Boost}$)	60 A (5 s)
Selective Fuse Breaking (I_{SFB})	215 A (15 ms)
Reverse polarity protection	< yes60 V
Nominal input current (I_N)	40 A (-40 °C ... 60 °C)
Input current I_{Static}	45 A (40 °C)
Input current $I_{Dynamic}$	60 A (5 s)
Input current I_{SFB}	215 A (15 ms)
Transient surge protection	Varistor
Voltage drop, input/output	0.1 V DC

Output data

Efficiency	typ. 99 % (12 V DC)
	typ. 99.2 % (24 V DC)
Output voltage	U_{In}
Output voltage range	8 V DC ... 26 V DC
Nominal output current (I_N)	40 A
Static Boost ($I_{Stat.Boost}$)	45 A
Dynamic Boost ($I_{Dyn.Boost}$)	60 A (5 s)
Selective Fuse Breaking (I_{SFB})	215 A (15 ms)
Derating	60 °C ... 70 °C (2.5%/K)
Protection against overvoltage at the output (OVP)	< 28.8 V DC
Power loss nominal load max.	6.5 W ($I_{OUT} = 40$ A)
	6 W ($I_{OUT} = 40$ A)
Connection in series	No

Signal: OK, 13/14

Output description	Group contact
Maximum switching voltage	max. 30 V AC/DC
Maximum inrush current	≤ 100 mA (short-circuit-proof)

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Signal relay 13/14

Default	open
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Signal relay 13/14

Default	closed
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Signal relay 13/14

Default	open
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Signal relay 13/14

Default	open
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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
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.5 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	16 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.5 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	16 mm ²
Conductor cross section AWG min.	20
Conductor cross section AWG max.	6
Stripping length	10 mm
Screw thread	M4
Tightening torque, min	1.2 Nm
Tightening torque max	1.5 Nm

Output

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
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.5 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	16 mm ²
Single conductor/flexible terminal point with ferrule without plastic	0.5 mm ²

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sleeve, min.	
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	16 mm ²
Conductor cross section AWG min.	20
Conductor cross section AWG max.	6
Stripping length	10 mm
Screw thread	M4
Tightening torque, min	1.2 Nm
Tightening torque max	1.5 Nm

Signal

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	0.75 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

LED signaling

Types of signaling	Relay contact, floating, current limited
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Signal output: OK, 13/14

Signal threshold $U_{in} < 8 \text{ V DC}$	LED off, input voltage not present or short circuit at redundancy module output
Signal threshold $U_{in} > 8 \text{ V DC}$	LED lights up green, input voltage present
Signal threshold $U_{in} > 28.8 \text{ V DC}$	LED flashing red, OVP active - input voltage exceeds the permissible voltage value
Redundancy module defective	LED lights up red, redundancy module needs to be factory tested

Electrical properties

Insulation voltage input, output / housing	500 V DC
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Product properties

Product type	Redundancy module
MTBF (IEC 61709, SN 29500)	> 13486000 h (25 °C) > 7314000 h (40 °C)

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	> 3379000 h (60 °C)
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Insulation characteristics

Protection class	III
Degree of pollution	2

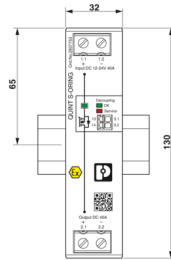
Life expectancy (electrolytic capacitors)

Current	40 A
Temperature	40 °C
Time	160000 h
Additional text	12 V DC

Life expectancy (electrolytic capacitors)

Current	40 A
Temperature	40 °C
Time	149000 h
Additional text	24 V DC

Dimensions

Dimensional drawing	
Width	32 mm
Height	130 mm
Depth	125 mm

Installation dimensions

Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	40 mm / 20 mm

Alternative assembly

Width	122 mm
Height	130 mm
Depth	35 mm

Mounting

Mounting type	DIN rail mounting
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

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Mounting position	horizontal DIN rail NS 35, EN 60715
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Material specifications

