

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



1043418

<https://www.phoenixcontact.com/us/products/1043418>

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Active QUINT single redundancy module for DIN rail mounting, protective coating, input: 12 V DC ... 24 V DC, output: 12 V DC ... 24 V DC / 1 x 40 A, integrated surge protection <30 V DC, 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
- Protective coating with ATEX and IECEx approval for extreme environmental conditions

## Commercial data

Item number	1043418
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM16
Product key	CMRI43
Catalog page	Page 305 (C-4-2019)
GTIN	4055626607474
Weight per piece (including packing)	560.1 g
Weight per piece (excluding packing)	560 g
Customs tariff number	85371091
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 ... 27.5 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)
Nominal output voltage	$U_{in} - 0.1 V$
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)	< 30 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)

#### 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
---------	------

## Signal relay 13/14

Default	open
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## Connection data

### Input

Connection method	Screw connection
Conductor cross section, rigid min.	0.5 mm <sup>2</sup>
Conductor cross section, rigid max.	16 mm <sup>2</sup>
Conductor cross section flexible min.	0.5 mm <sup>2</sup>
Conductor cross section flexible max.	16 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.5 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	16 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.5 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	16 mm <sup>2</sup>
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, rigid min.	0.5 mm <sup>2</sup>
Conductor cross section, rigid max.	16 mm <sup>2</sup>
Conductor cross section flexible min.	0.5 mm <sup>2</sup>
Conductor cross section flexible max.	16 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.5 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	16 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.5 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	16 mm <sup>2</sup>

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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, rigid min.	0.2 mm <sup>2</sup>
Conductor cross section, rigid max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	1.5 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.2 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	0.75 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.2 mm <sup>2</sup>
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	1.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

## Signaling

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

$U_{in} < 8 \text{ V DC}$	LED off, input voltage not present or short circuit at redundancy module output
$U_{in} > 8 \text{ V DC}$	LED lights up green, input voltage present
$U_{in} > 30 \text{ V DC}$	LED flashing red, OVP active - input voltage exceeds the permissible voltage value
Redundancy modul faulty	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
Product family	QUINT S-ORING
MTBF (IEC 61709, SN 29500)	> 13486000 h (25 °C)
	> 7314000 h (40 °C)
	> 3379000 h (60 °C)
LED	yes

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## Data management status

Article revision	04
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## Insulation characteristics

Protection class	III
Degree of pollution	2

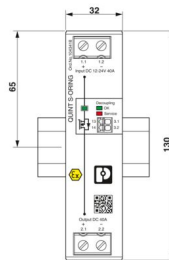
## Life expectancy (electrolytic capacitors)

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	50 mm / 50 mm

## Alternative assembly

Width	122 mm
Height	130 mm
Depth	35 mm

## Mounting

Mounting type	DIN rail mounting
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Assembly note	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
Mounting position	horizontal DIN rail NS 35, EN 60715

## Material specifications

Flammability rating according to UL 94 (housing / terminal blocks)	V0
Housing material	Metal
Housing material	Aluminum / stainless steel
Type of housing	Aluminum (AlMg3)
Hood version	Galvanized sheet steel, free from chrome (VI)

## 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

## Approvals

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	⊕ II 3 G Ex ec nC IIC T4 Gc
	SIQ 21 ATEX 183 X

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IECEX	Ex ec nC IIC T4 Gc
	IECEX SIQ 21.0001X

## EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
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
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Conducted noise emission	EN 55016
	EN 61000-6-3 (Class B)
Noise emission	Additional basic standard EN 61000-6-5 (immunity in power station)
Noise emission	EN 55016
	EN 61000-6-3 (Class B)
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)
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Output	2 kV (Test Level 4 - asymmetrical)
Signal	2 kV (Test Level 4 - asymmetrical)
Comments	Criterion A

## Surge voltage load (surge)

Input	2 kV (Test Level 3 - asymmetrical)
Output	0.5 kV (Test Level 1 - asymmetrical)

