



# AL400UL-ADA - Fire Alarm Indicating Circuit Power Supply/Charger

## Overview:

The Altronix AL400UL-ADA Fire Alarm Indicating Circuit Power Supply/Charger is specifically designed to interface between the FACP and indicating devices to supply the additional power needed for a Fire Alarm System to conform to ADA regulations. For both retrofit and new installations, the model AL400UL-ADA Fire Alarm Indicating Circuit Power Supply will save time and expense, while efficiently providing the power needed to drive additional horns, strobes and bells required under the ADA. This unit allows compatibility between 12VDC fire alarm control panels and 24VDC ADA strobes and other signaling devices. The AL400UL-ADA comes complete with enclosure, transformer and ample room for standby batteries. On-board supervisory relays are incorporated for remote status reporting and trouble indications at the fire panel.

## Specifications:

- UL listed fire protective signaling (UL864)
- NYC Department of Buildings Approved (MEA) 120-93-E
- California State Fire Marshal Approved (CSFM)
- NFPA 72 compliant
- CSA approved (Canada)
- 12VDC or 24VDC power limited output
- Input 115 VAC 50 / 60 Hz, 1.45 AMP
- 4 amps supply current @ 12VDC or 24VDC
- Unit is compatible with Class B indicating circuits
- Compatible with 12 or 24VDC fire panels
- Filtered and electronically regulated output
- Signaling device loop supervision
- Built-in charger for sealed lead acid or gel type batteries
- Automatic switchover to stand-by battery when AC Fails
- Thermal and short circuit protection with auto reset
- AC input and DC output LED indicators
- AC fail supervision (form "C" contact)
- Battery presence and low battery supervision (form "C" contact)
- Unit is complete with power supply, red enclosure, cam lock and open frame transformer
- Battery leads supplied

Enclosure dimensions: 15.5"H x 12"W x 4.5"D



## Power Supply Output Specifications:

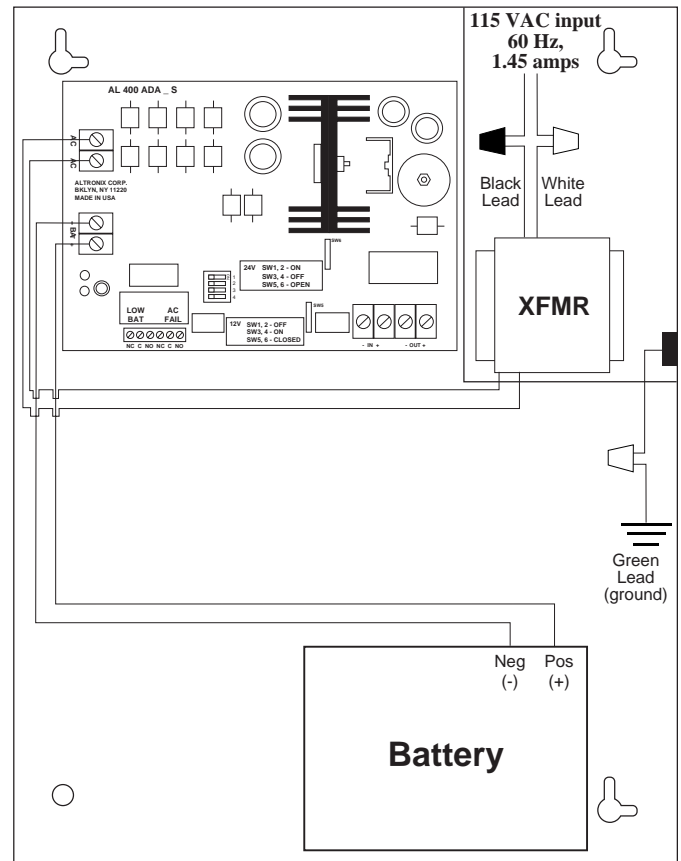
Output	Switch Position			Load DC
12VDC	SW1 & SW2 OFF	SW3 & SW4 ON	SW5 & SW6 CLOSED	4.0 amps
24VDC	SW1 & SW2 ON	SW3 & SW4 OFF	SW5 & SW6 OPEN	4.0 amps

## Stand-by Specifications:

Stand-by Batteries	24 hr. of Stand-by & 15 mins. of Alarm	60 hr. of Stand-by & 15 mins. of Alarm
12V / 7 AH Battery	Stand-by = 60mA Alarm = 4.0 amps	Stand-by = 60mA Alarm = 4.0 amps
24V / 7 AH Battery (Two (2) 12VDC / 7 AH Batteries wired in series)	Stand-by = 60 mA Alarm = 4.0 amps	Stand-by = 60 mA Alarm = 4.0 amps

**Note:** Current draw from FACP is 5 mA in alarm condition.

Fig. 1



**Operation:**

The AL400UL-ADA Fire Alarm Indicating Circuit Power Supply/Charger, is intended for use with fire alarm control panels (FACP) to provide the increased power necessary to operate the additional indicating devices due to the new ADA requirements. In a non-alarm condition, the FACP indicating circuit signal passes through the AL400UL-ADA, thus maintaining circuit supervision. In an alarm condition, the FACP indicating output voltage reverses polarity triggering the AL400UL-ADA. This causes the AL400UL-ADA to supply power to the indicating devices connected to its output. Multiple AL400UL-ADA units may be interconnected along this circuit to accommodate more indicating devices (Fig. 2, pg. 3).

