

Embedded Power for Business-Critical Continuity

Rev. 11.14.08 _111
ALQ/AEQ42B50
1 of 3

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



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) |

Safety

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



General Specifications

| | | |
|-------------------------|--------------------------|--------------|
| Efficiency: | | 97% |
| Isolation voltage: | Input/output | 1500 Vdc |
| Switching frequency: | Fixed | 195 KHz typ. |
| Material flammability: | | UL94V-0 |
| Weight: | | TBD |
| 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)-(6)L | Low profile Open-frame |
| 500 W | 36 - 55 V | 12 V | 8.5 - 13.75 V | 42 A | 97% | AEQ42B50(N)-(6)L | Baseplate |

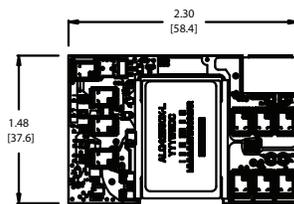
Notes / options:

Suffix "-6" : 3.7 mm pin length (default is 5 mm)

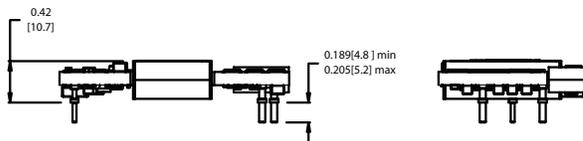
Suffix "N" : Designates negative logic enable (default is positive logic with no suffix "N" required)

Mechanical Drawing

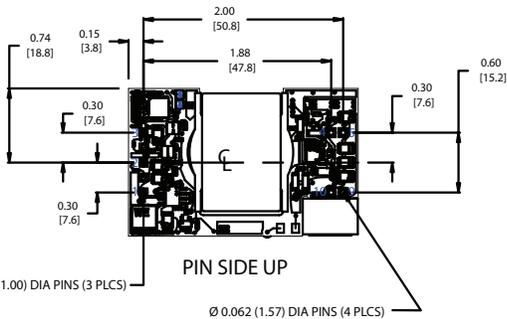
ALQ-Open-frame



PIN SIDE DOWN

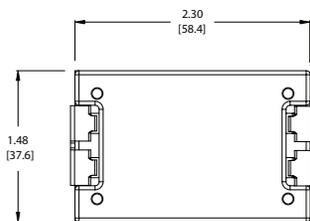


SIDE VIEW

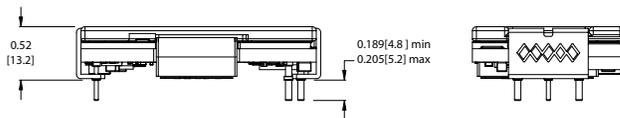


PIN SIDE UP

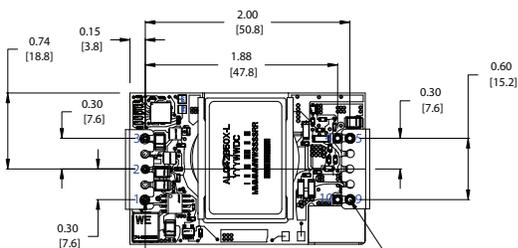
AEQ-Baseplate



PIN SIDE DOWN



SIDE VIEW



PIN SIDE UP

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.