

## Quarter-Brick Series

### Narrow Input IBC

**Total Power:** 240 -300W  
**Input Voltage:** 48VDC  
**# of Outputs:** Single



### Special Features

- 48 V input with isolated 12 V output
- Efficiencies up to 96%
- Open loop regulation
- Fully rated 240 W @ 70 °C, 200 LFM
- Overcurrent protection
- Operates with no load
- Auto restart after fault condition
- Remote ON/OFF
- Paralleable
- Over-temperature protection
- Available RoHS compliant
- 2 Year Warranty

### Safety

UL/cUL : CAN/CSA 22.2  
No. 60950  
UL 60950 File No. E139421

TÜV Product Service (EN60950)  
Certificate No.  
B03 04 19870213

This series is a new, high efficiency, Quarter-Brick, isolated, Intermediate Bus Converter series that provides up to 300 Watts of output power. The series is designed to convert 48 Volts  $\pm 10\%$  to a loosely regulated 12 Volts at full rated load up to 25 A and efficiencies up to 96%. This converter is available in four package types, standard quarter-brick through-hole, through-hole vertical, standard quarter-brick surface-mount, and quarter-brick surface-mount solder ball. In addition, this series features remote ON/OFF, no-load operation, input undervoltage protection as well as output overvoltage and overcurrent protection.



# Specifications

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

## OUTPUT SPECIFICATIONS

Output voltage		12 V
Current share accuracy	Full load	10%
Line regulation	Low line to high line	±10% max.
Load regulation	Full load to min. load	6% max.
Minimum load		0 A
Overshoot		3.0% max.
Undershoot		200 mV max.
Ripple and noise (See Note 1)	5-20 MHz	150 mV pk-pk
Transient response (See Note 2)	Deviation	<100 mV <100 μs recovery to within total error band
Overvoltage setpoint		13.8 V

## INPUT SPECIFICATIONS

Input voltage range	Nominal 48 Vdc	±10% Vdc
Input current	No load Remote OFF	100 mA typ. 2 mA typ.
Input reflected ripple	(See Note 3)	34 mA rms 100 mA pk-pk
Remote ON/OFF	ON OFF	>1.7 Vdc <0.8 Vdc
Under-voltage lockout	Power up Power down	41.0 V 38.6 V
Start-up time (See Note 4)	Power up Power down	<50 ms <20 ms

## EMC CHARACTERISTICS

Conducted emissions	EN55022 (See Note 5)	Level A
	EN55022 (See Note 5)	Level B
Immunity:		
ESD air	EN61000-4-2 4 kV	
ESD contact	EN61000-4-2 4 kV	
Radiated field enclosure	EN61000-4-3 3 V/m	
Conducted (dc power)	EN61000-4-6 3 V	
Conducted (signal)	EN61000-4-6 3 V	

## GENERAL SPECIFICATIONS

Efficiency	Half load	Up to 96% typ.
Isolation	Input/output	2250 Vdc
Switching frequency	Fixed	300 kHz typ.
Approvals and standards (See Note 6)	EN60950 (TÜV Product Service) UL/cUL60950	
Material flammability	UL94V-0	
Weight	56.66 g (2 oz)	
MTBF	MIL-HDBK-217F	1,000,000 hours
Representative model:	25 A @ 48 Vin, 40 °C ambient 100% load ground benign	
	Telcordia SR-332	2,828,160 hours

