

*Installation Guide  
for*

**interlogix** ™

**SECURITY & LIFE SAFETY GROUP**

***AL602IT1***

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

# AL602ITI - UL Listed ADA Fire Alarm Signaling Circuit Power Supply

**Overview:**

The Interlogix AL602ITI is an extremely cost effective 6.5 Amps voltage regulated remote power supply/battery charger. The AL602ITI 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 rated supply current can be divided between the four (4) outputs for powering notification appliances. Each output is rated at 2 amps max., and can be independently programmed for Steady, Temporal Code 3 or Strobe Synchronization. All outputs may be programmed for Input to Output Follower Mode (output will follow input. i.e. March Time Input, March Time Output). An individual output of 4 amps is achieved by paralleling 2 outputs. The AL602ITI 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 AL602ITI's steered input (input 1 or input 2). In addition, there are common trouble output terminals (N.C., C, N.O.) 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 AL602ITI'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 - Control Units for Fire Protective Signaling Systems and UL Listed UL1481 - Power Supplies for Fire Protective Signaling Systems.
- NFPA 72 Compliant.
- Input 115VAC 50/60 Hz, 1.45 Amps.
- Field selectable 24VDC or 12VDC voltage regulated power limited outputs.
- 24VDC or 12VDC rated @ 6.5 Amps max.
- Typical 8.6 mV output voltage ripple.
- 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.
- Two (2) NC dry contact trigger inputs.
- Programmable supervised indicating circuit outputs: Four (4) Class B or Two (2) Class A or One (1) Class A and Two (2) Class B.
- 2 wire horn/strobe Sync mode allows audible notification appliances (horns) to be silenced while visual notification appliances (strobes) continue to operate.
- Temporal Code 3, Steady Mode, Input to Output Follower Mode (maintains synchronization of notification appliances circuit).
- March Time.
- 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.
- Automatic switchover to stand-by battery when AC Fails.
- Zero voltage drop when switching over to battery backup.
- 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).  
Factory set for 1 minute with optional 6 hour delay setting (field selectable).
- 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:

<b>AC Input:</b>	115VAC / 1.45 Amps @ 60Hz.
<b>Output:</b>	12 - 24VDC. Maximum 2.0 amps per output. Total of 6.5 Amps in Alarm Condition.
<b>Battery:</b>	For 12VDC operation use a 12VDC / 12AH battery. For 24VDC operation use two (2) 12VDC / 12AH or two (2) 12VDC / 7AH batteries connected in series.
<b>Stand-by Current:</b>	75mA
<b>EOL Resistor (end of line):</b>	2.2K (2200 ohm)

### Stand-by Specifications:

Stand-by Batteries	Stand-by Time	Alarm Output Total Amps/Minutes	Aux Output Current
24VDC/12AH (use two (2) 12VDC batteries in series)	24 Hours	6.5 Amps/15 Minutes	50mA
	60 Hours	6.5 Amps/5 Minutes	-
24VDC/7AH	24 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:

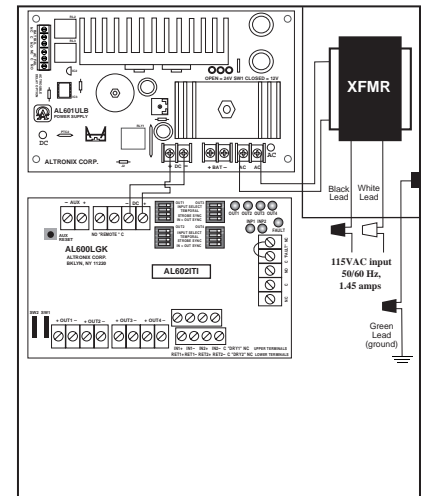
The AL602ITI should be installed in accordance with article 760 of The National Electrical Code or NFPA 72 as well as all applicable Local Codes.