## 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

## Criteria

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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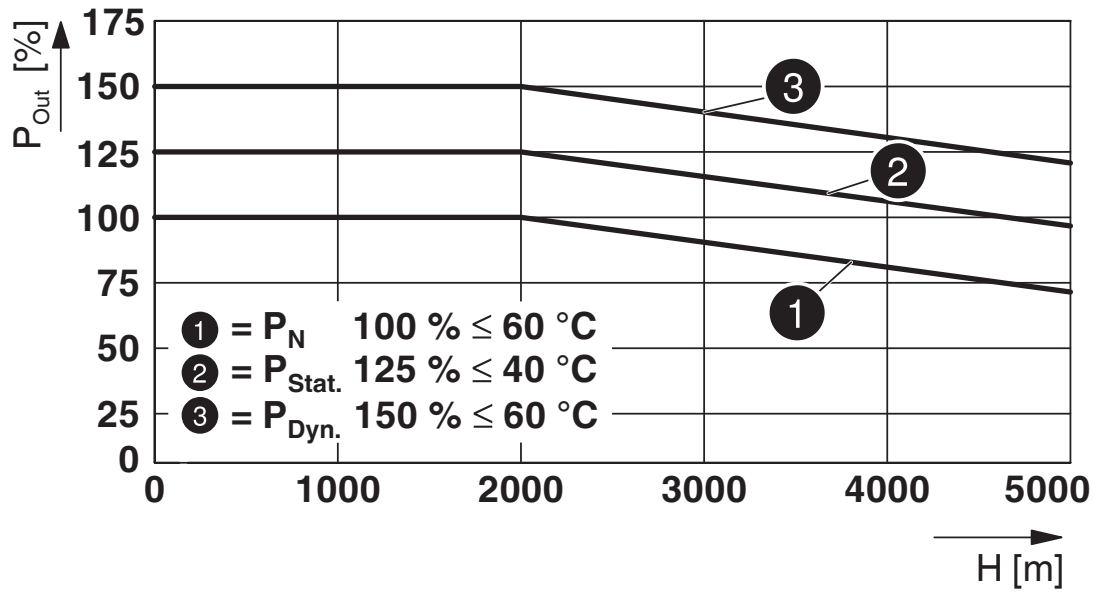


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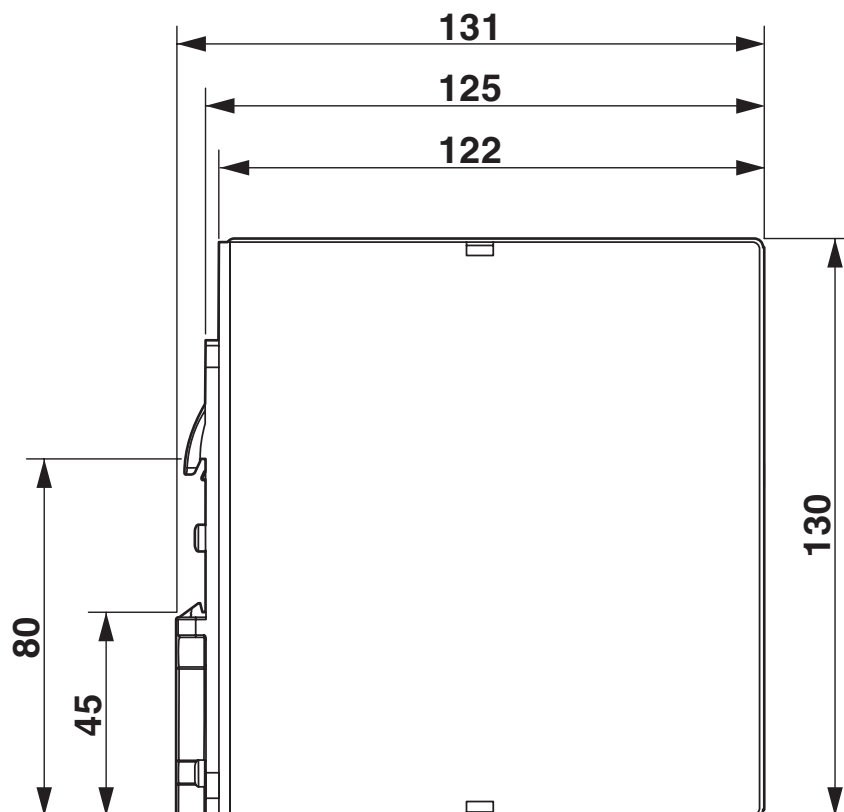
<https://www.phoenixcontact.com/us/products/1043418>

