



Redundancy Module PS1000-D2-24.20.RM

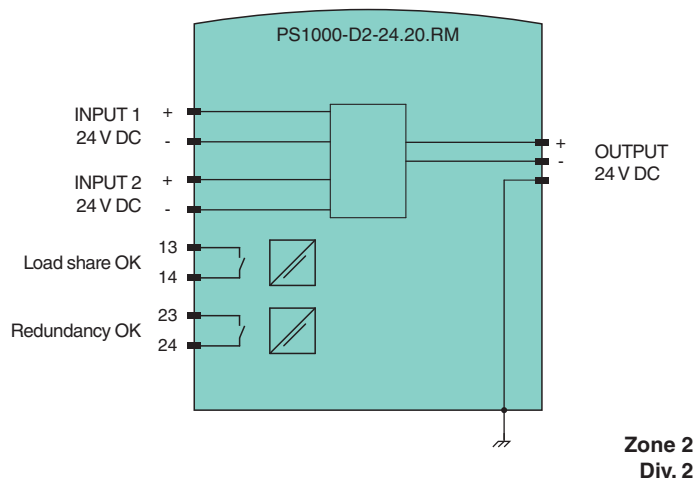
- 24 V DC to 28 V DC input
- 2 inputs with 1 output
- Output 24 V DC, 20 A
- Housing width 32 mm
- Built-in decoupling mosfets for 1+1 and N+1 redundancy
- Automatic load sharing
- Reverse input polarity protection
- Easy wiring: distribution terminal for negative pole included
- Redundancy status indicator
- 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
Input		
Rated voltage	U _r	24 ... 28 V
Voltage range		18 ... 35 V DC

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
Output		
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)
Fault indication output		
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
Galvanic isolation		
Input/Output		SELV/PELV
Indicators/settings		
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
Directive conformity		
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
Conformity		
Degree of protection		EN 60529
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Ambient conditions		
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
Mechanical specifications		
Housing material		aluminum alloy , galvanized steel
Degree of protection		IP20
Connection		

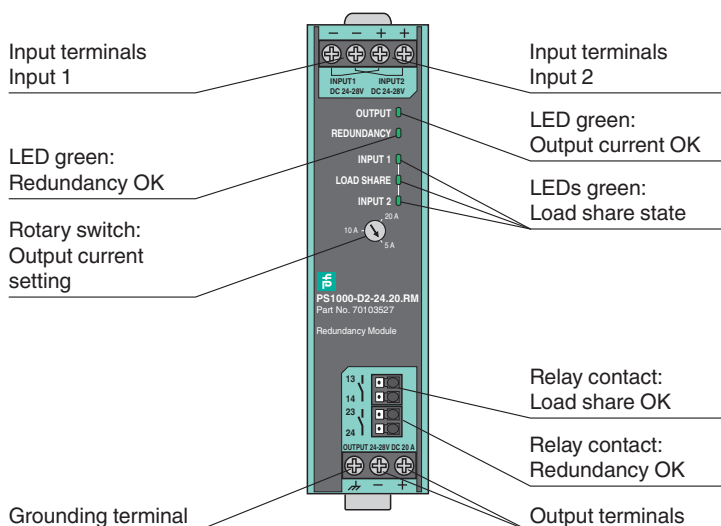
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Technical Data

Input/Output		screw terminals conductor cross section: max. 6 mm² (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 mm² (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		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 www.pepperl-fuchs.com .

Assembly

Front view



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.

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

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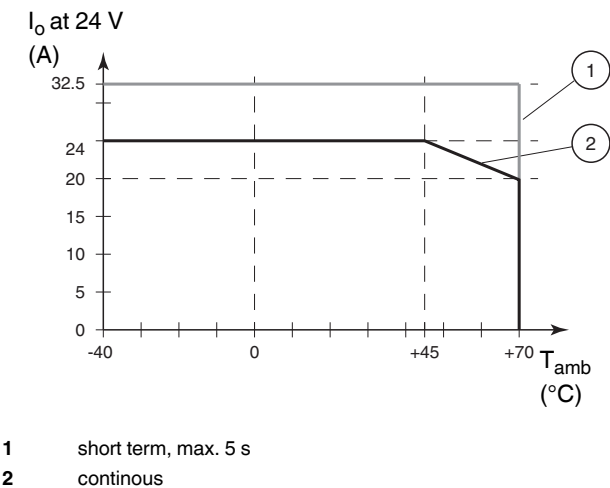
If you load the device with more than 50 % of the rated power permanently keep the following mounting distances:

- 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



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