

EXB250 Series

Single output

- 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

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.



2 YEAR WARRANTY

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

SPECIFICATIONS

OUTPUT SPECIFICATIONS

| | | |
|------------------------------------|--|--------------------------|
| Voltage adjustability | 90% to 110% | |
| Set point accuracy | ±1.6% max. | |
| Line regulation | 1.2 V model | ±0.2% max. |
| Low line to high line | All other models | ±0.1% max. |
| Load regulation | Full load to min. load | ±0.2% max. |
| Minimum load | 0% | |
| Overshoot | At turn-on and turn-off | |
| 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 | |

EMC CHARACTERISTICS

| | | |
|--------------------------|------------------------|-----------------------|
| Conducted emissions | EN55022 (See Note 2) | Level A |
| Immunity: | EN55022 (See Note 2) | Level B |
| 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 | 1500 Vdc |
| | Input/baseplate | 1500 Vdc |
| Switching frequency | Fixed | |
| 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 | -40 °C to +100 °C |
| | Non-operating | -40 °C to +125 °C |

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.) |

EXB250 Series

Single output

DC-DC CONVERTERS 72-165 W High Efficiency DC-DC Converters

2

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 lo max. to 0.75 lo max. and 0.75 lo max. to 0.5 lo 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

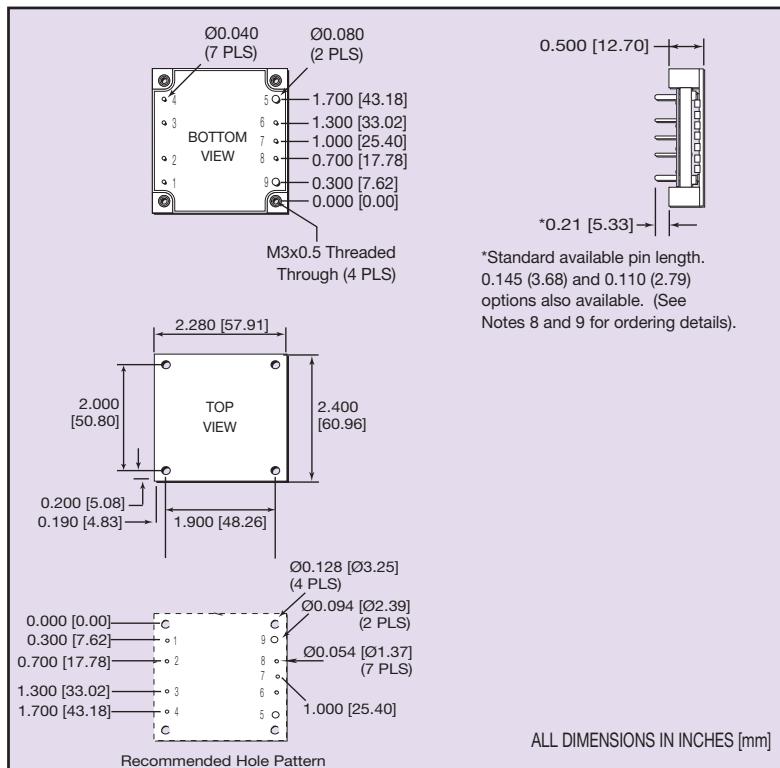
Central office interface A ETS300-132-2 input voltage and current requirements

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

EXB250 Series

Single output

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



| 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



UL/cUL : UL1950 File No. E135734



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

Datasheet © Artesyn Technologies® 2005

The information and specifications contained in this datasheet are believed to be correct at time of publication. However, Artesyn Technologies accepts no responsibility for consequences arising from printing errors or inaccuracies. The information and specifications contained or described herein are subject to change in any manner at any time without notice. No rights under any patent accompany the sale of any such product(s) or information contained herein.

Please consult our website for the following items: ✓ Application Note ✓ Longform Datasheet

www.artesyn.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Emerson Network Power:

[EXB250-48S05J](#) [EXB250-48S05-RJ](#) [EXB250-48S12J](#) [EXB250-48S12-RJ](#) [EXB250-48S1V2J](#) [EXB250-48S1V2-RJ](#)
[EXB250-48S1V5J](#) [EXB250-48S1V5-RJ](#) [EXB250-48S1V8-RJ](#) [EXB250-48S2V5-RJ](#) [EXB250-48S3V3-RJ](#) [EXB250-48S1V8J](#) [EXB250-48S2V5J](#) [EXB250-48S3V3J](#)