## Drawings

Diagram



Dimensional drawing



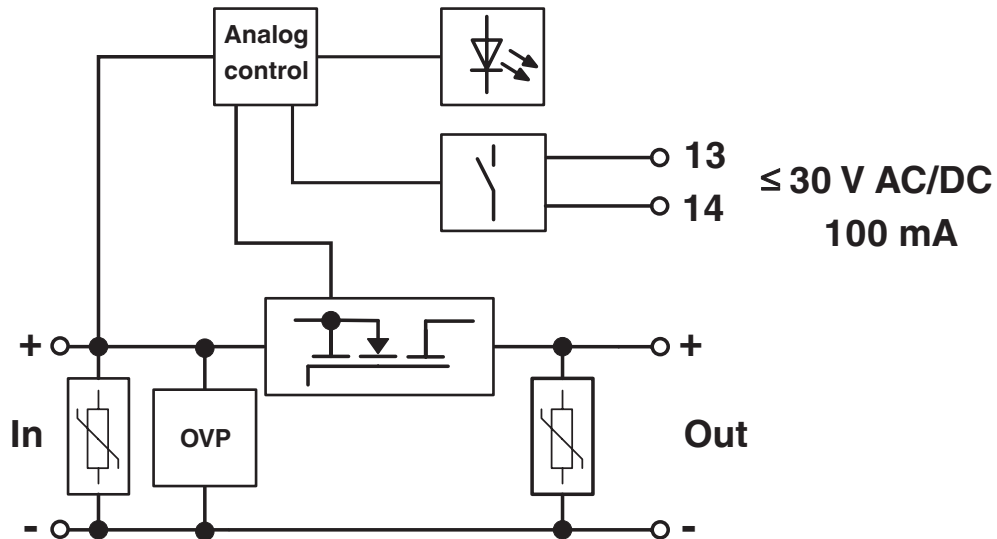
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Block diagram



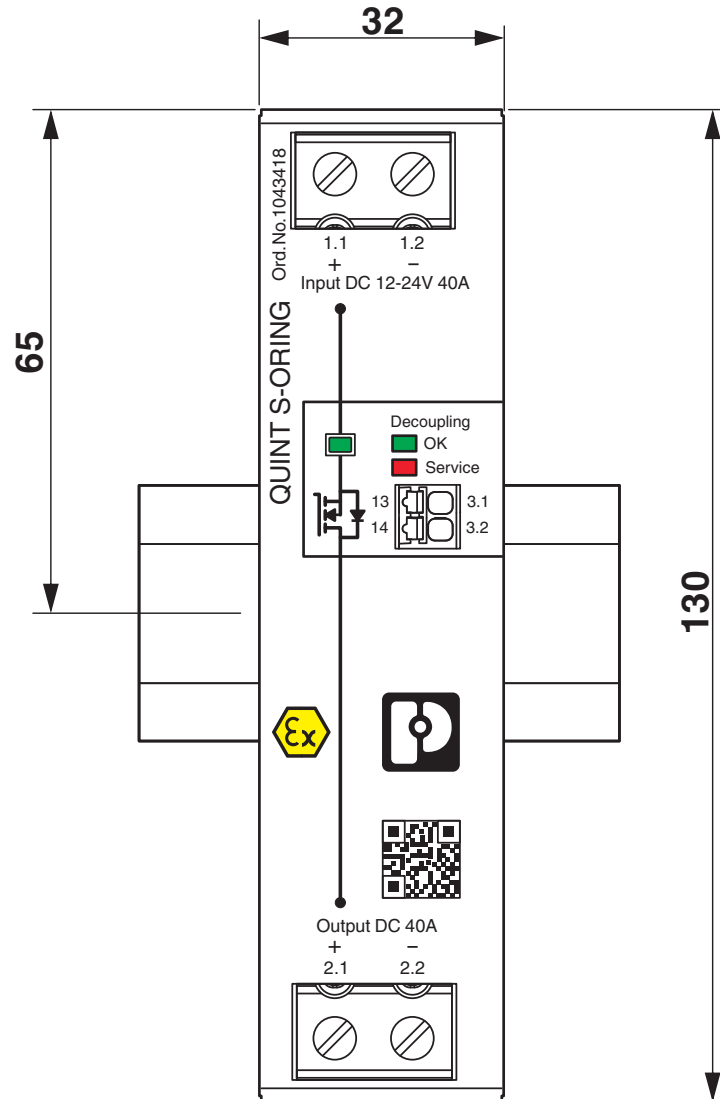
# QUINT4-S-ORING/12-24DC/1X40/VP - Redundancy module, with protective coating