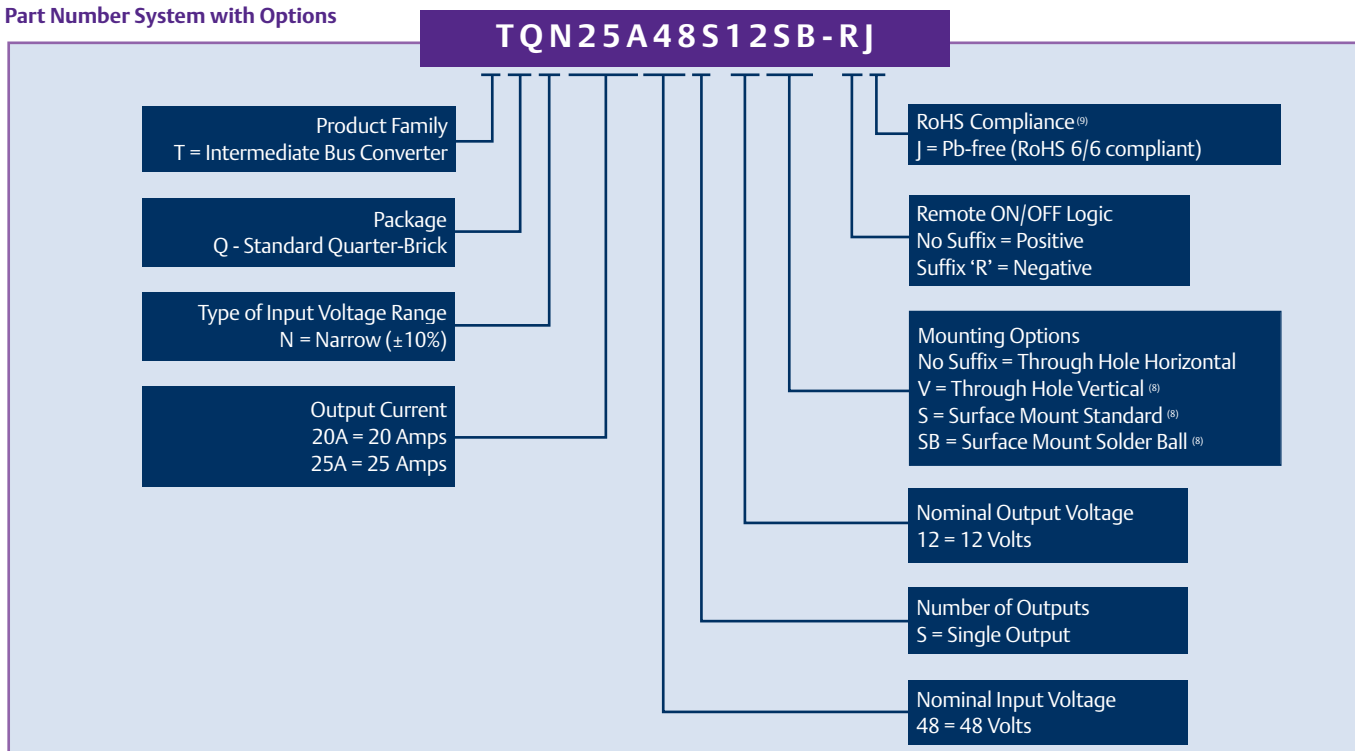
## ENVIRONMENTAL SPECIFICATIONS

Thermal performance (300 LFM airflow)	Operating ambient, temperature	0 °C to +80 °C
	Non-operating	-55 °C to +125 °C

# Specifications Contd.

RATED OUTPUT POWER	INPUT VOLTAGE	OUTPUT VOLTAGE	INPUT CURRENT (MAX)	OUTPUT CURRENT (MAX.)	OVER CURRENT SETPOINT	EFFICIENCY HALF/FULL LOAD	MODEL NUMBER <sup>(9,10)</sup>
240 W	43.2-52.8 Vdc	12 V	6 A	20 A	25 A	96%/95% (typ.)	TQN20A48S12J
300 W	43.2-52.8 Vdc	12 V	7 A	25 A	29 A	96%/95% (typ.)	TQN25A48S12J

## Part Number System with Options



### Notes

- 1 Measured as per recommended set-up. See Application Note 140 for details.
- 2  $di/dt = 10 \text{ A}/\mu\text{s}$ ,  $V_{in} = 48 \text{ Vdc}$ ,  $T_c = 25 \text{ }^\circ\text{C}$ , load change = 50% lo max. to 75% lo max. and 75% lo max. to 50% lo max.
- 3 Measured with external filter. See Application Note 140 for details.
- 4 Start-up into resistive load.
- 5 The Quarter-Brick Narrow Input series of converters meet levels A and B conducted emissions with external components. See Application Note 140 for details.
- 6 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- 7 Use of additional high quality ceramic output capacitors is recommended in the end system.
- 8 Consult factory for availability.
- 9 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 10 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 foldback
Over-temperature	Auto restart

### RECOMMENDED SYSTEM CAPACITANCE

Input capacitance	390 $\mu\text{F}$ /20 mW ESR max.
Output capacitance (See Note 7)	270 $\mu\text{F}$ /10 mW ESR max.

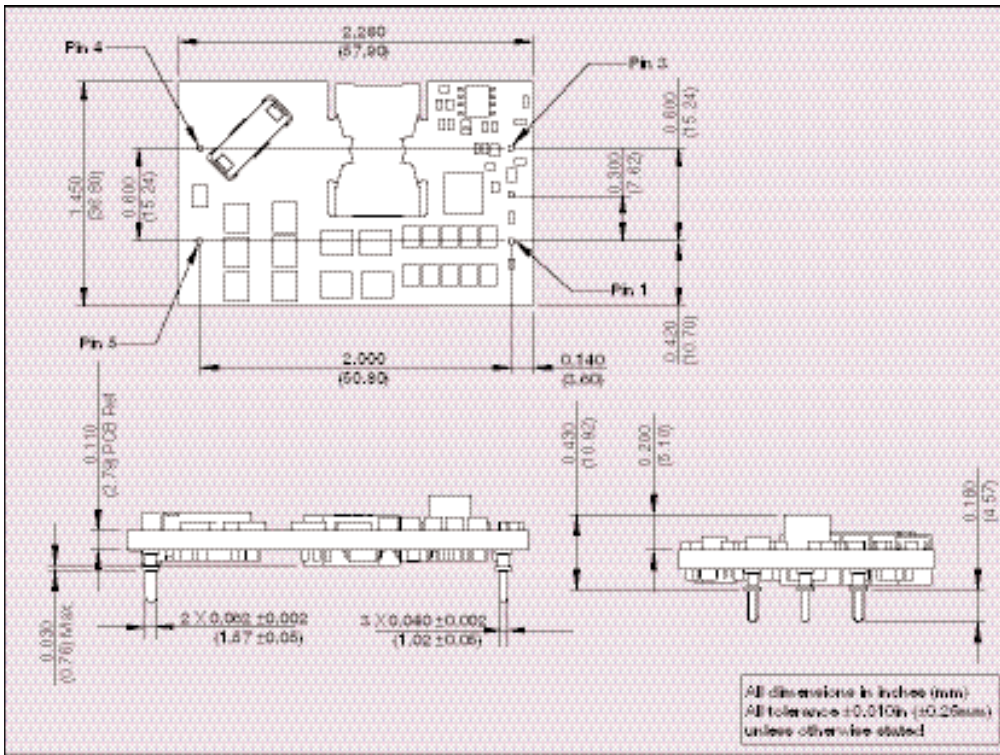


Figure 1: Horizontal Mechanical Drawing and Pinout Table

PIN CONNECTIONS	
PIN NUMBER	FUNCTION
1	+Vin
2	Remote ON/OFF
3	-Vin
4	-Vout
5	+Vout

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