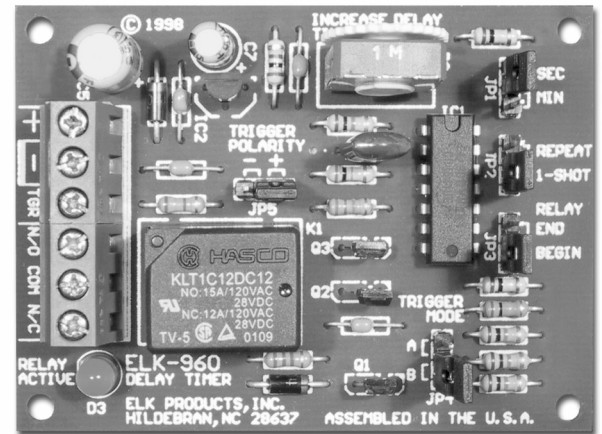


# Delay Timer Module

## ELK-960

The ELK-960 Delay Timer is designed to be an economical and flexible solution for any general-purpose timer application. The unit can be configured for use on 12 to 24 Volt D.C. systems, with positive or negative trigger logic. Positive triggers can be as low as 4.5Volts. Setup is quick and easy with thumbwheel adjustment between 1 and 60 seconds. A quick jumper setting converts the time from seconds to minutes!. The Timer can be configured to activate once for each trigger, or free-run as soon as power is applied. Relay can be configured to be normally on or normally off.



## Features

- 12 to 24 Volt D.C. Operation.
- Adjustable Time Delay.
- SPDT (Form "C") Relay.
- Low Current Input Trigger (<1mA).
- Selectable Positive or Negative trigger.
- Selectable Initial Relay State: ON / OFF.
- Operating Modes: One-Shot or Repeat.
- LED Indication of Relay State.
- Lifetime Limited Warranty.

## Specifications

- Operating Voltage: 12 to 24 Volts D.C.
- Current Draw: 40mA DC with relay on.
- Time Settings: 1 Second to 60 Minutes.
- Relay Contacts: Form "C", 7A @ 30 VDC, 10A @ 125 VAC.
- Size: 3" x 2.2" x 1" (Fits Standard Snap Track).
- Trigger Voltage: 4.5 - 24 Volts D.C.

## OVERVIEW

The ELK-960 features adjustable delay time of one (1) second to approximately sixty (60) minutes. It can be operated by **12 to 24 Volts D.C.** and can be triggered by a negative (-) or positive (+) voltage. The operating mode and the relay condition can be set as follows: **BEGIN-** Relay turns on when triggered and back off when delay time expires. **END-** Relay turns off when triggered and back on when delay time expires. The delay time can start when the trigger is first applied (**B** mode) or when the trigger is removed (**A** mode). The ELK-960 relay can be set to provide a single **1-SHOT** output or to **REPEAT** (pulse on and off). All options are selected using easy to change mini-jumpers.

## TERMINAL DESCRIPTIONS

Positive power input. Connect a +12 to +24 Volts D.C. source. **Warning: Do not exceed +24 Volts D.C., Damage will occur.**

Negative power (ground) input. Connect to a negative or ground terminal of the power source.

**TGR** Trigger voltage input. Connect a 4.5 to 24 Volts D.C. trigger source. Place jumper **JP5** (TRIGGER POLARITY) in the "+" position to trigger from a positive voltage or in the "-" position to trigger from a negative. The trigger voltage may be 4.5 to 24 Volts D.C., regardless of the main powered input (12 to 24 Volts D.C.).

**N/O** Normally Open side of the relay contacts. No connection to COM when the relay is off.

**COM** Common or "pole" side of the relay contacts. When the relay is off, COM is internally connected with the N/C contact. When the relay is on, COM is internally connected with the N/O contact.

**N/C** Normally Closed side of the relay contacts. This terminal is internally connected with the COM terminal when the relay is off.

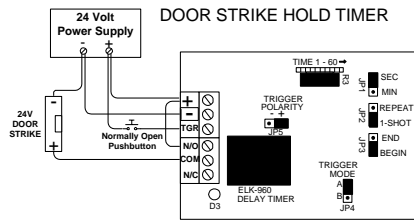
**NOTE:** The ELK-960 automatically triggers (turns on) and runs through a delay cycle when first powered up. To reduce waiting time and speed up installation, set jumper JP1 to SECONDS and adjust R3 to 1 before applying power. Once power is applied, change the settings as required.

SETTINGS AND JUMPER DESCRIPTIONS	
<b>R3</b>	This knob is used to increase or decrease the delay time from 1 to 60. The arrow is a reference point. Full clockwise is 1, halfway is 30, full counter-clockwise is 60.
<b>JP1</b>	<b>SEC</b> = Delay time is in seconds. Adjustable from 1-60. <sup>1</sup> <b>MIN</b> = Delay time is in minutes. Adjustable from 1-60. <sup>1</sup>
<b>JP2</b>	<b>REPEAT</b> = (Adjustable pulse) Relay cycles ON and OFF at delay time interval using a 50/50 duty cycle. <sup>2</sup> A trigger input will temporarily stop the cycle. <b>1-SHOT</b> = Relay activates only once per trigger.
<b>JP3</b>	<b>END</b> = Relay turns off when triggered and back on when delay time expires. <b>BEGIN</b> = Relay turns on when triggered and back off when delay time expires.
<b>JP4</b>	<b>A</b> = Delay time starts when trigger is removed. <b>B</b> = Delay time starts when trigger is first applied.
<b>JP5</b>	<b>+</b> = Selects positive polarity for the input trigger. <b>-</b> = Selects negative polarity for the input trigger.
<sup>1</sup> Times are approximate. When adjusted to the highest setting (60 minutes) the actual time delay will be slightly greater.  HINT: For a delay time in minutes, adjust and test with jumper JP1 in the SECONDS position. (IE: For a 15 minute delay, adjust and test to 15 seconds) Then move jumper JP1 to MINutes. This quickly provides a reasonable equivalent delay time in minutes.  <sup>2</sup> A 50/50 duty cycle means the OFF and ON times will be equal.	