**Installation Instructions:**

The AL400UL-ADA 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 4 for a description of each terminal function.

1. Mount AL400UL-ADA in desired location.
2. Connect the black and white transformer leads of AL400UL-ADA to a separate unswitched AC circuit (115VAC, 50/60Hz) dedicated to the Fire Alarm System (Fig. 1).
3. Set the AL400UL-ADA to the desired DC output voltage by setting the switches to the appropriate positions (see power supply output specification table)

**Note:** It is good operating practice to measure and verify output voltage before connecting devices to ensure proper operation of equipment (voltage should be measured in alarm condition).

4. Connect the indicating circuit output from the FACP (Fire Alarm Control Panel) (5 to 30VDC) to the terminals marked [- IN +] (Fig. 3, pg. 3) observing the correct polarity in alarm condition.

**Note:** Polarity indicated at the [- IN +] terminals are in alarm condition.

5. Connect the indicating devices to be powered by the AL400UL-ADA to the terminals marked [+ OUT -] (Fig. 2, pg. 3) and install the FACP's EOL resistor after the last indicating device on the circuit. The total current draw of the indicating devices should not exceed of 4 AMPS per power supply.
6. Connect supervisory trouble reporting devices to outputs marked [AC FAIL, LOW BAT] (Fig. 3, pg. 3) and [Power Fail] (Fig. 3, pg. 3) supervisory relay outputs. Use 22 AWG to 18 AWG for AC Fail & Low Battery reporting.
7. Connect the stand-by batteries to the terminals marked [- BAT +] (Fig. 3, pg. 3) carefully observing proper polarity. For 24VDC operation connect two (2) 12VDC batteries in series.

**Notes:**

- A. The AL400UL-ADA can be triggered by a 5 to 30VDC input from an FACP and provide a selectable 12VDC or 24VDC output (as set by appropriate switches, see power supply output specifications).
- B. The AL400UL-ADA is compatible with style Y (class B) indicating circuits only.

**Maintenance:**

The AL400UL-ADA should be tested at least once a year for proper operation as follows:

**Output Voltage Test:** Under normal load conditions, the DC output voltage should be checked for proper voltage levels (see specification table) and adjusted if needed with on board trimpot for a few tenths of a volt variation.

**Battery Test:** Under normal load conditions check that the battery is fully charged. Check the voltage at the battery terminal and at the board terminal marked [- BAT +] to insure there is no break in the battery connection wires.

**Note:** Maximum charging current under discharge is 1.25 amp.

**Note:** Expected battery life is approximately five years, however it is recommended changing batteries in four years or less if needed.

**Note:** With no AC present and battery wires connected, the DC output will read approximately 1 volt lower than the actual battery voltage.

**Fuse:**

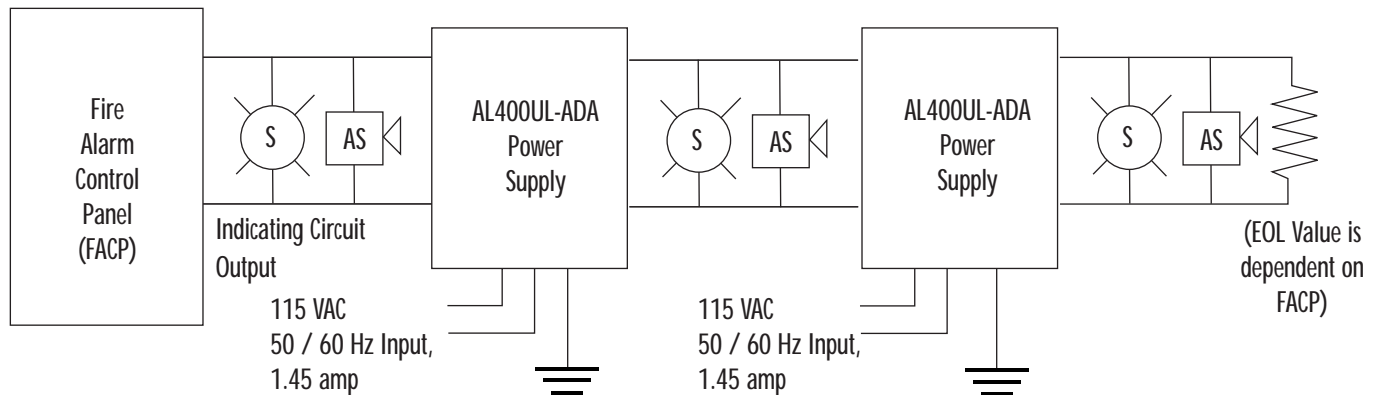
Factory authorized battery fuse M318006, 250VA / 6 amps. If this is blown battery voltage will not appear on DC output terminals (see LED Diagnostic Table.) Return unit for replacement of fuse.

