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[EXB30-24D05-3V3](#)

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EXB30 Series

Dual positive output



DC/DC CONVERTERS | 30W High Efficiency DC/DC Converters

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- Two independent positive outputs
- Output voltage tracking
- High efficiency
- Approved to EN60950, UL1950, CSA C22.2 No. 950
- Operating ambient temperature of -40°C to +70°C (natural convection)
- Up to 100% load imbalance
- Separate trim on each output
- No minimum load
- Complies with ETS 300 019-1-3/2-3
- Fully compliant with ETS 300 386-1



The EXB30 Dual series are isolated dual positive-output DC/DC converters. The products are designed using a high-efficiency synchronous rectification topology. They feature two independent fully regulated outputs, which are individually trimmable. The EXB30 Dual employs Dynamic Current Allocation such that maximum current can be drawn from either output with a total output current capability of 6A. No minimum load is required for either output. In addition, these products incorporate a tracking feature such that both outputs rise together with their output differential never exceeding 0.7 Volts during start-up. A remote on/off and latching overvoltage protection for both outputs are included as standard. These latches are enabled by default, but can be disabled by the user.



2 YEAR WARRANTY

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

SPECIFICATIONS

OUTPUT SPECIFICATIONS

| | | |
|---|--|--|
| Voltage adjustability | Both outputs | ±11% min. |
| Voltage accuracy | Both outputs | ±1.5% max. |
| Line regulation | Low line to high line Low line to high line | Vout1 ±0.4% Vout2 ±0.4% |
| Load regulation | Full load to no load | ±0.4% |
| Minimum load | Both outputs | 0% |
| Ripple and noise 20MHz bandwidth | | 150mV pk-pk max. 30mV rms max. |
| Temperature coefficient | | ±0.02%/°C |
| Transient response peak dev. settling time | 50% to 75% and back to 1.0%, no external cap. | 150mV 400µs |
| Short circuit protection Isc 8A rms (See Note 3) | Both outputs | Continuous automatic recovery |
| Tracking | | Max. differential 0.7V during start-up and in operation |

INPUT SPECIFICATIONS

| | | |
|---------------------------|--|----------------------------|
| Input voltage range | 24Vin nominal 48Vin nominal | 18 to 36VDC 36 to 75VDC |
| Input current | No load Remote OFF | 150mA max. 4mA max. |
| UVLO turn ON voltage | All inputs (See Note 2) | 94% typ. |
| UVLO turn OFF voltage | All inputs (See Note 2) | 86% typ. |
| Start-up time | Nominal line | 20ms max. |
| Active high remote ON/OFF | | |
| Logic compatibility | Open Collector ref. to -input ON OFF | 4.5VDC 0.6VDC |

EMC CHARACTERISTICS

| | | |
|--------------------------|------------------------------|---------------------|
| ETS 300 386-1 table 5 | | |
| Conducted emissions | EN55022 with external filter | Level A |
| | EN55022 with external filter | Level B |
| Radiated emissions | EN55022 (See App. Note 109) | Level B |
| Immunity: | | |
| ESD air | EN61000-4-2 | 8kV (NP), 15kV (RP) |
| ESD contact | EN61000-4-2 | 6kV (NP), 8kV (RP) |
| EFT DC power | EN61000-4-4 | 2kV (NP), 4kV (LFS) |
| EFT signal | EN61000-4-4 | 1kV (NP), 2kV (LFS) |
| Radiated field enclosure | EN61000-4-3 | 10V/m (NP) |
| Surges indoor signal | EN61000-4-5 | 500V (RP) |
| Conducted (DC power) | EN61000-4-6 | 10V (NP) |
| Conducted (signal) | EN61000-4-6 | 10V (NP) |
| Input transients | ETS 300 132-2, ETR 283 | |

GENERAL SPECIFICATIONS

| | | |
|---|--------------|--|
| Efficiency | | See table |
| Basic insulation | Input/output | 1500VDC |
| Input fuse 24V | (See Note 4) | 3.5A slow blow |
| Input fuse 48V | | 2.0A slow blow |
| Switching frequency | Fixed | 280kHz |
| Approvals and standards (See Notes 4, 6) | | EN60950 Bi-national UL1950 CSA C22.2 No. 950 |
| Weight | | 52g (1.84 oz) |
| MTBF (See Application Note 109) | MIL-HDBK-217 | 250,000 hours |

ENVIRONMENTAL SPECIFICATIONS

| | | |
|---------------------|--|--|
| Thermal performance | Operating ambient temperature Non-operating | -40°C to +70°C, See curves -55°C to +105°C |
| ETS 300 019-2-3 | | Classes T3.1 to T3.5 |
| Air temperature | Low: IEC 68-2-1 High: IEC 68-2-2 Change: IEC 68-2-14 | -40°C +70°C -40°C to +70°C |
| Relative humidity | IEC 68-2-56 IEC 68-2-30 | 10% to 100% RH Condensation |

EXB30 Series

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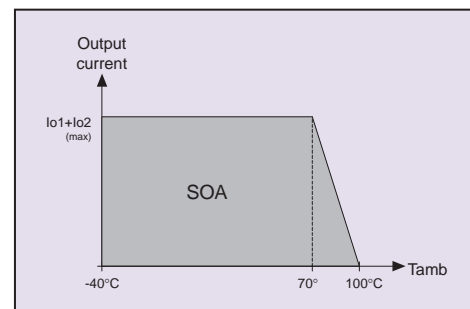
For the most current data and application support visit www.artesyn.com/powergroup/products.htm

| INPUT VOLTAGE | OUTPUT VOLTAGE | | OUTPUT CURRENT (5) | | OVP (1) | | TYPICAL EFFICIENCY | MODEL NUMBER |
|---------------|----------------|------|--------------------|------|---------|-------|--------------------|------------------|
| | 1 | 2 | 1 | 2 | 1 | 2 | | |
| 18-36VDC | 5V | 3.3V | 6.0A | 6.0A | 6.25V | 4.13V | 87% | EXB30-24D05-3V3 |
| 18-36VDC | 3.3V | 2.5V | 6.0A | 6.0A | 4.13V | 3.13V | 85% | EXB30-24D3V3-2V5 |
| 36-75VDC | 5V | 3.3V | 6.0A | 6.0A | 6.25V | 4.13V | 88% | EXB30-48D05-3V3 |
| 36-75VDC | 3.3V | 2.5V | 6.0A | 6.0A | 4.13V | 3.13V | 85% | EXB30-48D3V3-2V5 |

Notes

- 1 Latching OVP response time is 1ms (typical). OVP latch is reset by toggling remote ON/OFF or by recycling the input voltage.
- 2 Figures are percentage of minimum input voltage.
- 3 Rshort $\leq 20\text{m}\Omega$.
- 4 User must provide recommended fuses in order to comply with safety approvals.
- 5 Maximum continuous output power.
30 Watts for D05-3V3 models
20 Watts for D3V3-2V5 models.
- 6 Maximum temperature on hot spots not to exceed 120°C. See Application Note 109 on our website for details.

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



| PIN CONNECTIONS | |
|-----------------|---------------|
| PIN NUMBER | FUNCTION |
| 1 | - Vin |
| 2 | No Pin |
| 3 | Remote ON/OFF |
| 4 | + Vin |
| 5 | OP1 Trim |
| 6 | OP1 Return |
| 7 | OP1 |
| 8 | OP2 Trim |
| 9 | OP2 Return |
| 10 | OP2 |

EXTERNAL OUTPUT TRIMMING

All models can be externally trimmed by $\pm 11\%$ using either method shown below.

