



# Quarter-Brick Series

Single output



DC-DC CONVERTERS

High Current, High Efficiency, Low Profile

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**NEW Product**

- Ultra high efficiency topology
- Unprecedented useable output power levels
- High power density (200 W/in<sup>3</sup>) 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

This is a new high efficiency, open-frame, low profile, single board, isolated dc-dc converter series in an industry standard quarter-brick package that provides up to 200 W of output power. The series delivers very high output current at low voltages, and excellent useable power for today's high performance applications. The series features two input voltage ranges of 18 Vdc to 36 Vdc and 36 Vdc to 75 Vdc and is available with output voltages of 1.2 V, 1.5 V, 1.8 V, 2.5 V, 3.3 V and 5 V. The output voltage is adjustable from 80% to 110% of the nominal value. The series also has a remote ON/OFF capability. Overcurrent, overvoltage and overtemperature protection features are included as standard. Full international safety approval including EN60950-1 VDE and UL/cUL60950, reduces compliance costs and time to market.



Patent No. 6,765,810  
Other Patents Pending

**2 YEAR WARRANTY***All specifications are typical at nominal input, full load at 25 °C ambient unless otherwise stated***SPECIFICATIONS****OUTPUT SPECIFICATIONS**

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	

**INPUT SPECIFICATIONS**

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.)

**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 SPECIFICATIONS**

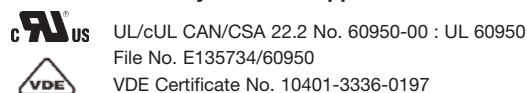
Basic insulation	Input/output	2250 Vdc
Switching frequency	Fixed	480 kHz
Approvals and standards	(See Note 3)	EN60950-1 VDE UL/cUL 60950
Material flammability	UL94V-0	
Weight	37 g (1.30 oz)	
MTBF	Telcordia Tech SR-332	3,866,933 hours

**ENVIRONMENTAL SPECIFICATIONS**

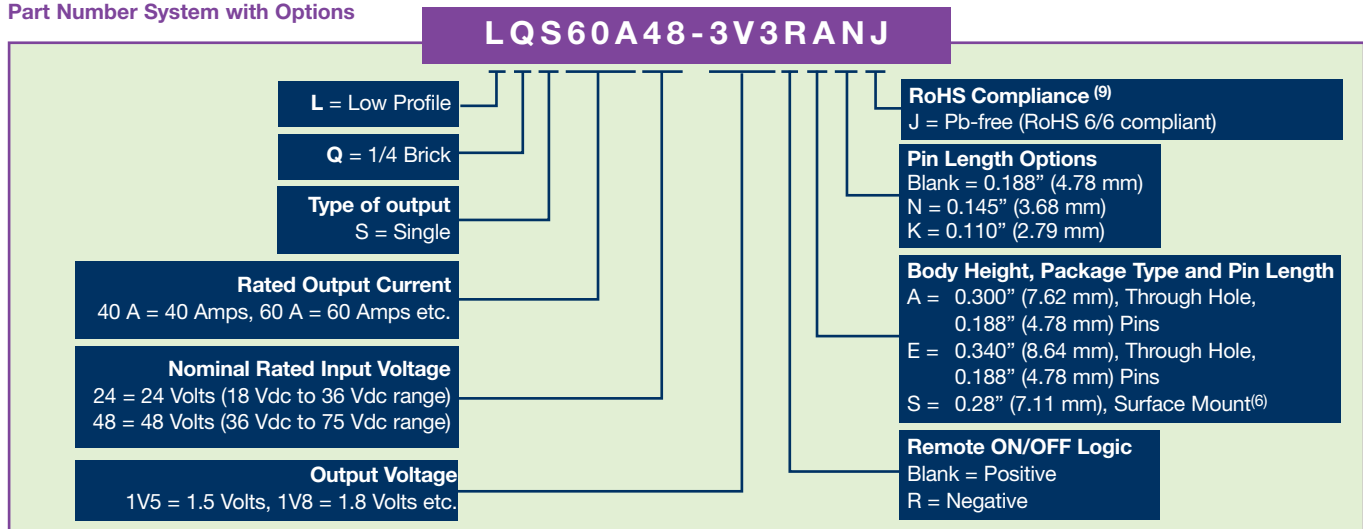
Thermal performance	Operating ambient, temperature	-40 °C to +85 °C
	Non-operating	-55 °C to +125 °C

**PROTECTION**

Short-circuit	Continuous
Overvoltage	Non-latching
Thermal	125 °C hot spot temperature with automatic recovery

**International Safety Standard Approvals**

OUTPUT VOLTAGE	INPUT CURRENT (MAX.) (4)	INPUT RIPPLE CURRENT (5)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION			RIPPLE & NOISE (pk - pk)	MODEL NUMBER (6,9,10)
					SET POINT ACCURACY (Max.)	LINE	LOAD		
<b>48 Vin VALUE MODELS</b>									
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
<b>48 Vin PERFORMANCE MODELS</b>									
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
<b>48 Vin ULTRA MODELS</b>									
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)
<b>24 Vin MODELS</b>									
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

**Part Number System with Options**

**Notes**

- 1 di/dt = 1 A/μs, 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. **LQS100A48-1V8RAJ**.
- 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.



