

## BXB50 Series

### Single output

**Total Power:** 33 - 50W  
**Input Voltage:** 18 - 36VDC  
36 - 75VDC  
**# of Outputs:** Single

### Special Features

- Industry standard footprint
- MTBF >1.4 million hours (Bellcore 332)
- Input voltage to ETS300-132-2
- Adjustable output voltage
- No minimum load required
- Separate case ground pin
- 2:1 input range for battery powered applications
- Undervoltage lockout (UVLO)
- UL, VDE and CSA safety approvals
- Available RoHS compliant
- 2 year warranty

### Safety

VDE0805/EN60950/IEC950  
File No. 10401-3336-0205  
Licence No. 40012035

UL60950 File No. E136005

CSA C22.2 No. 950  
File No. LR41062C



Rev.03.08.07  
bxb50s  
1 of 4

The BXB50 Series are high power density dc-dc converters packaged in the industry standard footprint (2.40 x 2.28 x 0.50 inches) to give designers optimum choices when specifying for both new and replacement designs. Suitable for a wide range of applications in nearly any industry, the BXB50 was particularly designed with communication and distributed power applications in mind. Using Bellcore 332, the MTBF is greater than 1,400,000 hours. Aluminum baseplate technology with four threaded M3 inserts makes heatsink attachment and optimum thermal management easy. The BXB50 series are approved to IEC950 by UL, CSA and VDE.



# Specifications

All specifications are typical at nominal input, full load at 25°C unless otherwise stated.

## OUTPUT SPECIFICATIONS

|  |  |                            |
|--|--|----------------------------|
| Voltage adjustability                                | 60% to 110%  |                            |
| Set point accuracy                                   | ±1.0%  |                            |
| Line regulation                                      | Low line to high line                                      | ±0.05%                     |
| Load regulation                                      | Full load to min. load                                     | ±0.10%                     |
| Minimum load   | 0%   |                            |
| Overshoot  | At turn-on and turn-off                                    | None                       |
| Undershoot   | None   |                            |
| Ripple and noise<br>(5 Hz to 20 MHz)<br>(See Note 1) | 3.3 V and 5 V  | 75 mV pk-pk,<br>20 mV rms  |
|  | 12 V and 15 V  | 100 mV pk-pk,<br>30 mV rms |
| Temperature coefficient                              | ±0.01%/°C  |                            |
| Transient response<br>(See Note 2)                   | ±2.0% max. deviation<br>170 μs recovery<br>to within ±1.0% |                            |
| Remote sense   | 0.5 Vdc transmission<br>line drop compensation             |                            |

## INPUT SPECIFICATIONS

|  |                              |   |
|--|------------------------------|---|
| Input voltage range                      | 24Vin nominal                | 18-36 Vdc                                   |
|  | 48Vin nominal                | 36-75 Vdc                                   |
| Input current                            | No load                      | 100 mA max.                                 |
|  | Remote OFF                   | 20 mA max.                                  |
| Input current (max.)<br>(See Note 4)     | 48 V models                  | 3.5 A max. @ Io max.<br>and Vin = 0 to 75 V |
| Input reflected ripple                   | (See Note 6)                 | 5 mA pk-pk                                  |
| Active low remote ON/OFF<br>(See Note 7) |                              |   |
| Logic compatibility                      | Open collector ref to -input |   |
| ON                                       |                              | 1.2 Vdc max.                                |
| OFF                                      | Open circuit                 |   |

## INPUT SPECIFICATIONS CONTINUED

|                               |                    |        |
|-------------------------------|--------------------|--------|
| Undervoltage lockout          | 24 Vin: power up   | 17 V   |
|                               | 24 Vin: power down | 16 V   |
|                               | 48 Vin: power up   | 34 V   |
|                               | 48 Vin: power down | 32.5 V |
| Start-up time<br>(See Note 8) | Power up           | 20 ms  |
|                               | Remote ON/OFF      | 20 ms  |

## EMC CHARACTERISTICS

|                                     |                  |         |
|-------------------------------------|------------------|---------|
| Conducted emissions<br>(See Note 3) | Bellcore 1089    | Level A |
|                                     | FCC part 15      | Level A |
|                                     | EN55022, CISPR22 | Level A |

## GENERAL SPECIFICATIONS

|   |   |                 |
|---|---|-----------------|
| Efficiency                              | See table   |                 |
| Isolation voltage                       | Input/case  | 1500 Vdc        |
|   | Input/output  | 1500 Vdc        |
|   | Output/case   | 1500 Vdc        |
| Switching frequency                     | Fixed   | 500 kHz typ.    |
| Approvals and standards<br>(See Note 5) | VDE0805, EN60950, IEC950<br>UL1950, CSA C22.2 No. 950 |                 |
| Case material                           | Aluminum baseplate with plastic case                  |                 |
| Material flammability                   | UL94V-0   |                 |
| Weight                                  | 110 g (3.88 oz)                                       |                 |
| MTBF                                    | Bellcore 332  | 1,400,000 hours |
|   | MIL-HDBK-217F   | 580,000 hours   |
|   | @ 40 °C, 100% load                                    | min.            |

## ENVIRONMENTAL SPECIFICATIONS

|                     |                      |                     |
|---------------------|----------------------|---------------------|
| Thermal performance | Operating case temp. | -40 °C to +100 °C   |
|                     | Non-operating        | -55 °C to +125 °C   |
| Altitude            | Operating            | 10,000 feet max.    |
|                     | Non-operating        | 40,000 feet max.    |
| Vibration           | 5-500 Hz             | 2.4 G rms (approx.) |

