



# Redundancy Module PS1000-D2-24.20.RM

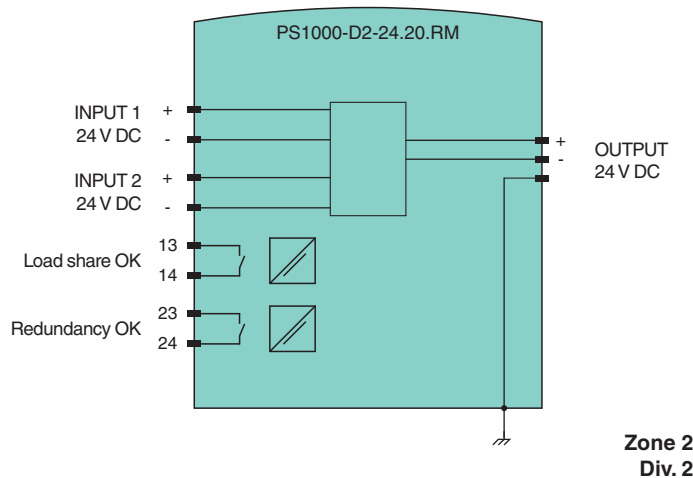
- 24 V DC to 28 V DC input
- 2 inputs with 1 output
- Output 24 V DC, 20 A
- Housing width 32 mm
- Built-in decoupling mosfets for 1+1 and N+1 redundancy
- Automatic load sharing
- Reverse input polarity protection
- Easy wiring: distribution terminal for negative pole included
- Redundancy status indicator
- Suitable for Zone 2/Div. 2 mounting



## Function

The device is a redundancy module for building redundant power supply systems. The device is equipped with 2 inputs and 1 output. Power supplies with an output current of up to 24 A and one output can be connected to the inputs. The power supplies can transmit a rated current of up to 20 A. The both inputs are decoupled by MOSFETs. This reduces heat generation and voltage drop between input and output. The device is mounted on a 35 mm DIN mounting rail according to EN 60715.

## Connection



## Technical Data

### Electrical specifications

Voltage drop		input to output 0.1 ... 0.5 V at input 2 x 5 A 0.2 ... 0.5 V at input 2 x 10 A 0.24 ... 0.5 V at input 2 x 12 A load share dependent
Power dissipation		1.7 W no load 2.6 ... 4.7 W at input 2 x 5 A 5.6 ... 8.7 W at input 2 x 10 A
<b>Input</b>		
Rated voltage	$U_r$	24 ... 28 V
Voltage range		18 ... 35 V DC

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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## Technical Data

Current	2 x 12 A at ambient temperature < 45 °C (113 °F) 2 x 10 A at ambient temperature 70 °C (158 °F) 2x 17 mA for max. 5 s for lower output currents see characteristic curve
<b>Output</b>	
Voltage	24 ... 28 V DC
Current	24 A at ambient temperature < 45 °C (113 °F) 20 A at ambient temperature < 70 °C (158 °F) 32.5 A for max. 5 s max. 26 A in overload or short circuit mode (voltage < 6 V DC)
<b>Fault indication output</b>	
Connection	terminals 13, 14 : relay contact load share terminals 23, 24 : relay contact redundancy
Output type	relay contact load share - contact is closed if the adjustment of the output voltages are sufficient - contact is open if an even load share does not occur and readjustment of the output voltage is required relay contact redundancy - contact is closed if no fault is detected - contact is open if one or both input voltages are below 22 V DC or above 30 V DC - contact is open if the output current is higher than the adjusted value of the output current - contact is open if an internal defect of the device is detected
Contact loading	max. 60 V DC/0.3 A ; 30 V DC/1 A ; 30 V AC/0.5 A resistive load min. 1 mA at 5 V DC
<b>Galvanic isolation</b>	
Input/Output	SELV/PELV
<b>Indicators/settings</b>	
Display elements	LED green: output status - LED lights up if the output current is smaller than the adjusted value of the output current LEDs green: load share status - LEDs indicate the load share status between the two power supplies LED green: redundancy status - LED lights up if no fault is detected - LED flashes if one or both input values are below 22 V or above 30 V - LED flashes if the output current is higher than the adjusted value of the output current - LED flashes if an internal defect is detected
Control elements	rotary switch
Configuration	setting of the output current via rotary switch - switch setting to 5 A in combination with two 5A power supplies (1+1 redundancy) - switch setting to 10 A in combination with two 10A power supplies (1+1 redundancy) - switch setting to 20 A for N+1 redundant systems
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 2014/30/EU	IEC/EN 61000-6-1 , IEC/EN 61000-6-2 , IEC/EN 61000-6-3 , IEC/EN 61000-6-4
Low voltage	
Directive 2014/35/EU	EN 61010-1
RoHS	
Directive 2011/65/EU (RoHS)	IEC/EN 63000:2019
<b>Conformity</b>	
Degree of protection	EN 60529
Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
<b>Ambient conditions</b>	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) , see characteristic curve
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	5 ... 95 % , noncondensing
Shock resistance	20 g , 11 ms or 30 g , 6 ms
Vibration resistance	2 ... 17.8 Hz : ± 1.6 mm , 17.8 ... 500 Hz : 2 g
<b>Mechanical specifications</b>	
Housing material	aluminum alloy , galvanized steel
Degree of protection	IP20
Connection	

