AL176UL
Access Control Power Supply/Charger

Overview:

Altronix AL176UL power-limited power supply/charger converts a 115VAC/60Hz input into 12VDC or 24VDC output (see specifications). It is 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:

Agency Listings:

- **UL294*** UL Listed in U.S. and Canada for Access Control Systems.

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Input:

- Input 115VAC/60Hz, 0.6A.

Output:

- Field selectable 12VDC or 24VDC output.
- 1.75A supply current.
- Class 2 Rated power-limited auto-resettable output.
- PTC protected output rated @ 2.5A.
- Filtered and electronically regulated output.
- Short circuit and thermal overload protection.

Battery Backup:

- Built-in charger for sealed lead acid or gel type batteries.
- Automatic switch over to stand-by battery when AC fails.
- Maximum charge current 0.4A.

Supervision:

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

Visual Indicators:

- AC input and DC output LED indicators.

Enclosure Dimensions (H x W x D):

8.125" x 7.4" x 3.55"
(206.4mm x 188mm x 90.2mm).

***ANSI/UL 294 7th Ed. Access Control Performance Levels:**
Destructive Attack - I; Endurance - N/A; Line Security - I; Stand-by Power - I, IV.

Power Supply Output Specifications:

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

Stand-by Specifications:

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

Installation Instructions:

Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/NFPA 72/ANSI, and with all local codes and authorities having jurisdiction. Product is intended for indoor use only.
See **Terminal Identification Chart** on *Pg. 2* for a description of each terminal function.

1. Mount unit in the desired location. Mark and predrill holes in the wall to line up with the top two keyholes in the enclosure. Install two upper fasteners and screws in the wall with the screw heads protruding. Place the enclosure's upper keyholes over the two upper screws; level and secure. Mark the position of the lower two holes. Remove the enclosure. Drill the lower holes and install two fasteners. Place the enclosure's upper keyholes over the two upper screws. Install the two lower screws and make sure to tighten all screws *(Enclosure Dimensions, pg. 4)*.
2. Connect AC power to the black and white flying leads of the transformer. Secure green wire lead to earth ground. Green "AC" LED on power supply board will turn on. This light can be seen through the LED lens on the door of the enclosure. 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 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.

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 avoiding potential damage.
4. Connect battery to the 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 is 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 the battery terminal and at the board terminals marked [+ BAT –] to ensure that 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.

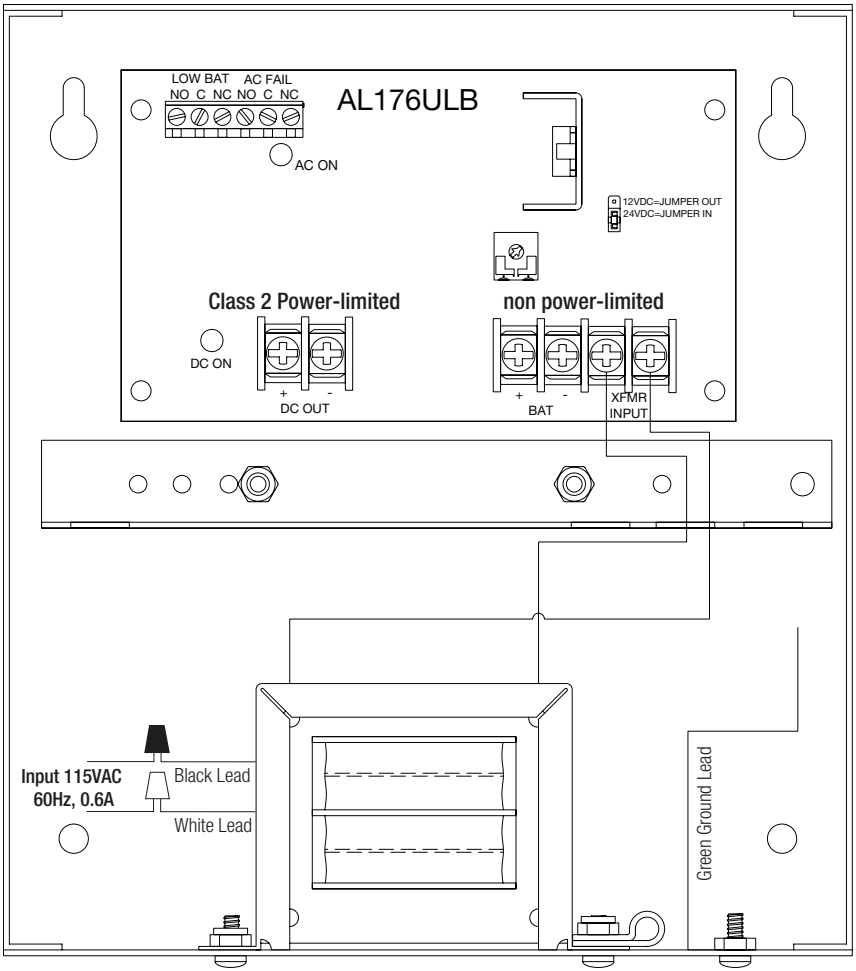
LED Diagnostics:

