



XBV Series Power Supply/Charger Boards

Installation Guide

Overview:

Altronix XBV Series power supply/chargers convert a 220VAC (working range 198VAC - 256VAC), 50/60Hz input to a 12VDC or 24VDC output.

Specifications:

| Altronix Model Number | Input Rating 220VAC 50/60Hz | Output Voltage (Current) | | Input Fuse Rating | Battery Fuse Rating | Maximum Charge Current |
|-----------------------|-----------------------------------|--------------------------|-------|-------------------|---------------------|------------------------|
| | | 12VDC | 24VDC | | | |
| AL300XB2V | 1.5A | 2.5A | 2.5A | 5A / 250V | 15A / 250V | 0.7A |
| AL400XB2V | 1.5A | 4A | 3A | 5A / 250V | 15A / 250V | 0.7A |
| AL600XB220 | 1.5A | 6A | 6A | 5A / 250V | – | 0.7A |
| AL1012XB220 | 1.3A | 10A | – | 5A / 250V | 15A / 250V | 0.7A |
| AL1024XB2V | 2.5A | – | 10A | 5A / 250V | 15A / 250V | 3.6A |

Output:

- Filtered and electronically regulated output.

Battery Backup:

- Built-in charger for sealed lead acid or gel type batteries.
- Automatic switch over to stand-by battery when AC fails.
- Zero voltage drop when switched over to battery backup.

Visual Indicators:

- AC input, DC output and BAT trouble LED indicators.

Supervision:

- AC fail supervision (form "C" contacts).
- Low battery and battery presence supervision (form "C" contacts).

Additional Features:

- Short circuit and thermal overload protection.

Board Dimensions (L x W x H approximate):

AL300XB2V:

7.1" x 4.5" x 1.44"
(180.3mm x 114.3mm x 36.6mm).

AL400XB2V:

7.1" x 4.5" x 1.44"
(180.3mm x 114.3mm x 36.6mm).

AL600XB220:

7.1" x 4.5" x 2"
(180.3 mm x 114.3 mm x 50.8 mm).

AL1012XB220:

7.25" x 4.5" x 1.75"
(184.2mm x 114.3mm x 44.5mm).

AL1024XB2V:

8.4" x 4.5" x 1.4"
213.4mm x 114.4mm x 35.6mm).

Stand-by Specifications:

AL300XB2V:

| Output | 4 hr. of Stand-by and 5 Minutes of Alarm | 24 hr. of Stand-by and 5 Minutes of Alarm | 60 hr. of Stand-by and 5 Minutes of Alarm |
|----------------------|--|---|---|
| 12VDC / 40AH Battery | Stand-by = 2.5A Alarm = 2.5A | Stand-by = 1.0A Alarm = 2.5A | Stand-by = 300mA Alarm = 2.5A |
| 24VDC / 12AH Battery | - | Stand-by = 200mA Alarm = 2.5A | - |
| 24VDC / 40AH Battery | Stand-by = 2.5A Alarm = 2.5A | Stand-by = 1.0A Alarm = 2.5A | Stand-by = 300mA Alarm = 2.5A |

AL400XB2V:

| Output | 4 hr. of Stand-by and 5 Minutes of Alarm | 24 hr. of Stand-by and 5 Minutes of Alarm | 60 hr. of Stand-by and 5 Minutes of Alarm |
|----------------------|--|---|---|
| 12VDC / 40AH Battery | Stand-by = 4.0A Alarm = 4.0A | Stand-by = 1.0A Alarm = 4.0A | Stand-by = 300mA Alarm = 4.0A |
| 24VDC / 12AH Battery | - | Stand-by = 200mA Alarm = 3.0A | - |
| 24VDC / 40AH Battery | Stand-by = 3.0A Alarm = 3.0A | Stand-by = 1.0A Alarm = 3.0A | Stand-by = 300mA Alarm = 3.0A |

AL600XB220:

| Output | 4 hr. of Stand-by and 5 Minutes of Alarm | 24 hr. of Stand-by and 5 Minutes of Alarm | 60 hr. of Stand-by and 5 Minutes of Alarm |
|----------------------|--|---|---|
| 12VDC / 40AH Battery | Stand-by = 6.0A Alarm = 6.0A | Stand-by = 1.0A Alarm = 6.0A | Stand-by = 300mA Alarm = 6.0A |
| 24VDC / 12AH Battery | - | Stand-by = 200mA Alarm = 6.0A | - |
| 24VDC / 40AH Battery | Stand-by = 6.0A Alarm = 6.0A | Stand-by = 1.0A Alarm = 6.0A | Stand-by = 300mA Alarm = 6.0A |

