

ALQ/AEQ42B50

Quarter-Brick Series

Fixed Ratio

2nd Generation IBC

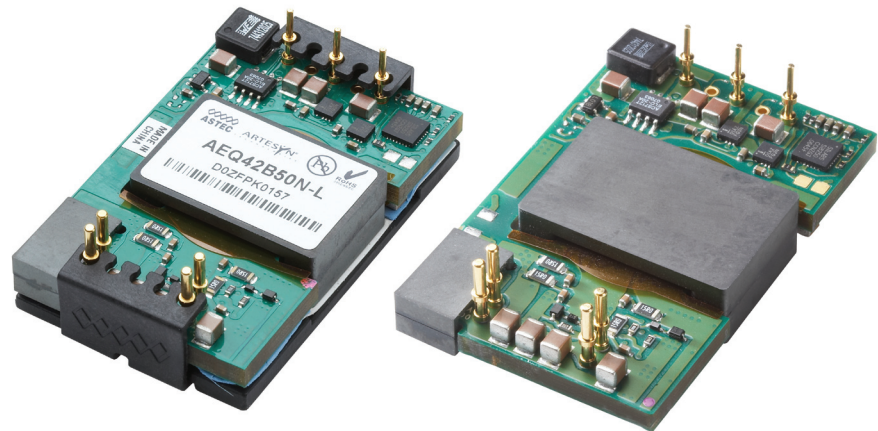
Total Power: 500 Watts
Input Voltage: 36 - 55 Vdc
Output Voltage: 12 Vdc

Special Features

- 48 V input with isolated 12 V output
- Ultra-high efficiency, 97%
- Unprecedented usable output power levels
- High power density open-frame or baseplate technology
- Wide operating ambient temperature range
- Meets basic insulation requirements of EN60950-1
- Remote ON/OFF and overtemperature protection
- Redundant output pins
- RoHS compliant
- 2 year warranty

Safety

- UL, cUL EN60950-1
- TUV EN60950-1



Electrical Specifications

Output		
Total error band: (including setpoint, line, load and temperature)	36 - 55 V	8.5 - 13.75 V
Minimum load:		0 A
Overshoot:	At turn-on and turn-off	None
Undershoot:		None
Ripple and noise 5 - 20 mHz:	(See Note 2)	100 mV pk - pk typ.
Input		
Input voltage range:		36 - 55 V
Input current (max.):	(See Note 1)	11 A max. @ I _o max. and V _{in} = min. rated
Remote ON/OFF:		
ON:		>2.95 V
OFF:		<1.20 V
Undervoltage lockout:	Power up	35 V
	Power down	33 V
Start-up time:	Power up	11 ms
	Remote ON/OFF	2 ms
Standing loss:		10 W (V _{in} = V _{in} , nom)



General Specifications

Efficiency:		97%
Isolation voltage:	Input/output	1500 Vdc
Switching frequency:	Fixed	195 KHz typ.
Material flammability:		UL94V-0
Weight:		60 grams
Demonstrated life test:	48 Vin, 40 °C, 50 % load	> 1.4 M Hrs.

Environmental Specifications

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

Protection

Short-circuit:		Hiccup
Thermal:		115 °C hot spot
Input overvoltage protection (autorecovery):	T - On threshold	57.0 - 59.5 V
	T - Off threshold	55.0 - 58.0 V

Pin Connections

Single Output

1. +Vin
2. Remote on/off
3. -Vin
4. -Vout
5. -Vout
9. +Vout
10. +Vout

Notes:

1. Recommended input fusing is a 20 A HRC 250 V rated fuse.
2. Measured at 20 MHz bandwidth with external 10 uF tant. capacitor in parallel with 0.1 uF @ 50 V X7R ceramic capacitor placed across +Vout and -Vout, TA = 25 °C.
3. Efficiency measurements taken at full load, nominal input, TA = 25 °C, airflow at 200 LFM.
4. Through-hole termination intended for wave soldering process.
5. All specifications are considered typical values unless otherwise noted and are subject to change without notice.
6. All dimensions are provided in inches [millimeters]. Pin placement tolerance: ± 0.005 [0.127]. Mechanical tolerance: ± 0.02 [0.50].
7. 2 year warranty.

Ordering Information

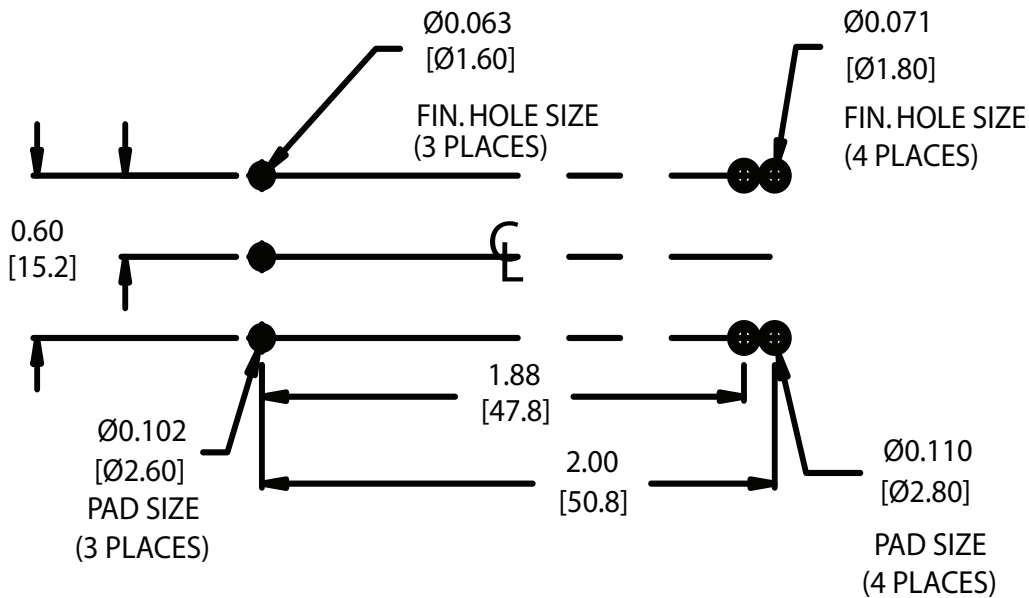
Output Power	Input Voltage	Output Voltage	Overall Output Regulation	Output Current	Efficiency	Model Number	Construction
500 W	36 - 55 V	12 V	8.5 - 13.75 V	42 A	97%	ALQ42B50(N)-(3)L	Low profile Open-frame
500 W	36 - 55 V	12 V	8.5 - 13.75 V	42 A	97%	AEQ42B50(N)-(3)L	Baseplate

Notes / Options:

- Suffix "-3" : 5 mm pin length, 1 pair output pin
- Blank: 5mm pin length, 2 pairs output pin
- Suffix "N" : Designates negative logic enable (default is positive logic with no suffix "N" required)
- Suffix "L" : RoHS 6/6 Compliant

Recommended PCB Hole Pattern

RECOMMENDED PAD LAY OUT



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.
©2009 Emerson Electric Co.