

EXB30 Series

Single output

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

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- High efficiency topology, 92% typical at 5V
- 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

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 to 75VDC and are available in output voltages of 12V, 5V, 3.3V, 2.5V and 2V. Each model is trimmable from 80 to 110% except the 12V output which has a wider trim range of 60% to 110%. The sub 5V models have an output current rating of 8A. Typical efficiencies for the models are 92% for the 5V, 90% for the 3.3V and 12V, 87% for the 2.5V and 86% for the 2V 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)	5Hz to 20MHz	150mV pk-pk 20mV rms
Temperature coefficient		±0.02%/°C
Transient response (See Note 2)		2.0% max. deviation 300µs recovery to within total error band
Remote sense		10% output voltage change

INPUT SPECIFICATIONS

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

EMC CHARACTERISTICS

Conducted emissions	EN55022 (See Note 3)	Level A
	EN55022 (See Note 3)	Level B
Radiated emissions	EN55022 (See App. Note 108)	Level B
Immunity:		
ESD air	EN61000-4-2	8kV (NP), 15kV (RP)
ESD contact	EN61000-4-2	6kV (NP), 8kV (RP)
Radiated field enclosure	EN61000-4-3	10V/m (NP)
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
Switching frequency	Fixed	300kHz typ.
Approvals and standards (See Note 5)		VDE0805, EN60950 IEC950, UL/cUL1950 CSA C22.2 No. 950
Material flammability		UL94V-0
Weight		40g (1.41oz)
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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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
							LINE	LOAD	
16W	36-75VDC	2.3VDC	2.0V	0A	8A	86%	±0.1%	±0.2%	EXB30-48S2V0
20W	36-75VDC	2.9VDC	2.5V	0A	8A	87%	±0.1%	±0.2%	EXB30-48S2V5
26.4W	36-75VDC	3.8VDC	3.3V	0A	8A	90%	±0.1%	±0.2%	EXB30-48S3V3
30W	36-75VDC	5.65VDC	5.0V	0A	6A	92%	±0.1%	±0.2%	EXB30-48S05
30W	36-75VDC	14.2VDC	12.0V	0A	2.5A	90%	±0.1%	±0.2%	EXB30-48S12

Notes

- 1 Measured as per recommended set-up.
- 2 $di/dt = 0.1A/\mu s$, $V_{in} = 48VDC$, $T_c = 25^\circ C$, load change = 0.5 lo max. to 0.75 lo max. and 0.75 lo max. to 0.5 lo 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 2A HRC 200V 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 $12\mu H$. $12\mu H$ inductor in series with +Vin.
- 7 Start-up into resistive load.

PROTECTION

Short circuit protection	Continuous
Overvoltage protection	Non-latching clamp
Thermal protection	125°C hot spot temperature with automatic recovery

TELECOM SPECIFICATION

Central office interface A	ETS300-132-2, input voltage and current requirements
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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	+ Vout
6	+ Sense
7	Trim
8	- Sense
9	- Vout

EXTERNAL OUTPUT TRIMMING

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

