

# EXQ125 Series

## Single output



DC/DC CONVERTERS | 36-100W High Efficiency DC/DC Converters

1

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



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 to 75VDC and are available in output voltages of 12V, 5V, 3.3V, 2.5V, 1.8V, 1.5V and 1.2V. 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.



2 YEAR WARRANTY

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

### SPECIFICATIONS

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

#### INPUT SPECIFICATIONS

Input voltage range	48Vin nominal	33 to 75VDC
Input current	No load Remote OFF	85mA 20mA
Input current (max.) (See Note 3)	3.5A max. @ Io max. and Vin = 33 to 75V	
Input reflected ripple	(See Note 5)	300mA (pk-pk) typ.
Active high remote ON/OFF Logic compatibility ON OFF	(See Note 7) Open collector ref to -input Open circuit or >4.0VDC <1.2VDC	
Undervoltage lockout	Power up Power down	32.5V (typ) 30.5V (typ)
Start-up time (See Note 6)	Power up Remote ON/OFF	6ms (typ) 2ms (typ)

#### EMC CHARACTERISTICS

Conducted emissions	EN55022 (See Note 2)	Level A
	EN55022 (See Note 2)	Level B
Radiated emissions	EN55022	Level B
Immunity:		
ESD air	EN61000-4-2	8kV (NP), 15kV (NP)
ESD contact	EN61000-4-2	6kV (NP), 8kV (NP)
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	
Operational	Input/output Input/baseplate	1500VDC 1500VDC
Switching frequency	Fixed	400kHz typ.
Approvals and standards (See Note 4)	EN60950 (TÜV Rheinland) UL/cUL1950	
Material flammability	UL94V-0	
Weight	45g (1.6oz)	
MTBF	MIL-HDBK-217F @ 25°C, 100% load ground benign	>300,000 hours

#### ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating baseplate temperature Non-operating	-40°C to +100°C -40°C to +125°C
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2

For the most current data and application support visit [www.artesyn.com/powergroup/products.htm](http://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 (7,8,9)
							LINE	LOAD	
36W	33-75VDC	1.45VDC	1.2V	0A	30A	86.5%	±0.1%	±0.2%	EXQ125-48S1V2
45W	33-75VDC	1.8VDC	1.5V	0A	30A	87.5%	±0.1%	±0.2%	EXQ125-48S1V5
54W	33-75VDC	2.3VDC	1.8V	0A	30A	88.0%	±0.1%	±0.2%	EXQ125-48S1V8
75W	33-75VDC	3VDC	2.5V	0A	30A	90.0%	±0.1%	±0.2%	EXQ125-48S2V5
82.5W	33-75VDC	3.9VDC	3.3V	0A	25A	91.0%	±0.1%	±0.2%	EXQ125-48S3V3
100W	33-75VDC	6VDC	5V	0A	20A	92.0%	±0.1%	±0.2%	EXQ125-48S05
100W	33-75VDC	14.4VDC	12V	0A	8.3A	93.0%	±0.1%	±0.2%	EXQ125-48S12

### Notes

- 1 di/dt = 0.1A/μs, Vin = 48VDC, 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 Long Form Data Sheet.
- 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 5A HRC 200V 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 Active low remote On/Off is available. Standard product is active high. When ordering active low parts, designate with the Suffix '-R', e.g EXQ125-48S3V3-R.
- 8 When ordering 0.145" pin lengths designate with the Suffix '-N', if the product is already a '-R' suffix product then the suffix will be '-RN'.
- 9 When ordering 0.110" pin lengths designate with the Suffix '-K', if the product is already a '-R' suffix product then the suffix will be '-RK'.

### 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. R2172600  
CB Scheme No. US-TUVR-0982

### PROTECTION

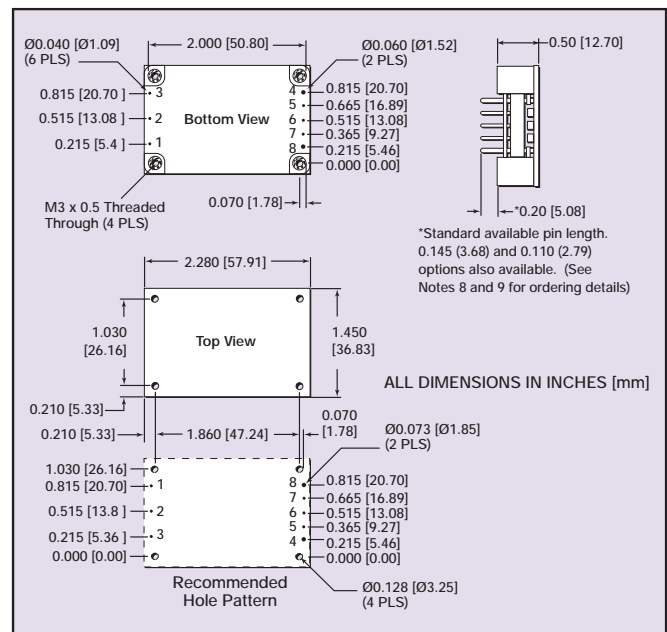
Short circuit protection Continuous

Overvoltage protection 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.



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Please consult our website for the following items: ✓ Application Note ✓ Longform Data Sheet

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