

60W, Encapsulated DC/DC Converter for Railway and other Heavy Duty Applications

RWY 60-P100 Series

- Rugged, field-proven design
- Full encapsulation
- Wide temperature range
- Full electronic protection
- EN50155 input ranges



This fully encapsulated, railway quality power converter utilizes field-proven technology to generate the required output power. It is a mature design with a track record in numerous applications. The unit is entirely potted with a thermally conductive MIL-grade silicon rubber compound which provides protection from moisture and other contaminants, as well as immunity to shock and vibration. Cooling is by conduction via a base plate to a heatsinking surface. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on railway rolling stock. It is manufactured at our plant under strict quality control.

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

Designed to meet EN60950-1 and EN50155

Immunity

Meets criteria of EN50155 and EN50121-3-2 according to the following standards:
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

EN50121-3-2

Switching Frequency

135kHz \pm 5kHz

Output Voltage

12V or 24V are standard.
Output is floating, either terminal can be grounded
Other outputs upon request

Redundancy Diode

None

Line/Load Regulation

\pm 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

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 (hiccup type)
Thermal shutdown with automatic recovery in case of insufficient cooling

Output Overvoltage Protection

Transzorb installed across the 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 heat-sink or chassis

Environmental Protection

Full encapsulation with thermally conductive silicon potting compound with UL94V-0 flammability rating
Meets environmental criteria as requested in MIL-810 C, D

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 'ON' LED adapter available

Control Input

None

Alarm Output

None

Package/Dimensions (W x H x L)

P100: 58 x 54 x 181 mm (2.3" x 2.1" x 7.1")
Includes terminal block and flanges
The case has clear alodine finish according to MIL-C-5541E Class 3
Mounting holes are clear

Weight

0.6kg (1.4 lb)

Connections

5-pole barrier-type terminal block with 3/8" spacing
Cover can be provided upon request

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice.

Terminal Block Pin-Out

OUTPUT		GND	INPUT	
+	-	\perp	+	-
1	2	3	4	5



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