

500W, IP66-Rated, Rugged Industrial, DC-DC Power Converter BAP 319-D4 Series (IP66)



- Packaged in waterproof IP66 enclosure
- Internal module ruggedized and conformal coated
- Regulated and adjustable output
- Full electronic protection
- Field-proven design
- N+1 redundancy available

The rugged industrial quality DC-DC power converters utilize field proven topology to generate the required output power. They are packaged in waterproof, rugged, die cast aluminum IP66 enclosures. The input and output are via sealed cable glands, circular connectors or custom connections. The internal boards are ruggedized and conformal coated for immunity to high levels of shock and vibration. Cooling is by internal conduction to the walls of the IP66 enclosure and by baseplate to an external chassis or cabinet wall, with additional convection via the outside surface. If installed on a heat-sinking surface, cooling is further enhanced and the converters achieve higher output power. 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 contribute to high MTBF. The unit is manufactured at our plant under strict quality control. High temperature, opto-less versions of this design are also available.

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 55022 Class A with margins

Switching Frequency

55kHz \pm 3kHz

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

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

Operating Temperature Range

-25 °C to 55 °C for full specification
Extended temperature ranges available on request

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Conduction to customer heat-sink or chassis and by additional natural convection via the surface of the IP66 enclosure

Environmental Protection

IP66 enclosure
Internal module: Ruggedized and conformal coated
Potting of the internal module is also available

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

None

Control Input

None

Alarm Output

None
Available as option

Package/Dimensions (L x W x H)

D4: 400 x 230 x 110 mm (15.7" x 9.1" x 4.3") excluding baseplate and connectors
D4 with baseplate: 448 x 230 x 113 mm (17.6" x 9.1" x 4.55)

Weight

8 kg; 17.6 lb

Connections

Internal barrier-type terminal block, 3/8" spacing accessible via sealed cable glands
Optional connectors instead of cable glands

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice

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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ABSOPULSE ELECTRONICS LTD

110 Walgreen Road, Ottawa. Ontario | K0A 1L0 | CANADA

Tel: +1-613-836-3511 | Fax: +1-613-836-7488

E-mail: absopulse@absopulse.com | <http://www.absopulse.com>