OVERVIEW

The ELK-110 features pre-recorded alarm messages in English & Spanish and 3 alarm channels, 1 for Burglar, 1 for Fire, and 1 for Carbon Monoxide. The siren/tones include High/Low Siren for Burglary, Temporal 3 Coded Tone for Fire, and Temporal 4 Coded Tone for Carbon Monoxide. Jumper pins allow customization of options and features.

INPUTS

The ELK-110 has both positive **(+BA)** and negative **(-BA)** inputs for Burglary conditions, making it compatible with most Controls. Tripping either channel causes a Burglary warning message and a loud high/low siren. For Controls that provide steady and pulsing on their alarm outputs, the ELK-110 offers *ComboTrigger™* which can distinguish a pulse from a steady and automatically switch Burg to Fire.

+FA (FIRE) This input is positive (+) trip only, and features a Fire warning message and a Temporal 3 Coded Tone. It is compliant with ANSI standard for Audible Emergency Evacuation Signaling.

+CO (Carbon Monoxide) This input is positive (+) trip only, and features a Carbon Monoxide warning message and a Temporal 4 Coded Tone.

FIRE (+FA) Override Should the +FA input be activated while either the +BA or +CO Alarm channels are sounding, Fire will take priority and will override the other alarms.
Caution: This ONLY functions on the +FA input. Pulsing on the +BA or -BA to activate Fire WILL NOT OVERRIDE the +BA or +CO alarms. If Fire priority override is desired, connect ONLY Positive (+) Steady output triggers to the three (+) inputs.

VOICE MESSAGES

Voice messages are spoken in English Only, or English followed by Spanish. (See "Switch & Jumper Options").

BA (Burglar) English:
Intruder, intruder, the authorities have been notified, leave immediately. Followed by high/low Alarm sound. This repeats until trigger is removed. {Spanish can be added by placing a shorting jumper on JP5}

FA (Fire) English:
Fire, fire, please evacuate the building. Followed by Temporal 3 Coded Tone. This repeats until the trigger is removed. {Spanish can be added by placing a shorting jumper on JP5}

CO (Carbon Monoxide) English:
Warning, Carbon Monoxide, please evacuate the building. Followed by Temporal 4 Coded Tone. This repeats until the trigger is removed. {Spanish can be added by placing a shorting jumper on JP5}

OUTPUTS

SPEAKER - For connection of Alarm Speaker(s). The lowest sustainable impedance is 4 Ohms.

SPKR TRBL - (Speaker Supervision, see option JP8)
The ELK-110 can monitor the SPEAKER Output and provide a switched low (pull to ground) on terminal "Out" when no continuity is detected (e.g. cut wire or removed speaker). A N/O or EOL resistor Control Zone may be connected as follows: Connect SPKR TRBL "NEG" terminal to the Zone Neg. Connect SPKR TRBL "OUT" to the Zone Input. The EOL resistor (if used) is connected across these inputs.
* Supervision only detects total loss of continuity, it will not detect a dead short on the SPEAKER output. *
Be sure to place a shorting jumper on JP8 and connect the RED (+12V) wire to a constant power source.

When the ELK-110 is active and sounding an alarm it may be possible for the SPKR TRBL output to inadvertently false activate. This is normal due to the fact that speaker continuity cannot be measured while the siren is sounding.

ELK PRODUCTS

Securing & Simplifying Life

Voice Driver
With Siren & Temporal Coded Tones
* Now includes Carbon Monoxide Alarm *

ELK-110 v5

APPLICATION:

The ELK-110 is ideal for residential and commercial alarm applications. It combines the advantages of high quality voice messages with conventional siren and temporal code tone sounds. It features 3 input channels, bilingual voice messages, and many unique options.

FEATURES:

- Three Input Channels, Burglar, Fire, and CO
- Siren only, Voice only, or combined
- Bilingual Voice - English & Spanish
- Temporal Coded Tones - ANSI standard Audible Emergency Evacuation Signaling
- Speaker Trouble Supervision

Voice Driver
ELK-110 v5

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With Siren & Temporal Coded Tones

SPECIAL FEATURES:
- **MilliMiser™** - option reduces current draw for controls with limited alarm output power
- **ComboTrigger™** - option for single alarm output controls which have the option of steady for burglar and pulsing for fire.
- **VolumeStep™** - option starts the siren sounds at low volume and step to full volume after 30 seconds. {voice does not step}

SPECIFICATIONS:
- Nom. Operating Voltage: 10-14 Volts D.C.
- Nom. Current Draw: 1.25 Amps (8 Ohm Spkr)
- Min. Low Current Trigger: 10.5VDC
- Sound Level: 122 db @1meter
- Freq. Temporal 3=800Hz, Temporal 4=1000Hz
- MilliMiser™ Current Drain 800 mA
- Maximum Speaker Loading: 4 Ohms
- Size: 2.75" X 4.0" (70mm X 102mm)

Features or Specifications subject to change without notice.

