

# EXQ125 Series

## Single output

- 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



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.



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                       |                                                             | 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<br>20 mV rms                                         |
| Transient response<br>(See Note 1) |                                                             | 2% typ. deviation<br>100 µs recovery to<br>within 1% of setpoint |

#### INPUT SPECIFICATIONS

|                                                               |                                                                      |                                             |
|---------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------|
| Input voltage range                                           | 48 Vin nominal                                                       | 33-75 Vdc                                   |
| Input current                                                 | No load<br>Remote OFF                                                | 85 mA<br>20 mA                              |
| Input current (max.)<br>(See Note 3)                          |                                                                      | 3.5 A max. @ Io max.<br>and Vin = 33-75 Vdc |
| Input reflected ripple<br>(See Note 5)                        |                                                                      | 300 mA (pk-pk) typ.                         |
| Active high remote ON/OFF<br>Logic compatibility<br>ON<br>OFF | Open collector ref to -input<br>Open circuit or >4.0 Vdc<br><1.2 Vdc |                                             |
| Undervoltage lockout                                          | Power up<br>Power down                                               | 32.5 V (typ)<br>30.5 V (typ)                |
| Start-up time<br>(See Note 6)                                 | Power up<br>Remote ON/OFF                                            | 6 ms (typ)<br>2 ms (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 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<br>Input/baseplate                         | 1500 Vdc<br>1500 Vdc                  |
| Switching frequency                     | Fixed                                                   | 400 kHz typ.                          |
| Approvals and standards<br>(See Note 4) |                                                         | EN60950 (TÜV Rheinland)<br>UL/cUL1950 |
| Material flammability                   |                                                         | UL94V-0                               |
| Weight                                  |                                                         | 45 g (1.6 oz)                         |
| MTBF                                    | Telcordia SR-332<br>@ 25 °C, 100% load<br>ground benign | 2,284,281 hours                       |

#### ENVIRONMENTAL SPECIFICATIONS

|                     |                                                  |                                        |
|---------------------|--------------------------------------------------|----------------------------------------|
| Thermal performance | Operating baseplate temperature<br>Non-operating | -40 °C to +100 °C<br>-40 °C to +125 °C |
|---------------------|--------------------------------------------------|----------------------------------------|

# EXQ125 Series

## Single output

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

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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 <sup>(8,9)</sup> |
|---------------------|---------------|----------|----------------|-----------------------|-----------------------|-------------------|------------|-------|-------------------------------|
|                     |               |          |                |                       |                       |                   | 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 <sup>(8)</sup>

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  $di/dt = 0.1 \text{ A}/\mu\text{s}$ ,  $V_{in} = 48 \text{ Vdc}$ ,  $T_c = 25^\circ\text{C}$ , load change = 0.5 I<sub>o</sub> max. to 0.75 I<sub>o</sub> max. and 0.75 I<sub>o</sub> max. to 0.5 I<sub>o</sub> 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

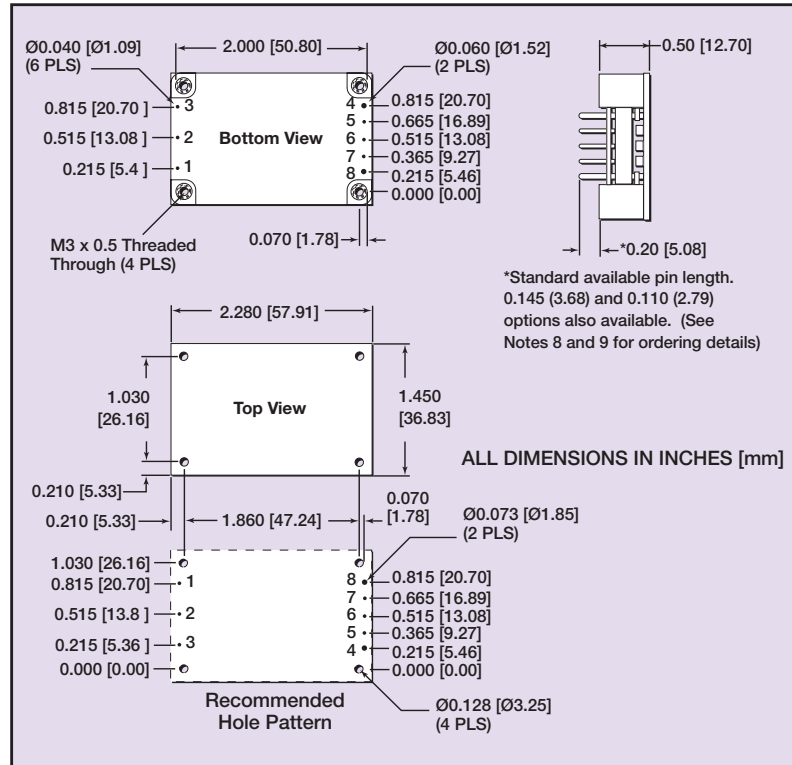
|                            |                                                      |
|----------------------------|------------------------------------------------------|
| Central office interface A | ETS300-132-2, input voltage and current requirements |
|----------------------------|------------------------------------------------------|

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

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## Single output

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| 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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