

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

PDC 400 Series

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



This 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 heatsinking 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

Fully encapsulated with thermally
conductive silicon compound

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 9.13")
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

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



ABSOPULSE ELECTRONICS LTD
110 Walgreen Road, Ottawa
Ontario, K0A 1L0, CANADA
Tel: (613) 836-3511 Fax: (613) 836-7488
E-mail: absopulse@absopulse.com
www.absopulse.com