Inflammability class in acc. with UL 94 (housing / terminal blocks)	V0
Housing material	Metal
Type of housing	Aluminum (AlMg3)
Hood version	Galvanized sheet steel, free from chrome (VI)
Housing material	Aluminum / stainless steel

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C (> 60 °C Derating: 2,5 %/K)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 5000 m (> 2000 m, observe derating)
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	≤ 100 % (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	IEC 60950-1 (SELV) and EN 60204-1 (PELV)
Standard - Safe isolation	DIN VDE 0100-410

Approval data

Shipbuilding approval	DNV GL
UL approvals	UL/C-UL listed UL 508 UL/C-UL Recognized UL 60950-1 UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location)

Conformity/Approvals

ATEX	<input type="checkbox"/> II 3 G Ex ec nC IIC T4 Gc SIQ 21 ATEX 183 X
IECEX	Ex ec nC IIC T4 Gc IECEX SIQ 21.0001X
Functional Safety in accordance with IEC 61508	SIL3 in accordance with IEC 61508-1 (in combination with

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product 2904602 QUINT4-PS/1AC/24DC/20)

EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
EMC requirements for noise emission	EN 61000-6-3
	EN 61000-6-4
EMC requirements for noise immunity	EN 61000-6-1
	EN 61000-6-2
Conducted noise emission	EN 55016
	EN 61000-6-3 (Class B)
Interference emission	Noise emission according to EN 61000-6-3 (residential and commercial) and EN 61000-6-4 (industrial)
Noise emission	Additional basic standard EN 61000-6-5 (immunity in power station)
Noise emission	EN 55016
	EN 61000-6-3 (Class B)
Noise immunity	Immunity according to EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone)
DNV GL conducted interference	Class A
Additional text	Area power distribution
DNV GL noise radiation	Class B
Additional text	Bridge and deck area

Electrostatic discharge

Standards/regulations	EN 61000-4-2
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Electrostatic discharge

Contact discharge	8 kV (Test Level 4)
Discharge in air	15 kV (Test Level 4)
Comments	Criterion B

Electromagnetic HF field

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

Frequency range	80 MHz ... 1 GHz
Test field strength	20 V/m (Test Level 3)
Frequency range	1 GHz ... 6 GHz
Test field strength	10 V/m (Test Level 3)
Frequency range	1 GHz ... 6 GHz
Test field strength	10 V/m (Test Level 3)
Comments	Criterion A

Fast transients (burst)

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

Input	2 kV (Test Level 4 - asymmetrical)
Output	2 kV (Test Level 4 - asymmetrical)
Signal	2 kV (Test Level 4 - asymmetrical)
Comments	Criterion A

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
Input	1 kV (Test Level 4 - symmetrical)
	2 kV (Test Level 4 - asymmetrical)
Output	1 kV (Test Level 2 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Signal	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion A

Conducted interference

Standards/regulations	EN 61000-4-6
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Conducted interference