Instructions Printed On Inside

ELK PRODUCTS

828-397-4200 Voice
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PO Box 100 • Hildebran, NC 28637 • USA

ELK-110 v5 INSTALLATION INSTRUCTIONS

SPEAKER: Nominal 8 Ohm Speaker. For multiple speakers wire in series or parallel to maintain combined resistance no lower than 4 Ohms. See Hookup examples & Speaker Resistance & Current Draw below. Warning: Max. 'Peak' current draw of the Elk-110 may reach 2 Amps depending on Hookups and selected options.

Low Current Triggers: Connecting the RED (+12V) wire to a constant 12V power source allows the +CO, +FA, and +BA inputs to activate from low current voltage triggers. If RED wire is NOT used, each input will draw the max. operating current, which some control outputs may not support.

Black (NEG): Connect to a common negative (-) terminal on the control panel or power source. — **BLACK**

White (+CO): Connect to the control positive (+) switched 12V output assigned to Carbon Monoxide Alarm. Warning: This input will draw the max. operating current if the Low Current Trigger (see note above) option is not utilized. — **WHITE**

Green (+FA): Connect to the control positive (+) switched 12V output assigned to Fire Alarm. Warning: This input will draw the max. operating current if the Low Current Trigger (see note above) option is not utilized. — **GREEN**
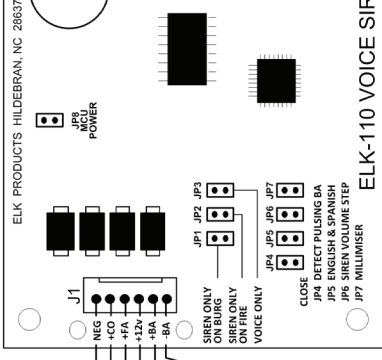
Red (+12V): For pulsing "ComboTrigger" operation this RED wire must be connected to a Aux. +12V DC constant source capable of up to 2 Amps. Otherwise this connection is optional, with its intended purpose to supply the main operating current of the ELK-110, allowing low current trigger voltages to activate the +CO, +FA, or +BA inputs. *A low current trigger voltage is 5 to 40 milliamps at ~10 to 12 Volts DC.* — **RED**

Blue (+BA): Connect to the control positive (+) switched 12V output assigned to Burglar Alarm. Warning: This input will draw the max. operating current if the Low Current Trigger (see note above) option is not utilized. This input can distinguish a solid or pulsing input "ComboTrigger." — **BLUE**

Brown (-BA): For Controls with a switching Negative (drive to 0V) Alarm Output (e.g. DSC). Connect Brown wire to Alarm negative (-) output, connect Red wire to (+12V) Alarm positive terminal, and connect Black wire to constant negative (-) terminal. This input can distinguish a solid or pulsing input "ComboTrigger." — **BROWN**

SPKR TRBL – (Speaker Supervision, see option JP8): Provides a switched low (pull to ground) on terminal "OUT" which can be used to trip a N/O or EOL resistor Control Zone whenever resistance across the SPEAKER terminals goes OPEN (cut wire or disconnection of speaker. Max. sink current is 40mA. *Supervision only detects total loss of continuity, it does not detect dead shorts.* Be sure to place a shorting jumper on JP8 and connect the RED (+12V) wire to a constant power source.

NOTE: If Control does not have an auxiliary output rated for up to 2 Amps an alternative could be to connect the Red wire to the standby battery using a 2 Amp in-line fuse & holder for safety. FOR PROTECTION AGAINST SHORT CIRCUITS the source voltage connection to the ELK-110 should always be fused or otherwise protected at no greater than 3 Amps.

ELK-110 VOICE SIREN v5

JP1 JP2 JP3

CLOSE
JP4 DETECT PULSING BA
JP5 ENGLISH & SPANISH
JP6 SIREN VOLUME STEP
JP7 MILLIMISER

JP4 JP5 JP6 JP7

SIREN ONLY ON BURG
SIREN ONLY ON FIRE
VOICE ONLY

J1 NEG +CO +FA +12v +BA -BA

JP8 MCU POWER

"WARNING" PROTECT EARS WHILE TESTING

SPEAKER
SPKR TRBL
NEG OUT

8 Ohm Speaker

SIREN ONLY ON BURG (No Voice) JP1: Deletes "Burglar" message on both +BA and -BA (Burg) inputs.

