

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	85mA
	Remote OFF	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 (See Note 7)		
Logic compatibility	Open collector ref to -input	
ON	Open circuit or >4.0VDC	
OFF	<1.2VDC	
Under-voltage lockout	Power up	32.5V (typ)
	Power down	30.5V (typ)
Start-up time (See Note 6)	Power up	6ms (typ)
	Remote ON/OFF	2ms (typ)

EMC CHARACTERISTICS

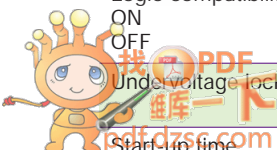
Conducted emissions	EN55022 (See Note 2)	Level A
	EN55022 (See Note 2)	Level B
Radiated emissions	EN55022	Level B
Immunity:		
ESD air	EN61000-4-2 8kV (NP), 15kV (NP)	
ESD contact	EN61000-4-2 6kV (NP), 8kV (NP)	
Radiated field enclosure	EN61000-4-3 10V/m (NP)	
Conducted (DC power)	EN61000-4-6 10V (NP)	
Conducted (signal)	EN61000-4-6 10V (NP)	
Input transients	ETS 300 132-2, ETR 283	

GENERAL SPECIFICATIONS

Efficiency	See table
Operational	Input/output 1500VDC
	Input/baseplate 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 -40°C to +100°C
	Non-operating -40°C to +125°C



EXQ125 Series

Single output



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

2

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 ^(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 : 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.

