# AL175ULX
# Access Control Power Supply/Charger

Rev. L13Y7

## Overview:

The AL175ULX is a power limited power supply/charger that will convert 115VAC / 60Hz input, into two individually PTC protected 12VDC or 24VDC outputs, (see specifications). It is intended for use in applications requiring UL Listing for Access Control System Units (UL 294) and applications requiring an interface with Fire Alarm Control Panels.

## Specifications:

### Agency Listings:

- UL Listed for Access Control Systems (UL294). CUL Listed - CSA Standard C22.2 No.205-M1983, Signal Equipment.
- MEA - NYC Dept. of Buildings Approved.
- CSFM - California State Fire Marshal Approved.
- Conforms to NFPA 101 life safety codes.

### Input:

- Input 115VAC / 60 Hz, .6 amp.

### Output:

- Selectable 12VDC or 24VDC power limited outputs.
- Class 2 Rated power limited outputs.
- 1.75 amp continuous supply current @ 12VDC or 24VDC.
- Filtered and electronically regulated output.
- Short circuit and thermal overload protection.

### Battery Backup:

- Maximum charge current: 400mA.
- Automatic switch over to stand-by battery when AC fails.

### Supervision:

- AC fail supervision (form "C" contacts).
- Dry trigger output (form "C" contacts).

### Fire Alarm Interface:

- Dry trigger input.

### Visual Indicators:

- AC input and DC output LED indicators.

### Added Features:

- Includes power supply, transformer and enclosure.

### Enclosure Dimensions:

13”H x 13.5”W x 3.25”D

### Product Weight:

8.9 lbs.

## Power Supply Output Specifications:

| Output VDC | Switch Position | Max. Stand-by Load DC | Max. Alarm Load DC | Battery (optional) |
|---|---|---|---|---|
| 12VDC | SW1 Open | 1.75 amp | 1.75 amp | 12VDC |
| 24VDC | SW1 Closed | 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 AL175ULX 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 3 for a description of each terminal function.***

1. Mount the AL175ULX 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, DC output). Use 22 AWG to 18 AWG for power limited circuits (trigger inputs, dry outputs).
   **Keep power limited wiring separate from non-power limited wiring (115VAC / 60Hz Input, Battery Wires). Minimum .25” spacing must be provided.**
3. Set the AL175ULX to the desired DC output voltage by setting switch SW1 to the appropriate position *(refer to Power Supply Output Specification Table).*

4. Measure output voltage before connecting devices. This helps avoid potential damage.
5. Connect one (1) 12VDC battery to terminals marked [+ BAT –] *(Fig. 1, pg. 2)* for 12VDC operation. Use two (2) 12VDC batteries connected in series for 24VDC operation, (Battery leads included).
   **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.
6. Connect appropriate signaling notification devices to AC Fail 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.
7. 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 batteries is desired they must be lead acid or gel type. Connect battery to the terminals marked [+ BAT –] *(Fig. 1)* (battery leads included). Use two (2) 12VDC batteries connected in series for 24VDC operation.
8. For Access Control Device & Fire Alarm Interface connections refer to desired Application Diagrams *(pg. 4)* and Terminal Identification Chart *(pg. 3)*.