**LED Diagnostic Table:**

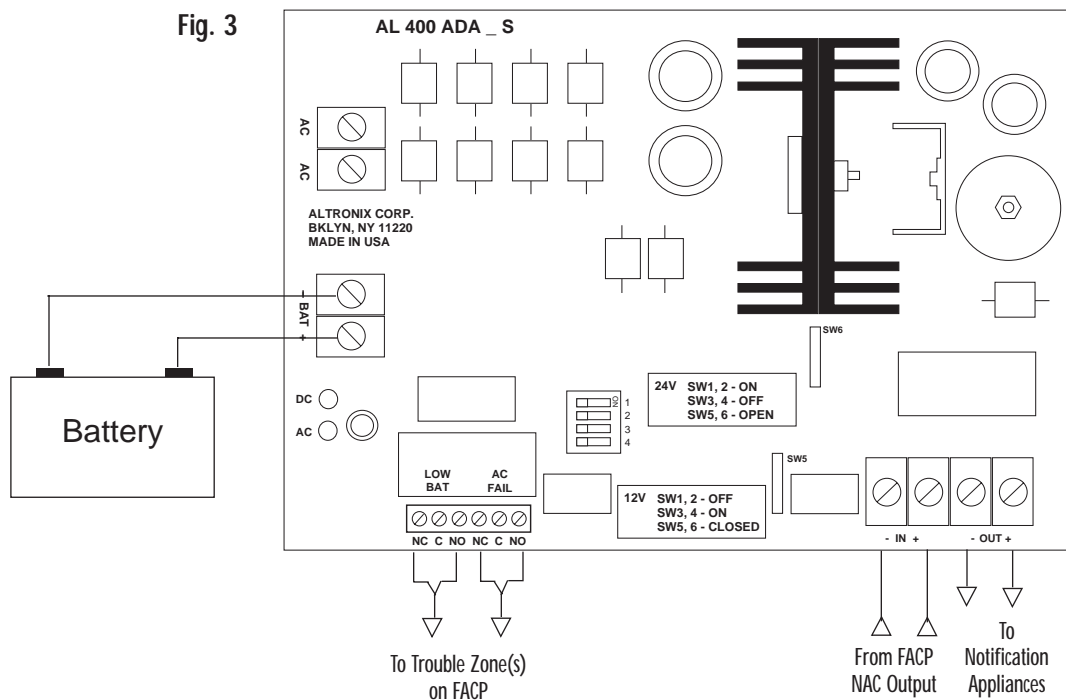
Red (DC)	Green (AC)	Power Supply Status
ON	ON	Normal operating condition
ON	OFF	Loss of AC, Stand-by battery supplying power
OFF	ON	No DC output
OFF	OFF	Loss of AC. Discharged or no stand-by battery. No DC output.

**AL400UL-ADA: Typical Application Diagram:**

**Fig. 2**



**Fig. 3**



**Terminal Identification:**

Terminal Legend	Function/Description
- IN +	These terminals connect to the 12 or 24VDC FACP indicating circuit output. In a non-alarm condition the FACP supervisory signal is passed through to the + OUT - terminals (polarity is indicated for alarm condition).
+ OUT -	This is a 12 or 24VDC indicating circuit output. When triggered by the FACP (caused by polarity reversal on the input) it will provide it will provide 12 or 24VDC output to the signaling devices with the polarity as indicated. An EOL device supplied by the FACP manufacturer should be installed after last signaling device on this output loop.
AC FAIL N.O., C, N.C.	Form "C" dry contacts used to signal the loss of AC, with AC present terminals N.O. and C are open, N.C. and C are closed. When loss of AC occurs terminals N.O. and C close, N.C. and C are open.
LOW BAT N.C., C, N.O.	Form "C" dry contacts used to signal low battery voltage or loss of battery voltage. Under normal conditions, terminals N.O. and C are open, N.C. and C are closed in a trouble condition N.O. and C are closed, and N.C. and C are open.
- BAT +	Standby battery input (leads provided). Use two 12VDC batteries wired in series for 24VDC operation.

**Enclosure Dimensions:**

15.5"H x 12"W x 4.5"D

