



# AL400UL - UL Listed, Multi-Agency Approved Power Supply/Charger

## Overview:

The AL400UL power supply converts a 115VAC / 60Hz input to a 12VDC or 24VDC power-limited output (see specifications). The AL400UL is UL Listed for fire alarm, burglar alarm, and access control applications.

## Specifications:

### Agency Listings:

- UL Listed  
Fire, Burglar and Access Control Power Supply (UL1481, UL603, UL294).
- MEA - NYC Department of Buildings Approved.
- CSFM - California State Fire Marshal Approved.
- NFPA 72 compliant



### Input:

- Input 115VAC, 60Hz, 3.5 amp.

### Output:

- 12VDC or 24VDC selectable output.
- 12VDC @ 4 amp or 24VDC @ 3 amp supply current.
- Class 2 Rated power-limited output.
- Filtered and electronically regulated output.
- Short circuit and thermal overload protection.

### Battery Backup:

- Battery leads included.
- Built-in charger for sealed lead acid or gel type batteries.
- Automatic switch over to stand-by battery when AC fails.
- Maximum charge current 1.2 amp.

### 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 approx.):

12.25” x 7.25” x 4.5” (311.15mm x 184.15mm x 114.3mm)

## Power Supply Voltage Output Selections:

Output	Switch Position
12VDC	SW1, 2 ON, SW3, 4 OFF
24VDC	SW1, 2 OFF, SW3, 4 ON

## Stand-by Specifications:

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

## 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.

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 the 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*). Secure enclosure to earth ground.
2. Set the AL400UL to the desired DC output voltage by setting dip switches (*Fig. 1*) to the appropriate position (*see Power Supply Voltage Output Specifications Chart*).
3. Connect AC power (115VAC / 60Hz) to the black and white flying leads of the transformer(*Fig. 1*).  
Use 18 AWG or larger for all power connections (Battery, 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 (115VAC / 60Hz Input, Battery Wires). Minimum 0.25" spacing must be provided.**

4. Connect devices to be powered to the terminals marked [- DC +] (*Fig. 1*).
5. Measure output voltage before connecting devices. This helps avoiding potential damage.
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 the terminals marked [- BAT +] (*Fig. 1*). Use two (2) 12VDC batteries connected in series for 24VDC operation (battery leads included).
7. Connect appropriate signaling notification devices to AC FAIL & BAT FAIL (*Fig. 1*) supervisory relay outputs.

**Wiring:**

Use 18 AWG or larger for all power connections.

**Note:** Take care to keep power-limited circuits separate from non power-limited wiring (115VAC, Battery)

**Maintenance:**

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

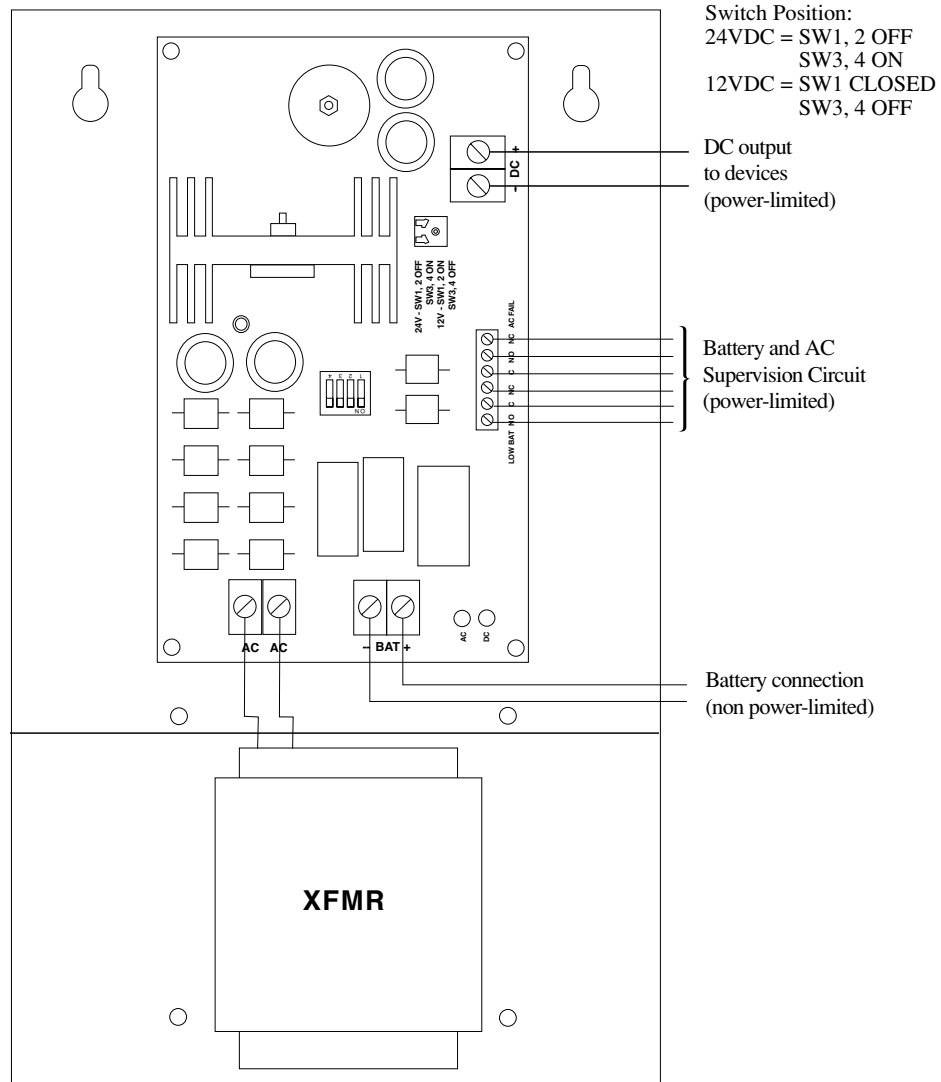
**Output Voltage Test:** Under normal load conditions the DC output voltage should be checked for proper voltage level (*see Power Supply Voltage Output Specifications Chart*).