1. Mount the AL602ITI 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* (pgs. 2 & 3)
- Typical Application Diagrams* (pgs. 7 - 11)
- Terminal Identification Table* (pgs. 5 & 6)
- Output Programming Selection Table* (pg. 4)
- Sync Mode Selection Table* (pg. 4)
- LED Status Indication Table* (pg. 5)

2. Connect the black and white transformer leads of AL602ITI to a separate unswitched AC circuit (115VAC, 50/60Hz) dedicated to the Fire Alarm System.
3. Set switch SW1 on Power Supply Board for desired output voltage. Open for 24VDC (factory set), Close for 12VDC.  
**Note:** It is important to measure output voltage before connecting devices. This helps avoid potential damage.
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.
5. Set output selection switches marked (OUT1 through OUT4) to follow corresponding input (IN1 & IN2) and desired output signal type (see output programming selection table pg. 4).
6. Connect FACP output to desired AL600LGK logic board inputs and notification appliances to desired AL600LGK logic board outputs (see typical application diagrams and Advent hookup instructions pgs. 6-11).  
**Note:** The 2-wire horn/strobe sync mode will only synchronize horns, horn strobes, strobes with synchronization capability.
7. For connection of smoke detectors, digital dialer (see optional hookup diagram pg. 10).
8. To report a ground fault connect negative (-) terminal of the auxiliary output marked [-AUX] to earth ground.

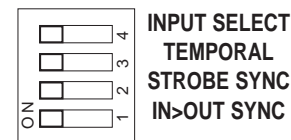


### General Information:

- 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).

**(AL600LGK Board)**  
**Output Dip Switches**



**Output Programming Selection Table:**

*Outputs must be programmed independently (OUT1 - OUT4)*

Function	Switch Positions		Descriptions
	ON	OFF	
Input to Output Follower Mode	1	2, 3	Output follows signal it receives from the corresponding input (i.e. FACP Sync module - maintains synchronization of notification appliance circuit.
	2, 3	1	Disables Input to Output Follower Mode.
Temporal Code 3 Mode	3	1, 2	Enables Temporal Code 3 signal generation output. This mode will accept a steady or a pulsing input.
Steady Mode		1, 2, 3	A steady output signal will be generated. This mode will accept steady or pulsing input.
March Time Mode (60 beats per minute)	2, 3	1	Enables a March Time output which will sound 60 beats per minute. This mode will accept a steady or pulsing input.

**For the above modes Dip Switch 4 determines which Input controls the corresponding output:**  
**Switch 4 in the ON position causes output(s) to be controlled by input 1.**  
**Switch 4 in the OFF position causes output(s) to be controlled by input 2.**

**Sync Mode Selection Table:**

Amseco Sync Mode* <i>(Fig. 1, 2, pg. 7)</i>	1, 3, 4	2	This mode is designed to work with the Amseco series of horns, strobes, and horn/strobes to provide a means of synchronizing the Temporal-coded horns, synchronizing the flash timing of the strobe, and silencing the horns of the horn/strobe combination over a two-wire circuit while leaving strobes active.
Faraday Sync Mode* <i>(Fig. 1, 2, pg. 7)</i>	2, 4	1, 3	This mode is designed to work with the Faraday series of horns, strobes, and horn/strobes to provide a means of synchronizing the Temporal-coded horns, synchronizing the flash timing of the strobe, and silencing the horns of the horn/strobe combination over a two-wire circuit while leaving strobes active.
Gentex Sync Mode* <i>(Fig. 1, 2, pg. 7)</i> <small>Gentex is a registered trademark of Gentex Corporation.</small>	1, 2, 3, 4		This mode is designed to work with the Gentex® Commander GES and ST/HS series of horns, strobes, and horn/strobes to provide a means of synchronizing the Temporal-coded horns, synchronizing the flash timing of the strobe, and silencing the horns of the horn/strobe combination over a two-wire circuit while leaving strobes active.
System Sensor Sync Mode* <i>(Fig. 1, 2, pg. 7)</i> <small>System Sensor is a registered trademark of Honeywell.</small>	1, 2, 4	3	This mode is designed to work with the SpectrAlert™ series of horns, strobes, and horn/strobes to provide a means of synchronizing the Temporal-coded horns, synchronizing the one-second flash timing of the strobe, and silencing the horns of the horn/strobe combination over a two-wire circuit while leaving strobes active.

