

200W, Rugged, Convection Cooled DC/DC Plug-in module for Railway and other Heavy Duty Applications BAP 236R-EH Series



- Field-proven rugged design
- For train and mobile applications
- Convection cooled
- Full electronic protection
- Wide selection of input/output combinations
- N+1 redundancy
- 3U x 220mm Eurocard

The BAP 236R-EH Series rugged, single-output DC/DC converter in Eurocard (Plug-in) format utilizes field proven topology to generate 200W output power. It is a mature design with a track record in hundreds of applications. The series is rated for operation over a -25 to +70°C temperature range without derating, with natural convection cooling. The internal redundancy diode allows parallel connection to achieve higher output power or N+1 redundancy. These models are fully ruggedized and conformal coated for immunity to shock, vibration, humidity, moisture, dust and insects. This 3U x 220mm Eurocard design is optimized for low component count and high efficiency. The use of components with established reliability results in a demonstrated MTBF exceeding 1,000,000 hours. The BAP 236R-EH is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Input Voltage

24Vdc (14.4 – 37V)
36Vdc (22 – 55V)
48Vdc (28 – 74V)
72Vdc (42 – 110V)
110Vdc and 96Vdc (57 – 168V)
Other inputs upon request

Input Protection

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

Isolation

1500Vdc input to chassis
3000Vdc input to output
1500Vdc output to chassis

Standards

Meets EN60950 and EN50155

Immunity

Meets criteria of EN50155 and EN50121-3-2 including:
EN61000-4-2 (ESD)
EN61000-4-3 (RF Immunity)
EN61000-4-4 (Fast Transient)
EN50155 (Surge)
EN61000-4-6 (Conducted immunity)
EN50155 (Voltage variation)

EMI

EN55022 Class B and
EN50121-3-2 conducted
and radiated

Switching Frequency

55kHz +/- 3kHz

Output Voltage

Any DC output up to 130Vdc

Redundancy diode

Installed

Line/Load Regulation

Typically +/-1% from no load to
full load including output
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% RMS of the
output voltage (20MHZ BW)

Overload Protection

Current limiting with short circuit
protection. Self-resetting thermostat
for thermal protection

Output Overvoltage Protection

Double regulator loop

Efficiency

80 - 90% depending on
input/output configuration

Operating Temperature

-25 to +70°C with convection
cooling.
Unimpeded airflow required.

Temperature Drift

0.03% per °C over operating
temperature range

Cooling

Convection by natural air
movement

Environmental Protection

Ruggedizing
Conformal coating

Shock/Vibration

Designed to meet IEC 61373
Cat 1 A&B and Cat 2 as a min.

MTBF

170,000 hours @ 45 °C
Demonstrated MTBF exceeds
1,000,000 hours at typical operating
temperatures

Indicators

Output ON green LED on the
front panel

Control Input

Optional

Alarm Outputs

Optocoupler alarm output
(C-E low-normal)

Package/Dimensions (H x W x D)

3U x 14HP x 220mm
Eurocard plug-in module

Weight

1.13 kg (2.5 lb)

Connections

H15 connector

RoHS Compliance

Fully compliant

Warranty

Two years subject to application
within good engineering practice

Enhancements to these general specifications and customizing can be accommodated upon request.

Designer and manufacturer of quality ac-dc power supplies and battery chargers, converters, inverters, dc-output UPS systems, complete rack mount systems and DC-input fluorescent lamp inverters since 1982. Custom or standard. Absopulse is a BABT-approved Facility.



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