M1 includes the SIA CP-01 Standards for False Alarm Reduction †
Introduction

LIMITATION
The ELK-M1G Control is designed to warn against unauthorized entry and other situations. However, it is not a guarantee of protection against the occurrence of burglary, fire, or other emergency. Any alarm system is subject to compromise or failure to warn for various reasons. For example:

- Unauthorized access can be gained through unprotected points or by disarming or bypassing protected points.
- Sensing devices are power driven and do not operate without electrical power. Battery-operated devices will not work without batteries, with dead batteries, or if the batteries are not put in properly. Devices powered solely by AC will not work if their AC power supply is cut off for any reason, however briefly.
- Telephone lines over which alarm signals are transmitted may be out of service or rendered inoperable by an intruder.
- Even if the system responds to the emergency as intended, occupants may have insufficient time to protect themselves from the emergency situation. In the case of a monitored alarm system, authorities may not respond appropriately.
- Smoke detectors have limitations and cannot detect all types of fires. According to data published by the Federal Emergency Management Agency, while smoke detectors have played a key role in reducing residential fire deaths in the United States, they may not activate or provide early warning for a variety of reasons in as many as 35% of all fires. Some of the reasons some detectors used in conjunction with this System may not work are as follows. Smoke detectors may have been improperly installed and positioned. Smoke detectors may not sense fires that start where smoke cannot reach the detectors, such as in chimneys, in walls, or roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level of a residence or building. A second floor detector, for example, may not sense a first floor or basement fire. Finally, smoke detectors have sensing limitations. No smoke detector can sense every kind of fire every time. In general, detectors may not always warn about fires caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson. Depending on the nature of the fire, and/or location of the smoke detectors, the detector, even if it operates as anticipated, may not present sufficient warning to allow all occupants to escape in time to prevent injury or death.
- Signals sent by wireless transmitters may be blocked or reflected by metal before they reach the alarm receiver. Even if the signal path has been recently checked during a weekly test, blockage can occur if a metal object is moved into the path.
- Wireless transmitters (used in some systems) are designed to provide long battery life under normal operating conditions. Longevity of batteries may be as much as 4 to 7 years, depending on the environment, usage, and the specific wireless device being used. External factors such as humidity, high or low temperatures, as well as large swings in temperature, may all reduce the actual battery life in a given installation. This wireless system, however, can identify a true low battery situation, thus allowing time to arrange a change of battery to maintain protection for that given point within the system.
- Installing an alarm system may make the owner eligible for a lower insurance rate, but an alarm system is not a substitute for insurance. Homeowner, property owners and renters should continue to act prudently in protecting themselves and continue to insure their lives and property.
- A user may not be able to reach a panic or emergency button quickly enough.
- Passive Infrared Motion Detectors can only detect intrusion within the designed ranges as diagrammed in their installation manual. Passive Infrared Detectors do not provide volumetric area protection. They do create multiple beams of protection, and intrusion can only be detected in unobstructed areas covered by those beams. They cannot detect motion or intrusion that takes place behind walls, ceilings, floors, closed doors, glass partitions, glass doors, or windows. Mechanical tampering, masking, painting or spraying of any material on the mirrors, windows or any part of the optical system can reduce their detection ability. Passive Infrared Detectors sense changes in temperature, however, as the ambient temperature of the protected area approaches the temperature range of 90 to 105°F (32 to 40°C), the detection performance can decrease.
- Alarm warning devices such as sirens, bells or horns may not alert people or wake up sleepers if they are located on the other side of closed or partly open doors. If warning devices are located on a different level of the residence from the bedrooms, they are less likely to wake or alert people inside the bedrooms. Even persons who are awake may not hear the warning if the alarm is muffled by noise from a stereo, radio, air conditioner or other appliance, or by passing traffic. Finally, alarm warning devices, however loud, may not warn hearing-impaired people.
- This equipment, like other electrical devices, is subject to component failure. Even though this equipment is designed to last as long as 20 years, the electronic components could fail at any time.
- The most common cause of an alarm system not functioning when an intrusion or fire occurs is inadequate maintenance. This alarm system should be tested weekly to make sure all sensors and transmitters are working properly.

