EXB250 Series

Single output

ARTESYN TECHNOLOGIES

- **High efficiency topology, 90% typical at 3.3 V**
- **Industry standard footprint**
- **Wide baseplate temperature, -40 °C to +100 °C (natural convection)**
- **90% to 110% output trim**
- **No minimum load**
- **Overvoltage protection**
- **Remote ON/OFF**
- **Available RoHS compliant**

RoHS 2002/95/EC



The EXB250 is a new high efficiency, open-frame, isolated 165 Watt converter series in an industry standard half-brick footprint. The EXB250 delivers very high output current at low voltages, and excellent useable power density for today's high end applications. The design takes advantage of open frame construction to provide a low weight, low thermal impedance baseplate design. The seven models in the series feature an input voltage range of 33 Vdc to 75 Vdc and are available in output voltages of 12 V, 5 V, 3.3 V, 2.5 V, 1.8 V, 1.5 V and 1.2 V. The output voltage on each model is adjustable from 90% to 110% of the nominal value. Typical efficiencies for the models are 90% for the 3.3 V, 88% for the 2.5 V and 87% for the 1.8 V version. The EXB250 series also has a remote ON/OFF capability. Overcurrent and overvoltage protection features are included as standard. With full international safety approval including EN60950 (TÜV Rheinland) and UL/cUL1950, the EXB250 reduces compliance costs and time to market.

c UL us TÜV

2 YEAR WARRANTY

SPECIFICATIONS

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

OUTPUT SPECIFICATIONS

Voltage adjustability		90% to 110%
Set point accuracy		±1.6% max.
Line regulation Low line to high line	1.2 V model All other models	±0.2% max. ±0.1% max.
Load regulation	Full load to min. load	±0.2% max.
Minimum load		0%
Overshoot	At turn-on and turn-off	None
Undershoot	1.2 V, 1.5 V (Z), 1.8 V (Z), 2.5 V (Z) and 3.3 V (Z) models	None
Ripple and noise	5 Hz to 20 MHz	60 mV pk-pk 20 mV rms
Transient response (See Note 1)		6% max. deviation 150 µs recovery to within total error band

INPUT SPECIFICATIONS

Input voltage range	48 Vin nominal	33-75 Vdc
Input current	No load Remote OFF	145 mA max. 35 mA max.
Input current (max.) (See Note 3)		5.7 A max. @ Io max. and Vin = 33-75 Vdc
Input reflected ripple	(See Note 5)	350 mA (pk-pk) typ.
Active high remote ON/OFF Logic compatibility ON OFF		Open collector ref to -input Open circuit or >4.0 Vdc <1.2 Vdc
Undervoltage lockout	Power up Power down	32.5 V (typ.) 30.5 V (typ.)
Start-up time (See Note 6)	Power up Remote ON/OFF	10 ms (typ.) 3 ms (typ.)

EMC CHARACTERISTICS

Conducted emissions	EN55022 (See Note 2) EN55022 (See Note 2)	Level A Level B
Immunity:		
ESD air	EN61000-4-2	8 kV (NP), 15 kV (NP)
ESD contact	EN61000-4-2	6 kV (NP), 8 kV (NP)
Radiated field enclosure	EN61000-4-3	10 V/m (NP)
Conducted (DC power)	EN61000-4-6	10 V (NP)
Conducted (signal)	EN61000-4-6	10 V (NP)
Input transients	ETS 300 132-2, ETR 283	

GENERAL SPECIFICATIONS

Efficiency		See table
Operational	Input/output Input/baseplate	1500 Vdc 1500 Vdc
Switching frequency	Fixed	400 kHz typ.
Approvals and standards (See Note 4)		EN60950 (TÜV Rheinland) UL/cUL1950
Material flammability		UL94V-0
Weight		73 g (2.6 oz)
MTBF	Telcordia SR-332 @ 25 °C, 100% load ground benign Demonstrated	1,598,243 hours >2,000,000 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating baseplate temperature Non-operating	-40 °C to +100 °C -40 °C to +125 °C

EXB250 Series

Single output

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER (8,9)
							LINE	LOAD	
72 W	33-75 Vdc	1.44 Vdc	1.2 V	0 A	60 A	84.0%	±0.2%	±0.2%	EXB250-48S1V2J
90 W	33-75 Vdc	1.8 Vdc	1.5 V	0 A	60 A	85.5%	±0.1%	±0.2%	EXB250-48S1V5J
108 W	33-75 Vdc	2.2 Vdc	1.8 V	0 A	60 A	87.0%	±0.1%	±0.2%	EXB250-48S1V8J
150 W	33-75 Vdc	3 Vdc	2.5 V	0 A	60 A	88.0%	±0.1%	±0.2%	EXB250-48S2V5J
165 W	33-75 Vdc	4 Vdc	3.3 V	0 A	50 A	90.0%	±0.1%	±0.2%	EXB250-48S3V3J
165 W	33-75 Vdc	6 Vdc	5 V	0 A	33 A	91.7%	±0.1%	±0.2%	EXB250-48S05J
165 W	33-75 Vdc	14.4 Vdc	12 V	0 A	13.75 A	92.0%	±0.1%	±0.2%	EXB250-48S12J

