

100W Dual-output EN50155 Compliant AC-DC Power Supply for Railway and other Heavy-Duty Applications MIW 152R-F1 Series



- Field-proven rugged design
- For train and mobile applications
- EN50155 input ranges
- Two individually regulated outputs
- Conduction/convection cooled
- Full electronic protection

This rugged, railway quality AC-DC power supply with two individually regulated isolated outputs uses field proven topology to generate the required output power. Cooling is via base plate to a heat-sinking surface and by natural convection. Additional cooling is achieved by natural convection through the cooling slots. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also provides exceptional mechanical ruggedness. Conformal coating provides protection against humidity and airborne contaminants. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF. The unit meets the requirements of EN50155 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 EN62368-1 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

EN55032 Class A with wide margins

Hold Up Time

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

Switching Frequency

47kHz \pm 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

\pm 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: transzorb

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: 113 x 51 x 198 mm
4.45" x 2" x 7.8"
Includes baseplate, excludes terminals
Mounting holes are clear

Weight

0.8kg (1.8 lb.)

Connections

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

RoHS

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

ABSOPULSE power supplies are designed and built to customer requirements. The specifications on this data sheet are generic guidelines only and are subject to change
OEM of industrial and railway quality DC-DC converters, AC-DC power supplies and battery chargers, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard. ABSOPULSE is a BABT-approved Facility.



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