

280W, Rugged Dual output DC/DC Converter for Railway and other Heavy Duty Applications

RWY 282 Series

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



The RWY 282 Series fully encapsulated, dual output, railway quality DC/DC converter uses a field-proven design to generate 280W output power. Both outputs are individually regulated and current limited. 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. The unit is also suitable for transportation, mining, oilrigs, military and other harsh environments. The RWY 282 is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Standard Input Voltages

36Vdc (22 – 51V)
48Vdc (29 - 67V)
72Vdc (43 – 101V)
96Vdc (58 – 135V)
110Vdc (66 - 154V)
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

Switching Frequency

80kHz \pm 5kHz

Standard Output Voltage/Current

Two individually regulated
outputs. Any single voltage on
either output within the 5V to
72Vdc range is available.
Max 140W or max 12A per output
(whichever represents the limit)
Outputs are floating; either
terminal can be grounded

Redundancy Diode

None

Line/Load Regulation

+/- 1.5% combined from zero load
to full load on each output

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

Transzorb installed across each
Output

Efficiency

80 to 90% depending on
input/output configuration

Operating Temperature Range

-40 to +70oC 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

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 is
significantly higher

Indicators

None.
Optional 'ON' LED available

Control Input

None

Alarm Output

None

Package/Dimensions

P300: 114 x 54 x 201 mm
(4.5" x 2.10" x 8") including
terminal block and flanges.
Mounting holes are clear

Weight

1.5 kg (3.2 lbs)

Connections

9 pole barrier-type terminal block
with 3/8" spacing. Cover provided
Cover provided on 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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