Part Number System with Options

EXB250-48S1V2-ZRNJ

- **EX** = Open Frame, Through Hole
- **B** = 1/2 Brick
- **Output Wattage Class**: 250 = 250 Watts
- **Input Voltage**: 48 = 48 Volts (33 Vdc to 75 Vdc range)
- **Number of Outputs**: S = Single
- **Output Voltage**: 1V2 = 1.2 V, 1V5 = 1.5 V etc
- **RoHS Compliance** (8,9): J = Pb-free (RoHS 6/6 compliant)
- **Pin Length of Standard Product**: Blank = 0.210 " (5.33 mm)
  Pin Length of Modified Standard Products: N = 0.145 " (3.68 mm), K = 0.110 " (2.79 mm)
- **Control Logic**: Blank = Positive, R = Negative
- Blank = Standard Product, Z = Zero Undershoot, Soft Turn-off Characteristic (Applies to 1.5 V, 1.8 V, 2.5 V and 3.3 V models only)

Notes

1. di/dt = 0.1 A/µs, Vin = 48 Vdc, Tc = 25 °C, load change = 0.5 Io max. to 0.75 Io max. and 0.75 Io max. to 0.5 Io max.
2. The EXB250 meets level A and level B conducted emissions only with external components connected before the input pins to the converter. See Application Note 119.
3. Recommended input fusing is a 10 A HRC 200 V rated fuse.
4. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
5. Measured with no external Pi filter. Significant reduction possible with external filter. See Application Note 119.
6. Start-up into resistive load.
7. For the pin length of Modified Standard products please consult the factory.
8. 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.
9. 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.

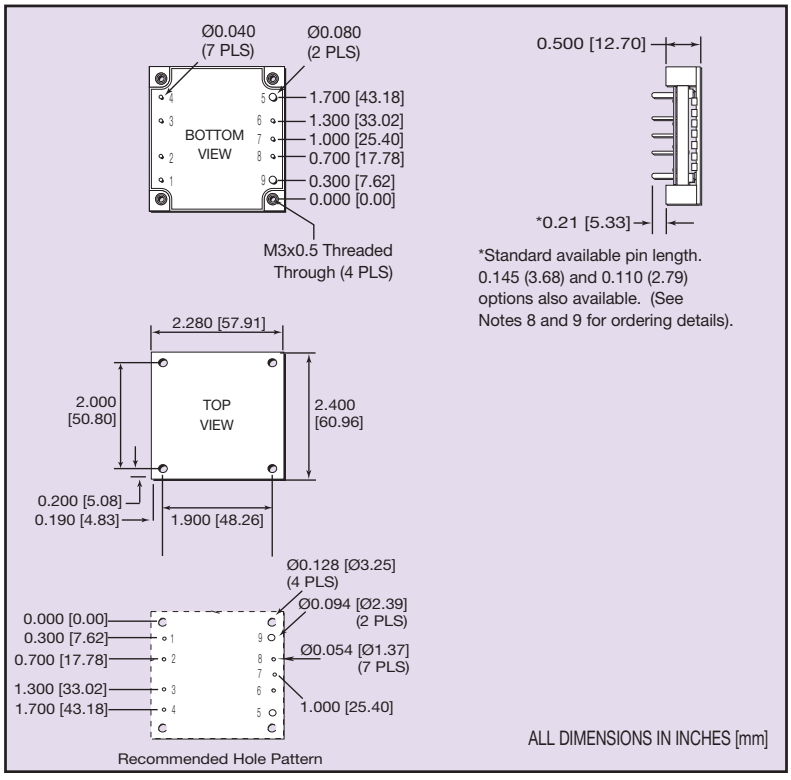
PROTECTION

Short circuit	Continuous
Overvoltage	Non-latching clamp

TELECOM SPECIFICATION

Central office interface A	ETS300-132-2 input voltage and current requirements

CAUTION: Hazardous internal voltages and high temperatures. Ensure that unit is not user accessible.



PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	+Vin
2	Remote On/Off
3	No Function
4	-Vin
5	-Vout
6	-Sense
7	Trim
8	+Sense
9	+Vout

International Safety Standard Approvals

c UL us UL/cUL : UL1950 File No. E135734

TÜV TÜV Rheinland File No. 10401-336-0209. Licence No. 40013414
CB Scheme No.DE1-32227

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