

# ALRLBV Series

Sub-Assembly

Power Supply/Charger Boards  
with LED Cable Assembly

## Models Include:

### AL400RLBV

- 12 or 24VDC @ 4A

### AL600RLBV

- 12 or 24VDC @ 6A

### AL1012RLBV

- 12VDC @ 10A

### AL1024RLBV

- 24VDC @ 10A

## Installation Guide



## Overview:

Altronix RLVB power supply/chargers convert a 220VAC / 60Hz input to a 12VDC or 24VDC output.

## Specifications:

| Altronix Model Number | Input Rating<br>220VAC<br>50/60Hz | Output Voltage (Current) |       | Input Fuse Rating | Battery Fuse Rating | Maximum Charge Current |
|-----------------------|-----------------------------------|--------------------------|-------|-------------------|---------------------|------------------------|
|                       |                                   | 12VDC                    | 24VDC |                   |                     |                        |
| AL400RLBV             | 1.5A                              | 4A                       | 3A    | 5A/250V           | 15A/32V             | 0.7A                   |
| AL600RLBV             | 1.5A                              | 6A                       | 6A    | 5A/250V           | —                   | 0.7A                   |
| AL1012RLBV            | 1.3A                              | 10A                      | —     | 5A/250V           | 15A/32V             | 0.7A                   |
| AL1024RLBV            | 2.5A                              | —                        | 10A   | 5A/250V           | 15A/32V             | 3.6A                   |

### Agency Listings:

- CE European Conformity.

### 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.

### Supervision:

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

### Visual Indicators:

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

### Additional Features:

- Short circuit and thermal overload protection.

### Board Dimensions (L x W x H approximate):

#### AL400RLBV:

7.1" x 4.5" x 1.44" (180mm x 114mm x 37mm).

#### AL600RLBV:

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

#### AL1012RLBV:

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

#### AL1024RLBV:

8.4" x 4.5" x 1.9"  
(213.4mm x 114.3mm x 48.3mm).

## Stand-by Specifications:

### AL400RLBV:

| Output               | Burg. Application<br>4 hr. of Stand-by/<br>5 min. of Alarm | Fire Applications<br>24 hr. of Stand-by/<br>5 min. of Alarm | 60 hr. of Stand-by/<br>5 min. of Alarm* | Access Control<br>Applications<br>Stand-by |
|----------------------|--|---|---|--|
| 12VDC / 40AH Battery | Stand-by = 4.0A<br>Alarm = 4.0A                            | Stand-by = 1.0A<br>Alarm = 4.0A                             | Stand-by = 300mA<br>Alarm = 4.0A        | 4 hrs./4A                                  |
| 24VDC / 12AH Battery | -  | Stand-by = 200mA<br>Alarm = 3.0A                            | -                                       | -  |
| 24VDC / 40AH Battery | Stand-by = 3.0A<br>Alarm = 3.0A                            | Stand-by = 1.0A<br>Alarm = 3.0A                             | Stand-by = 300mA<br>Alarm = 3.0A        | 4 hrs./3A                                  |

### AL600RLBV:

| Output               | Burg. Applications<br>4 hr. of Stand-by/<br>5 min. of Alarm | Fire Applications<br>24 hr. of Stand-by/<br>5 min. of Alarm | 60 hr. of Stand-by/<br>5 min. of Alarm* | Access Control<br>Applications<br>Stand-by |
|----------------------|---|---|---|--|
| 12VDC / 40AH Battery | Stand-by = 6.0A<br>Alarm = 6.0A                             | Stand-by = 1.0A<br>Alarm = 6.0A                             | Stand-by = 300mA<br>Alarm = 6.0A        | 4 hrs./6A                                  |
| 24VDC / 12AH Battery | -   | Stand-by = 200mA<br>Alarm = 6.0A                            | -                                       | -  |
| 24VDC / 40AH Battery | Stand-by = 6.0A<br>Alarm = 6.0A                             | Stand-by = 1.0A<br>Alarm = 6.0A                             | Stand-by = 300mA<br>Alarm = 6.0A        | 4 hrs./6A                                  |

### AL1012RLBV:

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

### AL1024RLBV:

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

## Installation Instructions:

Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/NFPA 72/ANSI, the Canadian Electrical Code and with all local codes and authorities having jurisdiction. Product is intended for indoor use only.

1. Refer to Sub-Assembly Installation Instructions for mounting Rev. MS020119.
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 60Hz) to the terminals marked [L, 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 / 60Hz Input, DC Output (refer to Specifications Chart, pg. 2), 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.**