AL1012XB220:

| Output | Access Control Applications Stand-by |
|----------------------|--------------------------------------|
| 12VDC / 12AH Battery | 30 minutes of backup @ 10A |

AL1024XB2V:

| Output | 15 min. of Stand-by and 5 min. of Alarm | 4 hr. of Stand-by and 5 min. of Alarm | 24 hr. of Stand-by and 5 min. of Alarm | 60 hr. of Stand-by and 5 min. of Alarm | Access Control Applications Stand-by |
|----------------------|---|---------------------------------------|---|---|--------------------------------------|
| 24VDC / 12AH Battery | Stand-By = 8A Alarm = 10A | Stand-By = 1.5A Alarm = 10A | Stand-By = 200mA Alarm = 10A | Stand-By = 100mA Alarm = 10A | 20 mins./8A |
| Output | 15 min. of Stand-by and 5 min. of Alarm | 4 hr. of Stand-by and 5 min. of Alarm | 24 hr. of Stand-by and 15 min. of Alarm | 60 hr. of Stand-by and 15 min. of Alarm | Access Control Applications Stand-by |
| 24VDC / 65AH Battery | - | Stand-By = 8.0A Alarm = 10A | Stand-By = 1.5A Alarm = 10A | Stand-By = 500mA Alarm = 10A | 4 hrs./8A |

Installation Instructions:

Wiring methods shall be in accordance with in accordance with article 760 of The National Electrical Code or NFPA 72, as well as all applicable local codes and authorities having jurisdiction.

Product is intended for indoor use only.

1. Mount the power supply/charger board in the desired location/enclosure (mounting hardware included).
2. Set desired DC output voltage by setting SW1 to the appropriate position on the power supply board (Fig. 1e, pg. 4).
3. Connect unswitched AC power (220VAC 50/60Hz) to the terminals marked [L, G, N] (Fig. 1a, pg. 4).
Use 14 AWG or larger for all power connections (Battery, AC input, DC output).
Use 22 AWG to 18 AWG for power-limited circuits (AC Fail/Low Battery reporting).

Keep power-limited wiring separate from non power-limited wiring (220VAC 50/0Hz Input, Battery Wires). Minimum 0.25" spacing must be provided.

CAUTION: Do not touch exposed metal parts. Shut branch circuit power before installing or servicing equipment. There are no user serviceable parts inside.

Refer installation and servicing to qualified service personnel.

4. Measure output voltage before connecting devices. This helps avoiding potential damage.
5. Connect devices to be powered to the terminals marked [+ DC -] (Fig. 1d, pg. 4).
6. For Access Control applications batteries are optional. When batteries are not used, a loss of AC will result in the loss of output voltage. When the use of stand-by batteries is desired, they must be lead acid or gel type.
Connect battery to terminals marked [+ BAT -] (Fig. 1c, pg. 4).
Note: Separate enclosure must be used for housing 40AH or 65AH batteries.
7. It is required to connect appropriate signaling notification devices to [AC FAIL] & [BAT FAIL] (Fig. 1b, pg. 4) supervisory relay outputs. Use 22AWG to 18AWG wires. AC fail will report in 5 minutes.
To delay report for 6 hours cut "AC Delay" jumper (Fig. 1, pg. 4).

Wiring:

Use 18 AWG or larger for all low voltage power connections.

Note: Take care to keep power-limited circuits separate from non power-limited wiring (220VAC, Battery).

Maintenance:

Unit should be tested at least once a year for the proper operation as follows:

Output Voltage Test: Under normal load conditions, the DC output voltage should be checked for proper voltage level.

Battery Test: Under normal load conditions check that the battery is fully charged, check specified voltage (12VDC @ 13.2 or 24VDC @ 26.4) both at the battery terminal and at the board terminals marked [+ BAT -] to ensure that there is no break in the battery connection wires.

Replacing Batteries: Disconnect existing batteries. Connect battery to the terminals marked [+ BAT -].
Use two (2) 12VDC batteries connected in series for 24VDC operation.

