

* Try these other fine ELK products *

Magic Module Series

- MM443** Magic Module, 4 Input, 4 Output, Programmable
- MM447** Automation Controller w/Voice, Caddx Interface
- MV480** Recordable Voice Module, 400 Channels
- MKHOME1** Home Control Kit for Caddx NX Controls
- MK400** Starter Kit, Includes MM443 & MK485
- MK485** Programming Kit, MB485, Cables, Software
- MK410** X-10® Transceiver Kit, Programmed MM443
- MK420** iButton™ Access Kit w/ MM443, MA100, MA101
- MA100** iButton™ 'Touchkey' Reader & Interface Pack
- MA101** iButton™ 'Touchkeys', 10 pcs w/keyring holders
- MA290** Proximity / Wiegand Data Interface to MM443
- MB485** Data Bus Interface, RS232 to RS485
- MC100** Clock / Calendar Module for MM443
- ML8** Link Interface to Caddx NX Controls
- MT100** Temperature Sensor Module for MM443
- MM220** Magic Module, 2 Input, 2 Output, Programmable

Rust Free Sirens / Speakers

- 1RT** Speaker & Stainless Steel Enclosure
- 150RT** Siren & Stainless Steel Enclosure
- 155RT** Voice Siren in Stainless Steel Box

Speakers & Sirens

- 44** Speaker, 30 W, 8 Ohm Compact Horn
- 45** Siren, Compact Horn, 118db
- 55** Voice Siren, Compact Horn
- M120** Siren, Single Tone, 107db, Mini Horn
- SP15** Speaker, 15 watt, Small Horn
- SP30** Speaker, 30 watt, Horn
- SP35** Speaker, 20 watt, Interior
- SP40** Speaker, 40 watt, Horn
- SS15** Siren, Dual Tone, 110db, Horn
- SS30** Siren, Dual Tone, 120db, Horn
- SS36** Siren, Dual Tone, 105db, Interior

ECHO™ Sirens & Speakers

- 73** ECHO Speaker, 20 Watt, Interior
- 74** ECHO Dual Tone Siren, Interior
- 75** ECHO Voice Siren, Interior
- 870** ECHO Speaker, Self Amplified

Siren & Voice Drivers

- 100** High Performance Siren Driver
- 110** Voice Siren Driver, English & Spanish
- 120** Recordable Voice Module and Siren
- 124** Recordable Voice Module, 4 Channels

Surge Suppressors

- 950** Surge Suppressor, Phone & Power Line
- 951** Surge Suppressor, Phone - Single Line
- 955** Surge Suppressor, Phone - Dual Line

Relay Modules

- 912** Compact Relay, 12 Vdc, SPDT
- 912B** Heavy Duty Compact Relay, 12/24 Vdc, SPDT
- 924** Sensitive Relay, 12/24 Vdc, DPDT
- 941** Alarm Output Director
- 960** Delay Timer Relay, 1 sec. to 60 min.

Power Products

- 1240** Battery, Lead Acid, 12v, 5Ah
- 1270** Battery, Lead Acid, 12v, 8Ah
- 12100** Battery, Lead Acid, 12v, 12Ah
- 12170** Battery, Lead Acid, 12v, 18Ah
- 12250** Battery, Lead Acid, 12v, 25Ah
- P112** 12 Volts DC, 1 Amp Power Supply w/Enclosure
- P124** 24 Volts DC, 800mA Power Supply w/Enclosure
- P1216** 12 Volts DC, 1.5 Amp Power Supply
- P412** 12 Volts DC, 4 Amp Power Supply
- P624** Power Supply & Battery Charger
- PD9** Power Distribution Module
- 965** Low Battery Cutoff and Power Switch
- TRG1640** Transformer, 16.5VAC @ 40 VA
- TRG2440** Transformer, 24VAC @ 40 VA

Accessories

- 129** Computer Sound Card Interface
- 800** Audio Amplifier, 10 Watts
- 900-2** "B" Connectors, Unfilled, 500 pcs
- 902-2** "B" Connectors, Gel filled, 500 pcs
- 980** Telephone Line Fault Monitor
- 998** Warning Alarm System Decals
- 999** Double Sided Tape
- SL1** Strobe Light, 4 colors available
- WK1** Wall Mount Kit for SL1 Strobes

For more information contact your local Distributor or:
 ELK PRODUCTS, INC 828-397-4200 FAX 828-397-4415
<http://www.elkproducts.com> Email: info@elkproducts.com

Delay Timer

ELK-960

APPLICATION:

The **ELK-960** is an economical and flexible solution for many general-purpose time delay applications. The unit operates on 12 to 24 Volts D.C. and can be selected for positive or negative trigger logic. Setup is 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 pulse as soon as power is applied.



