

250W, Dual-Output Encapsulated DC/DC Converter for Railway & other Heavy Duty Applications RWY 252 Series



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

The RWY 252 Series fully encapsulated, dual output DC/DC converter uses a field-proven design to generate 250W output power. It employs forward topology on one output and push-pull topology on the other. Both outputs are individually regulated and current limited. This mature product has a track-record in numerous applications. It is entirely potted with a thermally conductive MIL-grade silicon rubber compound to ensure immunity to shock, vibration and humidity. The unit 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. It 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 252 is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Standard Input Voltages

24Vdc (14.4 – 34V)
36Vdc (22 – 51V)
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 & EN50121-3-2 conducted and radiated

Switching Frequency

80kHz \pm 5kHz Push-pull
130kHz \pm 5kHz Forward

Output Voltage/Current

Two individually regulated outputs. Any single voltage on either output within the 5V to 72Vdc range is available. Max 140W or max 12A for output 1 and max 110W or max 8A for output 2 (whichever represents the limit). Outputs are floating; either terminal can be grounded

Redundancy Diode

None

Line/Load Regulation

\pm 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 hiccup type short-circuit protection. Thermal shutdown with automatic recovery in case of insufficient cooling

Output Overvoltage Protection

Second regulator loop completely stable and independent of the main regulator loop for the main output. Transzorb installed across other output

Efficiency

80 to 90% depending on input/output configuration

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

Environmental Protection

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

Shock/Vibration

IEC 61373 Cat 1 A&B and Cat 2 as a min.

Humidity

5 – 95% non-condensing
Contact factory for higher rating

MTBF

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

Indicators

None.
Optional 'ON' LED available

Control Input

None

Alarm Output

None

Package/Dimensions

P300: 113 x 53 x 201 mm (4.4" x 2.1" x 7.9") including terminal block and flanges. Mounting holes are clear

Weight

1.3 kg (2.9 lbs)

Connections

9 pole barrier-type terminal block with 3/8" spacing.
Cover provided on request

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. Abopulse is a BABT-approved Facility.



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