



Power Supply PS1000-A9-24.40

- 380 V AC to 480 V AC wide-range inputs
- Output 24 V DC, 40 A, 960 W, 3-phase
- Housing width 110 mm
- Efficiency up to 95.3 %
- Minimal inrush current surge
- Shutdown input
- Remote control for ON/OFF
- DC OK relay contact
- Current sharing for parallel use



Function

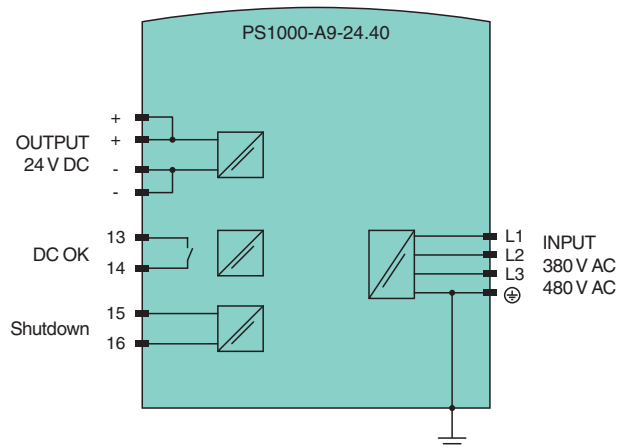
The device is used to supply field devices with 24 V DC and 40 A.
The device has a large power reserve of 150 % for up to 4 s to support the starting of heavy loads such as DC motors or capacitive loads.
The output voltage can be adjusted via a potentiometer. Device status and overload are indicated by LEDs.
The device has a relay contact output for remote monitoring.
The device has a connection for switching off the device via a switch or an external voltage.
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	95.3 % at 3 x 400 V AC 95.2 % at 3 x 480 V AC
Power dissipation	47.3 W at 3 x 400 V AC 48.4 W at 3 x 480 V AC

Technical Data

Input		
Current		1.65 A at 3 x 400 V AC 1.35 A at 3 x 480 V AC for lower output currents see characteristic curve
Inrush current		4.5 A peak at 3 x 400 V AC, temperature-independent 4.5 A peak at 3 x 480 V AC, temperature-independent
Voltage		3 x 380 ... 480 V AC (-15 %/+20 %), 50 ... 60 Hz (±6 %)
Capacity factor		0.88 at 3 x 400 V AC 0.9 at 3 x 480 V AC
Remote control		terminals 15, 16 remote control for ON/OFF and shutdown input
Output		
Rated voltage	U_r	24 V DC
Voltage range		24 ... 28 V DC factory setting: 24.1 V
Rated current	I_r	40 A
Current		continuous: 40 ... 34.3 A short-term up to 4 s: 60 ... 51.5 A linear power derating see characteristic curve
Power		960 W
Ripple		max. 100 mV _{pp}
Retention time/hold time		25 ms at 3 x 400 V AC 25 ms at 3 x 480 V AC
Overload behavior		constant current mode
Short-circuit current		typ. 46 A continuous, load impedance < 10 mΩ
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 LED red: overload - LED lights up if the output voltage is < 90 % of the adjusted output voltage or in case of short circuit - flashes if the shutdown has been activated or if the device has shut down due to overtemperature
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 setting of the shutdown input: - plug-in jumper plugged in: device switches off
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

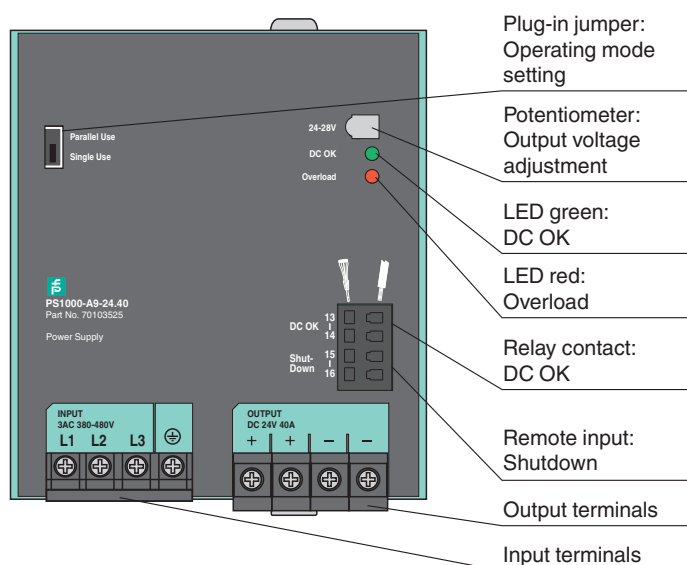
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Technical Data

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)
Relative humidity	5 ... 95 %, noncondensing
Shock resistance	15 g , 6 ms or 10 g , 11 ms
Vibration resistance	2 ... 17.8 Hz : ± 1.6 mm , 17.8 ... 500 Hz : 1 g
Mechanical specifications	
Housing material	aluminum alloy , galvanized steel
Degree of protection	IP20
Connection	
Input	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. 1 Nm
Output	screw terminals conductor cross section: max. 16 mm ² (AWG 22-8) cable diameter: max. 5.2 mm, wire end ferrules included stripped insulation length: 12 mm tightening torque: max. 2.3 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
Remote control/shutdown input	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. 1500 g
Dimensions	110 x 124 x 127 mm , without DIN mounting rail
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
International approvals	
UL approval	E223176
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.

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

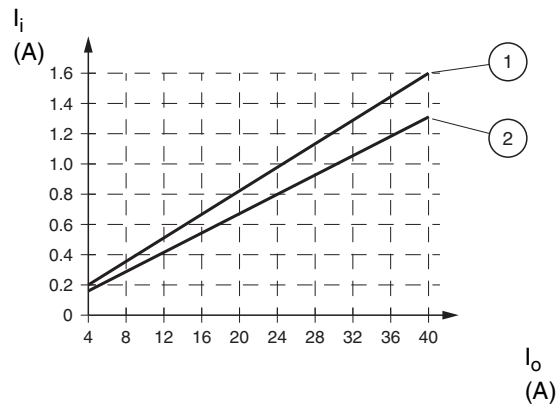
Increase this distance to 15 mm if the adjacent device is a heat source, e. g. another power supply.

Indication

Mode of operation	Red LED overload	Green LED status DC OK	Relay contact DC OK
Normal operation	OFF	ON	closed
Overload ($V_{out} < 0\%$)	ON	OFF	open
Output short circuit	ON	OFF	open
Temperature shutdown	flashing	OFF	open
Active shutdown input	flashing	OFF	open
No input power	OFF	OFF	open

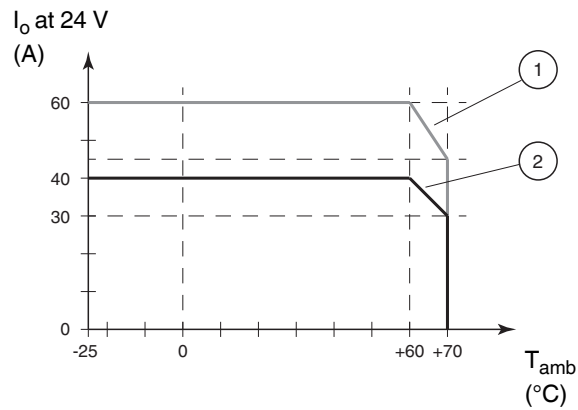
Characteristic Curve

Input current versus output current at 24 V output voltage



- 1 3 x 400 V AC
- 2 3 x 480 V AC

Output current versus ambient temperature



- 1 short term, max. 4 s
- 2 continuous