

*Installation Guide
for*



*AL600UL-ADA
UL Listed ADA Fire Alarm
Signaling Circuit Power Supply*



AL600UL-ADA - UL Listed ADA Fire Alarm Signaling Circuit Power Supply

Overview:

The Altronix AL600UL-ADA is an extremely cost effective 6.5 amps voltage regulated remote power supply /battery charger. The AL600UL-ADA may be connected to any 12 or 24 volt Fire Alarm Control Panel (FACP). Primary applications include Notification Appliance Circuit (NAC) expansion (supports ADA requirements) and will provide auxiliary power to support system accessories. The unit delivers regulated and filtered 24 or 12 volt power via four (4) Class B, two (2) Class A or two (2) Class B and one (1) Class A Notification Appliance Circuits. Additionally, a separate 50mA auxiliary output with reset for four (4)-wire smoke detectors. The 6.5 amps continuous supply current can be divided between the four (4) outputs for powering notification appliances. Each output is rated at 2 amps max. An individual output of 4 amps is achieved by paralleling 2 outputs. The AL600UL-ADA in non-alarm condition provides independent loop supervision for Class A and/or Class B FACP NAC circuits. In the event of a loop trouble the FACP will be notified via the AL600UL-ADA's steered input (input 1 or input 2). In addition, there are common trouble output terminals (NC, C, NO) which are used to indicate general loop/system trouble. A common trouble input is provided for optional NC (normally closed) devices to report trouble to the FACP. Two (2) FACP signaling outputs can be connected to AL600UL-ADA's inputs. These inputs can then be directed to control supervision and power delivery to any combination of the four (4) outputs.

Specifications:

- UL Listed (UL864).
- CSFM - California State Fire Marshal Approved.
- MEA - NYC Department of Buildings Approved.
- NFPA 72 Compliant.
- Input 115VAC/60 Hz, 1.45 amps.
- Field selectable 24VDC or 12VDC voltage regulated power limited outputs.
- Typical 8.6 mV output voltage ripple.
- 6.5 amps continuous supply current @ 24VDC or 12VDC.
- Separate 50mA auxiliary output with built-in and remote reset capability.
- Two (2) outputs may be paralleled for more power on an indicating circuit.
- Two (2) Class A or two (2) Class B FACP inputs.
- Programmable EOL resistor supervised indicating circuit outputs:
Four (4) Class B or Two (2) Class A or One (1) Class A and Two (2) Class B.
- Compatible with 12 or 24VDC fire panels.
- Filtered and electronically regulated output.
- Output loop supervision steered to Input 1 or Input 2.
- Common trouble input and output.
- Ground fault detection.
- Built-in charger for sealed lead acid or gel type batteries.
- Zero voltage drop when switching over to battery backup.
- Automatic switchover to stand-by battery when AC Fails.
- Thermal and short circuit protection with auto reset.
- Circuit breaker battery protection.
- Input and output status LED indicators.
- AC fail supervision (form "C" contact, 1 amp @ 28VDC).
- Battery presence and low battery supervision (form "C" contact, 1 amp @ 28VDC).
- Unit includes power supply, red enclosure, cam lock, open frame transformer and battery leads.

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



Power Supply Specifications:

AC Input:	115VAC / 1.45 amps @ 60Hz
Output:	12 - 24VDC. Maximum 2.0 amps per output. Total of 6.5 amps in Alarm Condition.
Battery:	For 12VDC operation use a 12VDC / 12AH battery For 24VDC operation use two (2) 12VDC / 12AH batteries connected in series
Stand-by Current:	75mA
EOL Resistor: (end of line)	2.2K (2200 ohm)

Stand-by Specifications:

Stand-by Batteries	Stand-by Time	Alarm Output Total Amps/Minutes	Aux Output Current
24VDC/12AH	24 Hours	6.5 Amps/15 Minutes	50mA
(use two (2) 12VDC batteries in series)	60 Hours	6.5 Amps/5 Minutes	-
12VDC/12AH	24 Hours	6.5 Amps/15 Minutes	50mA
	60 Hours	6.5 Amps/5 Minutes	-

Installation Instructions:

The AL600UL-ADA 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 AL600UL-ADA in a desired location.

It is recommended to first review the following tables for screw terminals, switch selection and LED status indications. This will greatly facilitate installation hook-up.

