

Encapsulated DC/DC Converter for Railway and other Heavy Duty Applications RWY 30 ... 100 Series



- Field-proven rugged design
- For train and mobile applications
- Complete encapsulation
- Full electronic protection
- Wide input ranges

The RWY 30 ... 100 Series fully encapsulated single output DC/DC converter uses field-proven topology to generate up to 100W output power. It is a mature design with a track-record in hundreds of applications. The converter is conduction cooled via a base plate and is rated for operation over a -40 to +70°C temperature range without derating. It is entirely potted with a thermally conductive MIL-spec. silicon rubber compound for resistance against shock, vibration, humidity, moisture, dust and insects. The use of components with many years of established reliability and generous headroom results in a high demonstrated MTBF. The unit is intended for transportation, mining, oil rigs, military and other harsh environments. This design meets the requirements of EN50155 for electronic equipment used on rolling stock. The RWY 30 ... 100 Series is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Standard Input Voltages

24Vdc (14.4 – 37V)
36Vdc (22 – 55V)
48Vdc (28 – 74V)
72Vdc (42 – 110V)
110Vdc & 96Vdc (57 – 168V)
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 and
EN50121-3-2 conducted
and radiated

Switching Frequency

130kHz ±5kHz

Output Voltage/Current

12V or 24V are standard.
Other outputs upon request

Redundancy Diode

None

Line/Load Regulation

+/- 1.5% 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
hiccup type short-circuit protection

Output Overvoltage Protection

Transorb 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

Shock/Vibration

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

Humidity

5 – 95% non-condensing

MTBF

180,000 hours @ 45 °C
Demonstrated MTBF is
significantly higher

Indicators

None.
Optional 'ON' LED available

Control Input

None

Alarm Output

None

Package/Dimensions (W x H x L)

P100: 58 x 61 x 180 mm
(2.3" x 2.4" x 7.1") including
terminal block and flanges
Mounting holes are clear

Weight

0.8kg (1.8lb)

Connections

5-pole barrier-type terminal block
with 3/8" spacing.
Cover can be provided upon
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. Absopulse is a BABT-approved Facility.



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