SIREN ONLY ON FIRE (No Voice) JP2: Deletes "Fire" message on the +FA input.

VOICE ONLY (No Sirens) JP3: Deletes ALL Siren sounds leaving only voice.

** CAUTION: VOICE ONLY (No Sirens) MUST NOT be selected in combination with "Siren Only On Burg" or Siren Only On Fire".

DETECT PULSING +BA OR -BA (COMBOTRIGGER) JP4: Enables a pulsing input to activate Fire. A steady input will activate Burglar.

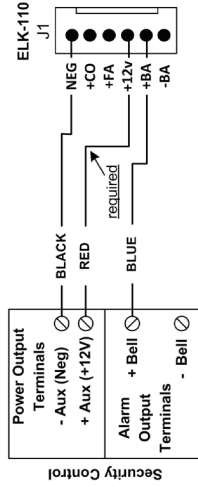**ENGLISH & SPANISH JP5:** Adds Spanish voice which will alternate with English.

SIREN VOLUME STEP JP6: Causes Siren sounds to start LOW and step to full volume after 30 seconds.

MILLIMISER JP7: Lowers maximum siren volume, thereby reducing overall current drain.

MCU POWER JP8: To utilize Speaker Supervision a shorting jumper MUST be placed on JP8, and the RED (+12V) wire must be connected to a constant power source.
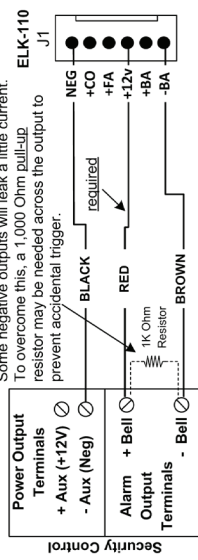

Hookup for Alarm Output with switching Positive (+)

The positive +Bell terminal is switched on for alarms. Burg will sound if the +Bell output is steady. Fire will sound if the +Bell output is pulsing. **NOTE: To detect pulsing, Jumper JP4 MUST be ON and the RED wire MUST be connected to a Aux. +12 Volt source.**
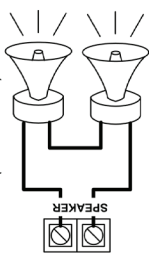
Security Control

Power Output Terminals
- Aux (Neg)
+ Aux (+12V)

Alarm Output Terminals
+ Bell
- Bell

ELK-110
J1
NEG +CO +FA +12v +BA -BA

BLACK
RED
BLUE

required

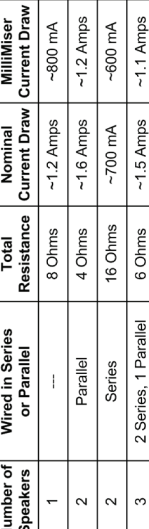**Hookup for Alarm Output with switching Negative (-)** e.g DSC

The positive +Bell is always hot and the negative -Bell is switched on for alarms. Burg will sound if the -Bell output is steady. Fire will sound if the -Bell output is pulsing. **NOTE: To detect pulsing, Jumper JP4 MUST be ON and the RED wire MUST be connected to +Bell or a Aux. +12 Volt source.**
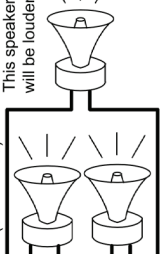
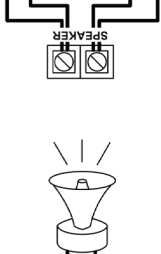Some negative outputs will leak a little current. To overcome this, a 1,000 Ohm pull-up resistor may be needed across the output to prevent accidental trigger.

Security Control

Power Output Terminals
+ Aux (+12V)
- Aux (Neg)

Alarm Output Terminals
+ Bell
- Bell

ELK-110
J1
NEG +CO +FA +12v +BA -BA

BLACK
RED
BROWN

required
1K Ohm Resistor

Speaker Resistance & Current Draw (ELK-110 v5)

Number of Speakers	Wired in Series or Parallel	Total Resistance	Nominal Current Draw	MilliMiser Current Draw
1	----	8 Ohms	~1.2 Amps	~800 mA
2	Parallel	4 Ohms	~1.6 Amps	~1.2 Amps
2	Series	16 Ohms	~700 mA	~600 mA
3	2 Series, 1 Parallel	6 Ohms	~1.5 Amps	~1.1 Amps

Two 8 Ohm Speakers in Series
(16 ohm load)

SPEAKER

Two 8 Ohm Speakers in Series, One in Parallel
(6 ohm load)

SPEAKER

Two 8 Ohm Speakers in Parallel
(4 ohm load)

This speaker will be louder

SPEAKER