**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 discharges is 1.2 amp.

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

*Fig. 1*



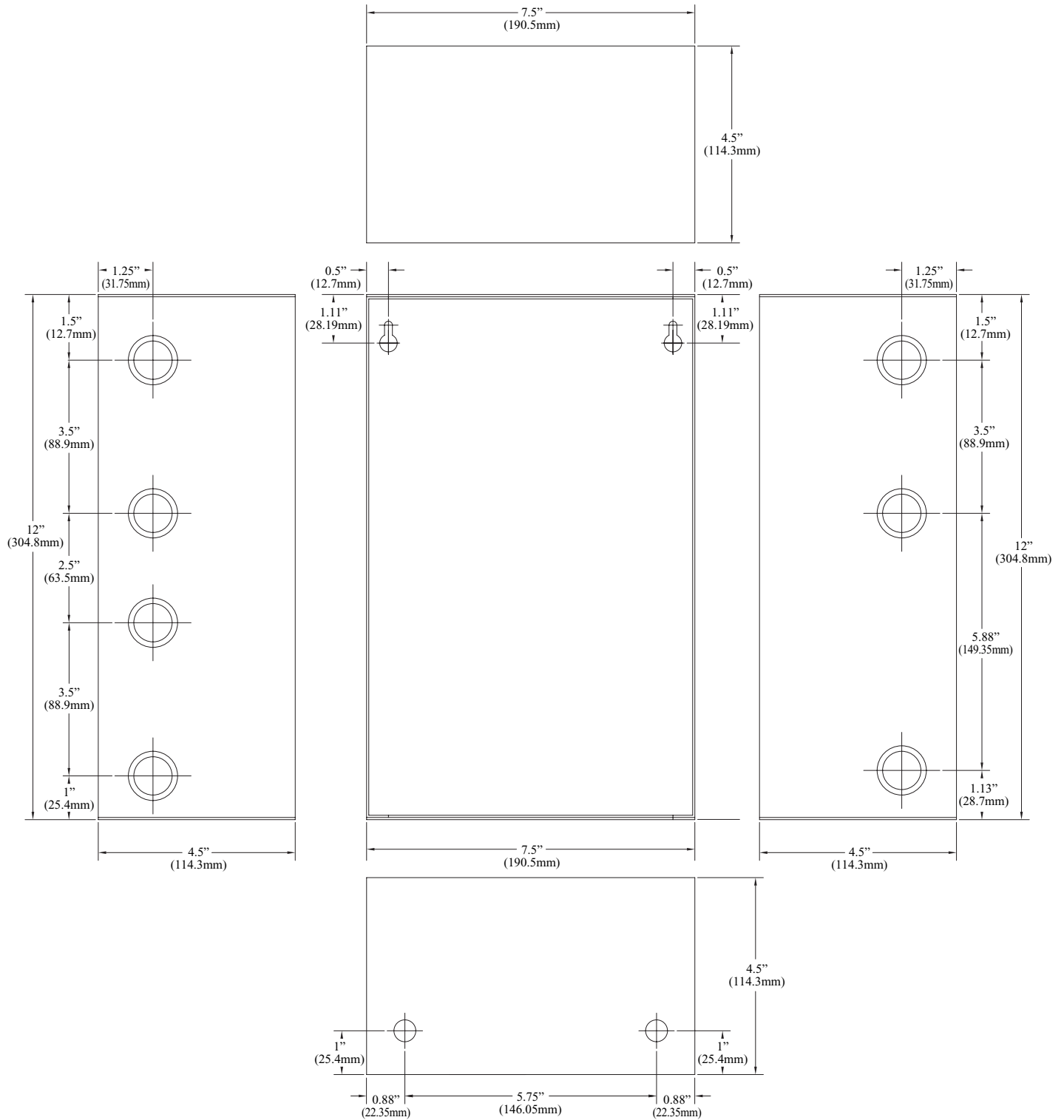
**LED Diagnostics:**

LED	ON	OFF
AC (Green)	Normal operation	No AC input
BAT (Red)	Battery connected	Battery disconnected
DC (Red)	Normal operation	No DC output

**Terminal Identification:**

Terminal Legend	Function/Description
AC, AC	Low voltage (28VAC) transformer connections.
- DC +	12VDC @ 4 amp or 24VDC @ 3 amp continuous power-limited output.
AC Fail NC, NO, C	Indicates loss of AC power, e.g. connect to audible device or alarm panel. Relay normally energized when AC power is present. Contact rating 1 amp @ 30VDC.
Bat Fail NC, C, NO	Indicates low battery condition, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating 1 amp @ 30VDC.
- BAT +	Stand-by battery connections. Maximum charge current 1.2 amp.

**Enclosure Dimensions (H x W x D approximate):**  
 12.25" x 7.25" x 4.5" (311.15mm x 184.15mm x 114.3mm)



Altronix is not responsible for any typographical errors. Product specifications are subject to change without notice.

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