EXQ125 Series

Single output

ARTESYN TECHNOLOGIES

- **Ultra-high efficiency topology, 91% at 3.3 V, 88% typical at 1.8 V**
- **Industry standard footprint**
- **Wide baseplate temperature, -40 °C to +100 °C**
- **90% to 110% output trim**
- **No minimum load**
- **Overvoltage protection**
- **Remote ON/OFF**
- **Available RoHS compliant**

RoHS 2002/95/EC



The EXQ125 is a new ultra high efficiency, open-frame, isolated converter series in an industry standard quarter-brick footprint that provides up to 100 Watts of output power. The EXQ125 delivers very high output current at low voltages, and excellent useable power density for today's high end applications. The seven models in the series feature an input voltage range of 33 Vdc to 75 Vdc and are available in output voltages of 12 V, 5 V, 3.3 V, 2.5 V, 1.8 V, 1.5 V and 1.2 V. The output voltage on each model is adjustable from 90% to 110% of the nominal value. The EXQ125 series also has a remote ON/OFF capability. Overcurrent and overvoltage protection features are included as standard. With full international safety approval including EN60950 (TÜV Rheinland) and UL/cUL1950, the EXQ125 reduces compliance costs and time to market.

c UL us TÜV

2 YEAR WARRANTY

SPECIFICATIONS

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

OUTPUT SPECIFICATIONS

Voltage adjustability		90% 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.
Minimum load		0 A
Overshoot	At turn-on and turn-off	None
Undershoot	1.2 V, 1.5 V (Z), 1.8 V (Z), 2.5 V (Z) and 3.3 V (Z) models	None
Ripple and noise	5 Hz to 20 MHz	60 mV pk-pk 20 mV rms
Transient response (See Note 1)		2% typ. deviation 100 µs recovery to within 1% of setpoint

INPUT SPECIFICATIONS

Input voltage range	48 Vin nominal	33-75 Vdc
Input current	No load Remote OFF	85 mA 20 mA
Input current (max.) (See Note 3)		3.5 A max. @ Io max. and Vin = 33-75 Vdc
Input reflected ripple	(See Note 5)	300 mA (pk-pk) typ.
Active high remote ON/OFF Logic compatibility ON OFF		Open collector ref to -input Open circuit or >4.0 Vdc <1.2 Vdc
Undervoltage lockout	Power up Power down	32.5 V (typ) 30.5 V (typ)
Start-up time (See Note 6)	Power up Remote ON/OFF	6 ms (typ) 2 ms (typ)

EMC CHARACTERISTICS

Conducted emissions	EN55022 (See Note 2) EN55022 (See Note 2)	Level A Level B
Radiated emissions	EN55022	Level B
Immunity:		
ESD air	EN61000-4-2	8 kV (NP), 15 kV (NP)
ESD contact	EN61000-4-2	6 kV (NP), 8 kV (NP)
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
Operational	Input/output Input/baseplate	1500 Vdc 1500 Vdc
Switching frequency	Fixed	400 kHz typ.
Approvals and standards (See Note 4)		EN60950 (TÜV Rheinland) UL/cUL1950
Material flammability		UL94V-0
Weight		45 g (1.6 oz)
MTBF	Telcordia SR-332 @ 25 °C, 100% load ground benign	2,284,281 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating baseplate temperature	-40 °C to +100 °C
	Non-operating	-40 °C to +125 °C

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Single output

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	
36 W	33-75 Vdc	1.45 Vdc	1.2 V	0 A	30 A	86.5%	±0.1%	±0.2%	EXQ125-48S1V2J
45 W	33-75 Vdc	1.8 Vdc	1.5 V	0 A	30 A	87.5%	±0.1%	±0.2%	EXQ125-48S1V5J
54 W	33-75 Vdc	2.3 Vdc	1.8 V	0 A	30 A	88.0%	±0.1%	±0.2%	EXQ125-48S1V8J
75 W	33-75 Vdc	3 Vdc	2.5 V	0 A	30 A	90.0%	±0.1%	±0.2%	EXQ125-48S2V5J
82.5 W	33-75 Vdc	3.9 Vdc	3.3 V	0 A	25 A	91.0%	±0.1%	±0.2%	EXQ125-48S3V3J
100 W	33-75 Vdc	6 Vdc	5 V	0 A	20 A	92.0%	±0.1%	±0.2%	EXQ125-48S05J
100 W	33-75 Vdc	14.4 Vdc	12 V	0 A	8.3 A	93.0%	±0.1%	±0.2%	EXQ125-48S12J

