

EXB30 Series

Single output

- High efficiency topology, 92% typical at 5 V
- Industry standard footprint
- Wide operating temperature, -40 °C to +85 °C (natural convection)
- 80% to 110% output trim
- No minimum load
- Overvoltage and overtemperature protection
- Remote sense compensation
- Remote ON/OFF
- Available RoHS compliant



The EXB30 is a new high efficiency open frame isolated 30 Watt converter series in an industry standard footprint. The first five models in the series feature a 2:1 input voltage range of 36 Vdc to 75 Vdc and are available in output voltages of 12 V, 5 V, 3.3 V, 2.5 V and 2 V. Each model is trimmable from 80% to 110% except the 12 V output which has a wider trim range of 60% to 110%. The sub 5 V models have an output current rating of 8 A. Typical efficiencies for the models are 92% for the 5 V, 90% for the 3.3 V and 12 V, 87% for the 2.5 V and 86% for the 2 V version. The EXB30 series offers remote ON/OFF and remote sense compensation to correct for voltage drops at the load. Overcurrent, overvoltage and overtemperature protection features are included as standard. With full international safety approval including EN60950 and cUL1950, the EXB30 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 | | 80% to 110% |
| Set point accuracy | | ±1.5% max. |
| Line regulation | Low line to high line | 0.1% max. |
| Load regulation | Full load to min. load | 0.2% max. |
| Total error band | | ±3.0% |
| Minimum load | | 0% |
| Overshoot | At turn-on and turn-off | None |
| Undershoot | | None |
| Ripple and noise (See Note 1) | 5 Hz to 20 MHz | 150 mV pk-pk 20 mV rms |
| Temperature coefficient | | ±0.02%/°C |
| Transient response (See Note 2) | | 2.0% max. deviation 300 µs recovery to within total error band |
| Remote sense | | 10% output voltage change |

INPUT SPECIFICATIONS

| | | |
|---|--|--|
| Input voltage range | 48 Vin nominal | 36-75 Vdc |
| Input current | No load Remote OFF | 50 mA max. 10 mA max. |
| Input current (max.) (See Note 4) | 48 V models | 1.0 A max. @ Io max. and Vin = 36-75 Vdc |
| Input reflected ripple (See Note 6) | | 30 mA (pk-pk) typ. |
| Active high remote ON/OFF Logic compatibility ON OFF | | Open collector ref to -input Open circuit or >2 Vdc <1.2 Vdc |
| Undervoltage lockout | 48 Vin: power up 48 Vin: power down | 34 V 31.5 V |
| Start-up time (See Note 7) | Power up Remote ON/OFF | 30 ms 30 ms |

EMC CHARACTERISTICS

| | | |
|--------------------------|--|-----------------------|
| Conducted emissions | EN55022 (See Note 3) EN55022 (See Note 3) | Level A Level B |
| Radiated emissions | EN55022 (See App. Note 108) | Level B |
| Immunity: | | |
| ESD air | EN61000-4-2 | 8 kV (NP), 15 kV (RP) |
| ESD contact | EN61000-4-2 | 6 kV (NP), 8 kV (RP) |
| 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 |
| Basic insulation | Input/output | 1500 Vdc |
| Switching frequency | Fixed | 300 kHz typ. |
| Approvals and standards (See Note 5) | | VDE0805, EN60950 IEC950, UL/cUL1950 CSA C22.2 No. 950 |
| Material flammability | | UL94V-0 |
| Weight | | 40 g (1.41 oz) |
| MTBF | MIL-HDBK-217F @ 25 °C, 100% load ground benign | >300,000 hours |

ENVIRONMENTAL SPECIFICATIONS

| | | |
|---------------------|--|---------------------------------------|
| Thermal performance | Operating ambient temperature Non-operating | -40 °C to +85 °C -40 °C to +125 °C |
| ETS 300 019-2-3 | | Classes T3.1 to T3.5 |
| Altitude | Operating Non-operating | 10,000 feet max. 40,000 feet max. |

