

500W, Rugged DC-DC Converter for Heavy-duty Industrial Applications BAP 319-F4 Series

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



This rugged, industrial quality DC/DC converter uses field-proven topology 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. An optional built-in redundancy diode allows for parallel and N+1 operation. Full electronic protection, low component count, large design headroom, and the use of components with established reliability result in a high MTBF. The series is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

24Vdc (21-29V)
48Vdc (42-56V)
125Vd (105-145V)
(12Vdc input with reduced power)
Consult factory for other voltages

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:
1000VDC input to chassis,
1500VDC input to output,
500VDC output to chassis

Standards

Designed to meet EN60950-1 and related standards

EMI

EN 55032 Class A as a minimum

Switching Frequency

80KHz ±5KHz

Output Voltages

12V, 24V, 48V or 125Vdc
Total output power 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

±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 (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 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 to customer heat-sink or chassis and natural convection

Environmental Protection

Ruggedizing
Conformal coating

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 - 95% non-condensing

MTBF

160,000 hours at 45°C
Demonstrated MTBF is significantly higher

Indicators

None
Available as option

Control Input

None

Alarm Output

None
Available as option

Package/Dimensions (W x H x L)

F4: 130 x 62 x 351 mm
5.1" x 2.43" x 13.82" includes flanges, excludes terminal block
Mounting holes are clear

Weight

2.2 kg (4.9 lb)

Connections

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

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice

Terminal Block Pin-out

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

ABSOPULSE power supplies are designed and built to customer requirements. The specifications on this data sheet are generic guidelines only and are subject to change.

OEM of industrial and railway quality DC-DC converters, AC-DC power supplies and battery chargers, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard. ABSOPULSE is a BABT-approved Facility.



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