300W, Rugged DC/DC Converter for Railway and other Heavy-Duty Applications
BAP 65R-FT Series

- Field-proven rugged design
- For train and mobile applications
- Conduction/convection cooled
- Full electronic protection
- Wide selection of input/output combinations
- N+1 redundancy available

The BAP 65R Series rugged, railway quality DC/DC converter uses field proven topology to generate 300W output power. It is a mature design with a track record in numerous applications. Cooling is by conduction via baseplate to a heat-sinking surface and by natural convection. Ruggedizing and conformal coating provide added immunity to shock, vibration and humidity. An optional redundancy diode allows parallel connection to achieve higher output power or N+1 redundancy. Other options include a Form C output fail alarm and remote shutdown. This chassis-mount design is optimized for low component count and high efficiency. The use of components with established reliability results in a demonstrated high MTBF. The unit meets the requirements of EN 50155 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
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 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
EN55022 Class B and EN50121-3-2 conducted and radiated

Switching Frequency
55kHz +/- 3kHz

Output Voltage
Any single DC output up to 130Vdc

Redundancy diode
Not included.
Available as option

Line/Load Regulation
+/-1% from no 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% 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 +55oC cold-plate temperature.
Extended temperature ranges Available

Temperature Drift
0.03% per oC over operating temperature range

Cooling
Conduction to customer heatsink or chassis and natural convection

Environmental Protection
Heavy ruggedizing
Conformal coating

Shock/Vibration
IEC 61373 Cat 1 A&B

Humidity
5 – 95% non-condensing

MTBF
150,000 hours @ 45 oC
Demonstrated MTBF is significantly higher.

Indicators
Output ON green LED visible through the cooling slot

Control Input
Optional

Alarm Outputs
Optional

Package/Dimensions (W x H x L)
F3: 132mm x 64mm x 300mm (5.2" x 2.5" 11.8") including terminal block and mounting flanges
Mounting holes are clear

Weight
2 kg (4.4 lb)

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

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.

ANALYTIC SYSTEMS
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