

# STEP3-DIODE/5-24DC/2X5/1X10/PT - Redundancy module



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Redundancy module STEP DIODE, DIN rail mounting, 5 V DC ... 24 V DC, 1x 10 A, 2x 5 A



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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, STEP DIODE provides the solution: decoupling with diode.

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## Technical data

### Input data

Nominal input voltage range	5 V DC ... 24 V DC
Input voltage range	4.5 V DC ... 30 V DC
Voltage type of supply voltage	DC
Nominal input current ( $I_N$ )	1x 10 A 2x 5 A
Reverse polarity protection	< yes60 V DC
Voltage drop, input/output	typ. 0.5 V ( $I_{OUT} = 5 A$ )
Transient surge protection	Transil diode

### Output data

Nominal output voltage	24 V DC
Setting range of the output voltage ( $U_{Set}$ )	5 V DC ... 24 V DC
Nominal output current ( $I_N$ )	2x 5 A 1x 10 A
Derating	50 °C ... 70 °C (2 % / K)

### Connection data

#### Conductor connection

Connection method	Push-in connection
rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
flexible with ferrule without plastic sleeve	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> 1 mm <sup>2</sup> (recommended)
flexible with ferrule with plastic sleeve	0.2 mm <sup>2</sup> ... 1 mm <sup>2</sup> 1 mm <sup>2</sup> (recommended)
rigid (AWG)	24 ... 14 (Cu)
Stripping length	10 mm (rigid/flexible/ferrule without plastic sleeve) 13 mm (Ferrule with plastic sleeve)

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## Electrical properties

Insulation voltage input/output	550 V AC
Insulation voltage input, output / housing	550 V AC

## Product properties

Product type	Redundancy module
Product family	STEP DIODE
MTBF (IEC 61709, SN 29500)	> 29675000 h (25 °C)
	> 18693000 h (40 °C)
	> 13996000 h (50 °C)
LED	yes

## Data management status

Article revision	00
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## Insulation characteristics

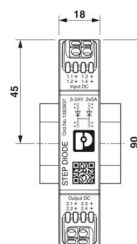
Protection class	III
Degree of pollution	2

## Dimensions

### Item dimensions

Width	18 mm
Height	90 mm
Depth	61 mm
	55 mm (Device depth (DIN rail mounting))

### Dimensional drawing



Horizontal pitch	1 Div. (DIN 43880)
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### Installation dimensions

Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	30 mm / 30 mm

## Mounting

Mounting type	DIN rail mounting
Assembly note	alignable: 0 mm horizontally, 30 mm vertically
Mounting position	horizontal DIN rail NS 35, EN 60715

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## Material specifications

Flammability rating according to UL 94 (housing / terminal blocks)	V0
Housing material	Metal
Housing material	Polycarbonate
Foot latch material	Polyamid

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-10 °C ... 70 °C (Derating: > 50 °C; 2 %/K)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 5000 m (> 2000 m, Derating: 10 %/1000 m)
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Dry heat (IEC 60068-2-2)	70 °C (16 h)
Humid heat cyclic (IEC 60068-2-30)	55 °C (95 %, 2 x 23 h)
Cold (IEC 60068-2-1)	-25 °C (16 h)
Shock (operation)	18 ms, 30g, per spatial direction (IEC 60068-2-27)
Vibration (operation)	< 15 Hz, amplitude ±2.5 mm (IEC 60068-2-6) 15 Hz ... 150 Hz, 2.3g, 90 min.

## Standards and regulations

### Electrical safety

Standard designation	Electrical safety
Standards/specifications	IEC 61010-1 (SELV)

### Protective extra-low voltage

Standard designation	Protective extra-low voltage
Standards/specifications	IEC 61010-1 (SELV) IEC 61010-2-201 (PELV)

## Approvals

### UL

Identification	UL/C-UL Listed UL 61010-1
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### UL

Identification	UL/C-UL Listed UL 61010-2-201
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### UL

Identification	UL/C-UL Listed ANSI/UL 121201 Class I, Division 2, Groups A, B, C, D (Hazardous Location)
Note	T4 (-10°C ... +70°C, >50°C, derating: 2%/K)

## EMC data

# STEP3-DIODE/5-24DC/2X5/1X10/PT - Redundancy module



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Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Noise immunity	EN 61000-6-2:2019
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU

## Fast transients (burst)

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

Input	4 kV (Test Level 4 - asymmetrical)
Output	2 kV (Test Level 3 - asymmetrical)
Comments	Criterion B

## Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
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## Surge voltage load (surge)

Input	0.5 kV (Test Level 2 - symmetrical)
	1 kV (Test Level 2 - symmetrical)
Output	0.5 kV (Test Level 2 - symmetrical)
	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion B

## Conducted interference

I/O/S	asymmetrical
Frequency range	150 kHz ... 80 MHz
Comments	Criterion A
Voltage	10 V (Test Level 3)

