150W, Encapsulated, Conduction Cooled Railway Quality DC/DC Converter
RWY 150-P150 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. 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
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
80kHz ±5kHz

Output Voltage
12Vdc or 24Vdc
Output is floating, either terminal can be grounded
Other outputs upon request

Redundancy Diode
None

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 (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

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 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
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)
P150: 69 x 61 x 180 mm
2.7" x 2.4" x 7.1"
Includes terminal block and flanges
The case has clear alodyne finish according to MIL-C-5541E Class 3
Mounting holes are clear

Weight
0.8 kg (1.8 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	
+	-	⏚	+	-
1	2	3	4	5

HIGH VOLTAGE (HVPS) Condatas AG
Distribution electronic components

European Stocking Distributor
Phone: +41 44 730 33 53
Email: sales@hvps-condatas.com / www.hvps-condatas.com
Rietbachstrasse 7, 8952 Schlieren (ZH), Switzerland