

## 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



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.

Rev.03.08.07  
bxb50s  
1 of 4



# 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 (5 Hz to 20 MHz) (See Note 1)	3.3 V and 5 V	75 mV pk-pk, 20 mV rms
	12 V and 15 V	100 mV pk-pk, 30 mV rms
Temperature coefficient	±0.01%/°C	
Transient response (See Note 2)	±2.0% max. deviation 170 µs recovery to within ±1.0%	
Remote sense	0.5 Vdc transmission 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.) (See Note 4)	48 V models	3.5 A max. @ Io max. and Vin = 0 to 75 V
Input reflected ripple	(See Note 6)	5 mA pk-pk
Active low remote ON/OFF (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 (See Note 8)	Power up	20 ms
	Remote ON/OFF	20 ms

## EMC CHARACTERISTICS

Conducted emissions (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 (See Note 5)	VDE0805, EN60950, IEC950 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.

Rev.03.08.07  
bxb50s  
3 of 4

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  $di/dt = 0.1 \text{ A}/1 \mu\text{s}$ ,  $V_{in} = 48 \text{ Vdc}$ ,  $T_c = 25^\circ\text{C}$ , 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  $\mu\text{H}$ . 12  $\mu\text{H}$  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

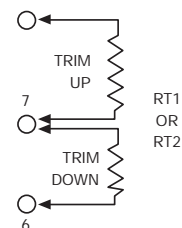
Short circuit	Continuous, automatic recovery
Overvoltage	Non-latching
Undervoltage	Non-latching
Thermal	110 $^\circ\text{C}$ baseplate, automatic recovery

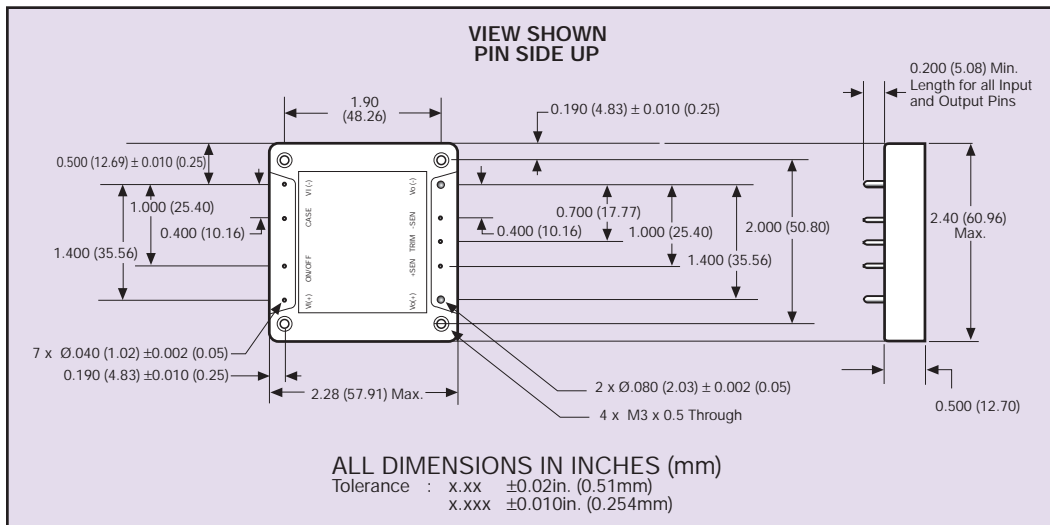
### TELECOM SPECIFICATION

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