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

Power frequency magnetic field

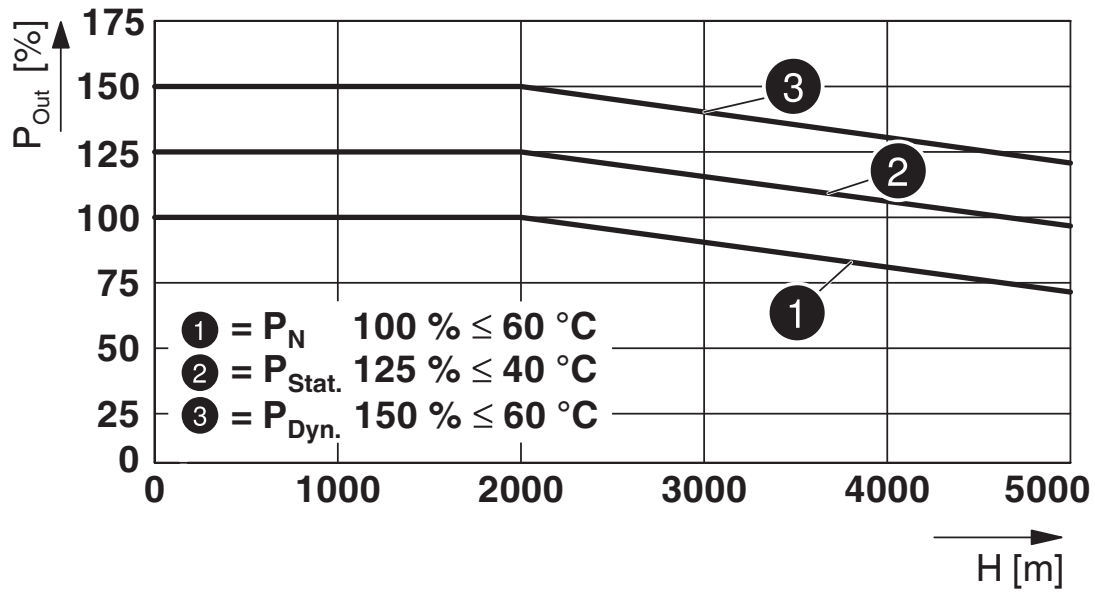
Standards/regulations	EN 61000-4-8
Frequency	16.67 Hz
	50 Hz
	60 Hz
Test field strength	30 A/m
Additional text	60 s
Comments	Criterion A
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

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Drawings

Diagram



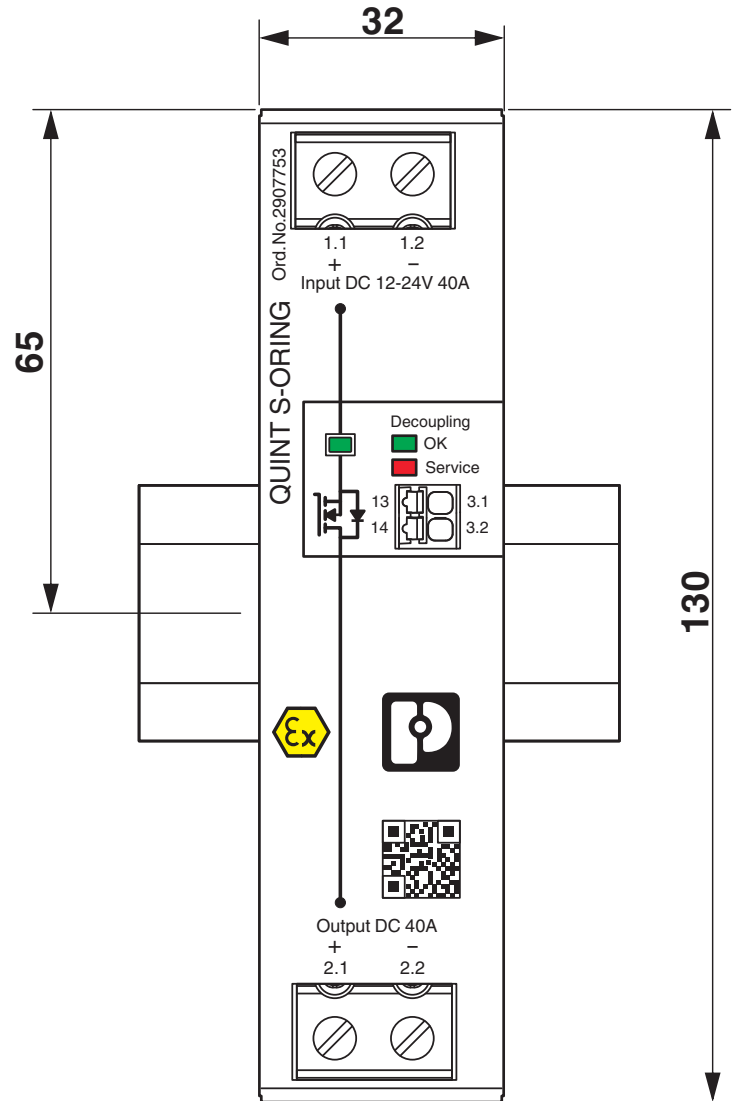
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Dimensional drawing



