



# AL176UL Access Control Power Supply/Charger

Rev. 081701

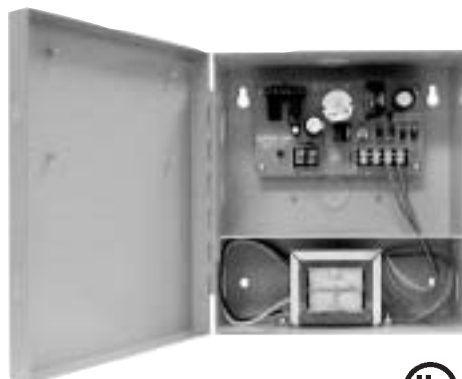
### Overview:

The AL176UL is a power limited power supply/charger that converts a 115VAC / 60Hz input, into 12VDC or 24VDC output, (see specifications). They are intended for use in applications requiring UL Listing for Access Control (UL294). It must be installed in accordance with National and Local Electrical Codes and Regulations.

### Specifications:

- UL Listed - U.S. and Canada for Access Control Systems (UL294).
- Class 2 rated power limited outputs.
- Input 115VAC/60Hz, .6 amp.
- Field selectable 12VDC or 24VDC power limited output.
- 1.75 amp continuous supply current @ 12VDC or 24VDC.
- Filtered and electronically regulated output.
- Maximum charge current: 400mA.
- Automatic switch over to stand-by battery when AC fails (zero voltage drop).
- AC fail supervision (form "C" 1 amp @ 28VDC).
- Low battery supervision (form "C" 1 amp @ 28VDC).
- AC input and DC output LED indicators.
- Short circuit and thermal overload protection.
- Includes power supply, transformer, enclosure and battery leads.

Enclosure Dimensions: 8.5"H x 7.5"W x 3.5"D



### Power Supply Output Specifications:

| Output VDC | Jumper         | Max. Stand-by Load DC | Max. Alarm Load DC | Battery (optional) |
|------------|----------------|-----------------------|--------------------|--------------------|
| 12VDC      | Jumper Removed | 1.75 amp              | 1.75 amp           | 12VDC              |
| 24VDC      | Jumper On      | 1.75 amp              | 1.75 amp           | 24VDC              |

### Stand-by Specifications:

| Output               | 4 hr. of Stand-by & 5 Minutes of Alarm |
|----------------------|--|
| 12VDC / 7 AH Battery | Stand-by = 1.25 amp                    |
| 24VDC / 7 AH Battery | Alarm = 1.25 amp                       |

### Installation Instructions:

The AL176UL should be installed in accordance with article 760 of The National Electrical Code or NFPA 72 as well as all applicable Local Codes.

See *Terminal Identification Chart on page 2 for a description of each terminal function.*

1. Mount the AL176UL in desired location.
2. Connect AC power to the black and white flying leads of the transformer. Secure green wire lead to earth ground. Use 18 AWG or larger for all power connections (Battery, AC input). Use 22 AWG to 18 AWG for power limited circuits (DC output, AC FAIL and LOW BAT supervisory relays).

**Keep power limited wiring separate from non-power limited wiring (115VAC / 60Hz Input, Battery Wires). Minimum .25" spacing must be provided.**

3. Set the AL176UL to the desired DC output voltage by either removing/leaving jumper. (see *Power Supply Output Specifications*).

**Note:** Measure output voltage before connecting devices. This helps avoid potential damage.

4. Connect battery to terminals marked [+ BAT -] on the unit (battery leads included). Use two (2) 12VDC batteries connected in series for 24VDC operation.

**Note:** 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 are desired, they must be lead acid or gel type.

5. Connect appropriate signaling notification devices to AC Fail and Low Bat supervisory relay outputs.  
**Note:** To meet UL requirements, AC Supervisory outputs must be connected to the zone of Alarm Control Panel or to visual AC trouble indicator.
6. For Access Control Device connections refer to Terminal Identification Chart.

**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 (*Power Supply Output Specifications Chart*).

**Battery Test:** Under normal load conditions check that the battery is fully charged, check specified voltage both at battery terminal and at the board terminals marked [- BAT +] to insure there is no break in the battery connection wires.