# Instructions

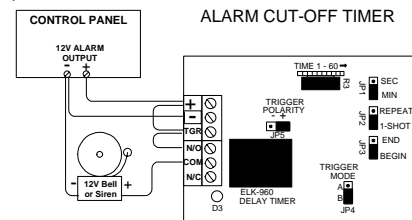
# ELK-960

## APPLICATIONS AND WIRING DIAGRAMS



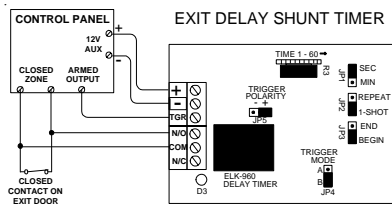
**Jumper JP1** = SEC - Adjust R3 for desired delay time.  
**Settings JP2** = 1-SHOT - Relay activates only once per trigger.  
**JP3** = BEGIN - Relay turns on when triggered by pushbutton.  
**JP4** = A - Time delay (turn off) starts when trigger is removed.  
**JP5** = "+" - Positive polarity input trigger.

Used to extend the release time of an access control device or to manually activate a door release device. The trigger is activated by a contact closure or a N/O pushbutton and the door strike remains activated (door open) after the button is released for the delay time set up in the ELK-960.



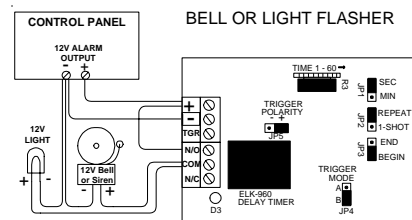
**Jumper JP1** = MIN - Adjust R3 to SEC, then switch to MIN.  
**Settings JP2** = 1-SHOT - Relay activates only once per trigger.  
**JP3** = BEGIN - Relay turns on when triggered by alarm output.  
**JP4** = B - Time delay (cut-off) starts when trigger is applied.  
**JP5** = "+" - Positive polarity input trigger.

Useful for adding a cut-off timer to a control panel that does not have one. It can also be used to shorten the cut-off timer for a control with no adjustable timer.



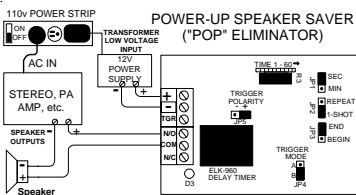
**Jumper JP1** = SEC or MIN - Adjust R3 for desired delay time  
**Settings JP2** = 1-SHOT - Relay activates only once per trigger.  
**JP3** = BEGIN - Relay turns on when triggered by armed output.  
**JP4** = B - Time delay (turn off) starts when trigger is applied.  
**JP5** = "+" - Positive polarity input trigger.

Provides an exit delay to an otherwise instant alarm loop. The ELK-960 is triggered by the control's Armed output. The door contact is then shunted by the relay contacts. After the user has exited and the delay time has expired, the door contact is restored into the loop.



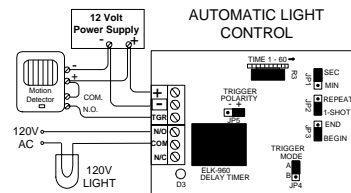
**Jumper JP1** = SEC - Adjust R3 for desired delay time.  
**Settings JP2** = REPEAT - Relay cycles On and Off at delay time intervals.  
**JP3** = BEGIN - Relay turns on when powered from alarm output.  
**JP4** = N/A - Not applicable. ELK-960 self-triggers on power-up.  
**JP5** = N/A - Not applicable. No trigger required.

Converts a steady output to pulsing, suitable for flashing a light or pulsing an audible device. Note: Alarm output must be capable of supplying enough current to drive the bell and light.



**Jumper JP1** = SEC - Adjust R3 for desired delay time.  
**Settings JP2** = 1-SHOT - Relay activates only once per trigger.  
**JP3** = END - Relay turns on after delay following power-up.  
**JP4** = N/A - Not applicable. ELK-960 self-triggers on power-up.  
**JP5** = N/A - Not applicable. No trigger required.

Useful for protecting speakers (and ears) from devices that generate loud but brief "pops" when powered-up. ie: Stereo or PA equipment. Adjust R3 to keep speaker(s) disconnected for several seconds after power strip is turned on and while the equipment warms up.



**Jumper JP1** = SEC or MIN - Adjust R3 for desired delay time.  
**Settings JP2** = 1-SHOT - Relay activates only once per trigger.  
**JP3** = BEGIN - Relay turns on when triggered by motion detector.  
**JP4** = A - Time delay (turn-off) starts when trigger is removed.  
**JP5** = "+" - Positive polarity input trigger.

For turning on an interior or exterior light with a motion detector. When motion is detected, the ELK-960 is triggered and the light is turned on. The amount of time the light remains on after the detector resets is adjustable. Delay time will automatically restart each time the motion detector activates.