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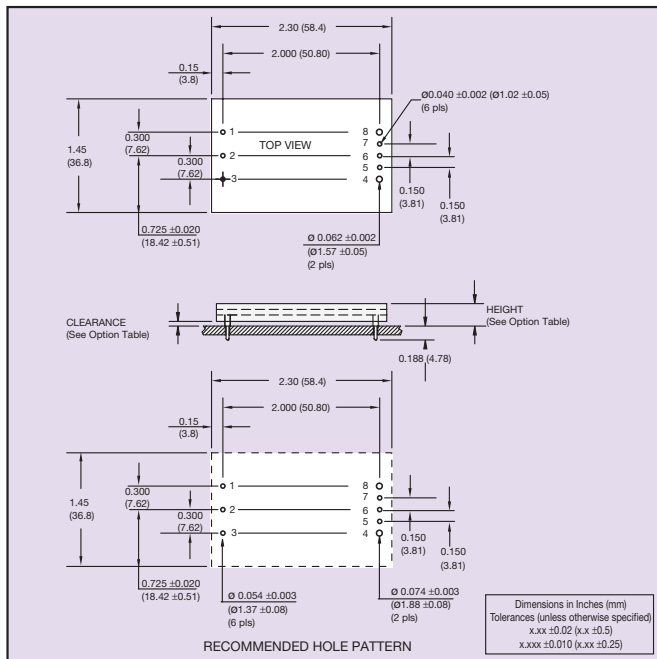
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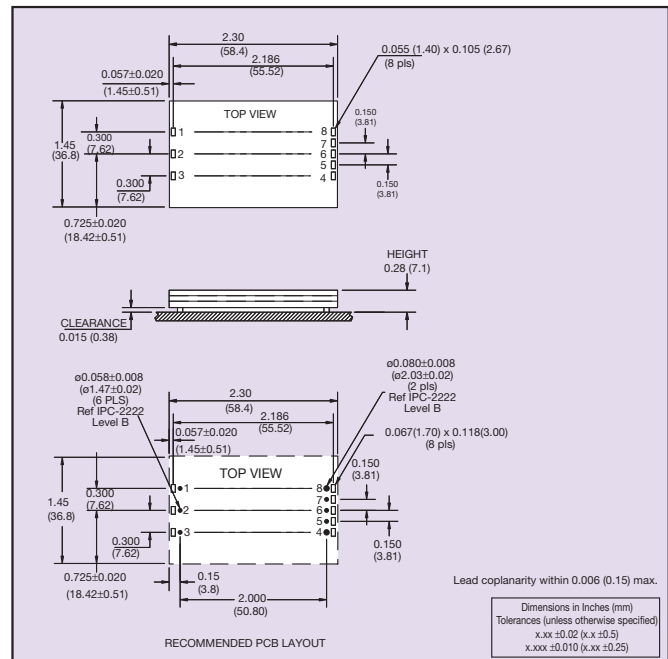
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For the most current data and application support visit [www.artesyn.com/powergroup/products.htm](http://www.artesyn.com/powergroup/products.htm)

**NEW Product**



**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

**Pin Connection Table**

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)

**Dimension Options Table**

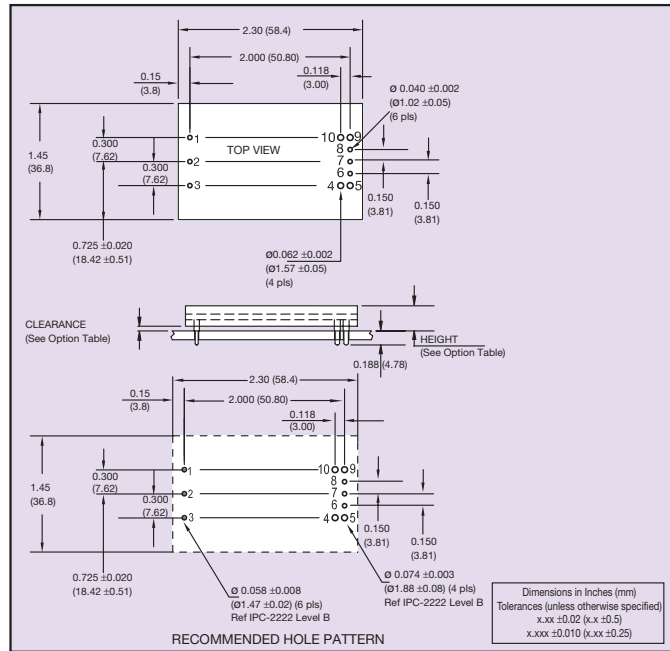


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**48 V Mechanical Drawing for Output Current Greater than 50 A  
“The Double P” Pinout (7)**

PIN CONNECTIONS			
PIN NUMBER	FUNCTION	PIN NUMBER	FUNCTION
1	+Vin	6	-Sense
2	ON/OFF	7	Trim
3	-Vin	8	+Sense
4	-Vout	9	+Vout
5	-Vout	10	+Vout

**Pin Connection Table**

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)

**Dimension Options Table**

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Please consult our website for the following items: ✓ Application Note ✓ Longform Datasheets [www.artesyn.com](http://www.artesyn.com)