**Note:** The AL602ITI will only synchronize horns, horn strobes and strobes that contain synchronization capability. Contact signal manufacturer for more detailed info. The same synchronization mode must be selected for all outputs.

**\* It is 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.**

**LED Status Indication Table:**

<b>LED</b>	<b>OFF</b>	<b>ON</b>	<b>BLINKING</b>
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**

<b>Terminal Legend</b>	<b>Function/Description</b>
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 Output Programming 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 (see typical application diagrams pgs. 7-8). 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 Output Programming Selection Table pg. 4).
C "FAULT" N.C. (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). (form "C" contact 1 amp / 28VDC).
N.C., C, N.O. (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). (form "C" contact 1 amp / 28VDC).
- 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 N.O. "REMOTE" C terminals. (fig. 5 pg. 9)
N.O. 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 Legend	Function/Description
AC FAIL C, N.C., N.O.	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.
BAT FAIL N.O., N.C., C	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. During a trouble condition terminals N.O. and C are closed, and N.C. and C are open.
+ BAT-	Stand-by battery input (leads provided). Use two (2) 12VDC batteries wired in series for 24VDC operation.

### Wiring to Advent FACP:

Use the information below to wire an Advent Commercial Fire Control panel to the AL602ITI power supply. The Advent panel will be configured for a continuous fire alarm output, and an audible fire alarm output. The continuous output is used to control visual alarm appliances (strobes), and is active until a fire alarm is acknowledged (cancelled). The audible output is used to control audible alarm appliances (horns), and is active until a fire alarm is silenced. A trouble indicator output in the AL602ITI activates a relay output for AC power loss, low backup battery or trouble on any of the output circuits. This output is learned in to a fire supervisory input (zone type 96) on the Advent panel.

If additional power or additional outputs are required, up to four AL602ITI NAC Power Supplies can be controlled from one pair of Advent Fire panel outputs.

Note: The AL602ITI must be mounted within 20 feet of the Advent panel enclosure and all wiring between the Advent panel and the AL602ITI must be enclosed in conduit.

Use the following steps to wire the trouble indicator.

1. Wire the "AC Fail" and Battery Fail" outputs to the "Fault" input in the AL602ITI as shown in fig. 1, pg.7.
2. Wire the N.O. and C terminals of the common trouble output on the AL602ITI to an input zone on the Advent panel as shown in figure 8. This input zone must be learned into the Advent panel as zone type 96.

Use the following steps to wire the audible output.

1. Configure a relay output on a 4 Relay Output Module as an audible (not silent) fire alarm output (used to control horns), using Advent Downloader Software on site.
2. Wire this output relay to input 2 on the AL602ITI as shown in fig. 1, pg.7.

Note: The 4 Relay Output Module must be mounted inside the Advent Panel enclosure.

Use the following steps to wire the visual (strobe) output.

1. Configure a relay output on a 4 relay output module as a continuous fire output (used to control strobes), using Advent downloader software on site.
2. Wire this output relay to input 1 on the AL602ITI as shown in fig. 1, pg.7.

Note: The 4 Relay Output Module must be mounted inside the Advent Panel enclosure.

If additional power or outputs are requires, up to 3 additional AL602ITI NAC Power Supplies can be added by connecting the "RET" terminals of the first AL602ITI to the corresponding "IN" terminals of the next AL602ITI and so on. See fig. 1, pg. 7 for details.

