

500W, Rugged, Encapsulated DC/DC Converter for Heavy Duty Applications

PDC 500 Series



- Field-proven rugged design
- Electronic protection
- Fully encapsulated
- Conduction cooling

The PDC 500 Series fully encapsulated single output DC/DC converter uses field-proven technology to generate 500W output power. It is conduction cooled via a base plate and is rated for full operation in the specified temperature range. The unit is entirely potted with a thermally conductive MIL-spec. silicon rubber compound for resistance against shock, vibration and humidity. The use of components with many years of established reliability and generous headroom results in a high MTBF. The unit is suitable for transportation, mining, oil rigs, military and other harsh environments. Versions to meet EN 50155 railway specifications are also available. Extra options including alarms and a redundancy diode are available on custom versions. A 600W version with 125Vdc input and 24Vdc or higher output is possible. The PDC 500 series is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

24Vdc (21V – 30V)
48Vdc (42V – 60V)
125Vdc (90V – 145V)
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 A with wide margins

Switching Frequency

55KHz +/- 3KHz

Output Voltages

12Vdc/40A, 24Vdc/20A,
48Vdc/10A or 110Vdc/4.5A
Output is floating; either terminal can be grounded.
Consult factory for other voltages

Redundancy Diode

Not installed.
Available on custom versions

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 (no hiccup)
Thermal shutdown with automatic reset in case of insufficient cooling

Output Overvoltage Protection

Double regulator loop

Efficiency

Typically 82% at full load

Operating Temperature Range

-40 to +60°C cold-plate
temperature for full specification
Extended temperature range available

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

Meets requirements of IEC 61373
Cat 1 A&B and Cat 2 as a minimum.

Humidity

5 - 95% non-condensing

MTBF

140,000 hours at 45°C
Demonstrated MTBF is significantly higher.

Indicators

None
Optional "Output ON" LED available

Control Input

None

Alarm Output

None
Available on custom versions

Package/Dimensions (W x H x L)

P 500: 140 x 76 x 257 mm
(5.5" x 3" x 10.1") including terminal block and flanges
Mounting holes are clear

Weight

3.5 kg (8 lb)

Connections

10-pole barrier type terminal block

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 AABT-approved Facility



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