

400W, Encapsulated DC/DC Converter for Railway and other Heavy Duty Applications RWY 400 Series



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

The RWY 400 Series fully encapsulated, single output DC/DC converter uses a field-proven design to generate 400W output power. It is a mature product with a track-record in numerous applications. This converter is entirely potted with a thermally conductive MIL-grade silicon rubber compound to ensure immunity to shock, vibration and humidity. It is conduction cooled via a base plate to a heatsinking surface. Low component count, large design headrooms, and the use of components with established reliability result in a high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on rolling stock. The unit is also suitable for transportation, mining, oil rigs, military and other harsh environments. The RWY 400 is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Standard Input Voltages

48Vdc (29 - 67V)
72Vdc (43 - 101V)
96Vdc (58 - 135V)
110Vdc (66 - 154V)
Other inputs upon request

Input Protection

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

Isolation

1500Vdc input to chassis
3000Vdc input to output
1500Vdc output to chassis

Standards

Meets EN60950 and EN50155

Immunity

Meets criteria of EN50155 and
EN50121-3-2 including:
EN 61000-4-2 (ESD)
EN61000-4-3 (RF Immunity)
EN61000-4-4 (Fast transients)
EN50155 (Surge)
EN61000-4-6 (Conducted Imm.)
EN50155 (Voltage Variations)

EMI

EN55022 Class B and
EN50121-3-2 conducted
and radiated

Switching Frequency

55kHz \pm 3kHz

Standard Output Voltages

12Vdc/33A, 24Vdc/16A,
36Vdc/11A or 48Vdc/8A
Consult factory for other voltages
Outputs are floating; either
terminal can be grounded

Redundancy Diode

Not installed on standard version

Line/Load Regulation

+/- 1% combined from zero load to
full load on each output

Dynamic Response

Max 5% voltage deviation for 10%
to 50% load step, with better than
1msec recovery time

Output Ripple/Noise

Less than 1% peak-to-peak or
0.2% RMS of the output voltage
(20MHZ BW)

Output Overload Protection

Rectangular current limiting with
short-circuit protection
(not hiccup)
Thermal shutdown with automatic
recovery in case of insufficient
cooling

Output Overvoltage Protection

Second regulator loop completely
stable and independent of main
regulator loop

Efficiency

80 to 90% depending on
input/output configuration

Operating Temperature Range

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

Temperature Drift

0.03% per °C over operating
temperature range

Cooling

Conduction cooling via base plate
to customer 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
Contact factory for higher rating

MTBF

150,000 hours @ 45 °C
Demonstrated MTBF is
significantly higher

Indicators

None.
Optional 'Output ON' LED
available

Control Input

None

Alarm Output

None. Available as option

Package/Dimensions (W x H x L)

P400: 131 x 76 x 232 mm
(5.2" x 3" x 9.1")
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 and customizing can be accommodated upon request. Specifications subject to change.

Designer and manufacturer of quality ac-dc power supplies and battery chargers, converters, inverters, dc-output 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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