

500W, High Temperature, High DC-input Voltage, Conduction Cooled Industrial Quality DC/DC Converters HHT 500-FX Series

- Operation up to 85 °C
- High DC-input voltage
- Wide DC-input range
- No optocouplers, no electrolytics
- Rugged, industrial quality
- Cooling by conduction
- Rugged construction
- Conformal coating
- Full electronic protection
- Customized versions available



This rugged, industrial quality DC/DC converter is designed for applications that require high DC-input voltage 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 baseplate temperature range of -40 °C to 85 °C for full specification. All heat generating components are installed on aluminum heat-sink blocks which are thermally coupled to the heatsink fins and cooled by conduction. 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.

SPECIFICATIONS

Input Voltage

400Vdc (300-500V)
500Vdc (400-600V)
600Vdc (500-700V)
Other inputs upon request

Input Protection

Inrush current limiting
Varistor
Reverse polarity protection
Internal safety fuse
Lower voltage than the specified minimum input will not damage the unit

Isolation

Corresponding to input/output voltage, minimum:
2500Vdc input to chassis
4300Vdc input to output
500Vdc output to chassis

Standards

Designed to meet EN60950-1 and related standards

EMI

Min. EN55022 Class A with margins

Switching Frequency

55kHz ±5kHz

Output Voltages

24V, 48V, 72V or 125Vdc
500W continuous
Output is floating; either terminal can be grounded
Consult factory for other voltages

Redundancy diode

Not installed
Available as option

Line/Load Regulation

±2% combined from 10% load to full load

Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 2msec recovery time

Output Ripple / Noise

Better than 1% of output voltage peak to peak or 0.2% Vrms (20MHz BW)

Output Overload Protection

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

Output Overvoltage Protection

Second regulator loop, completely stable and independent of main regulator loop

Efficiency

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

Operating Temperature Range

-40 °C to 85 °C base plate temperature for full specification

Temperature Drift

0.03% per °C, over operating temperature range

Cooling

Conduction to customer heat-sink or chassis, assisted by 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

170,000 hours at 70 °C
Demonstrated MTBF is significantly higher.

Indicators

Green 'Output ON LED' visible through cooling slats

Control Input

Optional

Alarm Output

Not installed
Output fail alarm Form C contacts installed on request

Package/Dimensions (W x H x L)

FX: 153 x 67 x 358 mm
6" x 2.7" x 14.2" 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

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



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