

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
- Parallelable
- 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

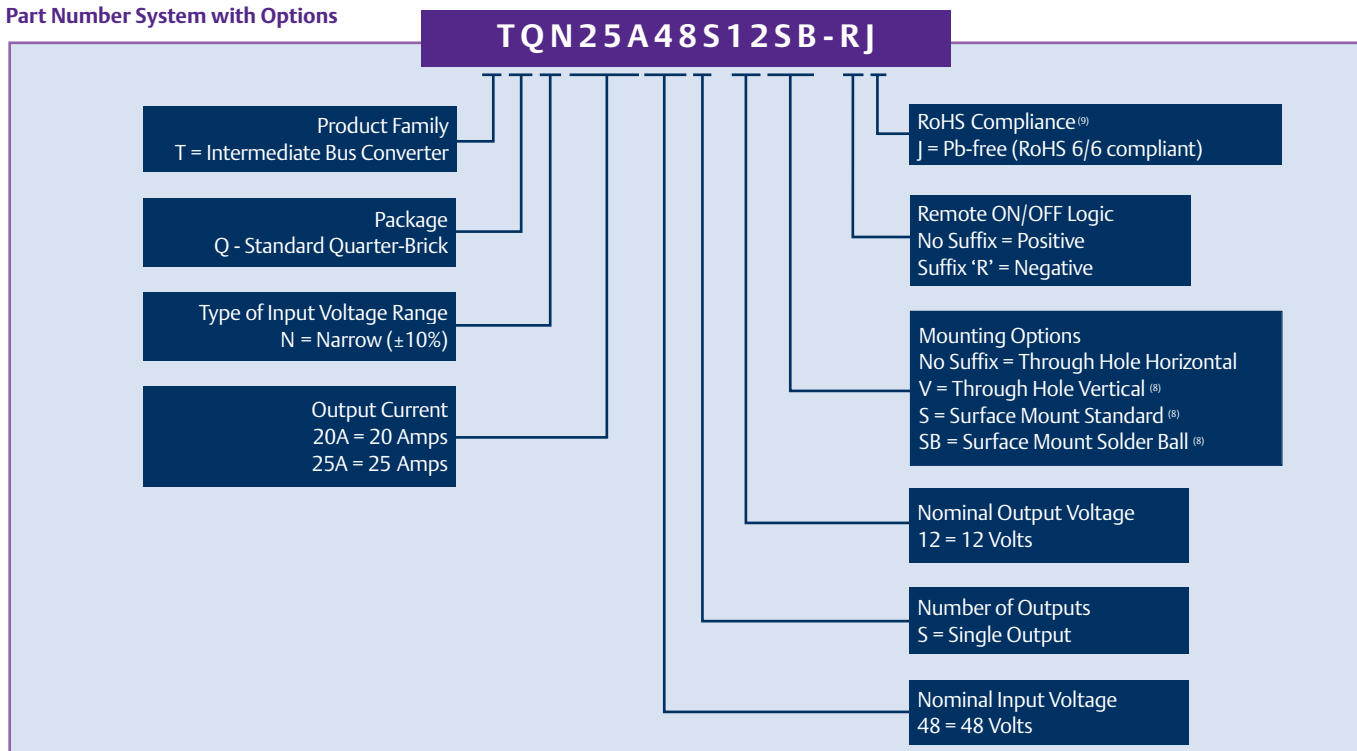
ENVIRONMENTAL SPECIFICATIONS

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 ^(9,10)
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 μF /20 mW ESR max.
Output capacitance (See Note 7)	270 μF /10 mW ESR max.

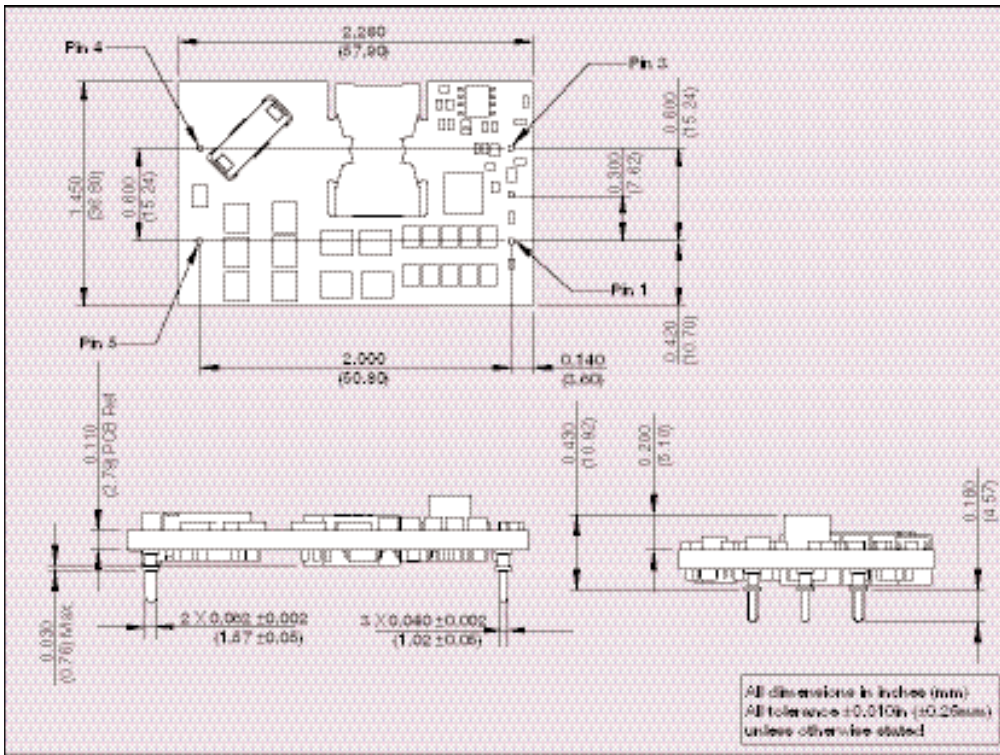


Figure 1: Horizontal Mechanical Drawing and Pinout Table

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

Americas

5810 Van Allen Way
Carlsbad, CA 92008
USA
Telephone: +1 (760) 930 4600
Facsimile: +1 (760) 930 0698

Europe (UK)

Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
Telephone: +44 (0) 1384 842 211
Facsimile: +44 (0) 1384 843 355

Asia (HK)

14/F, Lu Plaza
2 Wing Yip Street
Kwun Tong, Kowloon
Hong Kong
Telephone: +852 2176 3333
Facsimile: +852 2176 3888

For global contact, visit:

www.powerconversion.com
techsupport.embeddedpower@emerson.com

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

Emerson Network Power.

The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- Embedded Computing
- **Embedded Power**
- Monitoring
- Outside Plant
- Power Switching & Controls
- Precision Cooling
- Racks & Integrated Cabinets
- Services
- Surge Protection

EmersonNetworkPower.com

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co. ©2008 Emerson Electric Co.