Delay Timer

ELK-960



Economical Time Delay Relay Module

FEATURES:

- Operating Voltage Range: **12 to 24** Volts D.C.
- Adjustable Delay Time.
- Positive or Negative Low Current Trigger.
- **SPDT** (Form "C") Relay.
- Selectable Initial Relay State: ON / OFF.
- Output Modes: One-Shot or Repeat.
- LED Indication of Relay Status.
- Lifetime Limited Warranty.
- Packed In Reusable Poly Storage Box.

SPECIFICATIONS:

- Time Settings: 1 Sec to ~ 60 Min.
- Relay Contact Rating: 7A @ 30 VDC.
10A @ 125 VAC.
- Operating Voltage: 12 to 24 Volts D.C.
- Trigger Voltage: 4.5 - 24 Volts D.C.
- Input Trigger Current: 1.2 mA.
- Current Draw With Relay On: 40mA.
- Size: 3"x2.2"x1" (Fits Std.Snap Track).

Features and Specifications subject to change without notice.



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Instructions Printed On Inside

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 24VDC 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 24VDC, regardless of the main powered input (12Vdc to 24VDC).
- 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

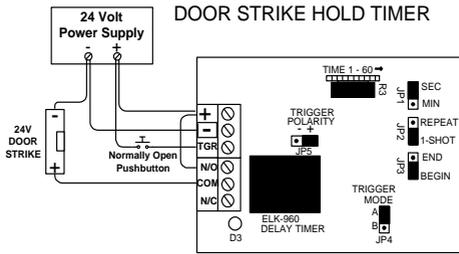
R3	This knob is used to increase or decrease the delay time from 1 to 60. The arrow is a reference point. Full clockwise is 1, halfway is 30, full counter-clockwise is 60.
JP1	SEC = Delay time is in seconds. Adjustable from 1 ~ 60. ¹ MIN = Delay time is in minutes. Adjustable from 1 ~ 60. ¹
JP2	REPEAT = (Adjustable pulse) Relay cycles ON and OFF at delay time interval using a 50/50 duty cycle. ² A trigger input will temporarily stop the cycle. 1-SHOT = Relay activates only once per trigger.
JP3	END = Relay turns off when triggered and back on when delay time expires. BEGIN = Relay turns on when triggered and back off when delay time expires.
JP4	A = Delay time starts when trigger is removed. B = Delay time starts when trigger is first applied.
JP5	+ = Selects positive polarity for the input trigger. - = Selects negative polarity for the input trigger.

¹ 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.

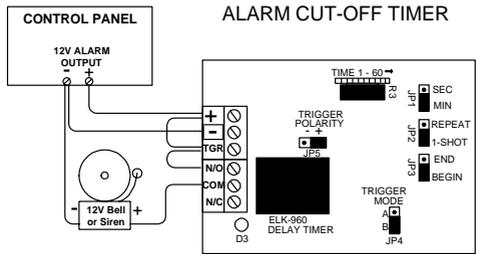
² A 50/50 duty cycle means the OFF and ON times will be equal.

APPLICATIONS AND WIRING DIAGRAMS



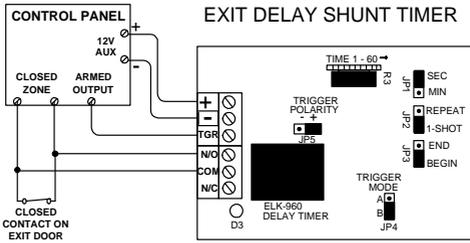
- Jumper JP1** = SEC -Adjust R3 for desired delay time.
Settings JP2 = 1-SHOT -Relay activates only once per trigger.
JP3 = BEGIN -Relay turns on when triggered by pushbutton.
JP4 = A -Time delay (turn off) starts when trigger is removed.
JP5 = "+" -Positive polarity input trigger.

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.



