

300W, IP66-Rated, Rugged Railway Quality AC-DC Power Supply with PFC-input PFC 65R-D3 Series (IP66)



- Electronic power factor correction (PFC)
- Packaged in waterproof IP66 enclosure
- For train and mobile applications
- Internal boards ruggedized and conformal coated
- Rugged, field-proven design
- Full electronic protection
- N+1 redundancy available

The rugged railway quality AC-DC power supply with power factor corrected input utilizes field proven topology to generate the required output power. The units are enclosed in robust, waterproof, die cast aluminum D3 size IP66 packages. The input and output are via sealed cable glands, circular connectors or custom connections. The internal boards are ruggedized and conformal coated for immunity to high levels of shock and vibration. Cooling is by internal conduction to the walls of the IP66 enclosure and by baseplate to an external chassis or cabinet wall, with additional convection via the outside surface. If installed on a heat-sinking surface, cooling is further enhanced and the converters achieve higher output power. An optional built-in redundancy diode allows for parallel and N+1 operation. Other options include a Form C output fail alarm and remote shutdown. Full electronic protection, low component count, large design headroom, and the use of components with established reliability contribute to high MTBF. The power supply meets the requirements of EN50155 for electronic equipment used on railway rolling stock. The unit is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

95-264Vac universal
47-63Hz
Input Current: 3.8Arms max. at 95V
Power factor is min 0.97 at full load for the entire input range
Meets EN 61000-3-2

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

Standards

Designed to meet EN60950-1, 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)
EN 50155 (Surge)
EN 61000-4-6 (Conduction Immunity)
EN50155 (Voltage Variations)

EMI

EN50121-3-2

Hold Up Time

Minimum 5ms at full load for 5% drop of output voltage at nominal input

Switching Frequency

80kHz \pm 3kHz

Output Voltage

24Vdc, 48Vdc or 110Vdc
300W continuous
Output is floating. Either terminal can be grounded
Other outputs and increased output power on request

Redundancy Diode

Not installed.
Available on request

Line/Load Regulation

\pm 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

Current limiting with short circuit protection (No hiccup)
Self-resetting thermostat for thermal protection

Output Overvoltage Protection

Double regulator loop

Efficiency

85% at full load

Operating Temperature Range

-25 °C to 55 °C base plate temperature for full specification
Extended temperature ranges available on request

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Conduction to customer heat-sink or chassis and by additional natural convection via the surface of the IP66 enclosure

Environmental Protection

IP66 enclosure
Internal module: Ruggedized and conformal coated
Potting of the internal module is also available

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5-100% condensing

MTBF

150,000 at 45°C
Demonstrated MTBF is significantly higher

Indicators

None

Control Input

None
Optional

Alarm Output

Not installed
Optional output Fail Alarm

Package/Dimensions (L x W x H)

D3: 360 x 160 x 90 mm
14.2" x 6.3" x 3.5"
D3 with baseplate:
406 x 160 x 94 mm
(16" x 6.3" x 3.7")

Weight

Approx. 4.6 kg (10 lb)

Connections

Internal barrier-type terminal block accessible via sealed cable glands.
Optional connectors instead of cable glands

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice

Internal Terminal Block Pin-out

INPUT			GND				OUTPUT					
+	-	⊥	NOT USED	NOT USED	NOT USED	-	-	+	+	NOT USED	NOT USED	
12	11	10	9	8	7	6	5	4	3	2	1	

The specifications on this data sheet are generic and are subject to change. Enhancements to these specifications can be provided upon request.

OEM of industrial & railway quality AC/DC power supplies and battery chargers, DC/DC converters, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" & 23" racks since 1982. Custom or standard. ABSOPULSE is a BABT-approved facility.



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