Carefully review:

Power Supply Specifications (pg. 3)

Typical Application Diagrams (pgs. 6 & 7)

Terminal Identification Table (pg. 5)

Input / Output Selection Table (pg. 4)

LED Status Indication Table (pg. 4)

2. Connect the black and white transformer leads of AL600UL-ADA to a separate unswitched AC circuit (115VAC, 50/60Hz) dedicated to the Fire Alarm System (Fig. 1).

Keep power limited wiring separate from non-power limited wiring (115VAC / 60Hz Input, Battery Wires). Minimum .25" spacing must be provided.

3. Set switch SW1 on Power Supply Board for desired output voltage. Open for 24VDC (factory set), Close for 12VDC.

Note: It is good operating practice to measure and verify output voltage before connecting devices to ensure proper operation of equipment.

4. Connect battery to terminals marked [+ BAT -] on the Power Supply Board (battery leads included). Use two (2) 12VDC batteries connected in series for 24VDC operation.

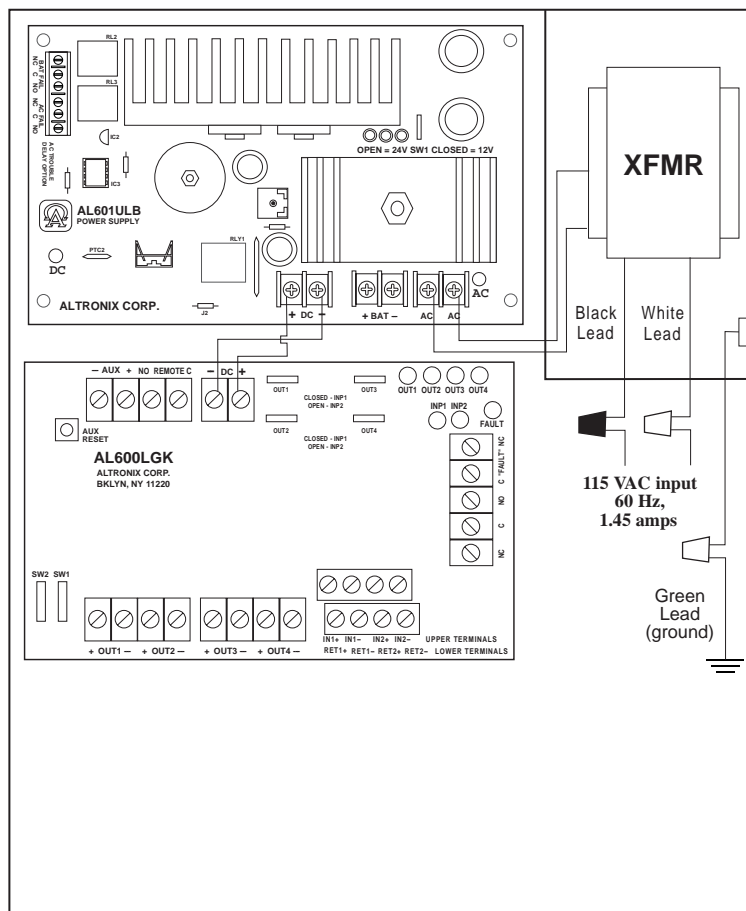


Fig. 1

5. Set output selection switches marked (OUT1 through OUT4) to follow corresponding input (IN1 & IN2) (*Input/Output Selection Table pg. 4*).
6. Connect FACP output to desired AL600LGK logic board inputs and notification appliances to desired AL600LGK logic board outputs (*typical application diagrams pg. 6*).
7. For connection of smoke detectors, digital dialer (*application diagram pg. 7*).
8. To report a ground fault connect negative (-) terminal of the auxiliary output marked [-AUX] to earth ground.

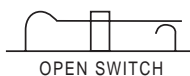
General Information:

- For all Class B hookups SW1 & SW2 on the AL600LGK logic board must be open.
For all Class A hookups SW1 & SW2 on the AL600LGK logic board must be closed.
- AC Fail condition will report approximately one (1) minute after loss of AC. To delay report for 6 hours cut jumper J1 on the Power Supply Board (AC trouble output delay option). If this mode is selected the Power Supply Board must be reset by removing all power to it for 30 seconds.
- Low battery condition will report at approximately 21VDC (24VDC output setting) or approximately 10.5VDC (12VDC output setting).
- Battery presence detection will report approximately 5 minutes after battery remains undetected (missing or removed).
- It is recommended (not required) to control visual notification appliances (strobes) via input 1 (IN1) and audible notification appliances (horns) via input 2 (IN2). This allows audible notification appliances (horns) to be silenced while visual notification appliances (strobes) continue to operate.