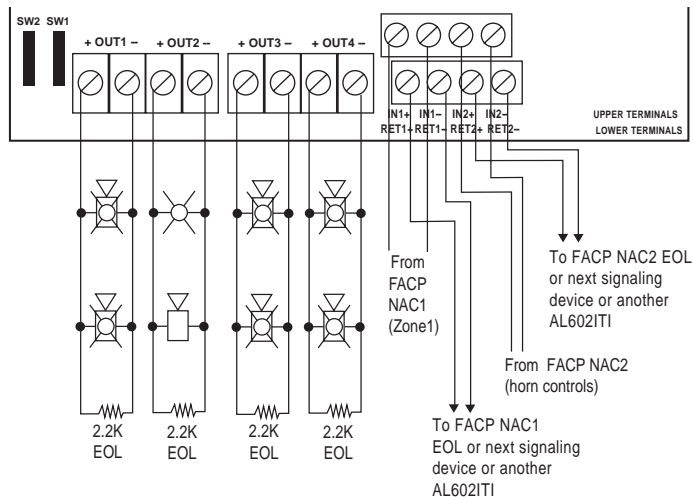
Set the DIP switches on the AL602ITI as required for the horn/strobes used. Refer to page 4 for information on setting the DIP switches and wiring the output circuits.





## Typical Application Diagrams:

**Fig. 2 - 2-wire Sync Mode w/Audible Silence (Class B hookup)**



**Note:** If common trouble input, terminals marked [C “FAULT” N.C.] are not used, these terminals must be shorted (connect jumper) to remain inactive. For optional hookups (see Fig. 5 pg. 9).

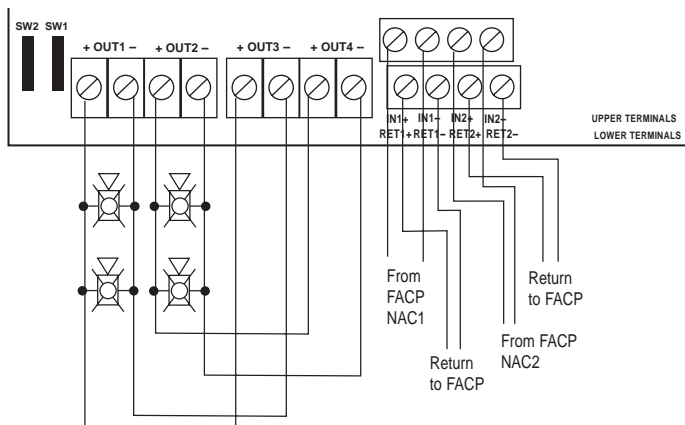
Two outputs may be connected in parallel for a maximum NAC output capability of 4 amps. When paralleling two (2) outputs, bridge (pos +) to (pos +) and (neg -) to (neg -). Both of the corresponding output switches must be set to follow the same input. Install two (2) 2.2K ohm EOL resistors in parallel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

Paralleled output circuit configuration is non-power limited.

**Note:** The sync mode will only synchronize notification appliances with synchronization capability.

- Switches SW1 & SW2 on AL600LGK logic board must be in the open position.
- It is 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.

**Fig. 3 - 2-wire Sync Mode w/Audible Silence (Class A hookup)**

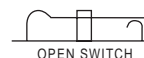


audible notification appliances (horns) to be silenced while visual notification appliances (strobes) continue to operate.

**Note:** If common trouble input, terminals marked [C “FAULT” N.C.] are not used, these terminals must be shorted (connect jumper) to remain inactive. For optional hookups (see Fig. 5 pg. 9).

**Note:** The sync mode will only synchronize notification appliances with synchronization capability.

- Switches SW1 & SW2 on AL600LGK logic board must be in the closed position for proper termination of NAC. Loop 1 starts on Output 1 and terminates on Output 3. Loop 2 starts on Output 2 and terminates on Output 4. Both of the corresponding output switches must be set to follow the same input.
- It is required to control visual notification appliances (strobes) via input 1 ( IN1) and audible notification appliances (horns) via input 2 ( IN2). This allows