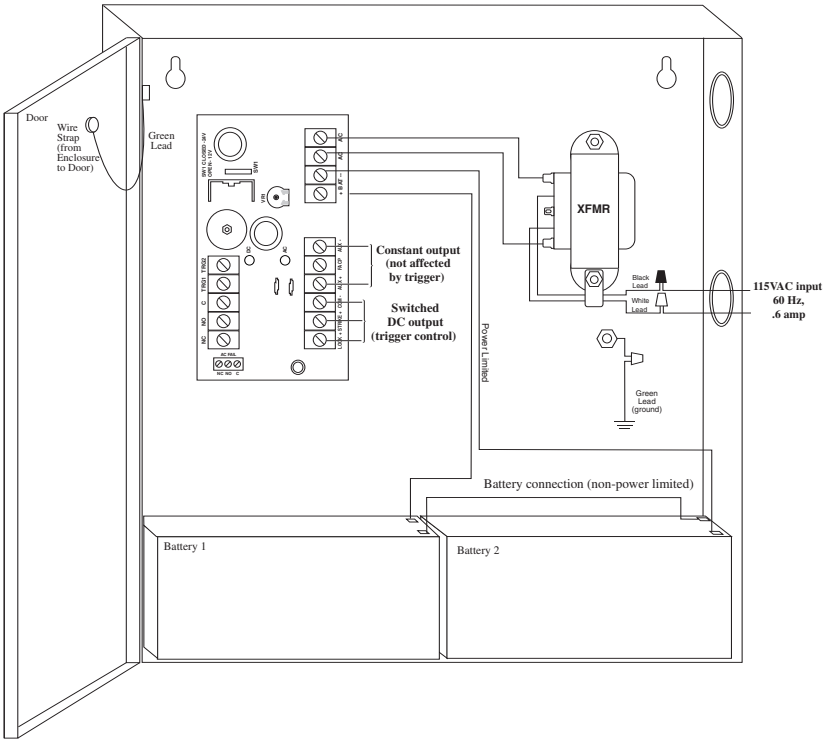



*Fig. 1*

## *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 *(refer to 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 discharges is 0.40 amp.
**Note:** Expected battery life is 5 years, however it is recommended changing batteries in 4 years or less if needed.

## *LED Diagnostics:*

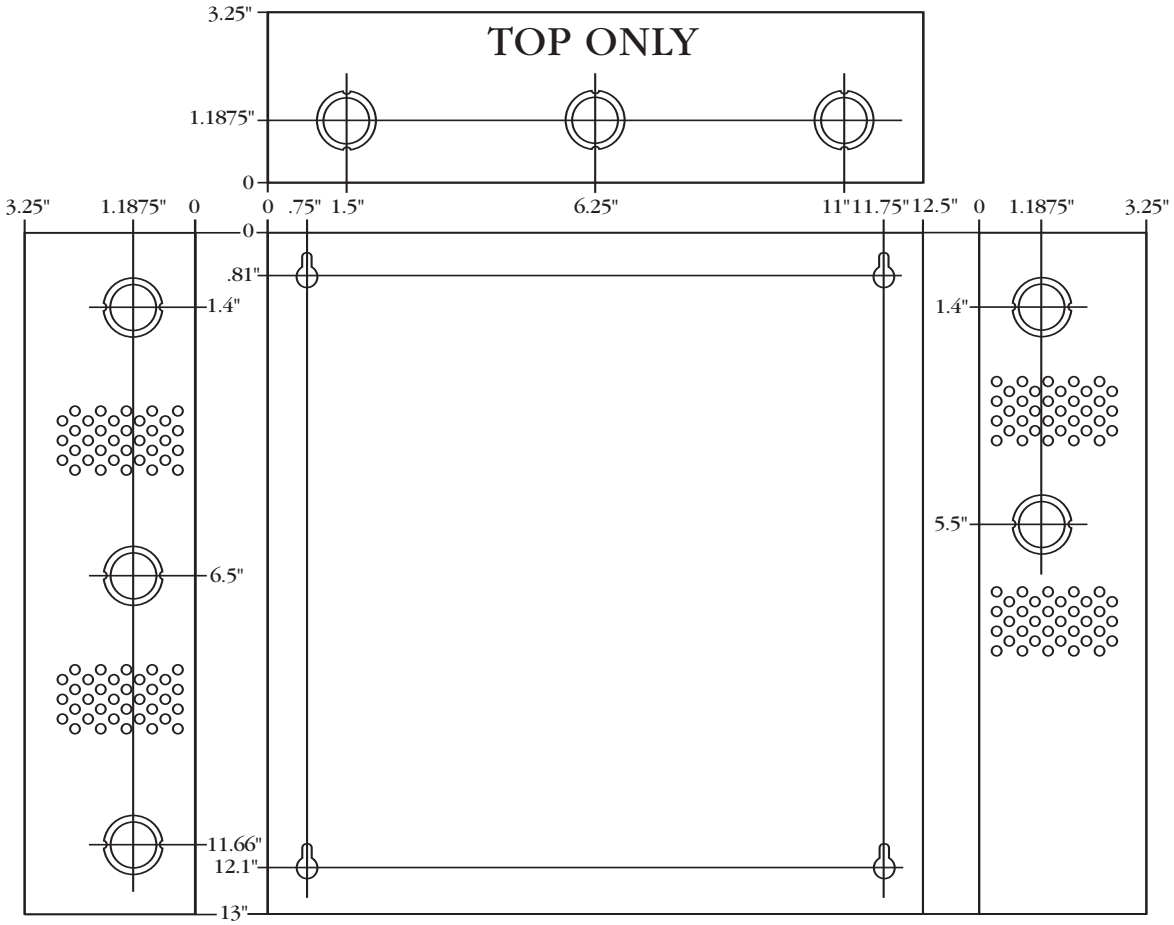
| Red (DC) | Green (AC) | Power Supply Status |
|---|---|---|
| ON | ON | Normal function. |
| ON | OFF | Battery backup is powering output. |
| OFF | ON | No DC output. |
| OFF | OFF | Loss of AC. Discharged or missing stand-by battery. No DC output. |