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Dimensional drawing



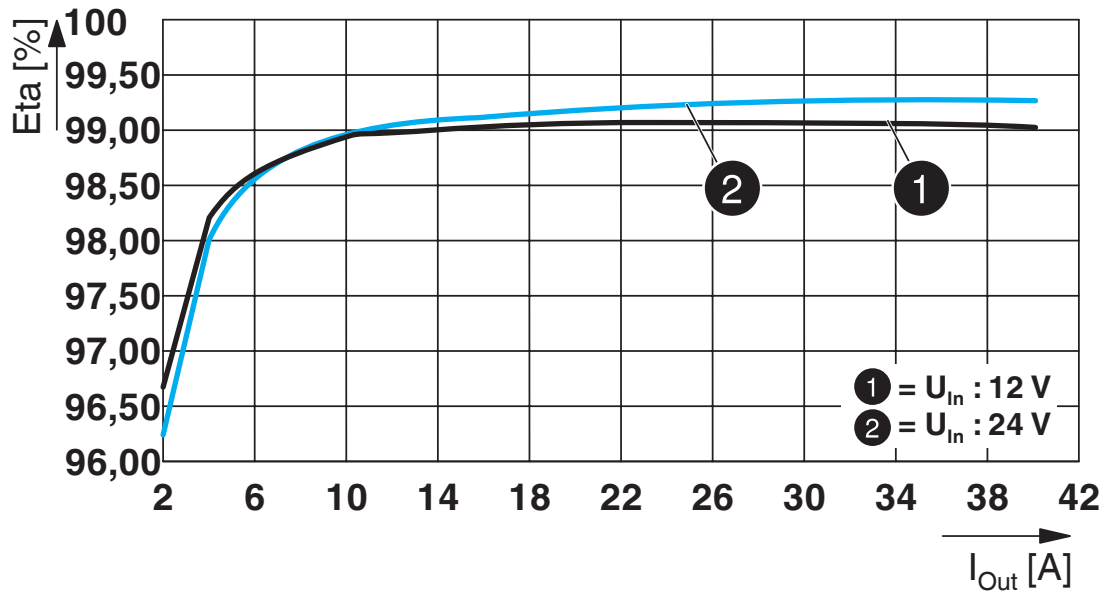
# QUINT4-S-ORING/12-24DC/1X40/VP - Redundancy module, with protective coating



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Diagram



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



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## Approvals

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**cUL Recognized**  
Approval ID: E211944



**UL Recognized**  
Approval ID: E211944



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



**UL Listed**  
Approval ID: E123528



**cUL Listed**  
Approval ID: E123528



**IECEE CB Scheme**  
Approval ID: DE/PTZ/0048



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



**cUL Listed**  
Approval ID: E199827



**UL Listed**  
Approval ID: E199827



**IECEx**  
Approval ID: IECEx SIQ 21.0001X



**ATEX**  
Approval ID: SIQ 21 ATEX 183 X

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**NEPSI-EX**

Approval ID: GYJ21.1004X



**CCC**

Approval ID: 2021322303003918



**UKCA-EX**

Approval ID: EXV21UKEX1072X\_00

**cULus Recognized**

**cULus Listed**

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## Classifications

### ECLASS

ECLASS-11.0	27371010
ECLASS-12.0	27371010
ECLASS-13.0	27371010

### ETIM

ETIM 9.0	EC000683
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### UNSPSC

UNSPSC 21.0	32151500
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-25
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	37be0f28-9fa5-448d-b313-15b0791cad97



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## Accessories

### UWA 182/52 - Mounting adapter

2938235

<https://www.phoenixcontact.com/us/products/2938235>



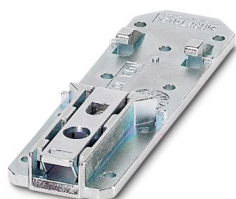
Universal wall adapter for securely mounting the device in the event of strong vibrations. The device is screwed directly onto the mounting surface. The universal wall adapter is attached on the top/bottom.

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### UTA 107/30 - Mounting adapter

2320089

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Universal DIN rail adapter

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

2938196

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



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