

1500W, 12Vdc to 48Vdc/30A Industrial Quality, Step-up (Boost) DC-DC Converter

LTH 1K5-12/48-3U4



- Rugged industrial quality
- Field-proven design
- Regulated output
- Cooling by high quality internal fans
- Full electronic protection
- Parallelable

This rugged, industrial-quality power converter utilizes field proven technology to generate the required output power. The unit is built with four LTH 65F internal modules that are connected parallel via redundancy diodes. This modular construction also provides inherent redundancy; the failure of one internal module only causes a drop in output power while the unit remains operational. The input and output are filtered for low noise. High quality built-in fans provide sufficient airflow for operation within the specified temperature range without de-rating. The fans draw air into the unit, which exhausts at the terminal side of the unit. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to a heatsink plate. This also ensures 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 is manufactured at our plant under strict quality control. Two or more units can be parallel connected for higher output power.

SPECIFICATIONS

Input Voltage

12Vdc nominal
10.5-16V operating range
Input current: 115A
Other inputs upon request

Input Protection

Reverse polarity protection by crowbar diode
Internal safety fuse link
Lower voltage than specified minimum input will not damage unit

Isolation

700Vdc input to chassis
1500Vdc input to output,
1000VDC output to chassis

Standards

Designed to meet EN62368-1
And corresponding standards

EMI

EN55032 Class A with margins

Switching Frequency

40kHz $\pm$ 3kHz

Output Voltage

48Vdc $\pm$ 0.5V/30A
Output is floating; either terminal can be grounded
Other outputs on request

Output Separation diode

Installed internally for separation of the internal modules and for parallel connection

Line/Load Regulation

$\pm$ 1.5 combined from zero load to full load including separation diodes

Dynamic Response

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

Output Ripple/Noise

Better than 80mVrms or 400mVpp (@ 20MHz BW)

Output Overload Protection

Rectangular current limiting with short circuit protection
Thermal shutdown with automatic reset in case of insufficient cooling
Current Limit set to: 33A $\pm$ 3A

Output Overvoltage Protection

Double regulator loop. Second loop completely stable and independent of main regulator loop
OVP setting: 53V $\pm$ 3V

Efficiency

Typically 80% at full load

Operating Temperature

-20 °C to 50°C for full specification
Extended temperature ranges with derating

Temperature Drift

0.03% per °C over operating temperature range

Cooling

By built-in high-quality fans

Environmental Protection

Ruggedizing
Conformal coating

Shock/Vibration

IEC61373 Cat 1 A&B

Humidity

5-95% non-condensing

MTBF

160,000 hours@45°C per internal module (Fans excluded)
Demonstrated MTBF is significantly higher

Indicators

Green "Output ON" LED on each internal module, visible through the cooling slots.

Control Input

None

Alarm Output

Not installed

Package/Dimensions (H x W x D)

3U4: 132 x 244 x 381 mm
(3U) 5.2" x 9.6" x 15"
Excludes connectors and mounting brackets. Mounting brackets are included

Weight

8.7kg (19 lbs)

Connections

Input: Threaded studs M6
Output: Terminal block Phoenix 75A type

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice
Contamination related failures and shipping costs excluded

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

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