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Use of this control for fire detection and/or annunciation may not be permitted by certain states, counties, municipalities or local jurisdiction. It is the responsibility of the installing alarm company to check with the local A.H.J. (Authority Having Jurisdiction) or State Fire Marshal’s office prior to using this control for fire detection.
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ELK-M1
Cross Platform Control
16 Zones expandable to 208

Control specifications subject to change without notice. All circuits are power limited except for Battery leads.

4-Wire Smoke Detector - Any Zone
N.O. Alarm Contacts

U.L. Listed EOL Supervision Relay, ESL #204A or equiv. Use 2,200 Ohm EOL resistor, part # ELK-ER820

2-Wire Smoke Detector - Zone 16 ONLY

To configure Zone 16 as a 2-wire smoke zone, set jumper JP1 to ‘2WIRE SMOKE’ and use 820 Ohm EOL resistor, part # ELK-ER820

Use Only Compatible Detectors

Control Compatibility Identifier: M10001

Notes
- Refer to Appendix F located in the Installation Manual #L520 Rev. J for UL limitations on total continuous ‘standby’ current drain from terminals +SAUX, +VAUX, +VKP, and J16.

2. OUT 1, for speaker(s) ONLY (4 to 8 Ohms).
If connecting more than 2, use series/parallel wiring to avoid going below a 4 ohm total load.
OUT 2 Connect ONLY 1 UL Listed Bell or Siren (self-contained). Current limited to 1 Amp.
Program Global Option 26 to Voltage. This output supervised. Speaker(s) only permitted for non-UL installations. Series/parallel wire to avoid dropping below a 4 ohm total load.
OUT 3 NO/NC dry contact relay rated 4A.
OUT 4 through 16 are +12V switched positive voltage outputs rated at 50mA max.
3. This terminal (formerly earth gnd) not used. Do not connect any neg terminals to ground.
4. If AC fails, control will shut down if battery drops below 10.2 Volts. To start the control with a good battery and no AC, short the silver pads momentarily. Replace Battery every 3-5 years. Test regularly with ELK-BLT Battery Life Tester.
† Not Evaluated by UL
†† Not for use in UL Listed Systems

TEST SYSTEM WEEKLY
Complies with FCC Part 68:
Reg. # US: SKGAL03BEKL-M1 REN: 0.3B
Use Standard Jack: USOC RJ-31X.
Serial Number located below on base.
Complies with part 15 of FCC rules.
This Class B digital apparatus complies with Canadian ICES-003

ELK PRODUCTS, INC.
HILDEBRAN, N.C., 28637, USA
Specifications, Features, and Benefits

General:
• Large zone capacity: 16 on-board zones expandable to 208
• Wireless capability ✩ Up to 144 zones
• Two Way Listen-in interface ✩
• Flash Memory - Allows field updates to firmware electronically
• RS-232 serial port to interface PCs and peripheral devices
• Time/Date stamped 512 event history log
• Menu driven, text keypad programming - no manual required!
• Voice announcement of alarms, zone descs, status, etc.
  - 500+ Word/Phrase Vocabulary
  - Link up to 6 words/phrases per announcement
  - 10 custom recordable words/phrases
• 13 On-Board Outputs: 1 voice driver/siren, 1 siren driver/voltage, 1 form “C” Relay, and 10 low current (50 mA) voltage outputs
• Supports 4 wire (any zone) and 2 wire (zone 16) smoke detectors
• Includes Fire alarm verification routine
• Can be partitioned into 8 areas and account numbers
• User Codes: 99 (4 or 6 digit) with assignable authority levels
• Arm levels: Away, Stay, Stay Instant, Nite, Nite Instant, Vacation
• Plug-in terminal blocks make service and pre-wires a snap!
• Hardware “watchdog” and nonvolatile EEPROM memory
• Supervised phone line, alarm output, and aux. overcurrent detectors

Communications
• True V.22 bis Modem for fast reliable upload/download
• Optional M1XEP Ethernet Interface ✩ for user operation, alarm reporting, and reporting, and more
• Built-in Phone Remote Control makes any phone a keypad
• Integrated Voice Dialer uses vocabulary or custom words
• Communicator formats: SIA, Contact ID, 4 + 2, and Pager
• Installer telephone (buttsset) test feature
• Elk-RP PC programming software with conflict resolution to easily highlight differences between control and PC
  - Dial-up, ethernet, RS-232 port, or local house phone jack
  - Automatic answering machine bypass