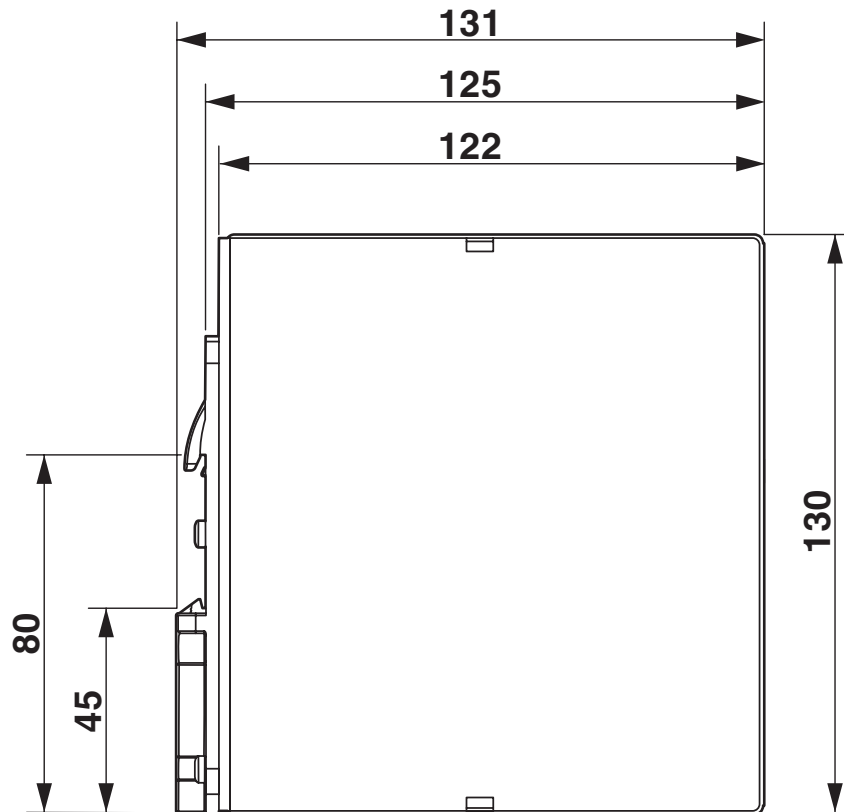
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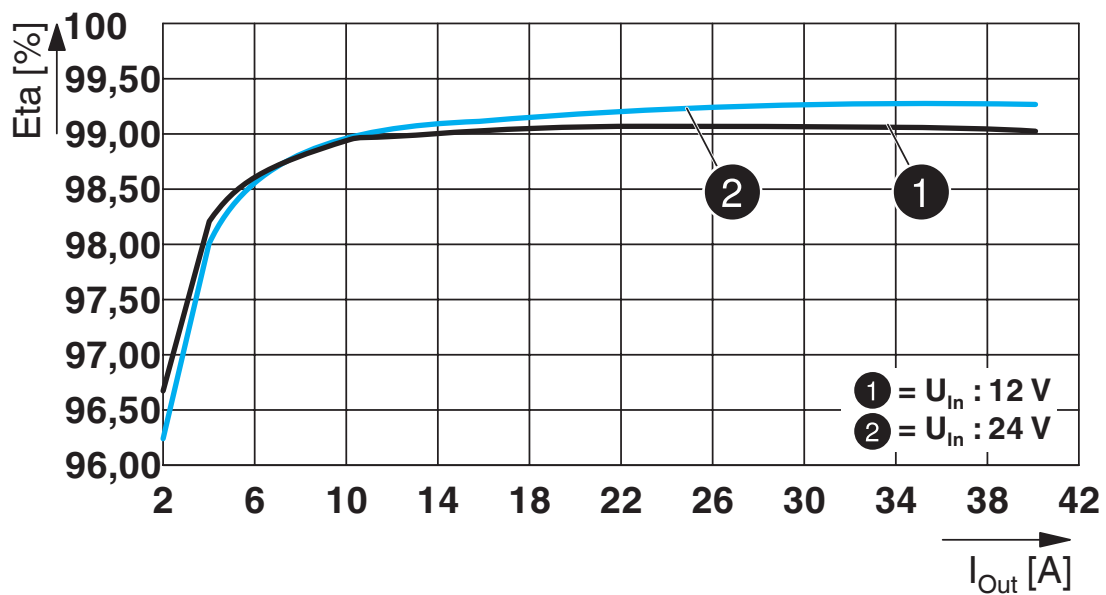
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Dimensional drawing