Switch Detail

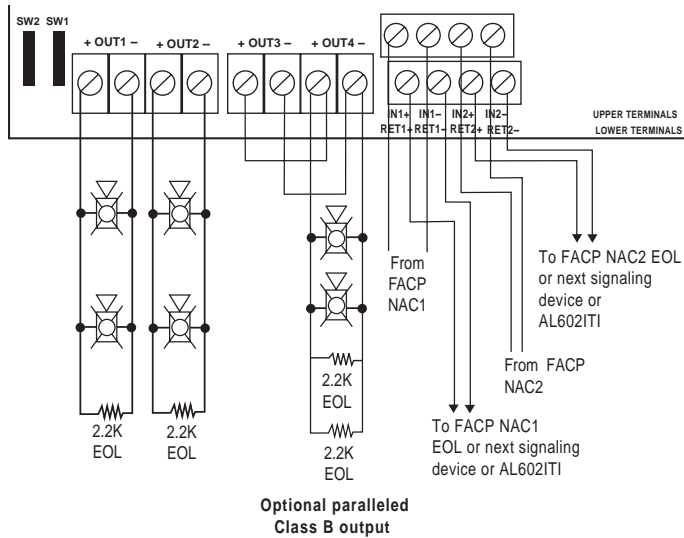


<b>Legend</b>	Horn	Strobes	Horn Strobes
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## Typical Application Diagrams:

**Fig. 4 - Normal or Sync Mode (Class B hookup)**



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, terminals marked [C “FAULT” N.C.] are not used, these terminals must be shorted (connect jumper) to remain inactive. For optional hookups (see Fig. 5 pg. 9).

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 -). 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.

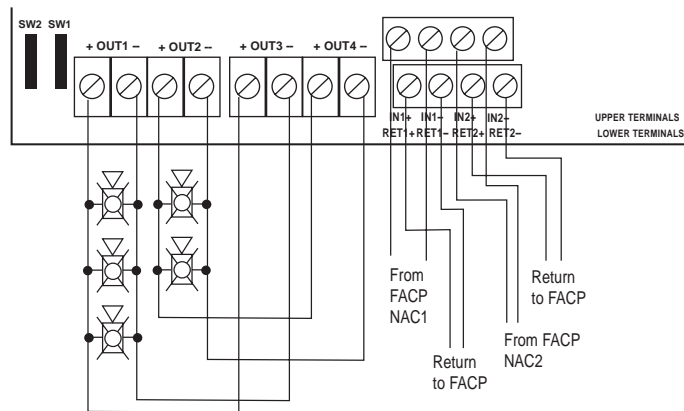
Paralleled output circuit configuration is non-power limited.

**Note:** The sync mode will only synchronize notification appliances with synchronization capability.

### 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

**Fig. 5 - Normal or Sync Mode (Class A hookup)**

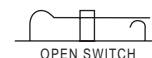


notification appliances (horns) independently of visual notification appliances (strobes) during certain operations.

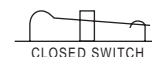
**Note:** If common trouble input, terminals marked [C “FAULT” N.C.] are not used, these terminals must be shorted (connect jumper) to remain inactive. For optional hookups (see Fig. 5 pg. 9).

**Note:** The sync mode will only synchronize notification appliances with synchronization capability.

- Switches SW1 & SW2 on AL600LGK logic board must be in the closed position for proper termination of NAC. Loop 1 starts on Output 1 and terminates on Output 3. Loop 2 starts on Output 2 and terminates on Output 4.. 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