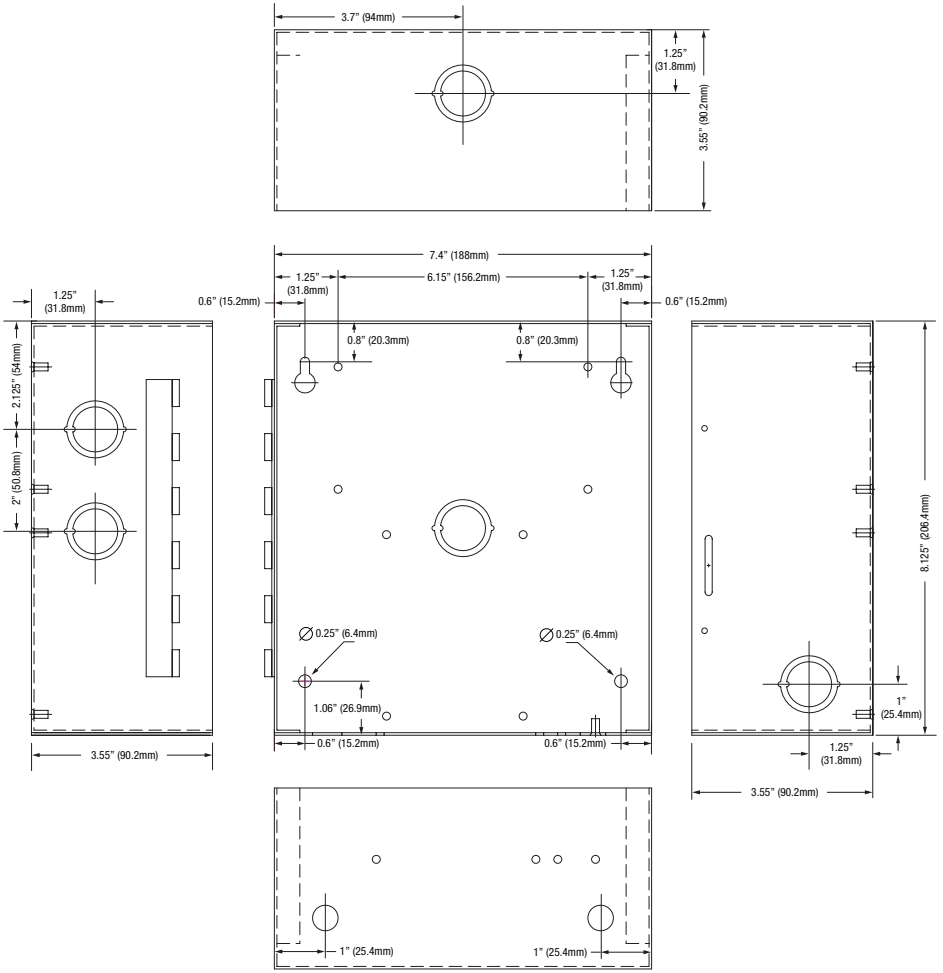
Red (DC)	Green (AC)	Power Supply Status
ON	ON	Normal function.
ON	OFF	Loss of AC. Battery backup is powering output.
OFF	ON	No DC output.
OFF	OFF	Loss of AC. Discharged or missing stand-by battery. No DC output.

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 NO, C, NC	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 1A @ 28VDC.
LOW BAT NO, C, NC	Used to notify low battery condition, e.g. connect audible device or alarm panel. Relay is normally energized. Contact rating 1A @ 28VDC.

Fig. 1 - **AL176UL**



Enclosure Dimensions (H x W x D approximate)**:**

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