

250W Encapsulated DC-DC Converter for Railway and other Heavy Duty Applications RWY 259-P59 Series



- EN50155 input ranges
- For train and mobile applications
- Full encapsulation
- Wide temperature range
- Rugged, field-proven design
- Full electronic protection

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

Input Voltage (Range)

24Vdc (14.4 – 34V) or
36Vdc (22 – 51V) or
48Vdc (29 - 67V) or
72Vdc (43 – 101V) or
96Vdc (58 – 135V) or
110Vdc (66 - 154V).
Other inputs upon request

Input Protection

Inrush current limiting
Reverse polarity protection
Surge 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,
EN50155

Immunity

Meets criteria as requested in
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

55kHz \pm 3kHz

Standard Output Voltages

12V, 24V, 36, 48V or 72Vdc
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 (no
hiccup)

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 heat-sink or chassis

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.

Control Input

None

Alarm Output

None

Package/Dimensions (W x H x L)

P59: 108 x 6870 x 191mm
(4.25" x 2.7" x 7.5")
including terminal block and
flanges
Mounting holes are clear

Weight

1.5 Kg (3.2 lb)

Connections

9-pole barrier type terminal block,
3/8" spacing

RoHS Compliance

Compliant

Warranty

Two years subject to application
within good engineering practice

Terminal Block Pin-Out

DC OUTPUT				DC INPUT				
-	-	+	+	NOT USED	NOT USED	GND	-	+
1	2	3	4	5	6	7	8	9

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.



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