Keypad
• Backlit, Large Character LCD Display, 16 x 2 lines
• Built-in Temperature Sensor
• Optional Plug-in Prox Access reader (26 bit Weigand format)
• Menu navigation keys and 6 programmable function keys
• Plug-in connector, only 4 wires to the control
• 1 Zone input and 1 Output Programmable per Keypad
• Programmable display of time, date, & temperature
• Displays system diagnostics and settings.
• Maximum Keypads allowed: 16

Automation & Integration
• Create lifestyle enhancing comfort, convenience, and security
• Powerful “Whenever/And/Then” RULES Programming allows almost any imaginable operation. No need to chain rules together. Any single “Whenever” event can have one or more ANDs and THENs (conditions and commands).
• Rules utilize easy to understand text based references
• Control lighting using RS-232 serial or 2-way Power Line Control (PLC) Commands include On, Off, Dim, All On, All Off ✩
• Transmit and receive custom serial ASCII strings
• Read Temperature Sensors - Communicate with Thermostats
• Turn on Tasks, Lights, Outputs via Keypad or Telephone
• Sunset/Sunrise calculation and activation built-in

Power Supply
• Heavy duty - 2.5 Amp power supply
• Dynamic battery test
• Master power switch and Low battery disconnect
• PTC (fuseless) resettable overload protection
• Multiple auxiliary power terminals

Part Numbers and Accessories:
ELK-M1GCB  M1G Gold Board Only (No Terminals Blocks)
ELK-M1GOLD  M1G Gold - Control in 14” metal can
ELK-M1GK  M1G Gold Kit - No Metal Can, for use with structured wiring systems
ELK-M1SYS4  M1G Gold Kit - 14” metal can, Ctrl, Encl, Xfmr, KP, 12V-8Ah, Spkr, RJset
ELK-M1KP  Keypad, LCD,16 character x 2 line
ELK-M1KP2  Small LCD Keypad, 16 character x 2 line ✩
(Internal temp sensor and 2 less “F” keys)
ELK-M1KPAS  Keypad Arming Station ✩
ELK-M1XIN  16 Zone (input) expander
ELK-M1XOVR  16 Output expander, 8 Voltage/8 Relays
ELK-M1RBOX  Relay board, 8 form “C” relays
ELK-M1DBH  Data bus wiring hub “Passive” ✩
ELK-M1DBHR  Data bus wiring hub “Active” for Retrofit ✩
ELK-M1XEP  Ethernet Port Exp/Interface ✩
ELK-M1XRF2G  Wireless Receiver for GE Crystal Xmtrs ✩
ELK-M1XRF2H  Wireless Receiver for Honeywell 5800 Xmtrs ✩
ELK-M1XSP  Lighting, Thermostat Interface & Serial exp. ✩
ELK-M1PR  Mini prox reader for keypad ✩
ELK-M1TWI  Two Way Listen-in Int. w/3 mic inputs ✩
ELK-M1TWS  Speaker & Mic for Two Way Listen-in ✩
ELK-M1TS  Zone Temperature Sensor -50 to 140 F ✩
ELK-RP  PC software - Free upon request with Control Panel purchase
ELK-RM  Remote “User” Management software

NOTE: Use of Two Way Listen-in may be regulated by local or state laws and/or ordinance. It is the responsibility of the installer to check before using this feature.

Highlighted Features of the M1G (Gold)
• Automation (“Whenever/And/Then”) Rules Capacity 528
• Serial (RS232) Port Supported 8 w/expanders
• Phone Number Capacity 8
• Number of HVAC Thermostats ✩ Supported 16
• Total Number of Outputs Supported 205
• Advanced Lighting ✩ Options (Pre-set Dim, Extended, Levels, Scenes) Yes
• Analog Zone Definitions Supported Yes

† Not evaluated by UL  †† Not for use in UL Listed Systems

M1G Installation and Programming
Wiring & Hookup Diagram

This unit provides Residential fire alarm service when installed according to ANSI/NFPA 72. Transmission of the fire alarm signal to a fire alarm headquarters or central station shall be permitted only with the approval of the authority having jurisdiction. The burglar alarm signal shall not be transmitted to a police emergency number. Equipment is to be installed in accordance with NFPA (985,55,1.P).