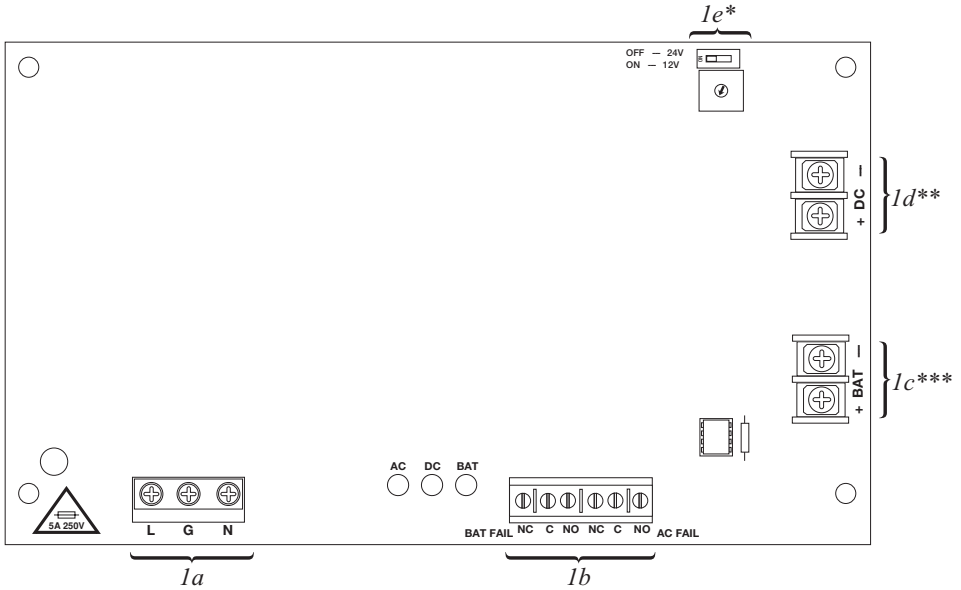
LED Diagnostics (AL300XB2V, AL400XB2V and AL600XB220):

| Red (DC) | Green (AC) | Red (BAT) | Power Supply Status |
|----------|------------|-----------|--|
| ON | ON | ON | Normal operating condition. |
| ON | OFF | ON | Loss of AC. Stand-by battery is supplying power. |
| OFF | ON | OFF | No DC output. Battery trouble. |
| OFF | OFF | OFF | Loss of AC. Discharged or no stand-by battery. No DC output. |
| ON | ON | OFF | Battery missing / low. |

LED Diagnostics (AL1012XB220 and AL1024XB2V):

| Red (DC) | Green (AC) | Power Supply Status |
|----------|------------|--|
| ON | ON | Normal operating condition. |
| ON | OFF | Loss of AC. Stand-by battery is supplying power. |
| OFF | ON | No DC output. |
| OFF | OFF | Loss of AC. Discharged or no stand-by battery. No DC output. |

Fig. 1 - XBV configuration



* Output Voltage Selection DIP Switch. Not applicable for AL1012XB220 and AL1024XB2V.

** AL1012XB220 terminals marked [- DC +]

*** AL1024XB2V terminals marked [- BAT +]

Terminal Identification:

| Terminal Legend | Function/Description |
|---|---|
| L, G, N (Fig. 1a, pg. 4) | Connect 220VAC to these terminals: L to hot, G to ground, N to neutral. |
| + DC - (Fig. 1d, pg. 4) | AL300XB2V: 12VDC or 24VDC @ 2.5A continuous output. AL400XB2V: 12VDC @ 4A or 24VDC @ 3A continuous output. AL600XB220: 12VDC or 24VDC @ 6A continuous output. AL1012XB220: 12VDC @ 10A continuous output. AL1024XB220: 24VDC @ 8A continuous, 10A in alarm. |
| AC FAIL NO, C, NC (Fig. 1b, pg. 4) | Used to notify loss of AC power, e.g. connect to audible device or alarm panel. Relay normally energized when AC power is present. Contact rating 1A @ 28VDC. AC or brownout fail is reported within 1 minute of event. To delay reporting for up to 6 hrs., cut "AC Delay" jumper and reset power to unit. |
| BAT FAIL NO, C, NC (Fig. 1b, pg. 4) | Used to indicate low battery condition, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating 1A @ 28VDC. A removed battery is reported within 1 minute. Battery reconnection is reported within 1 minute. Low battery threshold: approximately 21VDC. |
| + BAT - (Fig. 1c, pg. 4) | Stand-by battery connections. AL300XB2V, AL400XB2V, AL600XB220, AL1012XB220 maximum charge current 0.7A. AL1024XB2V maximum charge current 3.6A. |

Altronix is not responsible for any typographical errors.

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