## *Terminal Identification:*

| Terminal Legend | Function/Description |
|---|---|
| TRG1 & TRG2 | These input terminals are designed to connect to the normally closed outputs of an access control or fire alarm relay. These terminals control [LOCK+], and [STRIKE+], as well as AL175ULX output relay contacts [N.C., N.O., C] |
| LOCK+ | This terminal provides DC output voltage when [TRG1] and [TRG2] are shorted together and are typically used to power Mag Locks. |
| STRIKE+ | This terminal provides DC output voltage when [TRG1] and [TRG2] are unshorted and are typically used to power Electric Strikes. |
| N.C., N.O., C | Isolated dry Form "C" contacts. Shorting [TRG1] and [TRG2] together causes these contacts to switch. They are typically used for controlling multiple AL175ULXs with fire alarm tie-in *(Fig. 5 and Fig. 6, pg. 4)*. |
| AUX + | Continuous positive (+) DC power output voltage. It is not affected by TRG1, TRG2 operation. |
| COM - | Common negative (-) output (ground). |
| FACP | Spare wiring terminal used for fire alarm tie-in application *(Fig. 4, pg. 4)*. |
| + BAT – | Stand-by battery connections. |
| AC FAIL N.C., C, N.O. | Used to notify loss of AC e.g connect audible device or alarm panel relay normally energized When AC power is present. Contact rating 1 amp @ 28VDC. |

## *Enclosure Dimensions:*

13"H x 13.5"W x 3.25"D



## *Typical Application Diagrams:*

Fig. 2 - Typical single mag lock or door strike installation with fire alarm tie-in using trigger controlled output:

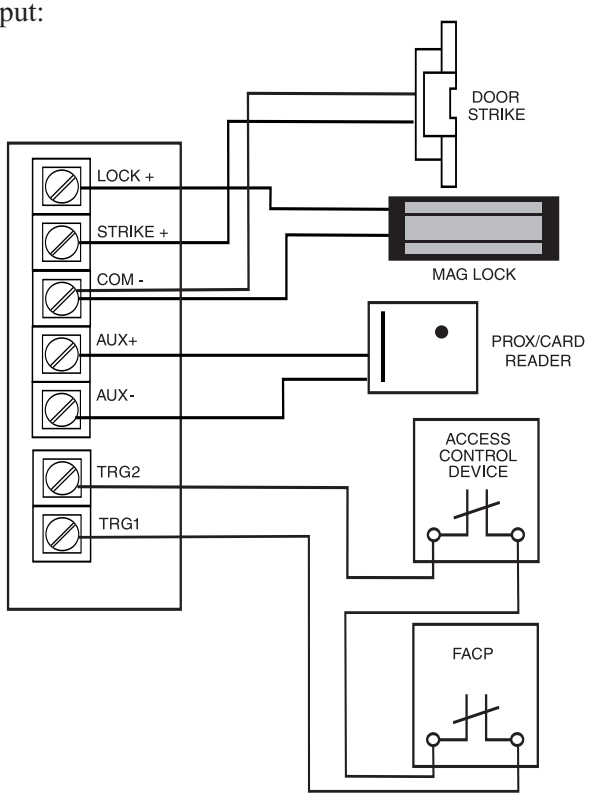



Fig. 3 - Typical dual mag lock installation with fire alarm tie-in using trigger controlled outputs:

