

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 input range (EN50155)
- N+1 redundancy
- 3U x 220mm Eurocard (Plug-in) module

This rugged, industrial quality plug-in DC-DC converter utilizes field-proven technology to generate the required output power. It is a mature design with a track record in numerous applications. A built-in redundancy diode allows parallel connection to achieve higher output power or N+1 redundant operation, including hot-insertion. The series is rated for operation over a -25 to +70°C temperature range without derating, with natural convection cooling. Heat generating components are installed on an aluminum heatsink block, which is connected to the heatsink plate on the side of the module. This also provides exceptional mechanical ruggedness. The input and output are filtered for low noise. 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. The unit meets the requirements of EN50155 for electronic equipment used on railway rolling stock. An industrial quality version of this design is 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

Designed to meet EN60950-1 and EN50155

Immunity

Meets criteria as requested in EN50155 and EN50121-3-2 according to:
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

EN50121-3-2

Switching Frequency

55kHz ±3kHz

Output Voltage

Any DC output up to 130Vdc

Redundancy diode

Installed internally
Hot swap allowed

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

IEC 61373 Cat 1 A&B

Humidity

5 – 95% non-condensing

MTBF

170,000 hours @ 45 °C
Demonstrated MTBF is significantly higher

Indicators

Output ON green LED on the front panel.
Test points for output voltage before redundancy diode

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

1.2 kg (2.6 lb)

Connections

H15 connector

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice

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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