

Encapsulated DC/DC Converter for Railway Video Monitoring and Wireless Networks RWF 15 ... 30 Series



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

The RWF 15 ... 30 Series fully encapsulated single output DC/DC converter was specifically designed for low power railway applications including video monitoring and wireless networks. It is also suitable for operation in industrial, mining, oil rig, military and other harsh environments. This mature design uses field-proven topology to generate up to 30W output power. It is conduction cooled via a base plate and is rated for operation over a -40 to +70°C temperature range without derating. The unit 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. This design meets the requirements of EN50155 for electronic equipment used on rolling stock. The RWF 15 ... 30 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 chassis or heat-sink

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.



ABSOPULSE ELECTRONICS LTD
110 Walgreen Road
Ottawa, Ontario. K0A 1L0. CANADA
Tel: (613) 836-3511 Fax: (613) 836-7488
E-mail: absopulse@absopulse.com
www.absopulse.com