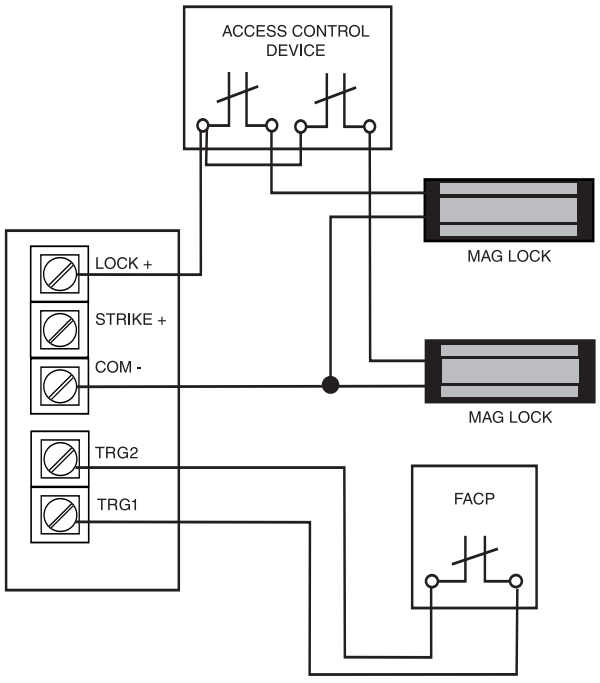



Fig. 4 - Typical mag lock with fire alarm tie-in using aux output installation:

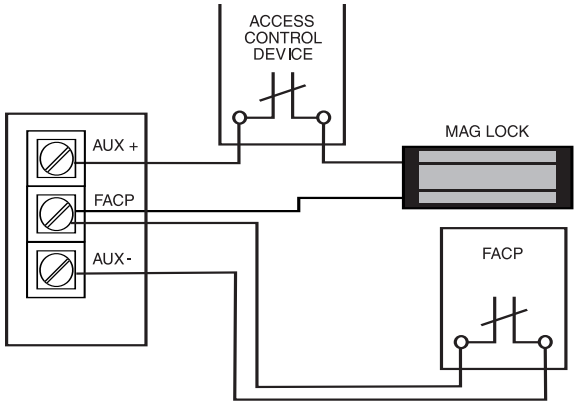



Fig. 5 - Latching fire alarm tie-in with manual reset:

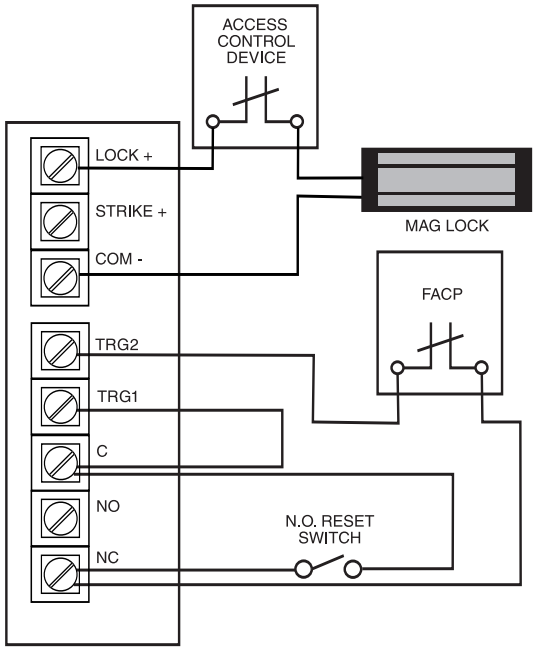
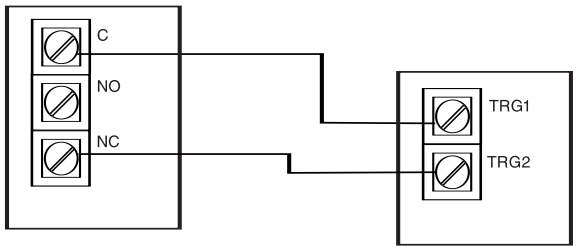



Fig. 6 - Multiple AL175ULX power supply connections:




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