Input / Output Selection Table:

AL600LGK Logic Board

Switch	Input 1	Input 2
OUT 1	Closed	Open
OUT 2	Closed	Open
OUT 3	Closed	Open
OUT 4	Closed	Open



Switch Detail



Note: Switch positions determine which outputs will trigger from either Input 1 or Input 2.

LED Status Indication Table:

LED	OFF	ON	BLINKING
Out 1	Normal	Alarm Condition	Trouble Condition
Out 2	Normal	Alarm Condition	Trouble Condition
Out 3	Normal	Alarm Condition	Trouble Condition
Out 4	Normal	Alarm Condition	Trouble Condition
Input 1	Normal	Alarm Condition	Trouble Condition
Input 2	Normal	Alarm Condition	Trouble Condition
Fault	Normal	System Trouble	N/A
AC	AC Loss	AC present	N/A
DC	No DC Output	DC present	N/A

Terminal Identification Table:

AL600LGK Logic Board

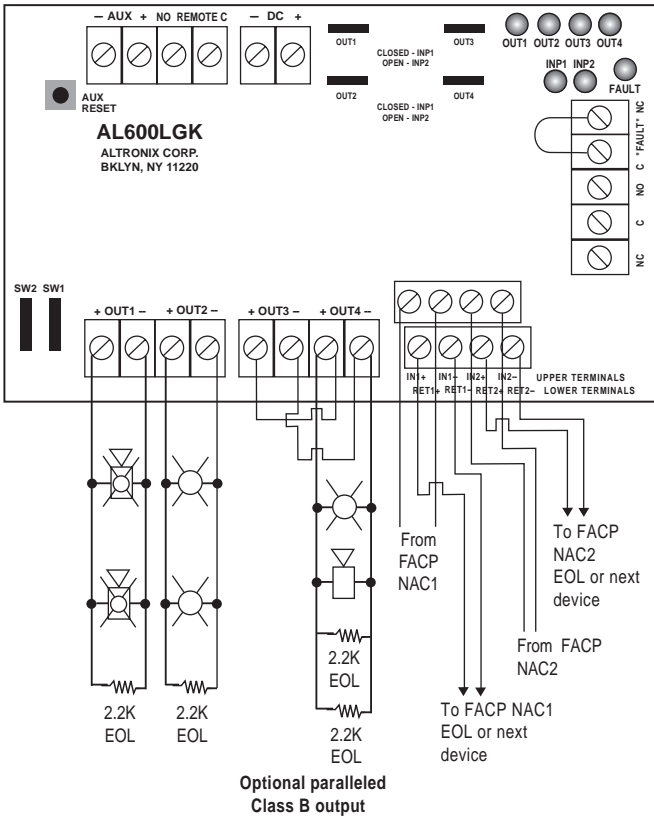
Terminal Identification	Function/Description
IN1+, IN1- IN2+, IN2-	These terminals connect to the 12 or 24VDC FACP notification appliance circuit outputs. (Class A or Class B) Input trigger voltage is 9-30VDC @ 5mA min. Terminal polarity is shown in alarm condition. During an alarm condition these inputs will cause the selected outputs chosen to drive notification appliances. The designated outputs are set by output switches OUT1 through OUT4 (see Input/Output Selection Table pg. 4). A trouble condition on an output loop will cause the corresponding input to trip the FACP by opening the FACP loop. An alarm condition will always override trouble to drive notification appliances.
RET1+, RET1- RET2+, RET2-	For Class A hookups these terminal pairs return to FACP NAC1 and/or NAC2. For Class B hookups the FACP EOL resistor from the NAC1 and/or NAC2 outputs are terminated at these terminals. Optionally, other notification appliances or additional signaling circuit power supplies may be connected to these terminals. If this option is chosen the EOL resistor must be terminated at the last device.
+ OUT1 - + OUT2 - + OUT3 - + OUT4 -	Notification appliances are connected to these outputs (<i>see typical application diagrams pgs. 6 and 7</i>). Each power limited output will supply 2 amps. Two (2) outputs may be connected in parallel for a maximum NAC output capability of 4 amps. Total supply current is 6.5 amps. Outputs are controlled by designated input 1 (IN1) or input 2 (IN2) (see Input/Output Selection Table pg. 4)
C “FAULT” NC (Common trouble input)	An open circuit across this pair of terminals will cause IN1 and IN2 to simultaneously signal a trouble condition back to the FACP (Typically used to report AC or BAT Fail).
NC, C, NO (Common trouble output)	These are dry contact trouble outputs that follow any general loop/system trouble conditions. (Typically used to trigger a digital communicator or other reporting device).
- AUX+	This separate 50mA auxiliary output is typically used to power 4-wire smoke detectors. It can be reset (voltage drops out) by pressing the momentary aux reset switch on the AL600LGK logic board or via the NO “REMOTE” C terminals. (see fig. 4 pg. 7)
NO C “REMOTE”	A momentary dry contact closure across these terminals interrupts the - AUX+ power output to reset 4-wire smoke detectors

