

150W, Encapsulated Railway Quality DC-DC Converters, Conduction Cooled

RWY 150-P150 Series



- Rugged, field-proven design
- Full encapsulation
- Wide temperature range
- Full electronic protection
- EN 50155 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 EN 50155 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 EN 62368-1
 And EN 50155

Immunity

Meets criteria of EN 50155 and
 EN 50121-3-2 according to the
 following standards:
 EN 61000-4-2 (ESD)
 EN 61000-4-3 (RF Immunity)
 EN 61000-4-4 (Fast Transients)
 EN 50155 (Surge)
 EN 61000-4-6 (Conducted Imm.)
 EN 50155 (Voltage Variations)

EMI

EN 50121-3-2

Switching Frequency

80kHz \pm 5kHz

Output Voltage

12Vdc or 24Vdc
 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 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

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

ABSOPULSE power supplies are designed and built to customer requirements. The specifications on this data sheet are generic guidelines only and are subject to change

OEM of industrial and railway quality DC-DC converters, AC-DC power supplies and battery chargers, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard. ABSOPULSE is a BABT-approved Facility.



ABSOPULSE ELECTRONICS LTD

110 Walgreen Road, Ottawa, Ontario | K0A 1L0 | CANADA
 Tel: +1-613-836-3511 | Fax: +1-613-836-7488

<https://absopulse.com/contact> | <https://www.absopulse.com>