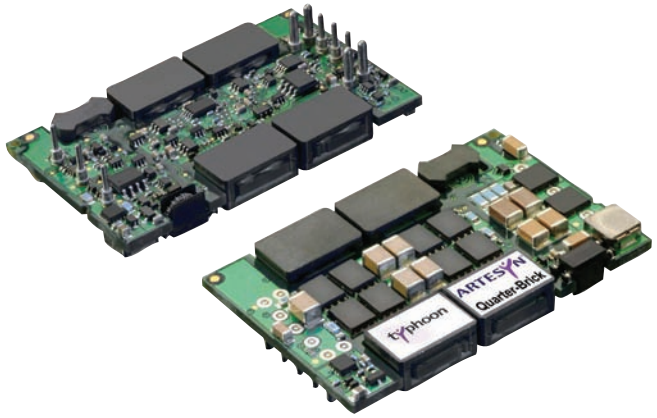
LQS Series

Quarter-Brick Series

Total Power: 200 Watts
Input Voltage: 36 V to 75 V
# of Outputs: 1



RoHS 2002/95/EC

Special Features

- Ultra high efficiency topology
- Unprecedented useable output power levels
- High power density (200 W/in^3) open-frame technology
- Wide ambient temperature range, -40 ˚C to +85 ˚C
- 80% to 110% output trim
- Monotonic start-up in normal and prebiased loads
- Basic insulation system
- Overvoltage and overtemperature protection
- Secondary side control, no optocouplers, fast transient response
- 100 V, 100 ms input transient rated
- Available RoHS compliant

Safety

UL, cUL 60950-1 Ed 2
CSA C22.2 No 60950-1 Ed 2
VDE EN60950-1:2006 + A11:2009

Electrical Specifications

Input		
Input voltage range:	24 V nominal 48 V nominal	18 - 36 Vdc 36 - 75 Vdc
Input current:	No load Remote OFF	85 mA to 150 mA 5 mA
Active high remote ON/OFF:	Logic compatibility ON OFF	Open collector ref to -input Open circuit or > 2.4 Vdc < 0.4 Vdc
Undervoltage lockout:	Power up Power down	35.5 V (typ.) 33.5 V (typ.)
Start-up time (See note 2):	Power up Remote ON/OFF	10 ms (typ.) 10 ms (typ.)
Output		
Voltage adjustability:		80% to 110%
Minimum load:		0%
Overshoot	At turn-on and turn-off	None
Undershoot:		None
Transient response: (See note 1)		70 mV, typ. deviation 20 µs recovery