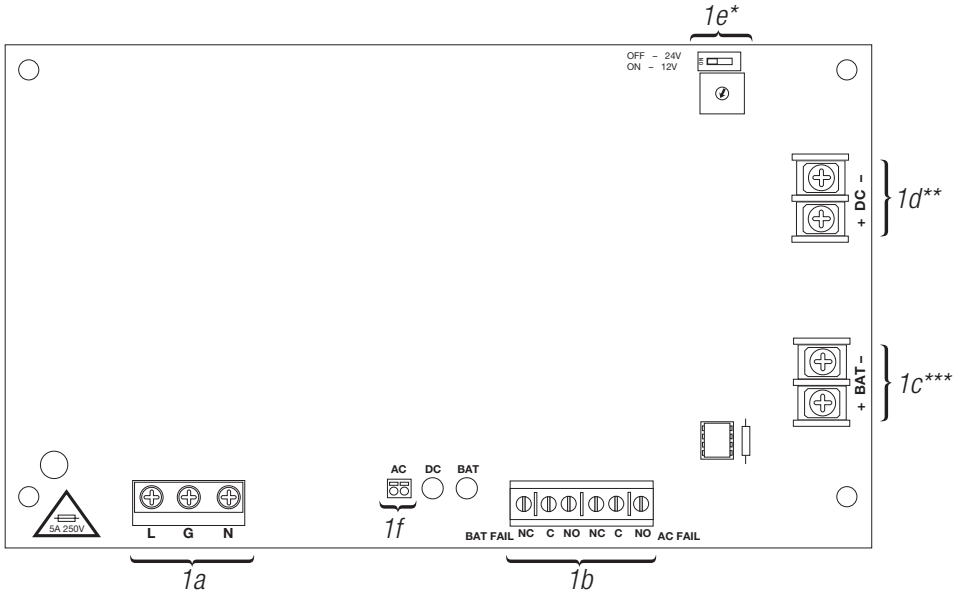
**Refer installation and servicing to qualified service personnel.**

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).
8. Connect included LED Cable harness to AC terminals (Fig. 1c, pg. 4) carefully observing polarity. Location of AC LED terminals may vary, depending on the board. See Fig. 2, pg. 5 for details.

Fig. 1 - RLBV Configuration



\* Output Voltage Selection DIP Switch. Not applicable for AL1012RLBV and AL1024RLBV.

\*\* AL1012RLBV terminals marked [- DC +]

\*\*\* AL1024RLBV terminals marked [- BAT +]

## Fig. 2 - LED Cable Harness Connection

Fig. 2a - AL400RLBV

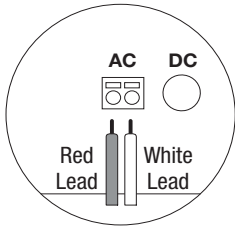


Fig. 2b - AL600RLBV

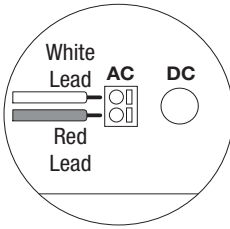


Fig. 2c - AL1012RLBV

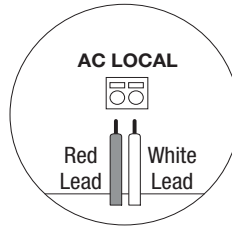
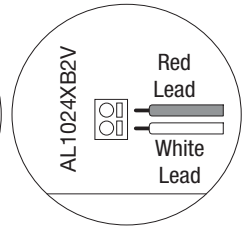


Fig. 2d - AL1024RLBV



### 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 (AL400RLBV and AL600RLBV):

| 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 (AL1012RLBV and AL1024RLBV):

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

## Terminal Identification:

| Terminal Legend       | Function/Description   |
|-----------------------|--|
| L, G, N               | Connect 220VAC to these terminals: L to hot, N to neutral ( <i>Fig. 1a, pg. 4</i> ).   |
| + DC – **             | <p><b>AL400RLBV:</b> 12VDC @ 4A or 24VDC @ 3A continuous output (Power-Limited output) (<i>Fig. 1d, pg. 4</i>).</p> <p><b>AL600RLBV:</b> 12VDC or 24VDC @ 6A continuous output (Non Power-Limited output) (<i>Fig. 1d, pg. 4</i>).</p> <p><b>AL1012RLBV:</b> 12VDC @ 10A continuous output (Non Power-Limited output) (<i>Fig. 1d, pg. 4</i>).</p> <p><b>AL1024RLBV:</b> 24VDC @ 8A continuous, 10A in alarm (UL1481).<br/>24VDC @ 10A (UL294) (Non Power-Limited output) (<i>Fig. 1d, pg. 4</i>).</p> |
| AC FAIL<br>NO, C, NC  | 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 ( <i>Fig. 1b, pg. 4</i> ).  |
| BAT FAIL<br>NO, C, NC | 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 ( <i>Fig. 1b, pg. 4</i> ).  |
| + BAT – ***           | Stand-by battery connections ( <i>Fig. 1c, pg. 4</i> ).<br>AL400RLBV, AL600RLBV, AL1012RLBV maximum charge current 0.7A.<br>AL1024RLBV maximum charge current 3.6A.  |

\*\* AL1012RLBV terminals marked [– DC +]

\*\*\* AL1024RLBV terminals marked [– BAT +]

## Model Reference Chart:

| Sub-Assembly Board | Enclosures          |
|--------------------|---------------------|
| AL400RLBV          | Trove1R and Trove2R |
| AL600RLBV          | Trove1R and Trove2R |
| AL1012RLBV         | Trove1R and Trove2R |
| AL1024RLBV         | Trove1R and Trove2R |

## Notes:

Altronix is not responsible for any typographical errors.

140 58th Street, Brooklyn, New York 11220 USA | phone: 718-567-8181 | fax: 718-567-9056  
website: [www.altronix.com](http://www.altronix.com) | e-mail: [info@altronix.com](mailto:info@altronix.com) | Lifetime Warranty  
IALRLBV G03X



**MEMBER**