

200W, Rugged, DC/DC Plug-in module for Railway and other Heavy Duty Applications

BAP 236R-EH Series

- ◆ Rugged, field-proven 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, railway quality 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 numerous applications. Cooling is by natural convection. Ruggedizing and conformal coating provide added immunity to shock, vibration and humidity. The internal redundancy diode allows parallel connection to achieve higher output power or N+1 redundancy. Low component count, large design headroom, and the use of components with established reliability result in a high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on railway rolling stock. It is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Input Voltage

24Vdc (14.4 – 34V)
36Vdc (22 – 51V)
48Vdc (29 – 67V)
72Vdc (43 – 101V)
96Vdc (58 – 135V)
110Vdc (66 – 154V)
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 +70oC with convection cooling.
Unimpeded airflow required.

Temperature Drift

0.03% per oC over operating temperature range

Cooling

Convection by natural air Movement

Environmental Protection

Ruggedizing
Conformal coating

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 – 95% non-condensing

MTBF

170,000 hours @ 45 oC
Demonstrated MTBF is significantly higher.

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.



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