

Encapsulated DC/DC Converter for Railway, Mobile and Industrial Applications RWY 15 ... 30 Series

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



The RWY 15...30 Series fully encapsulated, rugged, single output DC/DC converter uses a field-proven design to generate up to 30W output power. It is a mature product with a track-record in numerous 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 heat-sinking surface. Low component count, large design headroom, 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. RWY 15...30 is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Standard Input Voltages

24Vdc (14.4 – 34V) 15W max
36Vdc (22 – 51V) 25W max
48Vdc (29 – 67V) 30W max
72Vdc (43 – 101V) 30W max
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 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 +70o
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 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 oC
Demonstrated MTBF i

Indicators

None.
Optional 'ON' LED available

Control Input

None

Alarm Output

None

Package/Dimensions (W x H x L)

P30: 56 x 56 x 147 mm
(2.2" x 2.2" x 5.8") including
terminal blocks and flanges.
Mounting holes are clear.

Weight

0.5 kg (1.1 lb)

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 are subject to change.



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