

PW-SUP-500 — Industrial DC Power Supply 24 V / 20 A

Innovative-Parts AG | Power Systems Division
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Overview

The PW-SUP-500 is a stabilised single-phase AC/DC power supply providing 24 V DC at up to 20 A continuous output current (480 W). Designed for DIN-rail installation in industrial control cabinets, it converts single-phase mains supply to a regulated 24 V DC rail suitable for powering PLCs, I/O systems, sensors, and drives. The wide input voltage range and active power factor correction ensure reliable operation across global mains standards.

Key Features

- Output power: **480 W** continuous
 - Stabilised 24 V DC output with ± 1 % regulation
 - Wide-range AC input: 90 - 264 V AC
 - Active power factor correction (PFC), PF > 0.98
 - Output voltage adjustable 24.0 - 28.0 V via front potentiometer
 - Parallel operation for redundancy or higher current (N+1 capable)
 - Fold-back overcurrent protection and short-circuit proof
 - DIN-rail mounting (35 mm), compact 6HP width
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Technical Specifications

Input

Parameter	Value
Rated supply voltage AC 50 Hz (EF007076)	230 V AC (range: 90 ... 264 V AC)
Rated supply voltage AC 60 Hz (EF007077)	120 V AC (range: 90 ... 264 V AC)
Rated supply voltage DC (EF007078)	110 ... 375 V DC

Parameter	Value
Voltage type (supply voltage) (EF002991)	AC / DC (universal)
Frequency range	47 ... 63 Hz
Power consumption (EF000346)	520 VA at full load
Input current at 230 V AC	2.4 A
Inrush current (cold start, 25 °C)	< 20 A

Output

Parameter	Value
Nominal value output voltage 1 (EF009393)	24 V DC
Nominal value output current 1 (EF009396)	20 A
Power output (EF003034)	480 W
Output voltage stabilised (EF003092)	Yes
Secondary voltage adjustable (EF007002)	Yes, 24.0 ... 28.0 V DC
Max. output current 1 (EF008284)	20 A continuous / 24 A peak (5 s)
Residual ripple (at full load, 20 °C)	< 50 mVpp
Load regulation	≤ ±0.5 %
Line regulation	≤ ±0.3 %
Hold-up time (at full load)	> 20 ms

Protection

Function	Description
Short-circuit protection	Automatic restart after fault clearance
Overload protection	Current fold-back at 105 % rated current
Overvoltage protection	Crowbar, trips at 29 V DC
Overtemperature protection	Auto-shutdown with thermal recovery

Mechanical & Mounting

Parameter	Value
Suitable for rail mounting (EF003972)	Yes — 35 mm DIN rail (EN 60715)
Suitable for wall mounting	No
Width (EF000008)	108 mm
Height (EF000040)	125 mm
Depth (EF000049)	127 mm

Parameter	Value
Width in number of modular spacings	6 HP
Housing colour	Black (RAL 9005)
Housing material	Sheet steel, powder-coated
Degree of protection (IP)	IP20
Cooling	Natural convection (fanless)
Weight	1.2 kg

Environment

Parameter	Value
Ambient temperature (operation)	-25 ... +60 °C (derated above 45 °C)
Ambient temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 95 % non-condensing
Altitude	≤ 2000 m (above: derate output)

Connections

Terminal	Function
L, N, PE	AC mains input
+24 V, 0 V	DC output (×2 parallel terminals each)
SIG	DC-OK signal contact (relay, volt-free)

Redundancy Operation

For N+1 redundancy, connect two PW-SUP-500 units in parallel using the integrated diode OR-ing circuit. No additional OR-ing module required for currents up to 20 A per branch.

Approvals & Standards

- CE (LVD 2014/35/EU, EMC 2014/30/EU)
- UL 508 listed

- TÜV Rheinland certified
 - EN 61558 / IEC 62477
 - RoHS 2011/65/EU
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Efficiency

Load	Efficiency
25 %	89 %
50 %	92 %
100 %	91 %

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