

EXB30 Series

Dual positive output

ARTESYN[®]
TECHNOLOGIES

DC-DC CONVERTERS 30 W 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
- Available RoHS compliant



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 6 A. 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 20 MHz bandwidth		150 mV pk-pk max. 30 mV rms max.
Temperature coefficient		±0.02%/°C
Transient response peak dev. settling time	50% to 75% and back to 1.0%, no external cap.	150 mV 400 µs
Short circuit protection Isc 8 Arms (See Note 3)	Both outputs	Continuous automatic recovery
Tracking		Max. differential 0.7 V during start-up and in operation

INPUT SPECIFICATIONS

Input voltage range	24 Vin nominal 48 Vin nominal	18-36 Vdc 36-75 Vdc
Input current	No load Remote OFF	150 mA max. 4 mA 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	20 ms max.
Active high remote ON/OFF		
Logic compatibility	Open Collector ref. to -input ON	4.5 Vdc
OFF	Open circuit voltage	0.6 Vdc

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	8 kV (NP), 15 kV (RP)
ESD contact	EN61000-4-2	6 kV (NP), 8 kV (RP)
EFT DC power	EN61000-4-4	2 kV (NP), 4 kV (LFS)
EFT signal	EN61000-4-4	1 kV (NP), 2 kV (LFS)
Radiated field enclosure	EN61000-4-3	10 V/m (NP)
Surges indoor signal	EN61000-4-5	500 V (RP)
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
Input fuse 24 V	(See Note 4)	3.5 A slow blow
Input fuse 48 V		2.0 A slow blow
Switching frequency	Fixed	280 kHz
Approvals and standards (See Notes 4, 6)		EN60950 Bi-national UL1950 CSA C22.2 No. 950
Weight		52 g (1.84 oz)
MTBF (See Application Note 109)	MIL-HDBK-217	6,283,000 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

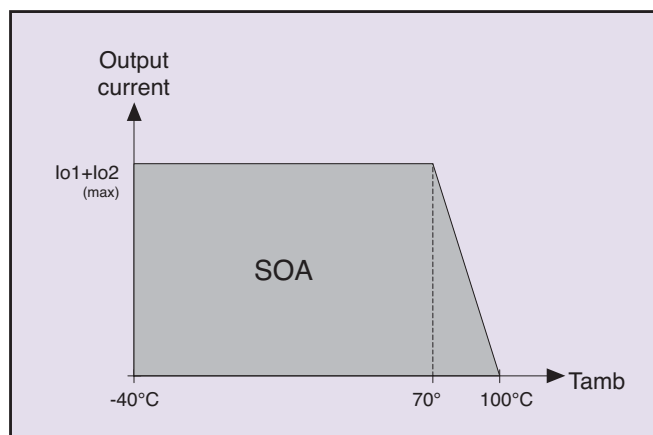
Dual positive output

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 ^(7,8)
	1	2	1	2	1	2		
18-36 Vdc	5 V	3.3 V	6 A	6 A	6.25 V	4.13 V	87%	EXB30-24D05-3V3J
18-36 Vdc	3.3 V	2.5 V	6 A	6 A	4.13 V	3.13 V	85%	EXB30-24D3V3-2V5J
36-75 Vdc	5 V	3.3 V	6 A	6 A	6.25 V	4.13 V	88%	EXB30-48D05-3V3J
36-75 Vdc	3.3 V	2.5 V	6 A	6 A	4.13 V	3.13 V	85%	EXB30-48D3V3-2V5J

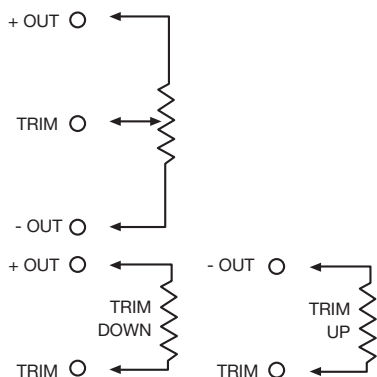
Notes

- 1 Latching OVP response time is 1 ms (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 $R_{short} \leq 20 \text{ m}\Omega$.
- 4 User must provide recommended fuses in order to comply with safety approvals.
- 5 Maximum continuous output power.
30 Watts for D05-3V3J models
20 Watts for D3V3-2V5J models.
- 6 Maximum temperature on hot spots not to exceed 120 °C. See Application Note 109 on our website for details.
- 7 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.
- 8 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.



EXTERNAL OUTPUT TRIMMING

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



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

International Safety Standard Approvals



UL/cUL CAN/CSA 22.2 No. 60950-00 : UL 60950
File No. E1741404



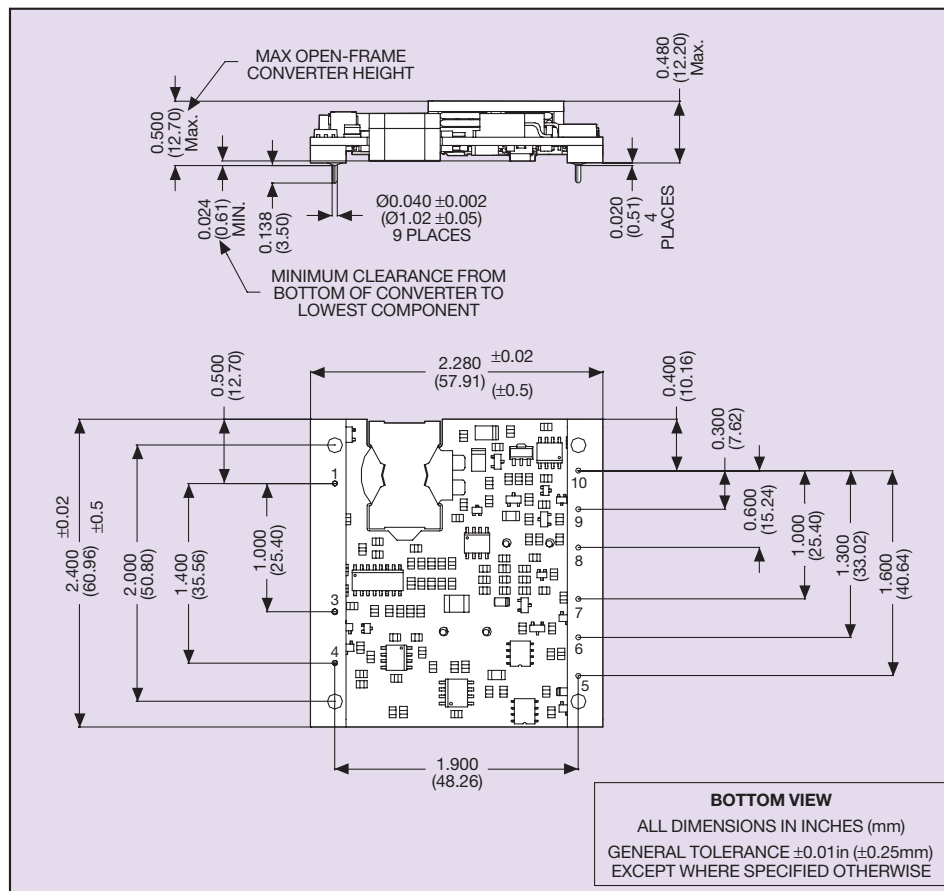
VDE Licence No. 122485. File No. 10401-3336-0157

CB Report and Certificate to IEC60950, Certificate No. DE1-31103

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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