

## 500W, Rugged, Industrial Quality DC/DC Converter with Pure Convection Cooling BAP 65TH-FT Series

- Rugged industrial quality
- Field-proven design
- Regulated and adjustable output
- Pure convection cooling by heat-sink fins
- Full electronic protection
- N+1 redundancy by built in diode as option
- Plug-in (Eurocard) version available



This rugged, industrial quality DC/DC converter uses field-proven topology to generate up to 500W output power. It is a mature design with a track record in numerous applications. Cooling is via heat-sink fins on the top of the unit; installation on a heat-sinking surface is not required. The unit can also be installed on thermally non-conductive surfaces, such as plastic, or on curved, uneven surfaces. An optional built-in redundancy diode allows for paralleling and N+1 operation or back-up battery connection. 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 headrooms, 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

48Vdc (42-56V)  
125Vd (90-145V)  
For other input voltages and ranges, please consult factory

#### 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

According to input voltage minimum of:  
1400Vdc input to chassis,  
2300VDC input to output,  
1000VDC output to chassis

#### Standards

Designed to meet EN60950-1 and corresponding UL and CSA standards

#### EMI

EN 55022 Class A as minimum

#### Switching Frequency

55kHz  $\pm$ 3kHz

#### Output Voltages

48V or 125Vdc  
Max output power 500W  
Output is floating; either terminal can be grounded  
For other output voltages, please consult factory.

#### Redundancy diode

None  
Installed on request

#### 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% Vrms (20MHz BW)

#### Output 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 85% at full load depending on input/output combination

#### Operating Temperature Range

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

#### Temperature Drift

0.03% per °C over operating temperature range

#### Cooling

Convection by heat-sink fins on top of unit

#### Environmental Protection

Basic ruggedizing  
Heavy ruggedizing and conformal coating as option

#### Shock/Vibration

IEC 61373 Cat 1 A&B

#### Humidity

5 - 95% non-condensing

#### MTBF

130,000 hours at 45 °C  
Demonstrated MTBF is significantly higher

#### Indicators

Green 'Output ON LED' visible through cooling slots

#### Control Input

Optional

#### Alarm Output

None on standard version  
Output fail alarm Form C contacts installed on request

#### Package/Dimensions (W x H x L)

F3TH (Modified F3 with heat-sinks):  
132 x 91 x 300 mm  
(5.2" x 3.6" x 11.8") including terminal block and mounting flanges  
Mounting holes are clear

#### Weight

2.8 kg (6.2 lb)

#### 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-outs

$\leq$ 125V Output

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



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