



AL400ULB

UL Recognized Power Supply/Charger

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).



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.

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.

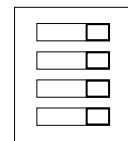
Board Dimensions (W x L x H approximate):

4.1" x 7.1" x 1.75" (104.14mm x 180.34mm x 44.45mm)

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	SW 1, 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 / 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:

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.

1. Mount AL400ULB in the desired location/enclosure.

2. Connect 28VAC / 175VA transformer to the 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 the 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.

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

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 [- 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 the outputs marked [LOW BAT, AC FAIL] supervisory relays marked [NC, NO, C] (Fig. 1).
Use 22 AWG to 18 AWG for AC Fail & Low Battery reporting.

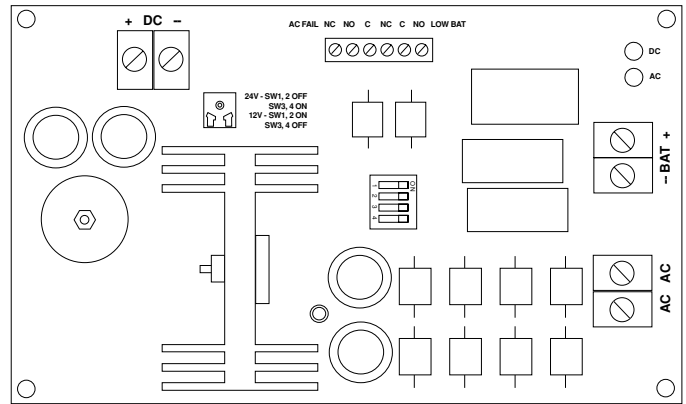


Fig. 1

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 (*Power Supply Output Specifications Table*).

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 1.25 amp.

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

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. A removed battery is reported within 5 minutes. Battery reconnection is reported within 1 minute.
- BAT +	Stand-by battery connections. Maximum charge current 1.2 amp.