

30W, Rugged DC/DC Converter for Railway Video Monitoring and Wireless Networks RWF 30 Series

- Rugged construction
- Single output
- Meets EN50155 and EN60950
- Complete encapsulation
- Conduction cooling
- Compact, cost-effective design



The RWF 30 series single output, forward converter provides 30W output power. This high-density unit is entirely potted with a thermally conductive MIL-spec. silicon rubber compound for resistance against shock, vibration, humidity, moisture, dust and insects. The converter is conduction cooled via a base plate and designed for operation within a wide temperature range without de-rating. The use of components with many years of established reliability and generous headroom contribute to the demonstrated MTBF exceeding 1,000,000 hours at typical operating temperatures. 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.

SPECIFICATIONS

Standard Input Voltages

24V (14.4 – 37Vdc)
36V (22 – 55Vdc)
48V (28 – 74Vdc)
72V (42 – 110Vdc)
110Vdc (57 – 168Vdc)
Other inputs upon request

Input Protection

Inrush current limiting.
Reverse polarity protection
Varistor
Internal safety fuse
Lower voltage than specified
input min. will not damage unit

Isolation

According to EN50155. Typically:
Input to chassis: 1500Vdc
Input to output: 3000Vdc
Output to chassis: 1500Vdc

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

Standard Output Voltage/Current

12V or 24V are standard.
Consult factory for other voltages

Switching Frequency:

130kHz \pm 5kHz

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 cooling surface
temperature for full specifications

Temperature Drift

0.03% per °C over operating
temperature range

Cooling

Conduction cooling via base plate
to customer chassis or heat-sink

MTBF

200,000 hours @ 45°C
Demonstrated MTBF exceeds
1,000,000 hours at typical
operating temperatures

Indicators

None.
Optional 'ON' LED available

Environmental Protection

Full encapsulation

Connections

5-pole barrier-type terminal block
with 3/8" spacing.

Dimensions

2.3" x 7.1" 2.4" including terminal
block and flanges

Weight

1.35lb (0.62kg)

Warranty

Twelve months 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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