

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



- Rugged, field-proven design
- Complete encapsulation
- Very wide temperature range
- Full electronic protection
- Wide input ranges

The RWY 30 ... 100 Series fully encapsulated, rugged, single output DC/DC converter uses a field-proven design to generate up to 100W output power. It is a mature product with a track-record in numerous of applications. This converter is entirely potted with a thermally conductive MIL-grade silicon rubber compound to ensure immunity to shock, vibration and humidity. It is conduction cooled via a base plate to a heatsinking surface. Low component count, large design headrooms, and the use of components with established reliability result in a high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on rolling stock. The RWY 30 ... 100 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

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  $\pm$ 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

+/- 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  
hiccup type short-circuit protection  
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.

#### Shock/Vibration

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

#### 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 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") 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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