



AL300ULB Power Supply/Charger

Overview:

The AL300ULB is a power supply/charger that converts a 28VAC / 100VA input into a 12VDC or 24VDC output (see specifications).

Specifications:

Input:

- Input 28VAC / 100VA.

Output:

- 12VDC or 24VDC selectable output.
- 2.5A continuous supply current.
- 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.

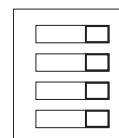
Board Dimensions (W x L x H approximate):

4.0” x 7.0” x 1.75” (101.6mm x 177.8mm x 51.05mm)

Power Supply Output Specifications:

| Output VDC | Switch Position |
|------------|---------------------------|
| 12VDC | SW1, SW2 ON, SW3, SW4 OFF |
| 24VDC | SW1, SW2 OFF, SW3, SW4 ON |

**AL300ULB Board
Output Dip Switches**



Stand-by Specifications:

| Output | 4 hr. of Stand-by and 5 Minutes of Alarm | 24 hr. of Stand-by and 5 Minutes of Alarm | 60 hr. of Stand-by and 5 Minutes of Alarm |
|-----------------------|---|--|--|
| 12VDC / 40 AH Battery | Stand-by = 2.5A Alarm = 2.5A | Stand-by = 1.0A Alarm = 2.5A | Stand-by = 300mA Alarm = 2.5A |
| 24VDC / 12 AH Battery | ————— | Stand-by = 200mA Alarm = 2.5A | ————— |
| 24VDC / 40 AH Battery | Stand-by = 2.5A Alarm = 2.5A | Stand-by = 1.0A Alarm = 2.5A | Stand-by = 300mA Alarm = 2.5A |

Installation Instructions:

The AL300ULB should be installed in accordance with article 760 of The National Electrical Code or NFPA 72 as well as all applicable Local Codes.

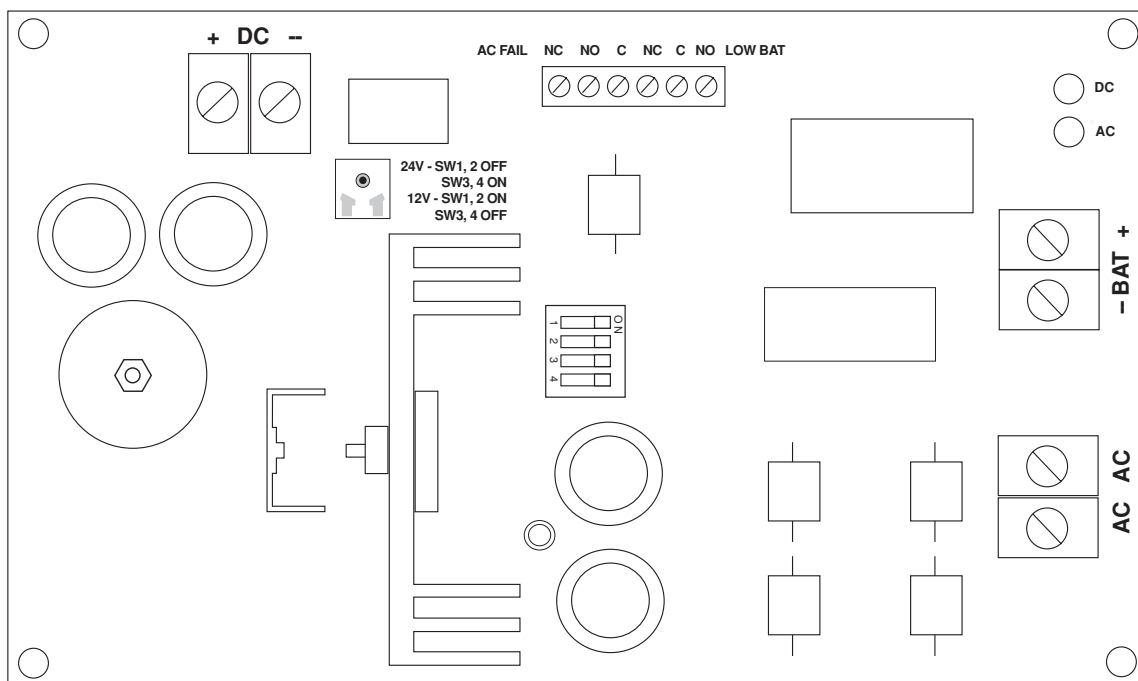
1. Mount the AL300ULB in the desired location/enclosure.
2. Connect 28VAC / 100VA transformer to the terminals marked [AC, AC].
Use 18 AWG or larger for all power connections (Battery, DC output).
Use 22 AWG to 18 AWG for power-limited circuits (AC Fail/Low Battery reporting).

Keep power-limited wiring separate from non power-limited wiring (115VAC / 60Hz Input, Battery Wires). Minimum 0.25” spacing must be provided.

CAUTION: Do not touch exposed metal parts. Shut branch circuit power before installing or servicing equipment. There are no user serviceable parts on board. Refer installation and servicing to qualified service personnel.

3. Set the AL300ULB to the desired DC output voltage by setting switches to the appropriate positions (refer to Power Supply Output Specifications Table).
4. Measure output voltage before connecting devices. This helps avoiding potential damage.
5. Connect devices to be powered to the terminals marked [+ DC -] (Fig. 1).
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) (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] (Fig. 1) supervisory relays marked [NC, NO, C,]. Use 22 AWG to 18 AWG for AC Fail and 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 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 0.6A.

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) | Function/Description |
|----------|------------|--|
| 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 / 100VA. |
| +DC - | 12VDC / 24VDC @ 2.5A continuous supply current. |
| 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 1A @ 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 1A @ 28VDC. |
| - BAT + | Stand-by battery connections. Maximum charge current 600mA. |