

## 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

**Enhancements to these general specifications and customizing can be accommodated upon request. Specifications are subject to change.**

*Designer and manufacturer of quality ac-dc power supplies and battery chargers, converters, inverters, dc-output UPS systems, and complete rack mount systems in 19" or 23" racks. Custom or standard. ABSOPULSE is a BABT-approved Facility.*



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