

## 500W, Encapsulated AC/DC Power Supply for Heavy Duty Applications POL 319 Series

- Extremely rugged field-proven design
- Full encapsulation
- Single output
- Full electronic protection
- High reliability
- Conduction cooling

**Not for new design.  
Please contact factory  
for alternative design.**



The POL 319 Series compact AC/DC power supply which uses half-bridge technology to convert a 115 or 230Vac input to the required voltage. Designed for operation in very harsh environments, the unit is entirely potted with a thermally conductive MIL-spec silicon rubber compound to increase resistance against humidity, moisture, shock, vibration, dust and insects. It is conduction cooled via a base plate. The POL 319 was designed for continuous operation in a -40°C to a +70°C temperature range when installed on an appropriate heatsinking surface. This converter features full electronic protection, high efficiency and low output noise. The use of components with many years of established reliability and generous headroom contributes to an MTBF exceeding 180,000 hours at 45°C. The POL 319 is manufactured at our plant under strict quality control. Customized versions are also available.

### SPECIFICATIONS

#### Input Voltage / Current

115/230VAC +/- 15%  
47 - 63Hz, selection by jumper  
Input current:

5A max at 230VAC input;  
10A at 115VAC input

The unit also accepts a 230Vdc to 370Vdc input range  
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 and related corresponding UL and CSA standards

#### EMI

EN 55022 Class A as a minimum

#### Switching Frequency

55KHz +/- 3KHz

#### Hold Up Time

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

#### Output Voltage/Current

12V/40A, 24V/20A or 48V/10A

Contact factory for other configurations

Output is floating, either terminal can be grounded

#### 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% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHZ BW)

#### Output Overload Protection

Rectangular current limiting with short-circuit protection (no hiccup)  
Thermal shutdown in case of insufficient cooling (self resetting)  
Current Limit: typically 110% of nominal

#### Output Overvoltage Protection

Second regulator loop  
OVP setting: typically 120% of nominal

#### Efficiency

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

#### Shock/Vibration

Designed to meet requirements of IEC 61373 Cat 1 A&B and Cat 2 as a minimum

#### MTBF

180,000 hours at 45°C  
Demonstrated MTBF is significantly higher

#### Indicators

None

#### Control Input

None

#### Alarm Output

None on standard version

#### Dimensions (W x H x L)

152 x 79 x 353 mm  
6" x 3.1" x 13.9" including terminal block and flanges

#### Weight

5.6 kg (12.5 lbs)

#### Connections

AC input: 3-pole barrier type terminal block with 3/8" spacing  
Output: 1/4"-20 NC studs  
Optional alarm: 4 pole Phoenix connector.

#### RoHS Compliance

(Directive 2002/95/EC)  
Fully compliant

#### Warranty

Two years subject to application within good engineering practice

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

*Designer and manufacturer of quality converters, inverters, UPS systems, complete rack mount systems and DC-input fluorescent lamp inverters since 1982. Custom or standard. Absopulse is a BAPT-approved Facility*



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