Reference NFPA70 (NEC) & Canadian Electrical Code.

All circuits are current limited except for Battery leads. Refer to Appendix F.


Testing of this system should be performed regularly with the primary AC power de-energized. Control panel specifications are subject to change without notice.

Lithium 3V "Clock" battery, Varta #CR2032 located in upper left corner behind cover. Battery has a life expectancy of approx. 10 years. Replace ONLY with exact model available at most electronics and camera retailers. "CAUTION: Lithium Battery May Explode If Mistreated. Do Not Recharge, Disassemble, or Dispose Of In Fire."

NOTE: M1ZTS Temperature Sensors may only be connected to the first 16 zones.

Smoke Detector covers should be kept free from dust and dirt by use of a dry or damp (water) cloth as needed. When necessary, clean the detector interior and/or replace the optical chamber according to instructions provided by the Smoke Detector Manufacturer.

M1G "Board only" non-alarm current draw = 140mA (.14 Amp)

LEDs Indicators Normal State Descriptions

TELCO SEIZED OFF Phone line is good and house phones are connected. If ON constantly, the phone line may be bad. During remote mode this LED will be ON since the house phones are then disconnected from the outside line & are being powered from control.

DIALER ACTIVE OFF Dialer/Modem is idle. If OFF, Dialer/Modem is in use (communicating).

Power ON AC Voltage is present and power switch is turned ON. If OFF, check AC power.

Status Regular 1 sec. Blink 1 blink with equal On and Off times is Normal. 2 fast blinks = Control running on bootloader only. 4 fast blinks = Control is re-initializing its EEPROM memory after a firmware flash. 5 fast blinks = Memory/Operation overflow

Battery Reversed OFF Battery is connected correctly. If ON, check battery lead connections.

Control needs AC power to start. Momentarily shorting these two pads allows control to startup on battery only.

Master Power Switch (SW1), disconnects AC and Battery power from control.

Replace Battery every 3-5 years. Use ELK model # ELK1280 (12V - 8 Ah) or ELK12180 (12V - 18 Ah) or equivalent.

16.5VAC, 45VA UL Listed Class 2 Transformer - ELK-TRG1640
DO NOT CONNECT TO A SWITCHED OUTLET
For Canada use cUL Listed Transformer - ATC Frost # FPS-4016

18W Min. 16.5V AC AC

BAKER

12 Volt Sealed Lead Acid

ELK1280 12V 8Ah
ELK12180 12V 18Ah

16.5 VAC, 45VA UL Listed Class 2 Transformer - ELK-TRG1640
DO NOT CONNECT TO A SWITCHED OUTLET
For Canada use cUL Listed Transformer - ATC Frost # FPS-4016

18W Min. 16.5V AC AC

BAKER

12 Volt Sealed Lead Acid

ELK1280 12V 8Ah
ELK12180 12V 18Ah
**Bus Termination.**

**Important Information about Data Terminating Jumper (JP3):**

- **Jumper Engagement:** Engages a 120 Ohm resistor across data A & B lines.
- **Jumpers:** Hardware pack has two black jumpers for this purpose. Jumpers engage a 120 Ohm resistor across data A & B lines.
- **Mandatory:** Must have a terminating jumper installed. Jumpers are marked JP2 on keypads, JP1 on Expanders. Control Diagram shows 2 basic (4-wire) home run cables with daisy chained devices on each. Last device on each cable.

**RS485 Data Bus:**

- **Max. length:** 4000 ft. Total length of 2 homeruns must not exceed that distance.
- **Warning:** Do not jumper more than 2 cables, run 6 or 8 conductor cable so that the data lines A & B can have a length of 2 homeruns.
- **Auxiliary Data Line:** 2-way (TW523/PSC05) select PLC Mode (JP2) for computer/ELKR5P (this connection not evaluated by UL).

**Auxiliary Data Bus (J3) † †:** For wireless receiver. Presently works with ITI/Caddx NX408E, NX416E, or NX448E. See Programming Menu 14.

**Personal Computer (Windows Based):**

- **Use 26AWG telco wire:** Accepts Cat5 or Cat6 cable with RJ45 plugs. For more information see diagram in keypad instructions.

