

250W, Rugged, Industrial Quality DC-DC Converters BAP 190-F1 Series



- Rugged industrial quality
- Field-proven design
- Regulated and adjustable output
- Conduction/convection cooling (no fans)
- Full electronic protection
- N+1 redundancy by built in diode as option

This rugged, industrial quality-DC converter utilizes field-proven technology to generate the required output power. It is a mature design with a track record in numerous applications. Cooling is by conduction via baseplate. Additional cooling is achieved by natural convection through the cooling slots. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also provides exceptional mechanical ruggedness. Conformal coating provides protection against humidity and airborne contaminants. Additional ruggedizing and conformal coating are available on request for applications that require immunity to high levels of shock, vibration and humidity. An optional built-in redundancy diode allows for parallel and N+1 operation. 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.

SPECIFICATIONS

Input Voltage

125Vdc nominal
Operating range 90-145Vdc
Input Current: 3.3A max.
Consult factory for other voltages

Input Protection

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

Isolation

1500Vdc input to chassis
2250Vdc input to output
500Vdc output to chassis

Standards

Designed to meet EN60950 and corresponding standards

EMI

EN55022 Class A with margins

Switching Frequency

55kHz \pm 3kHz

Output Voltage/Current

12V/20A, 24V/10A or 48V/5A
Total output power 250W continuous
Output is floating; either terminal can be grounded
Consult factory for other voltages

Redundancy Diode

Installed on request

Line/Load Regulation

\pm 1% combined from no load to full load including redundancy diode

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 with automatic reset in case of insufficient cooling

Output Overvoltage Protection

Double regulator loop. Second loop completely stable and independent of main regulator loop

Efficiency

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

Operating Temperature Range

0°C to 50°C for full specification
Extended temperature ranges available

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Conduction via base plate to customer heat-sink or chassis and natural convection

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

150,000 hours at 45°C
Demonstrated MTBF is significantly higher

Indicators

Green output ON LED visible through cooling slots

Control Input

None

Alarm Output

None
Output Fail Form C contacts installed on request

Package/Dimensions (W x D x H)

F1: 114 x 51x 201 mm (4.5" x 2" x 7.9") including terminal block and flanges.
Mounting holes are clear

Weight

0.8 kg (1.8 lb)

Connections

9-pole barrier type terminal block
3/8" spacing

RoHS Compliance

Fully compliant

Warranty

Two years subject to application within good engineering practice

Terminal Block Pin-Out

ALARM (OPTION)			DC OUTPUT			DC INPUT		
FAIL OPEN	COM	FAIL CLOSED	-	+	NOT USED	GND	-	+
1	2	3	4	5	6	7	8	9

The specifications on this data sheet are generic and are subject to change. Enhancements to these specifications can be provided upon request.

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