

## 250-300W, Encapsulated, Railway Quality DC/DC Converter RWY 300H-P300H Series



- Rugged, field-proven design
- Complete encapsulation
- Full electronic protection
- Wide temperature range
- EN50155 input ranges
- N+1 redundancy by built in diode on request

This fully encapsulated, railway quality DC/DC converter uses field-proven RWY 302 technology to generate the required output power. The design is based on field-proven topology, which has a track record in numerous applications. The use of the latest semiconductor technology enables lower component count than earlier generations. Comprehensive electronic protection, generous design headroom and the use of components with established reliability ensure high MTBF. The unit is entirely potted with a thermally conductive MIL-grade silicon rubber compound which provides immunity to shock, vibration and humidity. An optional built-in redundancy diode allows for parallel and N+1 operation. Cooling is by conduction via a base plate to a heat-sinking surface. The unit meets the requirements of EN50155 for electronic equipment used on rolling stock. It is manufactured at our plant under strict quality control.

### SPECIFICATIONS

#### Standard Input Voltages

24Vdc (14.4 – 34V)  
36Vdc (22- 51V)  
48Vdc (29 - 67V)  
72Vdc (43 - 101V)  
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

Designed to meet EN60950-1, EN50155

#### Immunity

Meets criteria of EN50155 and EN50121-3-2 according to the following standards:  
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

EN50121-3-2

#### Switching Frequency:

55kHz ±3kHz

#### Standard Output Voltages

Any single voltage from 58V to 300Vdc  
Output power is 250-300W depending on the input/output combination.  
Output is floating; either terminal can be grounded  
Consult factory for other voltages  
For lower outputs, see RWY 280H series

#### Redundancy Diode

None  
Available on request

#### Line/Load Regulation

±1% 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 short-circuit protection (no hiccup)  
Thermal shutdown with automatic recovery in case of insufficient cooling

#### Output Overvoltage Protection

Second regulator loop completely stable and independent of main regulator loop

#### Efficiency

80 to 90% depending on input/output configuration

#### Operating Temperature Range

-40 to +70°C cold plate 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.  
Meets environmental criteria as requested in MIL-810 C, D

#### Shock/Vibration

IEC 61373 Cat 1 A&B

#### Humidity

5 – 95% non-condensing

#### MTBF

150,000 hours @ 45 °C  
Demonstrated MTBF is significantly higher

#### Indicators

None.  
LED module for installation on the terminal block is available

#### Control Input

None

#### Alarm Output

None  
Available on request

#### Package/Dimensions (W x H x L)

P300H: 113 x 60 x 200 mm (4.5" x 2.4" x 7.9") including terminal block and flanges  
Mounting holes are clear

#### Weight

1.5 kg (3.3 lbs)

#### Connections

9-pole barrier type terminal block 3/8" spacing

#### RoHS Compliance

Compliant

#### Warranty

Two years subject to application within good engineering practice

Terminal Block Pin-out.

DC OUTPUT			DC INPUT					
+	NOT USED	NOT USED	-	NOT USED	NOT USED	GND	+	-
1	2	3	4	5	6	7	8	9



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