Power Supply Board

Terminal Identification	Function/Description
AC FAIL C, NC, NO	Form “C” dry contacts used to signal the loss of AC, with AC present terminals NO and C are open, NC and C are closed. When loss of AC occurs terminals NO and C close, NC and C are open.
BAT FAIL NO, NC, C	Form “C” dry contacts used to signal low battery voltage or loss of battery voltage. Under normal conditions terminals NO and C are open, NC and C are closed. During a trouble condition terminals NO and C are closed, and NC and C are open.
BAT+, BAT-	Stand-by battery input (leads provided). Use two (2) 12VDC batteries wired in series for 24VDC operation.

Typical Application Diagrams:

Fig. 2



Class B hookup:

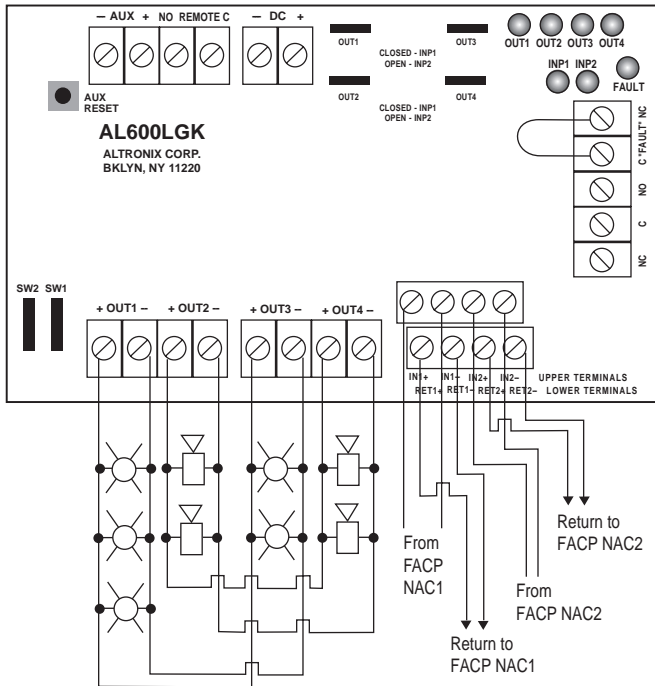
- Switches SW1 & SW2 on AL600LGK logic board must be in the open position.
- It is recommended (not required) to control visual notification appliances (strobes) via Input 1 (IN1) & to control audible notification appliances (horns) via Input 2 (IN2).
This facilitates the ability to silence audible notification appliances (horns) independently of visual notification appliances (strobes) during certain operations.

Note: If common trouble input option is not used, terminal pair C "FAULT" NC must be shorted (connect jumper) to remain inactive. For optional hookups (see Fig. 4, pg. 7).

Two outputs may be connected in parallel for a maximum NAC output capability of 4 amps. When paralleling two (2) outputs, bridge (pos +) to (pos +) and (neg -) to (neg -) of the selected outputs (shown in Fig. 2, pg. 6). Both of the corresponding output switches must be set to follow the same input. Install two (2) 2.2K ohm EOL resistors in parallel across the last notification appliance.

Paralleled output circuit configuration is non-power limited.