ARTESYN

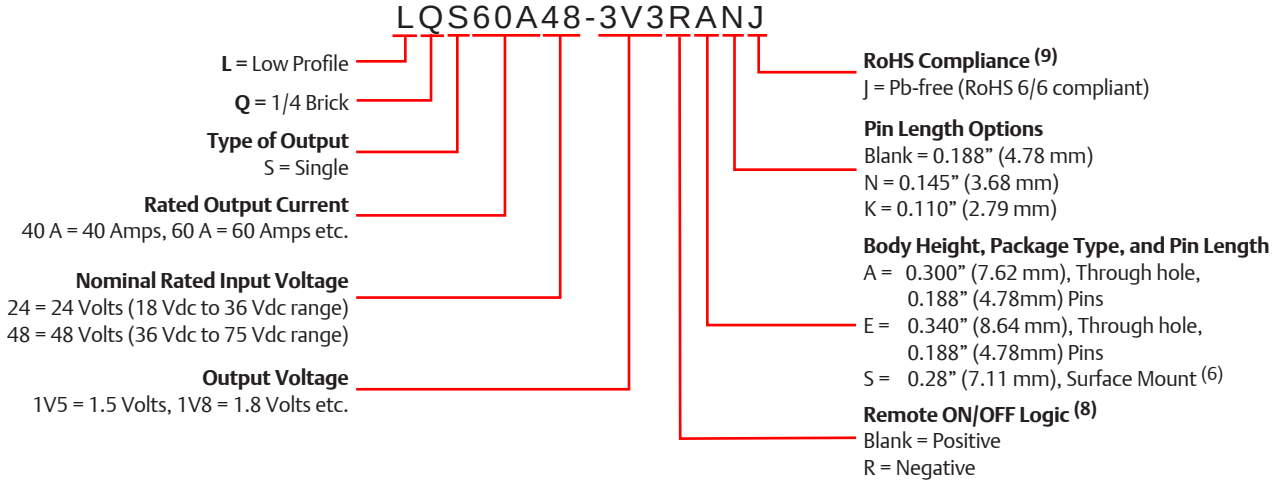
EMERSON
Network Power

Electrical Specifications continued

EMC Characteristics		
Immunity:		
ESD air enclosure:	EN61000-4-2 8 kV/6 kV (O/P within spec.)	
Radiated field enclosure:	EN61000-4-3 10 V/m (O/P within spec.)	
Conducted:	EN61000-4-6 10 V (O/P within spec.)	
Input transients:	100 V, 100 ms	
General Characteristics		
Basic insulation:	Input/output	2250 Vdc
Switching frequency:	Fixed	480 kHz
Approvals and standards:	(See Note 3)	EN60950-1 VDE, UL/cUL 60950-1
Material flammability:		UL94V-0
Weight:		37g (1.30 oz)
MTBF:	Telcordia Tech SR-332	3,866,933 hours
Environmental Specifications		
Thermal performance:	Operating ambient temperature	-40 ˚C to +85 ˚C
	Non-operating	-55 ˚C to +125 ˚C
Protection		
Short-circuit	Continuous	
Overvoltage	Non-latching	
Thermal	125 ˚C hot spot temperature with automatic recovery	

Ordering Information

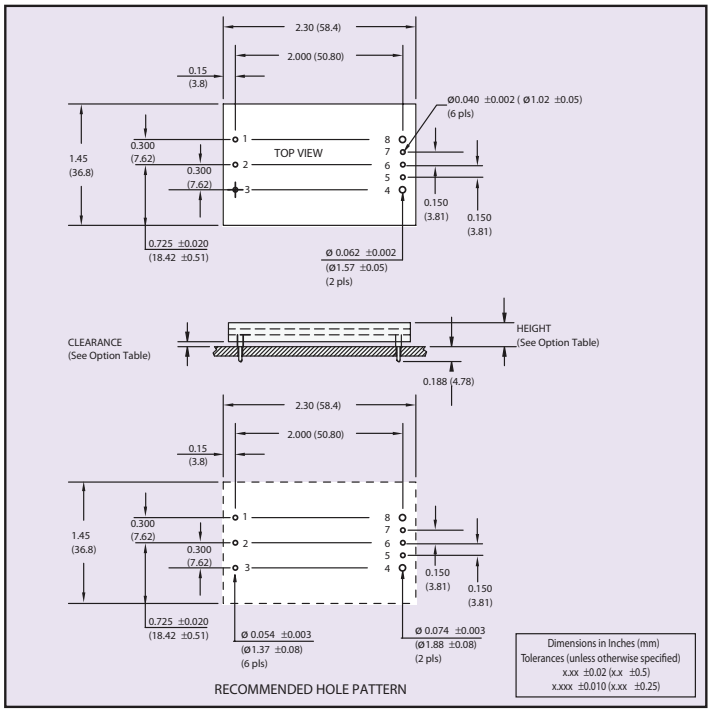
Output Voltage	Input Current Max. [4]	Input Ripple Current [5]	Output Current Max.	Efficiency typ.	Regulation			Ripple & noise (pk-pk)	Model Number [6,8,9,10]
					Set point accuracy Max.	Line	Load		
48 Vin VALUE MODELS									
1.2 V	1.92 A	150 mA	50 A	88.5%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-1V2J
1.5 V	2.36 A	150 mA	50 A	89.5 %	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-1V5J
1.8 V	2.82 A	150 mA	50 A	90.4%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-1V8J
48 Vin PERFORMANCE MODELS									
1.2 V	4.05 A	250 mA	100 A	86.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS100A48-1V2J
1.5 V	3.8 A	200 mA	80 A	88.8%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS80A48-1V5J
1.8 V	4.6 A	200 mA	80 A	90.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS80A48-1V8J
2.5 V	4.1 A	200 mA	50 A	90.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-2V5J
3.3 V	5.2 A	200 mA	50 A	91.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-3V3J
48 Vin ULTRA MODELS									
1.5 V	4.8 A	200 mA	100 A	88.5%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS100A48-1V5J
1.8 V	5.7 A	200 mA	100 A	89.5%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS100A48-1V8J
2.5 V	6.2 A	200 mA	80 A	91.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS80A48-2V5J
3.3 V	6.2 A	200 mA	60 A	91.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS60A48-3V3J
5 V	6.2 A	200 mA	40 A	92.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS40A48-5V0J [7]
5 V	6.2 A	200 mA	40 A	91.8%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS40A48-5V0GJ [11]
24 Vin MODELS									
1.8 V	3.4 A	200 mA	30 A	91.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS30A24-1V8J
3.3 V	6.5 A	300 mA	30 A	89.5%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS30A24-3V3J



