

400W, Rugged AC/DC Conduction Cooled Power Supply for Heavy Duty Applications POL 400-P400 Series

- Rugged, field-proven design
- Full encapsulation
- Full electronic protection
- High reliability
- Conduction cooling



This fully encapsulated, industrial quality AC/DC power supply uses field-proven technology to generate 400W output power. It is a mature design with an excellent track record in numerous heavy-duty applications. The unit is entirely potted with a thermally conductive MIL-grade silicon rubber compound to ensure resistance to shock, vibration and humidity. Cooling is via base plate by conduction. The unit is designed for continuous operation at 70°C with installation on an appropriate size heat-sinking surface. It has full electronic protection. Low component count, large design headroom, and the use of components with established reliability result in high MTBF. The unit is suitable for transportation, mining, oil-rigs, military and other heavy duty applications. It is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

115 or 230Vac, 47-440Hz
Input setting can be changed by removing the top cover and resolder a jumper.
The unit also accepts 250Vdc to 370Vdc range if selector is in 230Vac position.
Consult factory for other voltages

Input Protection

Inrush current limiting
Varistor
Internal safety fuse
Lower voltage than the specified minimum input will not damage the unit

Input Isolation

2250VDC input to chassis
4300VDC input to output,
8mm spacing
500VDC output to chassis

Standards

Designed to meet EN60950-1 and corresponding UL and CSA standards

EMI

EN55022 Class A with margins

Switching Frequency

55KHz ±3KHz

Hold Up Time

Min 5ms at nominal input for 5% drop of output voltage

Output Voltages

12Vdc/33A, 24Vdc/17A,
36Vdc/12A or 48Vdc/9A
Consult factory for other voltages

Redundancy diode

None

Line/Load Regulation

±1% combined from zero load to full load

Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

Output Ripple/Noise

Better than 1% peak to peak or 0.2%Vrms of the output voltage (20MHz BW)

Output Overload Protection

Rectangular current limiting with short circuit protection (no hiccup)
Thermal shutdown with automatic reset in case of insufficient cooling
Current limit: typically set for 110% of nominal output current

Output Overvoltage Protection

Double regulator loop completely stable and independent of main regulator loop.
OVP setting: typically set at 120% of nominal output voltage

Efficiency

Output is voltage dependent.
Typically 80% at full load

Operating Temperature Range

-40°C to +70°C cold-plate temperature for full specification

Temperature Drift

0.03% per °C over operating temperature range.

Cooling

Conduction via base plate to customer heatsink or chassis

Environmental Protection

Full encapsulation with thermally conductive silicon potting compound with UL94V-0 flammability rating.
Meets environmental criteria as requested in MIL-810 C, D

Shock/Vibration

IEC 61373 Cat 1 A&B

MTBF

180,000 hours @ 45 °C
Demonstrated MTBF significantly higher

Indicators

None

Control Input

None

Alarm Output

None

Available on custom versions

Package/Dimensions

P 400: 131 x 76 x 232 mm
5.2" x 3" x 9.2" including terminal block and flanges.
Mounting holes are clear

Weight

2.2 kg (4.85 lbs)

Connections:

9-pole barrier type terminal block, 3/8" spacing

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice



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