Diagram



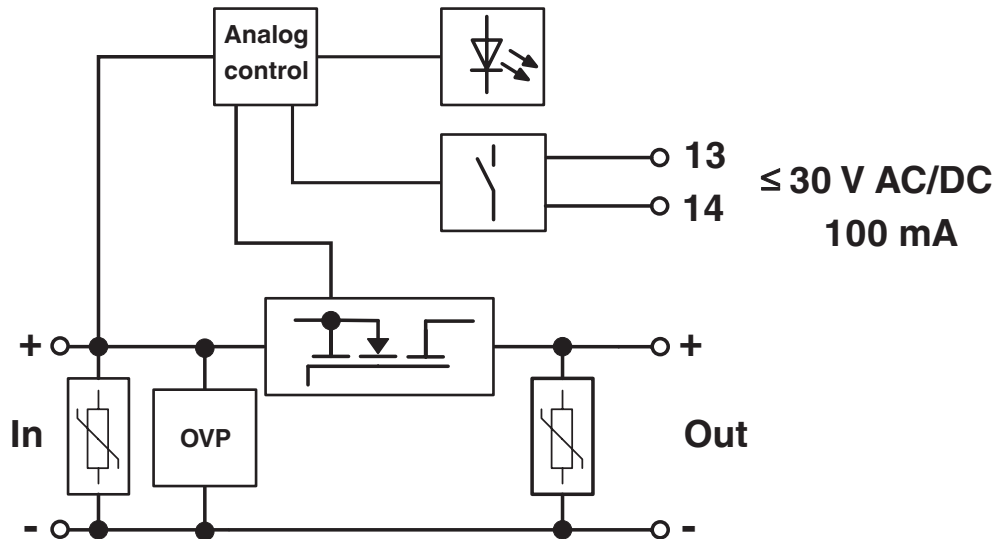
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Block diagram



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Approvals



cUL Recognized
Approval ID: FILE E 211944



UL Recognized
Approval ID: FILE E 211944



EAC
Approval ID: RU S-DE.BL08.W.00764



DNV GL
Approval ID: TAA000011F



UL Listed
Approval ID: FILE E 123528



cUL Listed
Approval ID: FILE E 123528



EAC Ex
Approval ID: RU C-DE.HB49.B.00004



IECEX
Approval ID: IECEX SIQ 21.0001X



CCC
Approval ID: GYJ21.1004X



NEPSI
Approval ID: 2021322303003918



cUL Listed
Approval ID: FILE E 199827

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UL Listed

Approval ID: FILE E 199827



ATEX

Approval ID: SIQ 21 ATEX 183 X

cULus Recognized

cULus Listed

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	27371010
ECLASS-10.0.1	27371010
ECLASS-11.0	27371010

ETIM

ETIM 8.0	EC000683
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UNSPSC

UNSPSC 21.0	32151504
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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"

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Accessories

Mounting adapter

Mounting adapter - UWA 182/52 - 2938235

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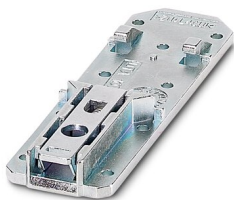


Universal wall adapter for securely mounting the device in the event of strong vibrations. The device is screwed directly onto the mounting surface. The universal wall adapter is attached on the top/bottom.

Mounting adapter

Mounting adapter - UTA 107/30 - 2320089

<https://www.phoenixcontact.com/in/products/2320089>



Universal DIN rail adapter

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Mounting adapter

Mounting adapter - QUINT-PS-ADAPTERS7/1 - 2938196

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Assembly adapter for QUINT-PS... power supply on S7-300 rail



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