300W, High Reliability, High Temperature, Conduction/Convection Cooled, Industrial Quality DC/DC Converter BHT 319-F4 Series

- Operation up to 85 ° C
- No optocouplers, no electrolytics
- Rugged, industrial quality
- Cooling by conduction/convection only (no fans or forced air)

Output Voltages

300W continuous

can be grounded

Redundancy diode

Available as option

Line/Load Regulation

Dynamic Response

2msec recoverv time

Output Ripple / Noise

(20MHz BW)

peak to peak or 0.2% Vrms

Output Overload Protection

Thermal shutdown in case of

short-circuit protection

Double regulator loop.

Rectangular current limiting with

insufficient cooling (self -resetting)

Output Overvoltage Protection

Transzorb across the output

±2% combined from 10% load

Max 5% voltage deviation for 10%

to 50% load step, with better than

Better than 1% of output voltage

Not installed

to full load

voltages

24V, 48V, 72V or 125Vdc

Consult factory for other

Output is floating; either terminal

- Rugged construction
- Conformal coating

Input Voltage

24Vdc (21-34V)

48Vdc (42-70V)

110Vdc (90-135V)

Input Protection

Varistor

the unit

Isolation

Standards

EMI

Inrush current limiting

Internal safety fuse

voltage, minimum:

related standards

Switching Frequency

55kHz ±3kHz

1000Vdc input to chassis

3000Vdc input to output

1000Vdc output to chassis

Designed to meet EN 60950-1 and

Min. EN 55022 Class A with margins

125Vdc (105-150V)

Other inputs upon request

Reverse polarity protection

Lower voltage than the specified

minimum input will not damage

Corresponding to input/output

- High input/output isolation
- Full electronic protection
- Customized versions available



This rugged, industrial quality DC/DC converter is designed for a long operating life at high operating temperatures. By eliminating optocouplers and electrolytic capacitors, the MTBF of the unit is greatly improved over conventional designs. The unit operates over a wide temperature range of -40°C to 85°C for full specification. In addition, all heat generating components are installed on aluminum heat-sink blocks which are thermally coupled to the heatsink fins and cooled by natural convection. The internal boards are conformal coated for immunity to humidity and contamination. The construction is robust and withstands high levels of shock and vibration. The input and output are filtered for low noise. Full electronic protection eliminates failure due to abnormal operating conditions, including application errors. Large design headroom and the use of components with established reliability also contribute to the long operating life of the unit. It is manufactured at our plant under strict quality control. A railway quality version of this design, the BHT 319R-F4, is also available.

SPECIFICATIONS

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

Operating Temperature Range -40 ° C to 85 ° C for full specification

Temperature Drift 0.03% per °C, over operating temperature range

Cooling Conduction to customer heat-sink or chassis and natural convection

Environmental Protection

Ruggedizing Conformal coating Heavy ruggedizing available on request

Shock/Vibration IEC 61373 Cat 1 A&B

Humidity 5 - 95% non-condensing

MTBF

240,000 hours at 45 °C Expected operating life is min. 30 years Indicators Green 'Output ON LED' visible through cooling slots

Control Input Optional

Alarm Output Not installed Output fail alarm Form C contacts installed on request

Package/Dimensions (W x H x L) F4: 130 x 64 x 353 mm 5.1" x 2.5" x 13.9 including terminal block and mounting flanges Mounting holes are clear

Weight 2.2 kg (4.9 lb)

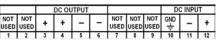
Connections 12-pole barrier type terminal block with 3/8" spacing

RoHS Compliance Compliant

Warranty Two years subject to application

within good engineering practice

Terminal Block Pin-outs





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