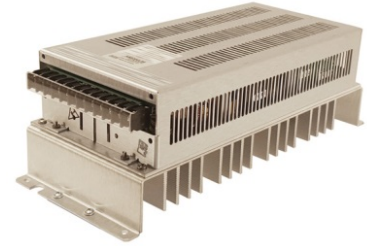


250W, Rugged DC-DC Converter with Convection Cooling by a Built-in Heatsink Assembly for Railway and other Heavy Duty Applications LTH 65R-F3-HSA Series



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

This rugged, railway quality DC-DC converter uses field proven topology to generate the required output power. It is based on a mature design with a track record in numerous applications. An optional built-in redundancy diode allows for paralleling and N+1 operation or back-up battery connected. Convection cooling is achieved by installing a heatsink assembly block with fins to the under-surface of the unit. The heatsink assembly also allows for mounting on uneven and thermally non-conductive surfaces. Ruggedizing and conformal coating provide immunity to shock, vibration, 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. The power supply is chassis-mounted. A DIN-rail option is available for trackside applications. An industrial quality version of this design, the LTH 65-F3-HSA, is also available.

SPECIFICATIONS

Input Voltage

12Vdc nominal
10.5-16Vdc operating range
Input current: 29A max.
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 \pm 3kHz

Output Voltage

24V, 48V or 125Vdc
Output is floating; either
terminal can be grounded
Other outputs on request

Redundancy diode

Not included
Available as option

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

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
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
attached to the under surface

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

Package/Dimensions (W x H x L)

F3 enclosure on HAS heatsink
assembly with fins:
132mm x 102mm x 323mm
(5.2" x 4" x 12.7")
Mounting holes are clear

Weight

3kg (6.6 lbs)

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

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

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

Designer and manufacturer of DC-DC converters, AC-DC power supplies, DC-AC sine wave inverters, AC-AC frequency converters, 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.



ABSOPULSE ELECTRONICS LTD

110 Walgreen Road, Ottawa, Ontario. K0A 1L0. CANADA
Tel: +1-613-836-3511 | Fax: +1-613-836-7488 E-mail:

<https://absopulse.com/contact> | <https://www.absopulse.com>