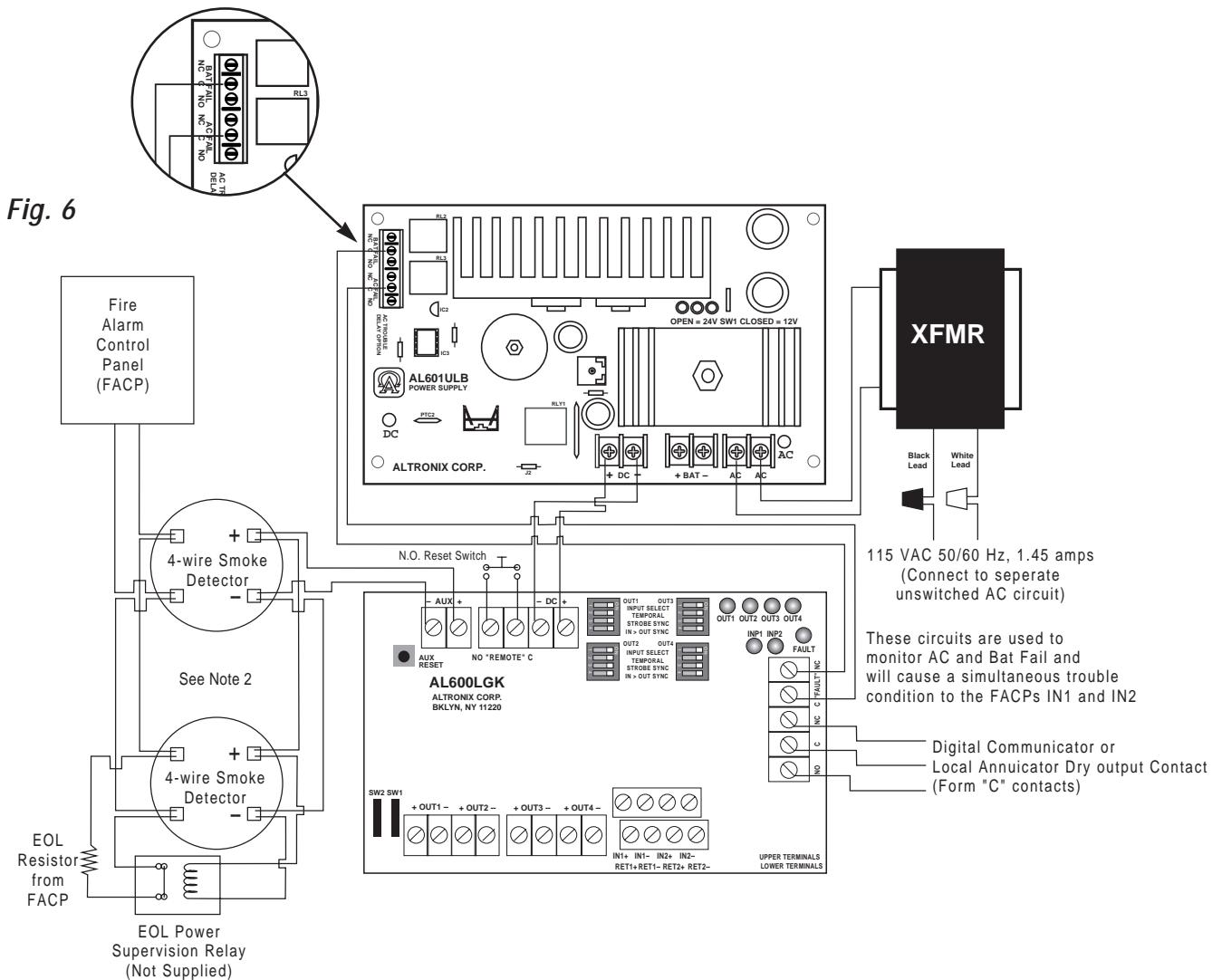


Switch Detail



<b>Legend</b>	Horn	Strobes	Horn Strobes
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## Optional Hookup Diagram:



### Optional hookups:

- 1- Battery and AC monitoring: AC or Battery Fail condition will cause the common trouble input (C "FAULT" N.C.) 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. 5 above to the common trouble input.