Fig. 3



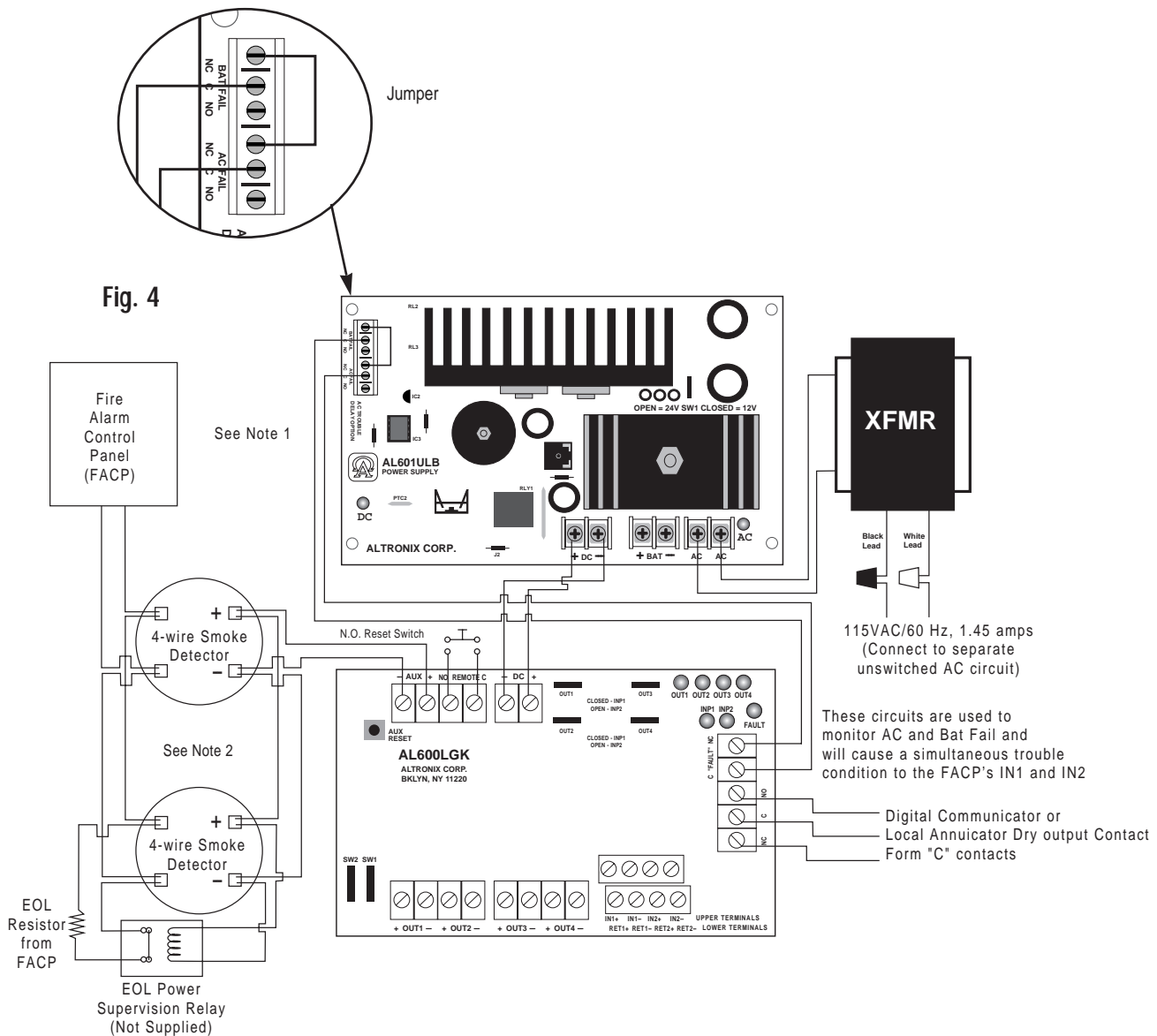
Class A hookup:

- Switches SW1 & SW2 on AL600LGK logic board must be in the closed position for proper termination of NAC. Output 1 and output 3 must be wired in parallel (pos +) to (pos +) and (neg -) to (neg -). Output 2 and output 4 must be wired in parallel (pos + to pos + and neg - to neg -). Both of the corresponding output switches must be set to follow the same input.
- It is recommended (not required) to control visual notification appliances (strobes) via Input 1 (IN1) & to control audible notification appliances (horns) via Input 2 (IN2).
This facilitates the ability to silence audible notification appliances (horns) independently of visual notification appliances (strobes) during certain operations.

Note: If common trouble input option is not used, terminal pair C "FAULT" NC must be shorted (connect jumper) to remain inactive. For optional hookups (see Fig. 4, pg. 7).

Paralleled output circuit configuration is non-power limited.





Optional hookups:

- 1- Battery and AC monitoring: AC or Battery Fail condition will cause the common trouble input (C "FAULT" NC) to report back to the FACP via input 1 and input 2. The common trouble input may also be used for other optional supervisory monitoring.

To report AC and Battery Trouble connect the battery and AC Fail relay output shown in Fig. 4 above to the common trouble input.

Note: If common trouble input option is not used, terminal pair C "FAULT" NC must be shorted (connect jumper) to remain inactive.