Part Number System with Options

EXQ125-48S1V2-ZRNJ

- **EX** = Open Frame, Through Hole
- **Q** = 1/4 Brick
- **Output Wattage Class**: 125 = 125 Watts
- **Input Voltage**: 48 = 48 Volts (33 V to 75 V range)
- **Number of Outputs**: S = Single
- **Output Voltage**: 1V2 = 1.2 V, 1V5 = 1.5 V etc
- **RoHS Compliance** [8]: J = Pb-free (RoHS 6/6 compliant)
- **Pin Length of Standard Product**: Blank = 0.200" (5.08 mm)
  Pin Length of Modified Standard Product: N = 0.145" (3.68 mm), K = 0.110" (2.79 mm) (See Note 7)
- **Control Logic**: Blank = Positive, R = Negative
- Blank = Standard Product, Z = Zero Undershoot, Soft Turn-off Characteristic (Applies to 1.5 V, 1.8 V, 2.5 V and 3.3 V models only)

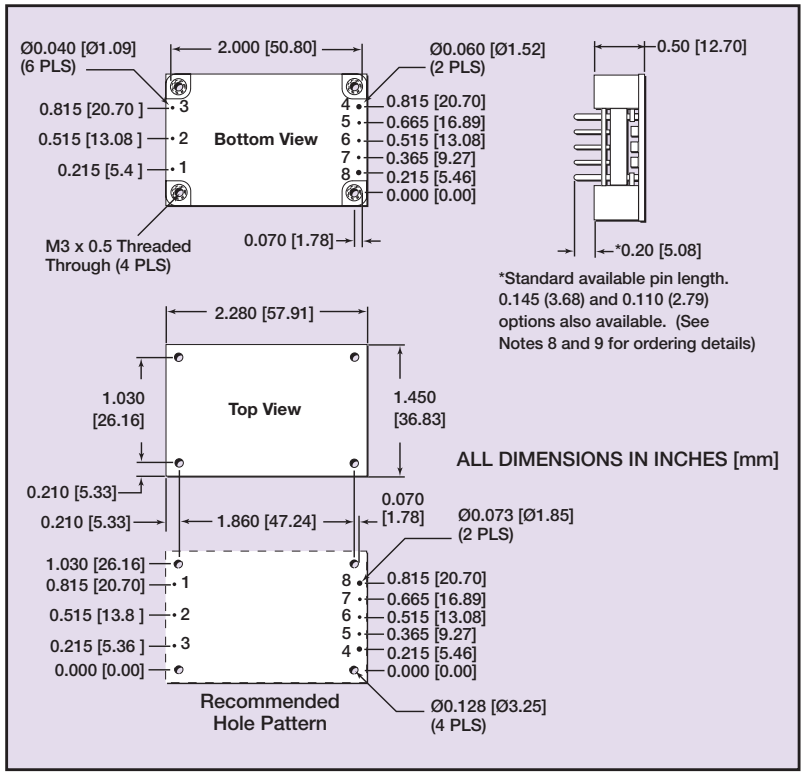
Notes

1. di/dt = 0.1 A/µs, Vin = 48 Vdc, Tc = 25 °C, load change = 0.5 Io max. to 0.75 Io max. and 0.75 Io max. to 0.5 Io max. Deviation varies by model, see Longform Datasheet.
2. The EXQ125 meets level A and level B conducted emissions only with external components connected before the input pins to the converter. See Application Note 118.
3. Recommended input fusing is a 5 A HRC 200 V rated fuse.
4. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
5. Measured with no external Pi filter. Significant reduction possible with external filter. See Application Note 118.
6. Start-up into resistive load.
7. Contact the factory for Modified Standard pin length products.
8. 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

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.



PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	+Vin
2	On/Off
3	-Vin
4	-Vout
5	-Sense
6	Trim
7	+Sense
8	+Vout

International Safety Standard Approvals

UL/cUL : UL1950 File No. E135734

TÜV Rheinland Certificate No. R72050216
CB Scheme No. US-TUVR-2217

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