



# AL400ULB - UL Recognized Power Supply/Charger

Rev. 061400

## Overview:

The AL400ULB is a power limited supply/charger that converts a 28VAC / 100VA input, into a Class 2 Rated power limited 12VDC or 24VDC output (see specifications).

## Specifications:

### Agency Listings:

- UL Recognized component for Access Control System Units (UL 294), Standard for Power Supplies for Use with Burglar-Alarm Systems (UL 603), Standard for Safety for Fire Protective Signaling Systems (UL 1481).



### Battery Backup:

- Built-in charger for sealed lead acid or gel type batteries.
- Maximum charge current 600mA.
- Automatic switch over to stand-by battery when AC fails.

### Visual Indicators:

- AC input and DC output LED indicators.

### Supervision:

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

### Additional Features:

- Short circuit and thermal overload protection.

### Board Dimensions (approximate):

4.1"W x 7.1"L x 1.75"H

### Input:

- Input 28VAC / 100VA.

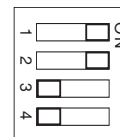
### Output:

- Class 2 Rated power limited output.
- 12VDC or 24VDC selectable output.
- 4 amp continuous supply current @ 12VDC.
- 3 amp continuous supply current @ 24VDC.
- Filtered and electronically regulated output.

## Power Supply Output Specifications:

Output VDC	Switch Position	Max. Stand-by Load DC	Max. Alarm Load DC	Stand-by Battery
12VDC	SW 1, 2 On, SW3, 4 Off	4.0 amp 200mA	4.0 amp 4.0 amp	24V/40AH 12V/12AH
24VDC	SW1, 2 Off, SW3, 4 On	3.0 amp 200mA	3.0 amp 3.0 amp	24VDC 24V/12AH

(AL400ULB Board)  
Output Dip Switches



## 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 / 40 AH 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 / 12 AH Battery		Stand-by = 200mA Alarm = 3.0 amp	
24VDC / 40 AH 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:

The AL400ULB should be installed in accordance with article 760 of The National Electrical Code or NFPA 72 as well as all applicable Local Codes.

- Mount the AL400ULB in desired location/enclosure.
- Connect 28VAC / 175VA transformer to terminals marked [AC, AC], (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 .25" spacing must be provided.**

- Set the AL400ULB to the desired DC output voltage setting the switches to the appropriate positions (refer to Power Supply Output Specifications Table).

4. Connect devices to be powered to terminals marked [+ DC -] (Fig. 1).
5. Measure output voltage before connecting devices. This helps avoid 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 terminals [- BAT +] (Fig. 1) as marked on the unit (battery leads included). Use two (2) 12VDC batteries connected in series for 24VDC operation.
7. Connect supervisory trouble reporting devices to outputs marked [LOW BAT, AC FAIL] supervisory relays marked [N.C., N.O., C] (Fig. 1). Use 22 AWG to 18 AWG for AC Fail & Low Battery reporting.

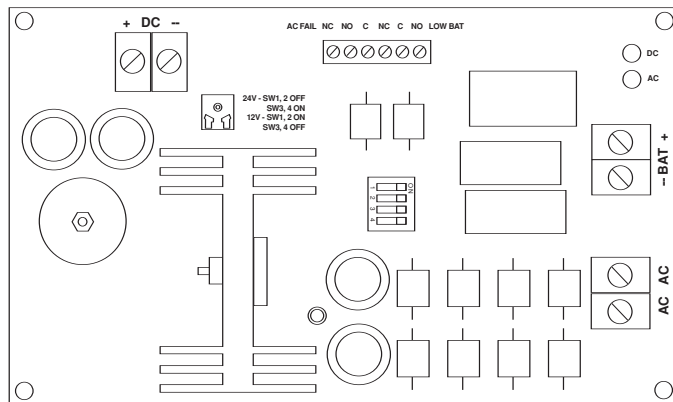


Fig. 1

### 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 Table).

**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 1.25 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 operating condition.
ON	OFF	Loss of AC, Stand-by 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
AC / AC	Low voltage AC input 28VAC / 175VA.
+ DC -	12VDC 4 amp continuous power limited output. 24VDC 3 amp continuous power limited output.
AC FAIL N.C., N.O., C	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 1 amp @ 28VDC.
LOW BAT N.C., C, N.O.	Used to indicate low battery condition, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating 1 amp @ 28VDC.
- BAT +	Stand-by battery connections. Maximum charge current 1.25 amp.

Altronix is not responsible for any typographical errors.