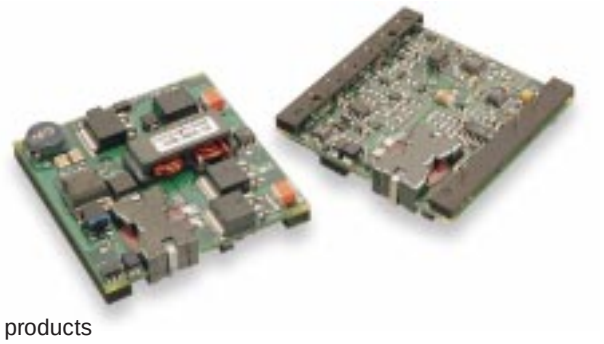
EXB30 Series

Dual positive output

DC/DC CONVERTERS | 30W High Efficiency DC/DC Converters | 1

- **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.

(LVD)

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 UVLO turn OFF voltage	All inputs (See Note 2) All inputs (See Note 2)	94% typ. 86% typ.
Start-up time	Nominal line	20ms max.
Active high remote ON/OFF Logic compatibility ON OFF	 Open Collector ref. to -input Open circuit voltage	 4.5VDC 0.6VDC

EMC CHARACTERISTICS

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

GENERAL SPECIFICATIONS

Efficiency		See table
Basic insulation	Input/output	1500VDC
Input fuse 24V Input fuse 48V	(See Note 4)	3.5A slow blow 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

Dual positive output

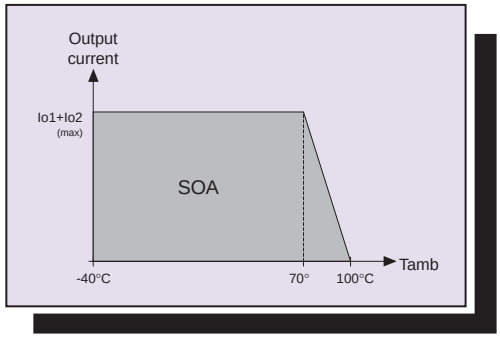
ARTESYN TECHNOLOGIES

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

INPUT VOLTAGE	OUTPUT VOLTAGE 1	OUTPUT VOLTAGE 2	OUTPUT CURRENT (5) 1	OUTPUT CURRENT (5) 2	OVP (1) 1	OVP (1) 2	TYPICAL EFFICIENCY	MODEL NUMBER
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 ≤20mΩ.
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.

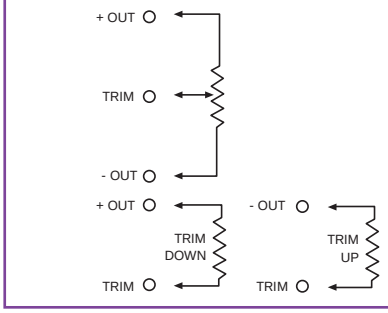


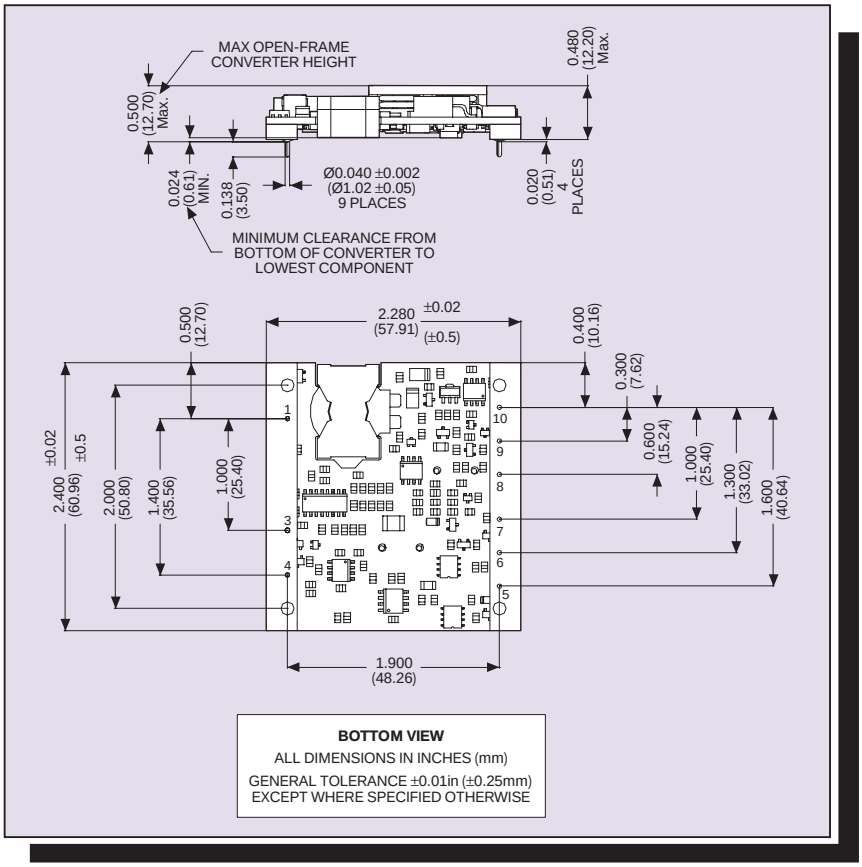
CAUTION: Hazardous internal voltages and high temperatures. Ensure that unit is not user accessible.

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 ±11% using either method shown below.





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