**Serial Port (J4) † †:**

- **Select PLC Mode (JP2):** Selects single or bi-directional PLC transmissions.
- **For Computer/ELKR5P:** (This connection not evaluated by UL).

**Lighting Interface Conn. (J5) † †:**

- **Use Std. 4 conductor modular telephone cable:** to connect to a powerline interface (PSC05, X-10 PLC or equiv.). Do not connect to a live phone line!

**RS232 Interface Conn.:**

- **Max. length:** 500 ft.
- **Viewed as shown (back to back), the pin to pin color coding:**
  - Pin 1: Red
  - Pin 2: Black
  - Pin 3: Green
  - Pin 4: Yellow
  - Pin 5: Grey
  - Pin 6: Brown
  - Pin 7: Orange
  - Pin 8: Yellow
  - Pin 9: Green
  - Pin 10: White
  - Pin 11: Black
  - Pin 12: Grey
  - Pin 13: Brown
  - Pin 14: Orange
  - Pin 15: Yellow
  - Pin 16: Green

**Note:** Do not jumper more than 2 cables. Run 6 or 8 conductor cable so that the data lines A & B can have a length of 2 homeruns.

**Optional Module adds 8 general purpose relays:** Plugs into J16 connector.

**Programmable Outputs (J16):**

- **Out 3 - Programmable General Purpose Relay:** Rated at 4Amps @ 12 - 24VDC (Dry Contacts)
- **Out 2 - Connect ONLY 1 UL Listed Bell or Siren (self-contained):** For residential Fire the indicating device shall be Wheelock 34T-12 or equiv. Current limited to 1 Amp. Program Global Option 26 to Voltage. Speaker(s) are only permitted for non-UL installations and they must be series/parallel wired to avoid dropping below a 4 ohm total load.
- **Out 1 - Voice/Siren † †:** Speaker output only (Interior)

**Audio Network Connection (J7) † †:**

- **For Two-Way Listen-in and Future Use!**
- **Use std. 4 conductor modular phone cord:** 

**Audio Network Interface (J8):**

- **Use USOC RJ-31X connector.**

**Reg. Number:** US:5K6AL03BELK-M1

**Certification:**

- **Compiles with FCC Part 68**
- **Reg. Number:** US:5K6AL03BELK-M1

**WARNING:** The RS485 Data Bus must never have more that two (2) terminating jumpers installed.

**RETURN PATH:**

- **NOTE:** Do not jumper more than 2 cables. Run 6 or 8 conductor cable so that the data lines A & B can have a length of 2 homeruns.

**Temporary Connection "Plug-in" jacks for RS485 Data Bus (J1 & J2):**

- **Local connection for Data Bus Devices e.g. Keypads, Expanders.**

**Data Bus Termination:**

- **Very Important!!**
- **Diagram shows 2 basic (4-wire) home run cables with daisy chained devices on each. Last device on each cable.**
- **Jumper Engagement:** Must have a terminating jumper installed. Jumper is marked JP2 on keypads, JP1 on Expanders. Control Hardware pack has two black jumpers for this purpose. Jumpers engage a 120 Ohm resistor across data A & B lines.

**NOTE:** If there is only 1 data bus cable, install JP3 jumper on the control.

**WARNING:** Use in UL Listed Systems.
Section 1 - Installation and Wiring

1.1 Planning the Installation

The first step in any multi-zone security system installation is planning the job.
1. Read this entire manual to familiarize yourself with all system features and procedures before actually beginning the installation. Read all the information regarding Underwriters Laboratories (UL) and NFPA requirements.
2. Perform a physical survey of the installation site. Use the diagrams below as a guide in planning the installation.
3. Discuss the installation requirements and applications with the customer.
4. Compare the installation requirements and applications with the factory default settings to determine what customized programming is needed to meet the specific installation requirements.
5. Bench test the system prior to installation.

1.2 Parts Diagram & Descriptions

See Wiring & Hookup Diagram on pages 6 & 7.