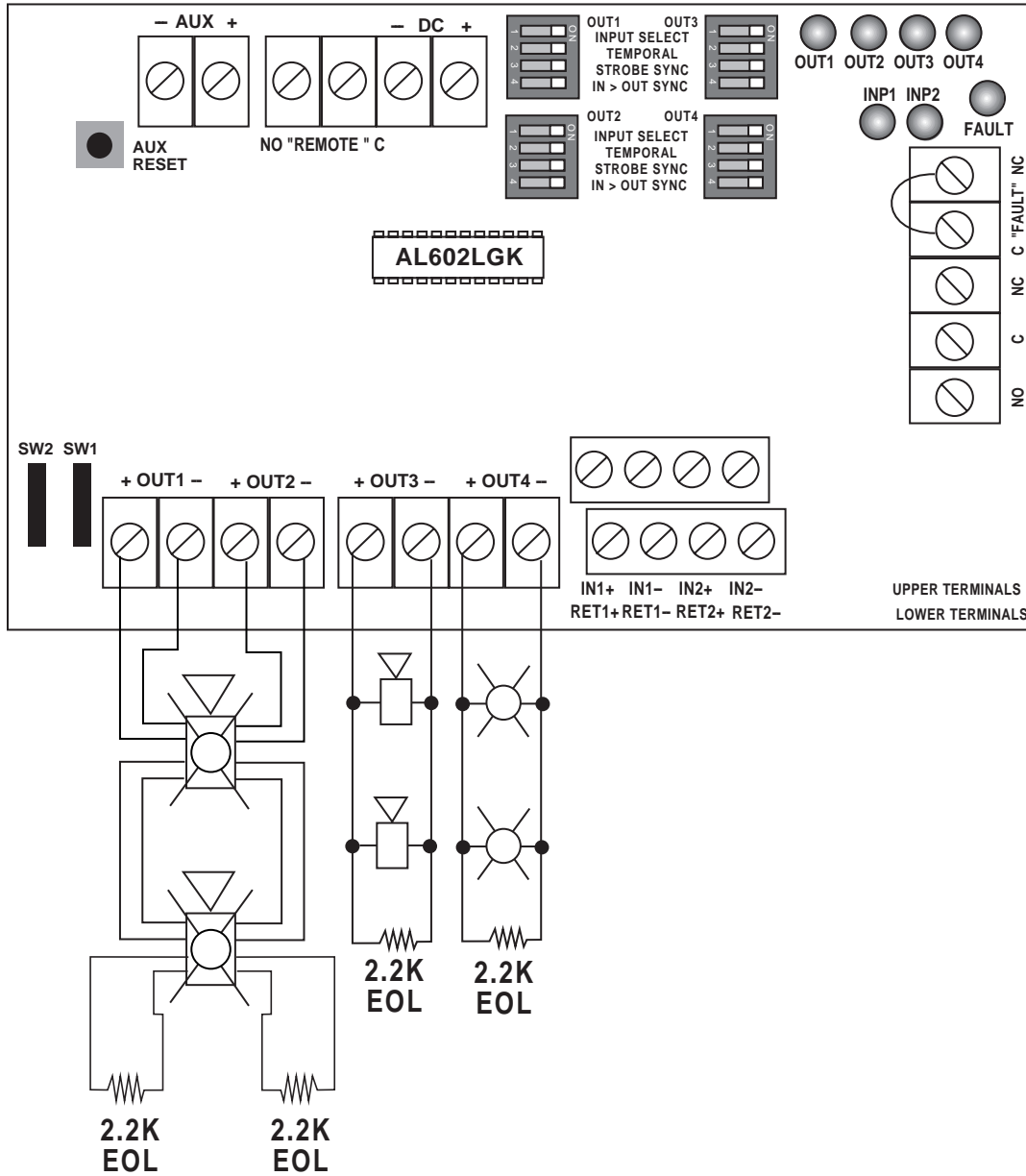
- 2- Dry contact input (IN1DRY, IN2DRY) (IN1DRY, IN2DRY) can be used to alarm output from an addressable module (these inputs are unidirectional and cannot report back to trigger module).

**Note:** If common trouble input, terminals marked [C "FAULT" N.C.] are not used, these terminals must be shorted (connect jumper) to remain inactive.

- 3- 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 (N.O. REMOTE C) or by pressing AUX RESET button on the AL600LGK logic board.

## Typical Application Diagram for Connecting Horn/Strobes with Independent Control of Horns and Strobes:



**Enclosure Dimensions:**  
 15.5"H x 12"W x 4.5"D