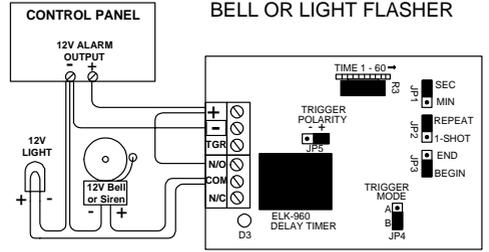
- Jumper JP1** = MIN -Adjust R3 to SEC, then switch to MIN.
Settings JP2 = 1-SHOT -Relay activates only once per trigger.
JP3 = BEGIN -Relay turns on when triggered by alarm output.
JP4 = B -Time delay (cut-off) starts when trigger is applied.
JP5 = "+" -Positive polarity input trigger.

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.



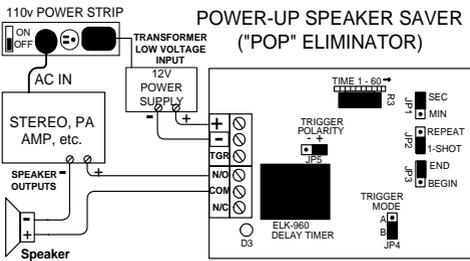
- Jumper JP1** = SEC or MIN - Adjust R3 for desired delay time
Settings JP2 = 1-SHOT -Relay activates only once per trigger.
JP3 = BEGIN -Relay turns on when triggered by armed output.
JP4 = B -Time delay (turn off) starts when trigger is applied.
JP5 = "+" -Positive polarity input trigger.

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.



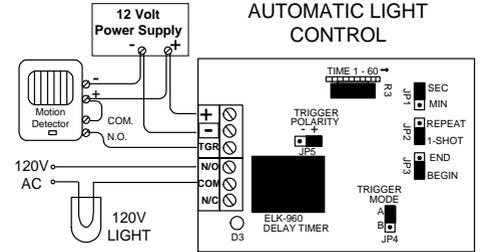
- Jumper JP1** = SEC -Adjust R3 for desired delay time.
Settings JP2 = REPEAT -Relay cycles On and Off at delay time intervals.
JP3 = BEGIN -Relay turns on when powered from alarm output.
JP4 = N/A -Not applicable. ELK-960 self-triggers on power-up.
JP5 = N/A -Not applicable. No trigger required.

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.



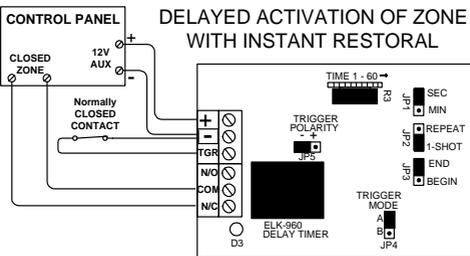
- Jumper JP1** = SEC -Adjust R3 for desired delay time.
Settings JP2 = 1-SHOT -Relay activates only once per trigger.
JP3 = END -Relay turns on after delay following power-up.
JP4 = N/A -Not applicable. ELK-960 self-triggers on power-up.
JP5 = N/A -Not applicable. No trigger required.

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.



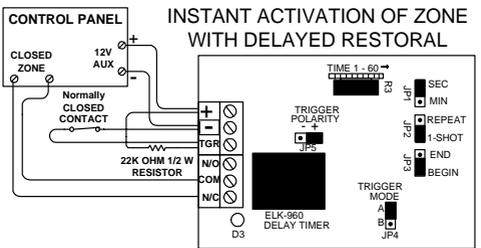
- Jumper JP1** = SEC or MIN -Adjust R3 for desired delay time.
Settings JP2 = 1-SHOT -Relay activates only once per trigger.
JP3 = BEGIN -Relay turns on when triggered by motion detector.
JP4 = A -Time delay (turn-off) starts when trigger is removed.
JP5 = "+" -Positive polarity input trigger.

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.



- Jumper JP1** = SEC -Adjust R3 for desired delay time.
Settings JP2 = 1-SHOT -Relay activates only once per trigger.
JP3 = END -Relay turned on after delay by contact opening.
JP4 = A -Delay starts when trigger removed by contact opening.
JP5 = "-" -Negative polarity input trigger.

Contact closure applies a constant trigger which keeps relay off and zone closed. Delay starts when contact opens. After delay time expires, the relay turns on and the zone is activated (opened). Closing the contact restores the zone instantly.



- 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 contact opening.
JP4 = A -Delay starts when trigger canceled by contact closure.
JP5 = "+" -Positive polarity input trigger.

When contact opens, relay is turned on which causes instant zone violation. Contact closure will cancel trigger applied by resistor. Delay starts when contact closes. Relay turns off and zone restores after delay time expires.