

# Redundancy module - QUINT-DIODE/12-24DC/2X20/1X40

2320157

<https://www.phoenixcontact.com/za/products/2320157>

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DIN rail diode module 12-24 V DC/2x20 A or 1x40 A. Uniform redundancy up to the consumer.



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## Product Description

A safe redundant system is the result of the parallel connection of two power supply units which are decoupled from one another. To further increase system availability, QUINT DIODE provides the solution: decoupling with diode.

## Your advantages

- Flexible
- Rugged design
- Consistent redundancy up to the load

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## Commercial Data

Item number	2320157
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	090
Product Key	CMRQ43
Catalog Page	Page 212 (C-6-2015)
GTIN	4046356524766
Weight per Piece (including packing)	857,6 g
Weight per Piece (excluding packing)	750 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	10 V DC ... 30 V DC
Voltage type of supply voltage	DC
Reverse polarity protection	< yes60 V
Nominal input current ( $I_N$ )	2x 20 A (-25 °C ... 60 °C) 1x 40 A (-25 °C ... 60 °C)
Maximum current $I_{max}$	2x 30 A (-25°C ... 40°C) 1x 60 A (-25°C ... 40°C)
Transient surge protection	Varistor
Voltage drop, input/output	typ. 0.5 V
Nominal input voltage range	12 V DC ... 24 V DC
Input voltage range	10 V DC ... 30 V DC
Input voltage range DC	10 V DC ... 30 V DC

### Output data

Efficiency	> 97 % > 97 %
Output voltage	$U_{in}$ -
Nominal output current ( $I_N$ )	40 A (Increasing power) 20 A (Redundancy)
Derating	60 °C ... 70 °C (2.5%/K)
Power loss nominal load max.	10 W ( $I_{OUT} = 20$ A)
Connection in series	No
Derating	60 °C ... 70 °C 2.5 %/K

### Connection data

#### Input

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	6 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	4 mm <sup>2</sup>
Conductor cross section AWG min.	12
Conductor cross section AWG max.	10
Stripping length	8 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

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## Output

Connection method	Screw connection
Conductor cross section solid min.	0.5 mm <sup>2</sup>
Conductor cross section solid 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>
Conductor cross section AWG min.	10
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

## Electrical properties

Insulation voltage input, output / housing	1000 V
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## Product properties

Product type	Redundancy module
MTBF (IEC 61709, SN 29500)	40000000 h

## Insulation characteristics

Protection class	III
Degree of pollution	2

## Dimensions

Width	50 mm
Height	130 mm
Depth	125 mm
Horizontal pitch	2.8 Div.

## Installation dimensions

Installation distance right/left	5 mm / 5 mm
Installation distance top/bottom	50 mm / 50 mm

## Mounting

Mounting type	DIN rail mounting
Assembly instructions	alignable: P <sub>N</sub> ≥50%, 5 mm horizontally, 15 mm next to active components, 50 mm vertically alignable: P <sub>N</sub> <50%, 0 mm horizontally, 40 mm vertically top, 20 mm vertically bottom
Mounting position	horizontal DIN rail NS 35, EN 60715

## Material specifications

Inflammability class in acc. with UL 94 (housing / terminal blocks)	V0
Housing material	Metal
Housing material	Steel sheet, zinc-plated

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## 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
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	IEC 60950-1 (SELV) and EN 60204-1 (PELV)
Standard - Safe isolation	DIN VDE 0100-410

### Approval data

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 IIC T4 Gc
	DEKRA 20ATEX0041 X
IECEX	Ex ec IIC T4 Gc
	IECEX DEK 20.0022X

### 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

### Electrostatic discharge

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

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## Electrostatic discharge

Contact discharge	8 kV (Contact discharge)
Discharge in air	15 kV (Air discharge)
Comments	Criterion A

## 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
Frequency range	1 GHz ... 3 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: conductor to ground)
Output	2 kV (level 3 - asymmetrical: conductor to ground)
Comments	Criterion A

## 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

Input/Output	Level 3
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

## Emitted interference

Standards/regulations	EN 61000-6-3
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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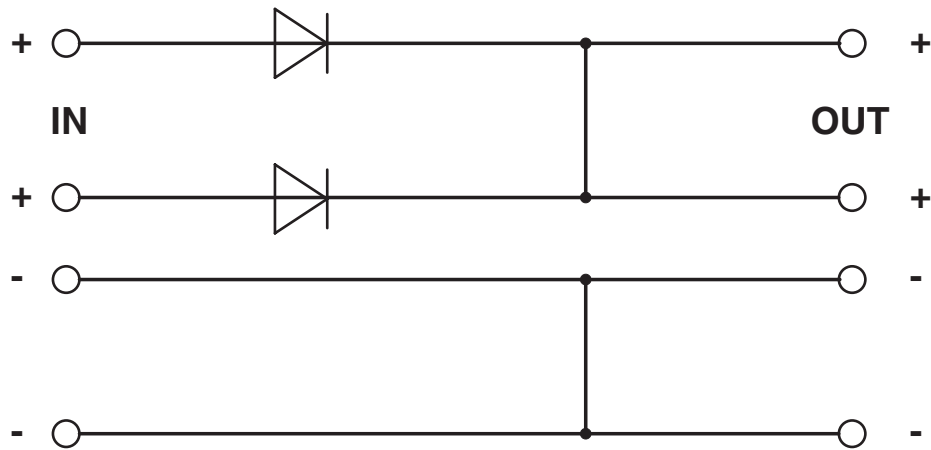


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## Drawings

Block diagram



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## Approvals



**cUL Recognized**  
Approval ID: FILE E 211944



**UL Recognized**  
Approval ID: FILE E 211944



**EAC**  
Approval ID: EAC-Zulassung



**DNV GL**  
Approval ID: TAA000011F



**LR**  
Approval ID: 14-20005

Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
500 V	41 A	-	- 6



**NK**  
Approval ID: TA19447M

Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
500 V	63 A	-	- 10



**BV**  
Approval ID: 36077/B0 BV



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



**UL Listed**  
Approval ID: FILE E 123528



**cUL Listed**  
Approval ID: FILE E 123528



**RINA**



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Approval ID: ELE362819XG

## ABS

Approval ID: 20-2022537-PDA



## ATEX

Approval ID: DEKRA 20ATEX0041X



## EAC Ex

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



## IECEX

Approval ID: IECEX DEK 20.0022X



## CCC

Approval ID: 2020322303003441



## NEPSI

Approval ID: GYJ20.1591X



## cUL Listed

Approval ID: FILE E 199827



## UL Listed

Approval ID: FILE E 199827

## INMETRO

Approval ID: DNV 19.0186X

cULus Recognized

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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	
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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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## Accessories

### Mounting adapter

Mounting adapter - UWA 182/52 - 2938235

<https://www.phoenixcontact.com/za/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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### Mounting adapter

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

<https://www.phoenixcontact.com/za/products/2938196>



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

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## Mounting adapter

Mounting adapter - UTA 107/30 - 2320089

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

## Universal DIN rail adapter



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