



# Power Supply

## PS1000-A6-24.20

- 100 V AC to 240 V AC wide-range input
- Output 24 V DC, 20 A, 480 W, 1-phase
- Housing width 48 mm
- Efficiency up to 95.6 %
- Minimal inrush current surge
- DC OK relay contact
- Current sharing for parallel use
- Suitable for Zone 2/Div. 2 mounting



### Function

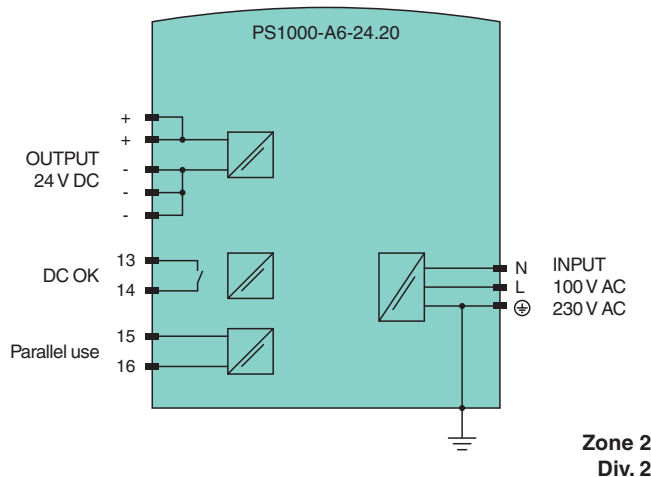
The device is used to supply field devices with 24 V DC and 20 A. It is possible to select between the operating modes "parallel use" and "single use". Plug in the plug-in jumper to set the operating mode "parallel use". Do not plug in the plug-in jumper to set the operating mode "single use". The device status is indicated by an LED. The device has a relay contact output for remote monitoring. The device is mounted on a 35 mm DIN mounting rail according to EN 60715.

### Application

#### Parallel Use

Link the two terminal poles when power supplies are connected in parallel. In order to achieve a sharing of the load current between the individual power supplies, the "parallel use" regulates the output voltage in such a manner that the voltage at no load is approx. 4 % higher than at nominal load.

### Connection



### Technical Data

#### Electrical specifications

Efficiency	94.2 % at 120 V AC 95.6 % at 230 V AC
Power dissipation	29.6 W at 120 V AC 22.1 W at 230 V AC

Release date: 2021-05-20 Date of issue: 2021-05-20 Filename: 70103523\_eng.pdf

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

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## Technical Data

Input	
Current	4.26 A at 120 V AC 2.23 A at 230 V AC 4.64 A at 110 V DC for lower output currents see characteristic curve
Inrush current	10 A peak at 120 V AC, temperature independent 4.5 A peak at 230 V AC, temperature independent
Voltage	100 ... 240 V AC (-15 %/+10 %), 50 ... 60 Hz (±6 %) 110 ... 150 V DC (±20 %)
Capacity factor	0.99 at 120 V AC 0.98 at 230 V AC
Output	
Rated voltage	$U_r$ 24 V DC
Voltage range	24 ... 28 V DC factory setting: 24.1 V
Rated current	$I_r$ 20 A
Current	24 ... 20.6 A at ambient temperature < 45 °C (113 °F) 20 ... 17.1 A at ambient temperature 60 °C (140 °F) 15 ... 13 A at ambient temperature 70 °C (158 °F) linear power derating see characteristic curve
Power	480 W
Ripple	max. 50 mV <sub>pp</sub>
Retention time/hold time	32 ms at 120 V AC 32 ms at 230 V AC
Overload behavior	continuous current : output voltage > 13 V DC intermittent current : output voltage < 13 V DC
Short-circuit current	typ. 29 A intermitted current peak value for typ. 2 s
Voltage limitation	typ. 30.5 V DC max. 32 V DC
Fault indication output	
Connection	terminals 13, 14
Output type	relay contact DC OK - contact is closed if the output voltage is > 90 % of the adjusted output voltage
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: status DC OK - LED lights up if the output voltage is > 90 % of the adjusted output voltage
Control elements	potentiometer , plug-in jumper
Configuration	setting of the output voltage via potentiometer setting of the operating mode - plug-in jumper plugged in: "parallel use" operating mode - plug-in jumper not plugged in: "single use" operating mode
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 , IEC/EN 61000-3-2 , IEC/EN 61000-3-3
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	-25 ... 70 °C (-13 ... 158 °F) , see characteristic curve
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