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**Technical Data**

Input/Output	screw terminals conductor cross section: max. 6 mm <sup>2</sup> (AWG 20-10) cable diameter: max. 2.8 mm, wire end ferrules included stripped insulation length: 7 mm tightening torque: max. 0.8 Nm
Relay contact output	spring terminals conductor cross section: max. 1.5 mm <sup>2</sup> (AWG 24-16) cable diameter: max. 1.6 mm, wire end ferrules included stripped insulation length: 7 mm
Mass	approx. 310 g
Dimensions	32 x 124 x 117 mm , without DIN mounting rail
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001

**Data for application in connection with hazardous areas**

ATEX approval	
ATEX certificate	EPS 11 ATEX 1 312 X
ATEX marking	Ⓔ II 3G Ex ec nC II T4 Gc
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-7:2016 , EN 60079-15:2010

**International approvals**

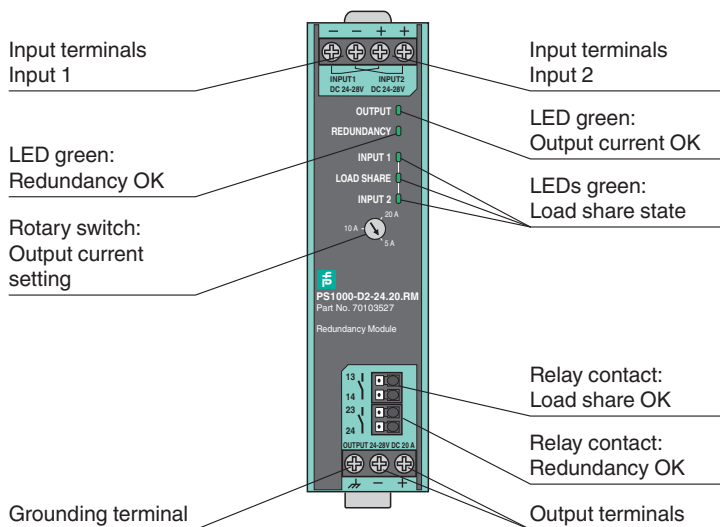
UL approval	
UL approval	E223176
IECEx approval	
IECEx certificate	IECEx EPS 20.0057X
IECEx marking	Ex ec IIC T4 Gc
Standards	IEC 60079-0:2011 , IEC 60079-7:2015 , IEC 60079-15:2010

**General information**

Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .
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**Assembly**

**Front view**



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**Installation Conditions**

Mount the device on the DIN mounting rail so that the input terminals are located on the bottom of the device.

This device is designed for convection cooling and does not require an external ventilator. Do not obstruct airflow. Do not cover the ventilation grid by more than 15 %, e. g. cable ducts.

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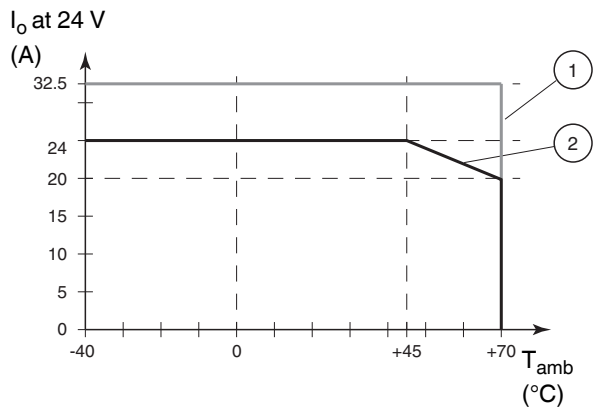
If you load the device with more than 50 % of the rated power permanently keep the following mounting distances:

- 40 mm above
- 20 mm below
- 5 mm on the left and right side

Increase this distance to 15 mm if the adjacent device is a heat source, e. g. another power supply.

**Characteristic Curve**

Output current versus ambient temperature



- 1 short term, max. 5 s
- 2 continuous

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