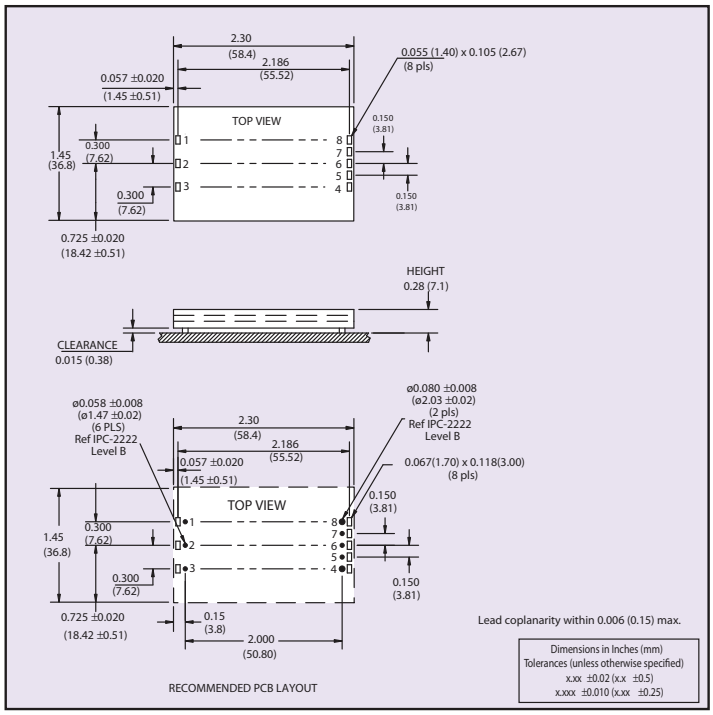
Notes:

1. di/dt = 1 A/us, Vin = 48 Vdc, Tc = 25 ˚C, load change = 50% to 75% Io max. and 75% to 50% Io max. Deviation varies by model. For further details see longform datasheet
2. Start-up into resistive load.
3. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
4. Recommended input fusing is up to 10 A HRC 200 V rated fuse.
5. Peak to peak measured without external π filter. Significant reduction possible with external filter. See Application Note 141 for further details.
6. 'S' option applies to the 24 V models only.
7. Except LQS40A48-5V0J which has the double output pins.
8. Active low Remote ON/OFF is available. Standard product is Active High. When ordering active low parts, designate with the suffix 'R' e.g. **LQS100A48-1V8RA**J
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 oiptons. Please contact your local sales representative or use the on-line model number search tool at www.PowerConversion.com to find a suitable alternative.
11. LQS40A48-5V0GJ has single output pins /0.188" pin length/0.340" body height

Mechanical Drawings



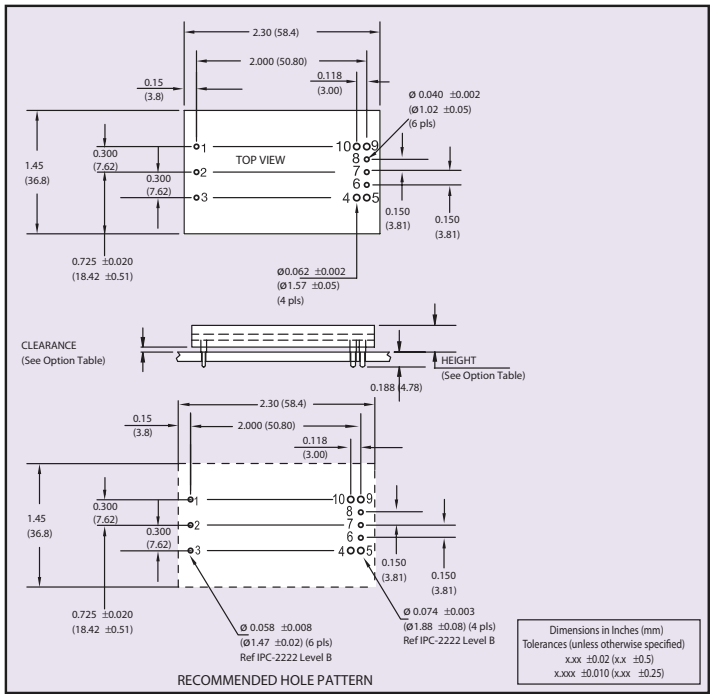
24 V/ 48 V Mechanical Drawing for Output Current of 50 A or less (See Note 7)



24 V Surface-mount Mechanical Drawing and Pinout Table

Pin Connections			
Pin Number	Function	Pin Number	Function
1	+Vin	5	-Sense
2	ON/OFF	6	Trim
3	-Vin	7	+Sense
4	-Vout	8	+Vout

Dimension Options		
Option	Clearance	Height
	± 0.016 (0.41)	+0.022 (0.56) -0.030 (0.76)
A	0.030 (0.76)	0.300 (7.62)
E	0.070 (1.78)	0.340 (8.64)



48 V Mechanical Drawing for Output Current Freater than 50 A
"The Double P" Pinout (7)

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