



Redundancy Module PS1000-D2-24.20.RM

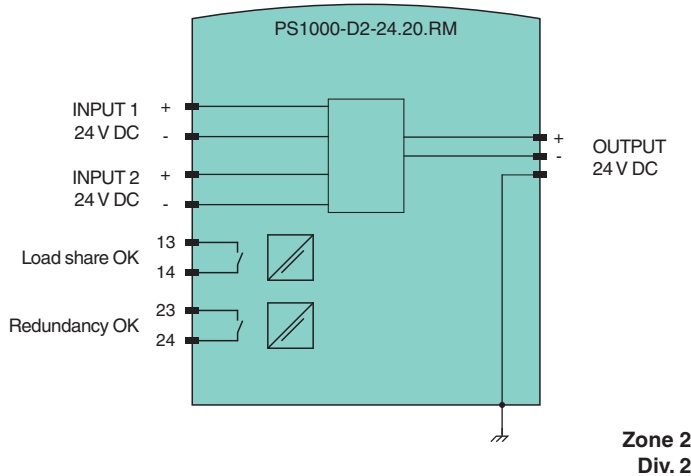
- 24 V DC to 28 V DC input
- 2 inputs with 1 output
- Output 24 V DC, 20 A
- Housing width 32 mm
- Built-in decoupling mosfets for 1+1 and N+1 redundancy
- Automatic load sharing
- Reverse input polarity protection
- Easy wiring: distribution terminal for negative pole included
- Redundancy status indicator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

Release date: 2023-11-30 Date of issue: 2023-11-30 Filename: 70103527_eng.pdf

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 technical information
Output		
Voltage range		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 ore 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 technical information
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		

Release date: 2023-11-30 Date of issue: 2023-11-30 Filename: 70103527_eng.pdf

Technical Data

Input/Output	screw terminals conductor cross section: max. 6 mm ² (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 ² (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 (W x H x D) , 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

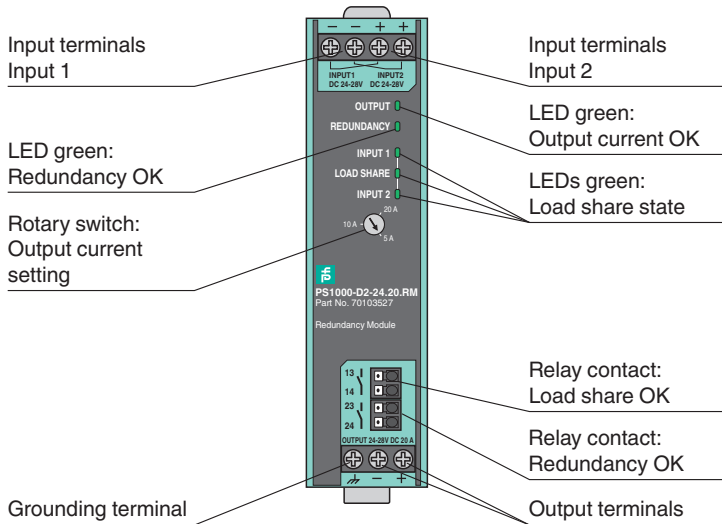
UL approval	
UL approval	E223176
IECEx approval	
IECEx certificate	IECEx EPS 20.0057X
IECEx marking	Ex ec nC IIC T4 Gc
Standards	IEC 60079-0:2011 , IEC 60079-7:2015 , IEC 60079-15:2010

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



Release date: 2023-11-30 Date of issue: 2023-11-30 Filename: 70103527_eng.pdf

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.

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.