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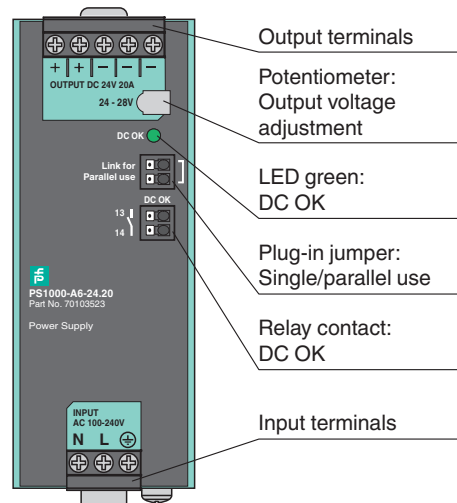
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## Technical Data

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
<b>Connection</b>	
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. 1 Nm
Relay contact output	spring terminals with push-in connection technology 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. 830 g
Dimensions	48 x 124 x 127 mm , without plugs and 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 17 ATEX 1 089 X
ATEX marking	Ⓜ II 3G Ex ec nC II T4 Gc
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-7:2015 , EN 60079-15:2010
<b>International approvals</b>	
UL approval	E350173 , E223176
IECEX approval	
IECEX certificate	IECEX EPS 20.0056X
IECEX marking	Ex ec nC 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> .

## 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.

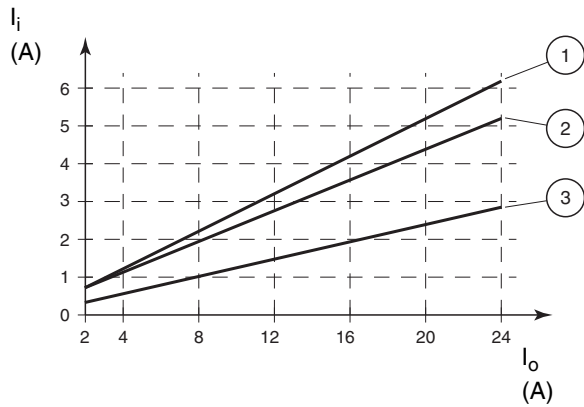
## Accessories



PS1000-D2-24.20.RM

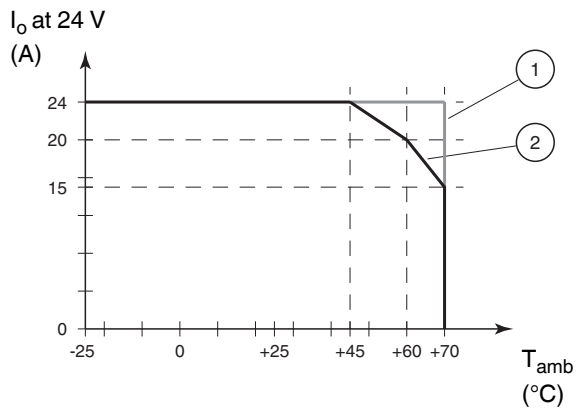
**Characteristic Curve**

Input current versus output current at 24 V output voltage



- 1 100 V AC
- 2 120 V AC
- 3 230 V AC

Output current versus ambient temperature



- 1 short term, max. 60 s, every 10 minutes
- 2 90 V AC ... 264 V AC, continuous

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