## Criteria

Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

# STEP3-DIODE/5-24DC/2X5/1X10/PT - Redundancy module

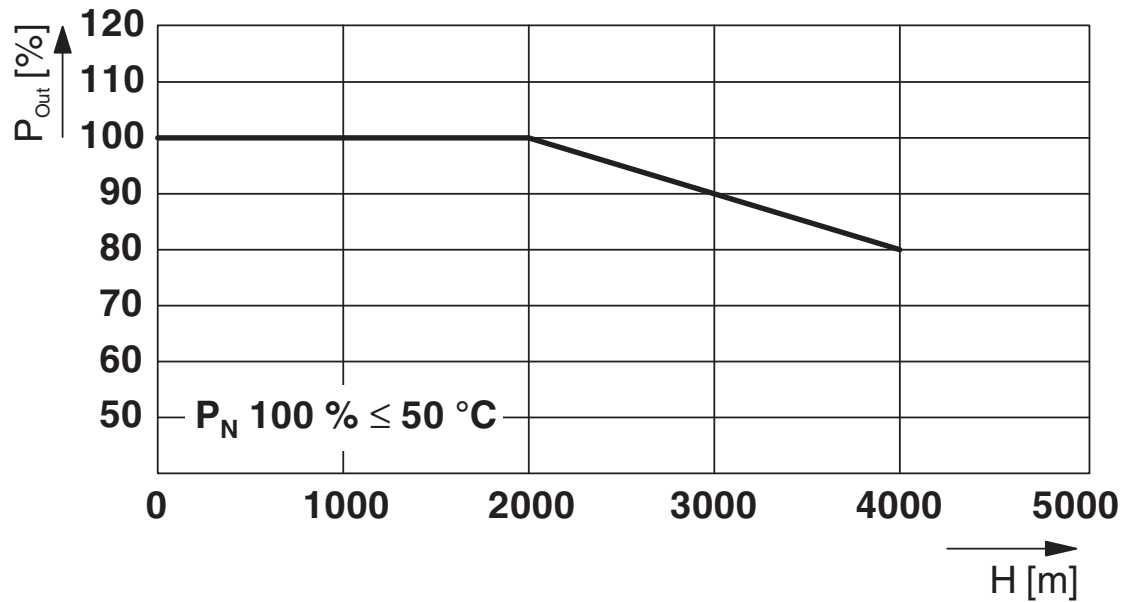


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## Drawings

Diagram



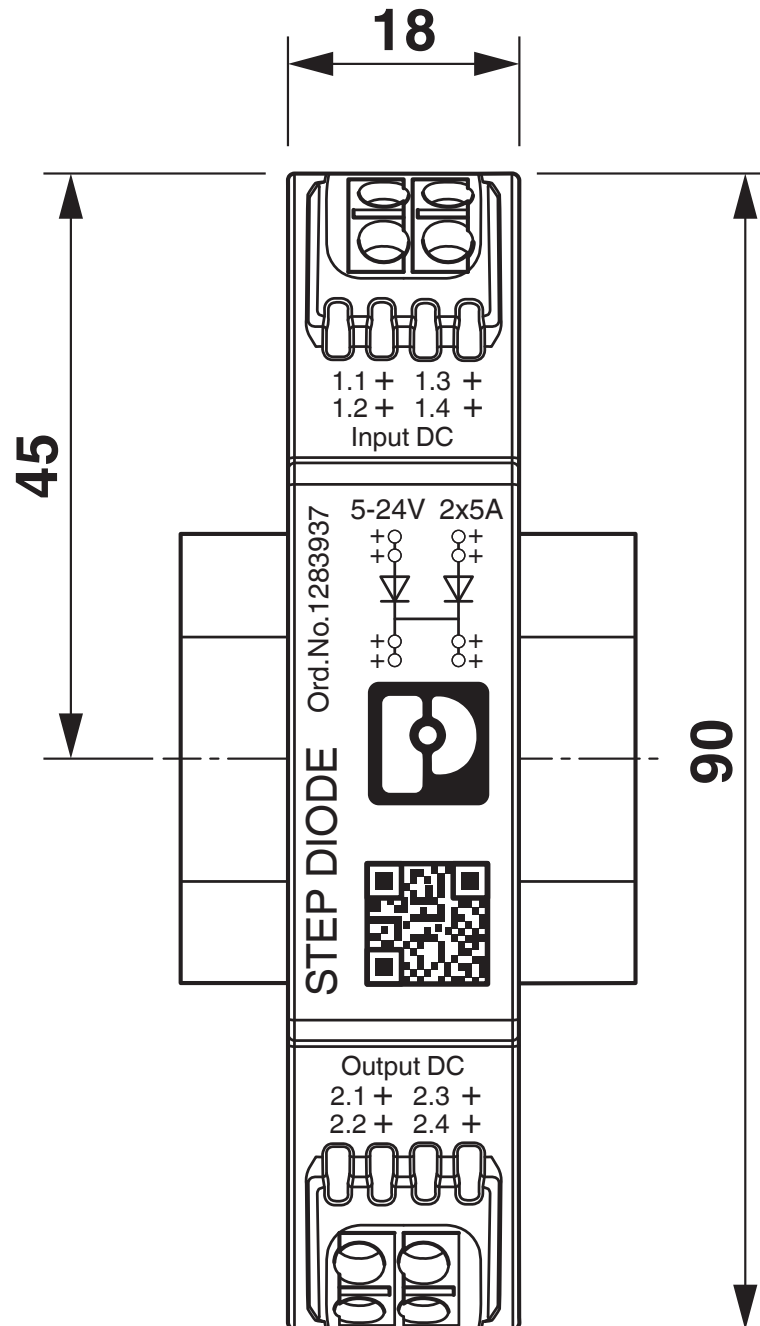
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Dimensional drawing