## Specifications Contd.

| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OVP      | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX.) | EFFICIENCY (TYP.) | REGULATION |        | MODEL NUMBER (7,9,10) |
|---------------------|---------------|----------|----------------|-----------------------|-----------------------|-------------------|------------|--------|-----------------------|
|                     |               |          |                |                       |                       |                   | LINE       | LOAD   |                       |
| 33 W                | 18-36 Vdc     | 4.3 Vdc  | 3.3 V          | 0 A                   | 10 A                  | 76%               | ±0.05%     | ±0.10% | BXB50-24S3V3FLTJ      |
| 50 W                | 18-36 Vdc     | 14.5 Vdc | 12 V           | 0 A                   | 4.16 A                | 83%               | ±0.05%     | ±0.10% | BXB50-24S12FLTJ       |
| 50 W                | 18-36 Vdc     | 17.5 Vdc | 15 V           | 0 A                   | 3.33 A                | 83%               | ±0.05%     | ±0.10% | BXB50-24S15FLTJ       |
| 33 W                | 36-75 Vdc     | 4.3 Vdc  | 3.3 V          | 0 A                   | 10 A                  | 77%               | ±0.05%     | ±0.10% | BXB50-48S3V3FLTJ      |
| 50 W                | 36-75 Vdc     | 6.5 Vdc  | 5 V            | 0 A                   | 10 A                  | 82%               | ±0.05%     | ±0.10% | BXB50-48S05FLTJ       |
| 50 W                | 36-75 Vdc     | 14.5 Vdc | 12 V           | 0 A                   | 4.16 A                | 84%               | ±0.05%     | ±0.10% | BXB50-48S12FLTJ       |

### Notes

- 1 Measured with 10  $\mu$ F tantalum capacitor and 1  $\mu$ F ceramic capacitor across output.
- 2  $di/dt = 0.1$  A/1  $\mu$ s,  $V_{in} = 48$  Vdc,  $T_c = 25$  °C, load change = 0.5  $I_o$  max. to 0.75  $I_o$  max. and 0.75  $I_o$  max. to 0.5  $I_o$  max.
- 3 Units should be characterised within systems. External components required.
- 4 Input fusing is recommended based on surge current and maximum input current.
- 5 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- 6 Simulated source impedance of 12  $\mu$ H. 12  $\mu$ H inductor in series with +Vin.
- 7 Active high remote on/off option is available (standard product is active low), designate with the suffix 'FHT' e.g. **BXB50-48S05FHTJ**. Consult factory for further details and options.
- 8 Start-up into resistive load.
- 9 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 10 NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative

### PROTECTION

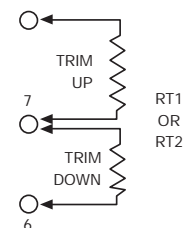
|               |                                      |
|---------------|--------------------------------------|
| Short circuit | Continuous, automatic recovery       |
| Overvoltage   | Non-latching                         |
| Undervoltage  | Non-latching                         |
| Thermal       | 110 °C baseplate, automatic recovery |

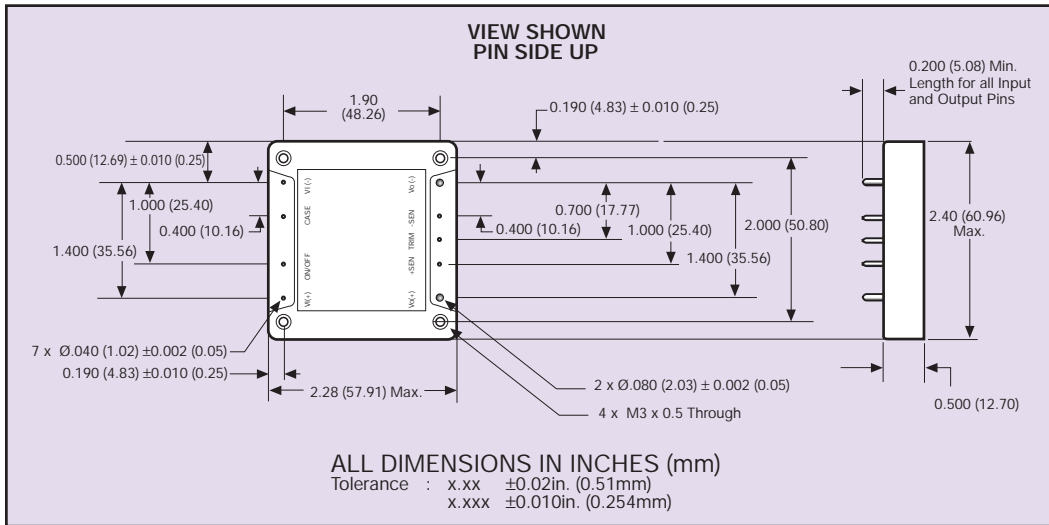
### TELECOM SPECIFICATION

|                            |              |
|----------------------------|--------------|
| Central office interface A | ETS300-132-2 |
|----------------------------|--------------|

### EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by using the method shown.





| PIN CONNECTIONS |               |
|-----------------|---------------|
| PIN NUMBER      | FUNCTION      |
| 1               | + Vin         |
| 2               | Remote ON/OFF |
| 3               | Case          |
| 4               | - Vin         |
| 5               | - Vout        |
| 6               | - Sense       |
| 7               | Trim          |
| 8               | + Sense       |
| 9               | + Vout        |

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