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Single output

DC-DC CONVERTERS | 16-30 W High Efficiency DC-DC Converters

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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 | |
| 16 W | 36-75 Vdc | 2.3 Vdc | 2 V | 0 A | 8 A | 86% | ±0.1% | ±0.2% | EXB30-48S2V0J |
| 20 W | 36-75 Vdc | 2.9 Vdc | 2.5 V | 0 A | 8 A | 87% | ±0.1% | ±0.2% | EXB30-48S2V5J |
| 26.4 W | 36-75 Vdc | 3.8 Vdc | 3.3 V | 0 A | 8 A | 90% | ±0.1% | ±0.2% | EXB30-48S3V3J |
| 30 W | 36-75 Vdc | 5.65 Vdc | 5 V | 0 A | 6 A | 92% | ±0.1% | ±0.2% | EXB30-48S05J |
| 30 W | 36-75 Vdc | 14.2 Vdc | 12 V | 0 A | 2.5 A | 90% | ±0.1% | ±0.2% | EXB30-48S12J |

Notes

- 1 Measured as per recommended set-up.
- 2 $di/dt = 0.1 \text{ A}/\mu\text{s}$, $V_{in} = 48 \text{ Vdc}$, $T_c = 25^\circ\text{C}$, 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 The EXB30 meets level A and level B conducted emissions only with external components connected before the input pins to the converter. Full details are given in Application Note 108 on the website.
- 4 Recommended input fusing is a 2 A HRC 200 V rated fuse.
- 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 μH . 12 μH inductor in series with +Vin.
- 7 Start-up into resistive load.
- 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 |
| Thermal | 125 °C hot spot temperature with automatic recovery |

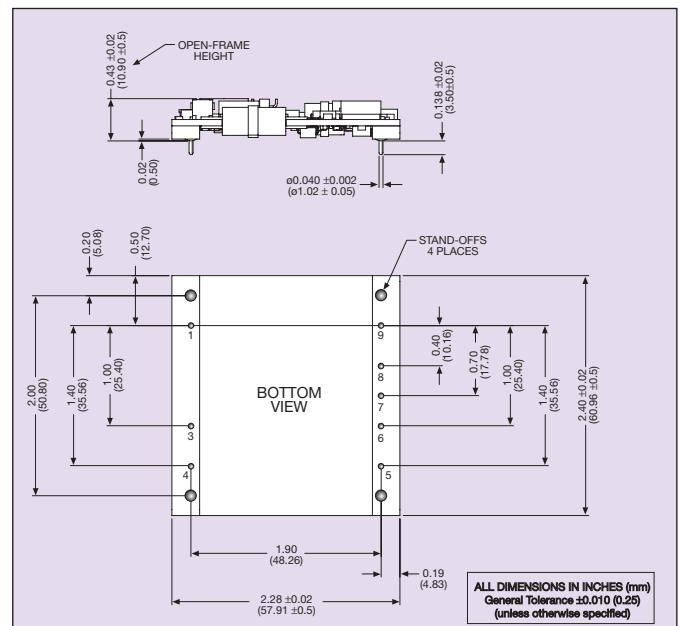
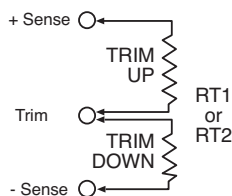
TELECOM SPECIFICATION

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.

EXTERNAL OUTPUT TRIMMING

All models can be externally trimmed by using the method shown below.



PIN CONNECTIONS

| PIN NUMBER | FUNCTION |
|------------|---------------|
| 1 | - Vin |
| 2 | No Pin |
| 3 | Remote ON/OFF |
| 4 | + Vin |
| 5 | + Vout |
| 6 | + Sense |
| 7 | Trim |
| 8 | - Sense |
| 9 | - Vout |



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