

200W, Rugged, Railway Quality, Convection Cooled DC-DC Converter LTH-65R-F3TH Series



- For train and mobile applications
- Meets requirements of EN50155
- Regulated and adjustable output
- Pure convection cooling by heat-sink fins
- Full electronic protection
- N+1 redundancy available as option

This rugged, railway quality DC-DC converter uses field proven topology to generate up to 200W output power. Cooling is via heat-sink fins on the top of the unit for installations where surface mounting is not possible. The unit can also be installed on thermally non-conductive surfaces, such as plastic, or on curved, uneven surfaces. An optional built-in redundancy diode allows for paralleling and N+1 operation or back-up battery connected. Ruggedizing and conformal coating ensure higher 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 EN50155 for electronic equipment used on rolling stock. It is manufactured at our plant under strict quality control. Customized versions are available.

SPECIFICATIONS

Input Voltage
12Vdc (10.5-16V)
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 and EN45545

Immunity
Meets criteria as requested in EN50155 and EN50121-3-2 according to:
EN61000-4-2 (ESD)
EN61000-4-3 (RF Immunity)
EN61000-4-4 (Fast Transient)
EN50155 (Surge)
EN61000-4-6 (Conducted immunity)
EN50155 (Voltage variation)

EMI
EN50121-3-2

Switching Frequency
55kHz ±3kHz

Output Voltage
Any voltage in the 12V to 125V range
12V, 24V, 48V or corresponding float voltages are standard
Output is floating; either terminal can be grounded
Other outputs on request

Redundancy diode
Not included
Available as option

Line/Load Regulation
± 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
Better than 1% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHZ BW)

Overload Protection
Rectangular current limiting with short-circuit protection (no hiccup)
Thermal shutdown in case of insufficient cooling (self -resetting)

Output Overvoltage Protection
Double regulator loop. Second loop completely stable and independent of main regulator loop

Efficiency
Typically 85% at full load depending on input/output combination

Operating Temperature
-25°C to + 55°C for full specification
Extended temperature ranges with derating

Temperature Drift
0.03% per °C over operating temperature range

Cooling
Convection by heat-sink fins on top of unit

Environmental Protection
Ruggedizing
Conformal coating

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
Green 'Output ON' LED visible through cooling slots

Control Input
None

Alarm Output
None on standard version
Optional output fail, Form C contacts

Package/Dimensions (W x D x L)
F3TH: 132 x 91 x 300mm
(5.2" x 3.6" x 11.8")
Mounting holes are clear

Weight
2.8 kg (6.2lbs)

Connections
Barrier type terminal block with 9.5mm spacing, 12 poles

RoHS Compliance
Compliant

Warranty
Two years subject to application within good engineering practice

Terminal Block Pin-Out

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

Enhancements to these general specifications and customizing can be accommodated upon request. Specifications are subject to change.

Designer and manufacturer of quality ac-dc power supplies and battery chargers, converters, inverters, dc-output UPS systems, complete rack mount systems and DC-input fluorescent lamp inverters since 1982. Custom or standard. Absopulse is a BABT-approved Facility.



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