

100W, Rugged, Dual-output, Railway Quality AC/DC Power Supply MIW 152R Series

- Field-proven rugged design
- For train and mobile applications
- Two individually regulated outputs
- Conduction/convection cooled
- Full electronic protection



The MIW 152R Series rugged, railway quality, dual-output AC/DC power supply uses field proven topology to generate up to 100W continuous power, depending on the input/output configuration. It has two individually regulated isolated outputs. This mature design has a track record in numerous applications. Cooling is via base plate to a heat-sinking surface and by natural convection. Ruggedizing and conformal coating provide added immunity to shock, vibration and humidity. Full electronic protection, 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 EN 50155 for electronic equipment used on railway rolling stock. It is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

95V to 264Vac universal
47 - 63Hz
Consult factory for other voltages

Input Protection

Inrush current limiting
Varistor
Internal safety fuse
Lower voltage than the specified minimum input will not damage the unit

Isolation

2250Vdc input to chassis
4300Vdc input to output
8mm spacing
1000Vdc output to chassis
1000Vdc between outputs

Standards

Designed to meet EN60950 and EN50155

Immunity

Meets criteria as requested in EN50155 and EN50121-3-2 according to the following standards
EN61000-4-2 (ESD)
EN61000-4-3 (RF Immunity)
EN61000-4-4 (Fast Transients)
EN50155 (Surge)
EN61000-4-6 (Conducted Immunity)
EN50155 (Voltage Variations)

EMI

EN55022 Class B and EN50121-4 conducted and radiated

Hold Up Time

Min. 5ms at nominal input for 5% Drop of the output voltage

Switching Frequency

47KHz +/- 2KHz

Output Voltage

V1: any voltage 3.3V-110Vdc
V2: any voltage 3.3V-24Vdc/3Amax
Both outputs are individually regulated, floating and isolated from each other.
Either terminal can be grounded.
Consult factory for other voltages

Redundancy diode

None
Available as option

Line/Load Regulation

±1% combined from no load to full load on both outputs

Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

Output Ripple/Noise

Better than 1% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHZ BW) on both outputs

Overload Protection

Rectangular current limiting with short-circuit protection (hiccup type)

Output Overvoltage Protection

V1: double regulator loop
V2: tranzorb

Efficiency

80 to 90% at full load depending on input/output configuration

Operating Temperature

-25°C to +55°C cold-plate temperature range for full specification.
Consult factory for extended temperature range

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Conduction to customer heat-sink or chassis and natural convection

Environmental Protection

Full ruggedizing
Conformal coating

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 – 95% non-condensing

MTBF

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

Indicators

Green output ON LED visible through cooling slots

Control Input

None

Alarm Output

None
Available as option

Package/Dimensions (W x H x L)

F1: 114 x 51 x 201 mm
(4.5" x 2" x 7.9") including terminal block and flanges.
Mounting holes are clear

Weight

0.8kg (1.8 lbs)

Connections

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

RoHS

Fully compliant

Warranty

Two years subject to application within good engineering practice

Terminal Block Pin-out

O/P V1		O/P V2		INPUT				
+	-	+	-	N/A	N/A	GND	(+) PH	(-) N
1	2	3	4	5	6	7	8	9



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