**Note:** Maximum charging current under discharge is 400mA.

**Note:** Expected battery life is 5 years, however it is recommended changing batteries in 4 years or less if needed.

**LED Diagnostics:**

| Red (DC) | Green (AC) | Power Supply Status   |
|----------|------------|---|
| ON       | ON         | Normal function   |
| ON       | OFF        | Battery backup is powering output                                 |
| OFF      | ON         | No DC output  |
| OFF      | OFF        | Loss of AC. Discharged or missing stand-by battery. No DC output. |

**Terminal Identification:**

| Terminal Legend          | Function/Description   |
|--------------------------|--|
| XFMR INPUT               | Low voltage AC input.  |
| + DC OUT –               | Continuous positive (+) DC power output voltage. Common negative (-) output (ground).  |
| + BAT –                  | Stand-by battery connections.  |
| AC FAIL<br>N.O., C, N.C. | Used to notify loss of AC e.g connect audible device or alarm panel. Relay is normally energized when AC power is present. Contact rating 1 amp @ 28VDC. |
| LOW BAT<br>N.O., C, N.C. | Used to notify low battery condition e.g connect audible device or alarm panel. Relay is normally energized. Contact rating 1 amp @ 28VDC.               |

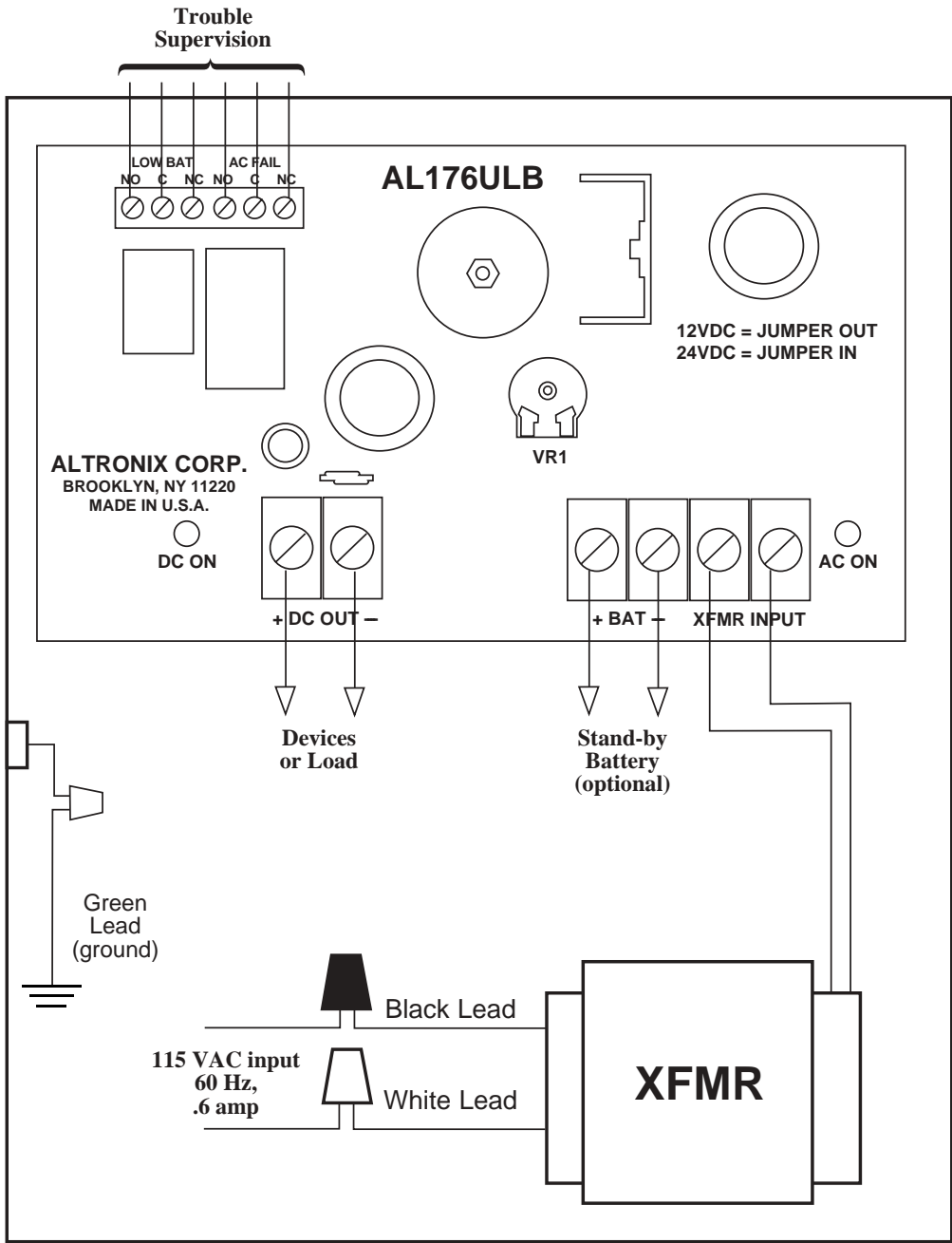


Fig. 1

**Enclosure Dimensions:**

8"H x 7.25"W x 3.5"D