- 2- Auxiliary output (-AUX+) provides 12VDC or 24VDC at 50mA max. The output voltage is determined by the setting of switch marked SW1 on the Power Supply Board. It can be reset by a momentary closure across terminals (NO REMOTE C) or by pressing AUX RESET button on the AL600LGK logic board.

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 output specifications chart).

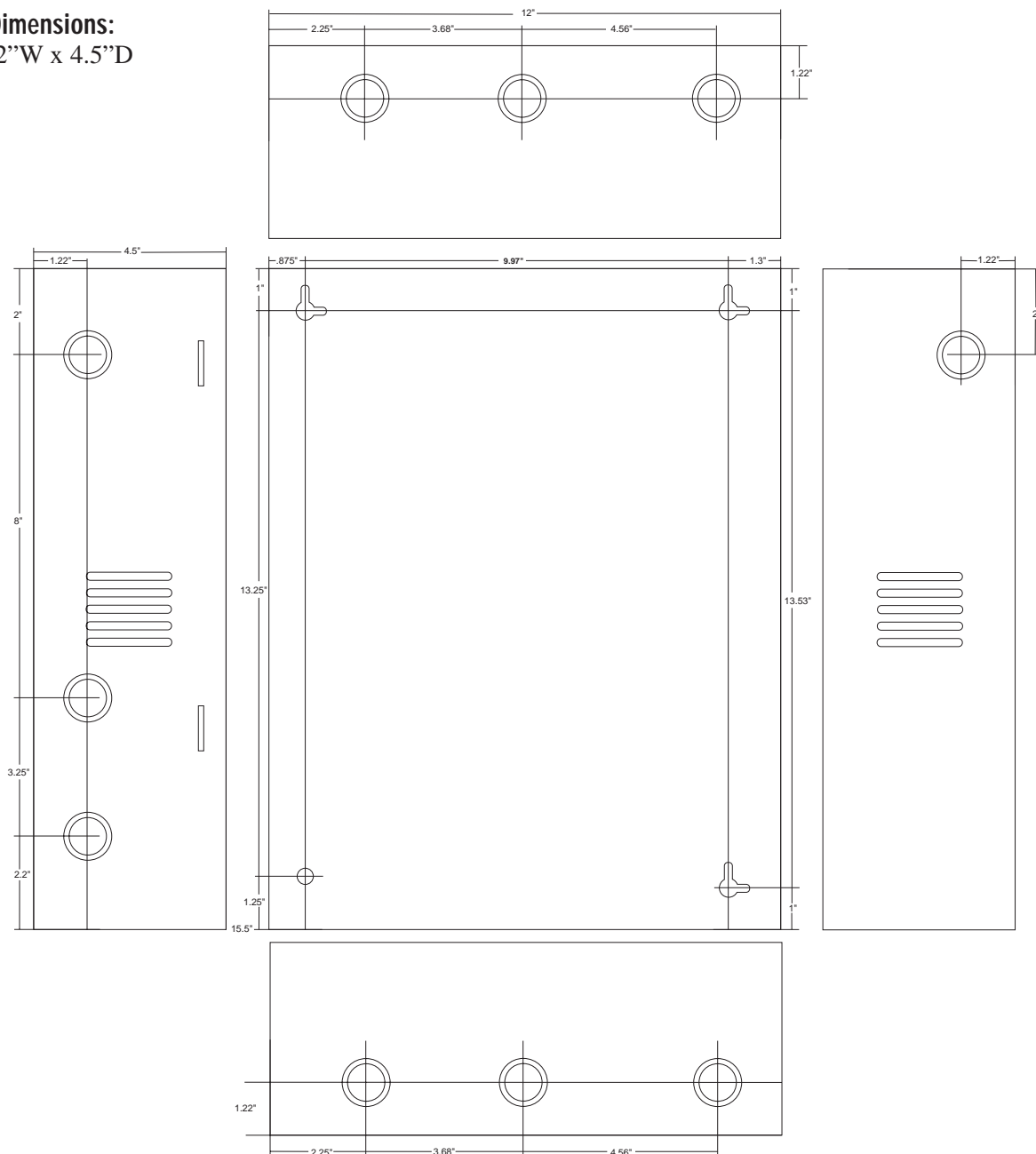
Battery Test: Under normal load conditions check that the battery is fully charged. Check specified voltage both at battery terminal and at the board terminals marked - BAT + to insure there is no break in the battery connection wires.

Note: Maximum charging current is 700mA.

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

Enclosure Dimensions:

15.5"H x 12"W x 4.5"D



MEMBER

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