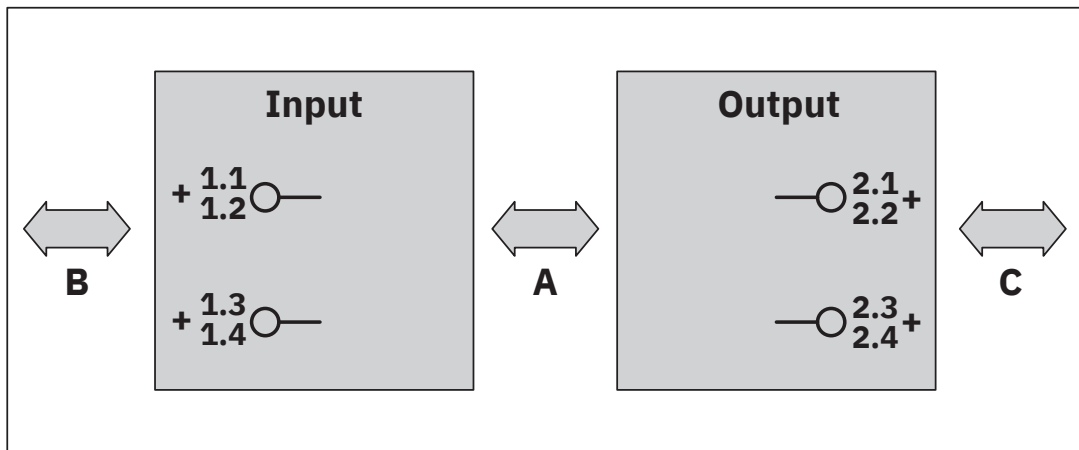


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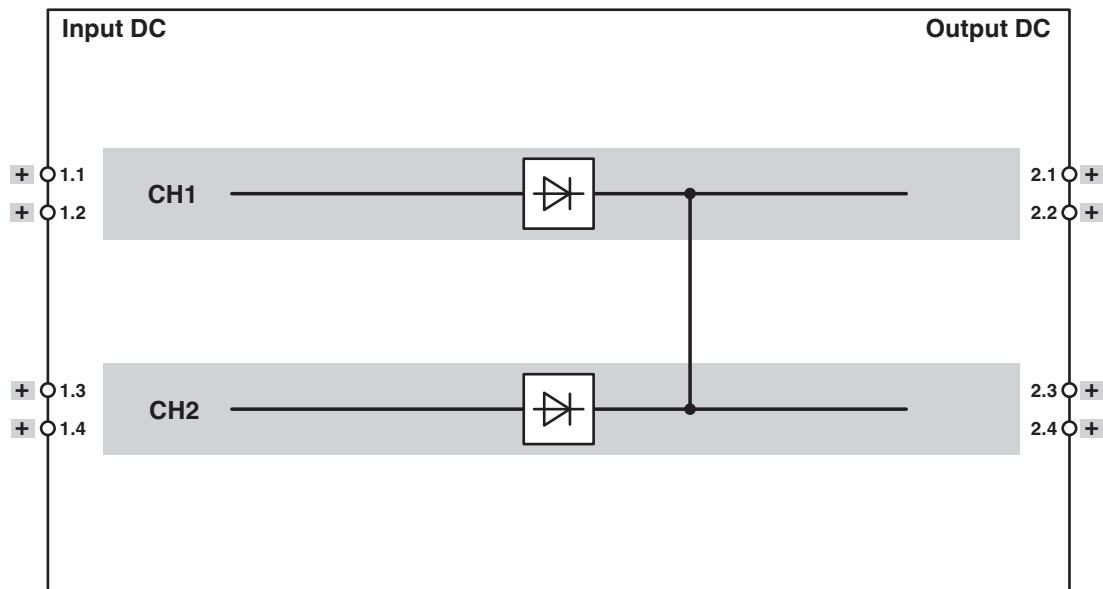
Schematic diagram

## Housing



Test sections, insulation voltage

Block diagram



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## Approvals

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**IECEE CB Scheme**

Approval ID: DK-122039-UL



**EAC**

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



**cULus Listed**

Approval ID: FILE E 123528

**DNV**

Approval ID: TAA000011F



**cULus Listed**

Approval ID: FILE E 199827

# STEP3-DIODE/5-24DC/2X5/1X10/PT - Redundancy module



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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(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	8f786d5d-f2f8-461e-ac91-4f048febfb2

### EF3.0 Climate Change

CO2e kg	2.197 kg CO2e
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