

500W, Rugged, Industrial Quality, Fan Cooled AC/DC Converter HBC 65F and HBC 65TF Series

- Rugged industrial quality
- Field-proven design
- Cooling by built-in fans
- Low noise output
- Full electronic protection
- N+1 redundancy as option



This rugged, industrial quality AC/DC converter has a proven track-record in numerous heavy-duty projects. It is the fan cooled version of the field proven HBC 65 Series. The units are available in two mechanical formats. The FF3 chassis is cooled by two long life fans on one side of the unit, with additional conduction via base plate to a heat-sinking surface. Alternatively, the F3TF version is cooled entirely by two long-life fans on the top of the unit; no additional cooling is required. This version is raised above the installation surface, which allows for mounting on uneven or thermally non-conductive surfaces. An optional built-in redundancy diode allows for paralleling and N+1 operation or back-up battery connected. Additional ruggedizing and conformal coating are available for applications that require 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 is manufactured at our plant under strict quality control. Customized versions are available.

SPECIFICATIONS

Input Voltage

115/230Vac ±15%
Voltage selection by internal jumper
or 300Vdc ±15%
47 - 63Hz
Other inputs are available on request

Input Protection

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

Isolation

2250Vdc input to chassis
4300Vdc input to output;
8mm spacing
500Vdc output to chassis

Standards

Designed to meet EN60950-1 and related standards

EMI

EN 55022 Class A with margins

Switching Frequency

55kHz ±3kHz

Hold Up Time

Min. 5ms at any input for 5% drop in output voltage

Output Voltage

12Vdc/40A, 24Vdc/20A,
48Vdc/10A or 125Vdc/4A
Output is floating; either terminal can be grounded
Other outputs on request

Redundancy diode

Available as an 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 0.2% rms or 1% peak- to-peak 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 completely stable and independent of main loop

Efficiency

Typically 80% at full load depending on input/output combination

Operating Temperature

0 °C to 50 °C full specification
Extended temperature ranges available with de-rating

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Forced air by two high quality built-in fans

Environmental Protection

Basic ruggedizing
Optional heavy ruggedizing and conformal coating is available

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 - 95% non-condensing

MTBF

130,000 hours @ 45 °C (fans excluded)
Demonstrated MTBF is significantly higher.

Indicators

None on standard version
Available as option

Control Input

None on standard version
Available as option

Alarm Outputs

None on standard version
Available as option

Package/Dimensions (W x H x L)

F3TF chassis - fans on top of unit
132 x 100 x 300 mm
(5.2" x 3.9" x 11.8") or
FF3: 155 x 64 x 300 mm
(6.1" x 2.5" x 11.8") including terminal block and flanges
Mounting holes are clear.

Weight

2.3kg (5 lbs)

Connections

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

RoHS Compliance

Fully compliant

Warranty

Two years subject to application within good engineering practice

Terminal Block Pin-out

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



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