



## Redundancy Module PS1000-D2-24.40.RM

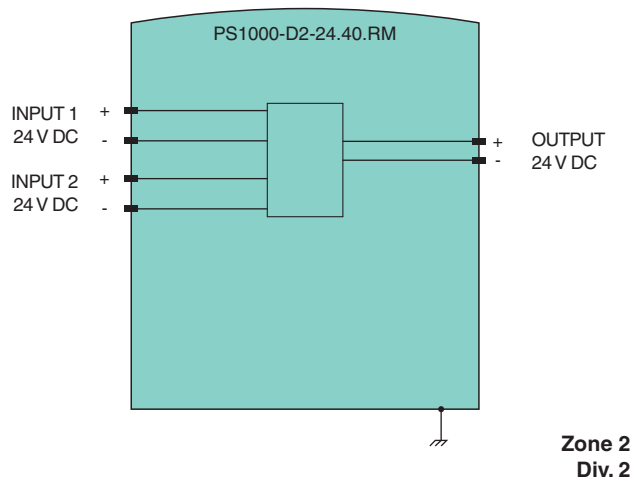
- 12 V DC to 28 V DC input
- 2 inputs with 1 output
- Output 24 V DC, 40 A
- Housing width 36 mm
- Built-in decoupling mosfets for 1+1 and N+1 redundancy
- Only 72 mV voltage drop at 20 A output current
- Only 1.7 W loss at 2 x 10 A and 5.9 W at 2 x 20 A input current
- Reverse input polarity protection
- 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 20 A and one output can be connected to the inputs. The power supplies can transmit a rated current of up to 40 A and 40 A to 65 A for 5 s. 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<br>72 mV at input 2 x 10 A<br>140 mV at input 2 x 20 A |                                                                                                                                                                                             |
| Power dissipation |                                                                        | 0.23 W no load<br>1.7 W at input 2 x 10 A<br>5.9 W at input 2 x 20 A                                                                                                                        |
| Input             |                                                                        |                                                                                                                                                                                             |
| Rated voltage     | U <sub>r</sub>                                                         | 12 ... 28 V                                                                                                                                                                                 |
| Voltage range     | 8.4 ... 36.4 V DC                                                      |                                                                                                                                                                                             |
| Current           |                                                                        | 2 x 20 A at ambient temperature < 60 °C (140 °F)<br>2 x 15 A at ambient temperature 70 °C (158 °F)<br>2 x 20 ... 32.5 A for up to 5 s<br>for lower output currents see characteristic curve |

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

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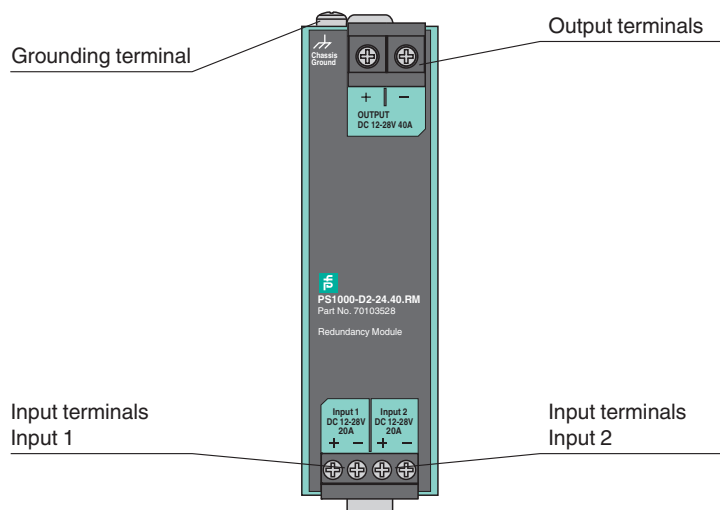
## Technical Data

|                                                                |  |                                                                                                                                                                                                                         |
|----------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output</b>                                                  |  |                                                                                                                                                                                                                         |
| Voltage                                                        |  | 12 ... 28 V DC                                                                                                                                                                                                          |
| Current                                                        |  | 40 A at ambient temperature < 60 °C (140 °F)<br>30 A at ambient temperature < 70 °C (158 °F)<br>65 A for up to 5 s<br>max. 26 A in overload or short circuit mode (voltage < 6 V DC)                                    |
| <b>Galvanic isolation</b>                                      |  |                                                                                                                                                                                                                         |
| Input/Output                                                   |  | SELV/PELV                                                                                                                                                                                                               |
| <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                                            |  | -25 ... 70 °C (-13 ... 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                                                     |  |                                                                                                                                                                                                                         |
| Input                                                          |  | screw terminals<br>conductor cross section: max. 6 mm <sup>2</sup> (AWG 20-10)<br>cable diameter: max. 2.8 mm, wire end ferrules included<br>stripped insulation length: 7 mm<br>tightening torque: recommendet 0.8 Nm  |
| Output                                                         |  | screw terminals<br>conductor cross section: max. 16 mm <sup>2</sup> (AWG 22-8)<br>cable diameter: max. 5.2 mm, wire end ferrules included<br>stripped insulation length: 12 mm<br>tightening torque: recommendet 1.2 Nm |
| Mass                                                           |  | approx. 280 g                                                                                                                                                                                                           |
| Dimensions                                                     |  | 36 x 124 x 127 mm , without DIN mounting rail                                                                                                                                                                           |
| Mounting                                                       |  | on 35 mm DIN mounting rail acc. to EN 60715:2001                                                                                                                                                                        |
| <b>Data for application in connection with hazardous areas</b> |  |                                                                                                                                                                                                                         |
| ATEX approval                                                  |  |                                                                                                                                                                                                                         |
| ATEX certificate                                               |  | EPS 11 ATEX 1 312 X                                                                                                                                                                                                     |
| ATEX marking                                                   |  | Ⓔ II 3G Ex ec II T4 Gc                                                                                                                                                                                                  |
| Directive conformity                                           |  |                                                                                                                                                                                                                         |
| Directive 2014/34/EU                                           |  | EN 60079-0:2012+A11:2013 , EN 60079-7:2016 , EN 60079-15:2010                                                                                                                                                           |
| <b>International approvals</b>                                 |  |                                                                                                                                                                                                                         |
| 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                                                                                                                                                                 |
| <b>General information</b>                                     |  |                                                                                                                                                                                                                         |
| 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



## 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.

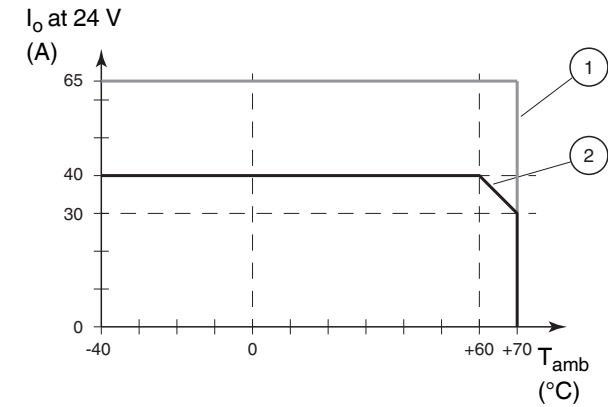
If you load the device with more than 50 % of the rated power permanently keep the following mounting distances:

- 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.

Characteristic Curve

Output current versus ambient temperature



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