

## 400W, Rugged, Encapsulated DC/DC Converter for Heavy Duty Applications PDC 400 Series

- Rugged, field-proven design
- Fully encapsulation
- Conduction cooling
- Full electronic protection
- Wide temperature range
- Wide input ranges



The PDC 400 Series fully encapsulated industrial quality DC/DC converter uses field-proven technology to generate up to 400W output power. It has an excellent track record in numerous heavy-duty applications. The unit is entirely potted with a thermally conductive MIL-grade silicon rubber compound to increase 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 manufactured at our plant under strict quality control. Versions that comply with EN 50155 railway specifications are available.

### SPECIFICATIONS

#### Input Voltage

24Vdc (21V – 30V)  
48Vdc (42 – 60V)  
125Vdc (95 – 140V)  
Consult factory for other voltages and ranges, including for railway

#### Input Protection

Inrush current limiting  
Varistor  
Reverse polarity protection  
Internal safety fuse  
Lower voltage than the specified input min. will not damage the unit

#### Isolation

1500Vdc input to chassis  
2250Vdc input to output,  
500VDC output to chassis  
as a minimum

#### Standards

Designed to meet EN 60950  
and related standards.

#### EMI

EN 55022 Class B

#### Switching Frequency

55kHz +/- 3kHz

#### 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 0.2%Vrms or  
1%Vpp of the output voltage  
(20MHz BW)

#### Output Overload Protection

Rectangular current limiting with short circuit protection  
Current limit typically set for 110% of nominal output current  
Thermal shutdown with automatic reset in case of insufficient cooling

#### Output Overvoltage Protection

Double regulator loop  
Typically set at 120% of nominal output voltage

#### Efficiency

Min. 80% at full load

#### Operating Temperature Range

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

#### Temperature Drift

0.03% per °C over operating  
temperature range

#### Cooling

Conduction cooling via base plate to customer chassis or heat-sink (cold plate)

#### Environmental Protection

Full encapsulation with thermally conductive silicon potting compound with UL94V-0 flammability rating.

#### Shock/Vibration

IEC 61373 Cat 1 A&B

#### Humidity

5 - 95% non-condensing

#### MTBF

145,000 hours at 45 °C  
Demonstrated MTBF is significantly higher.

#### Indicators

None

#### Control Input

None

#### Alarm Output

None

#### Dimensions

P400: 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 (4.8 lbs)

#### Connections

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

#### RoHS Compliance

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 BABT-approved Facility*



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