1.3 Mounting and Wiring Preparation

Control Mounting

DO NOT MOUNT THE CONTROL OUTDOORS OR IN A DAMP LOCATION OR WHERE THE ENVIRONMENTAL CONDITIONS ARE UNSUITABLE FOR ELECTRONIC BASED EQUIPMENT. DO NOT MOUNT IN AN UNCONDITIONED ATTIC. USE COMMON SENSE AND GOOD INSTALLATION PRACTICES. A suitable location would be inside a secure dry location where the ambient temperature inside the control box can remain at 32° to 120° Fahrenheit (0° to +49° Celsius). Choose a location that allows easy wiring to an unswitched power outlet and to a grounding conductor for the control. A central location makes running system wiring easier. Remove control box knockouts that best suit your wiring needs.

After removing all packing materials, compare the system components with those in the figure above to familiarize yourself with the part names. Mount the control using the upper center slotted hole to level. Install and connect all necessary wiring for the power transformer, detection loops, keypads and siren outputs.

Keypad Mounting and Wiring

Ideal height is 50-58 inches. Pick a location with an ambient temperature range between 32° and 120° F (0° to +49° C). Avoid direct sunlight if possible. Fasten backplate to electrical box or wall with flat head screws to prevent shorts to the back of the circuit board. Keypads have an unplugable harness for connecting to the M1data bus. Splice the Black, Red, White, and Green wires from the unplugable harness to the M1 Data Bus field cabling. Plug the connector into the back of the keypad. Tuck wires neatly into back plate and install Keypad on mounting plate. The LCD keypads have connections for an optional programmable output and a programmable zone input. NOTICE: Min. field wire gauge is 24 AWG, but 18 to 22 AWG is better for long distances. CAT5 (8 conductor) cable can be purchased in various wire gauge sizes. Where possible always use the larger gauge CAT5 cable. The extra conductors in CAT5 wires can be used to provide return path for the data A & B lines.
1.4 Control Wiring

Zone Inputs (1 thru 16 on main board, 17 thru 208 via expanders)

Zones are arranged in groups of 16, starting with Z1 thru Z16 on the main board. Each 2 zones share a common negative terminal. A zone may be programming for EOL resistor supervision (Default), or normally closed/normally open without a resistor. In addition, Burglar and Keyswitch zones may be programmed for EOL with Security Alert on Short, or EOL with Security Alert on Open/Short, also referred to as a Four (4) State Zone (firmware 4.3.5 or later). If EOL resistors are used, they should be placed at the furthest most remote end of the detection device wiring. EOL zones permit a combination of N.C. (normally closed) or N.O. (normally open) devices.

Using voltage meter probes across the zone and com terminals, a non-violated EOL zone will measure approx. 7.0 VDC. An open circuit will be approx. 13.8 VDC. A shorted circuit will be 0 VDC. The Keypad also provides the ability "Menu 8 "System Diagnostics" to view zone voltage.

NOTE: Refer to the section 'Data Bus E.O.L. Termination' for information on multiple homerun cables. NEVER SPLICE OR CONNECT WIRE WITH CONTROL POWER ON. Minimum cabling should be four conductor 22 or 24 gauge. Maximum resistance per wire is 25 Ohms. Device placement beyond 1000' is not recommended.
Two-Wire Smoke Zones (Zone 16)
To enable use of two-wire smoke detectors on Zone 16, position Jumper JP1 (located below Zone 16 terminals) so that the two right hand pins are covered. Go to Installer programming mode, Menu 05 - Zone Definitions, and program Zone 16 as a Fire zone (Def=10). Step to next location and program Wire Type=6. **NOTE Use only compatible two-wire detectors listed on the front label of the control. Do not mix brands. The maximum number of detectors is also listed on the front label.** For two-wire operation, a 820 Ohm EOL resistor part # ER820 must be used instead of the 2,200 Ohm resistor part # ER2200. Use 18AWG Fire approved wire. Max. wire length = 1000 feet. Max. wire resistance should not exceed 13 Ohms.

**Switched Power Connection (+SAUX)**
Four-wire smoke detector and other devices that require a temporary power disruption in order to reset or unlatch from the alarm state (i.e. smoke detectors, etc.) should be connected to the +SAUX 12 Volt DC switched power terminal. When a smoke reset is performed, the operating voltage to these devices is momentarily interrupted.

**Auxiliary Power Connections (+VAUX)**
Motion detectors, glass breaks, etc. and other devices requiring unswitched 24-hour power should be connected to one of the auxiliary terminals, +VAUX. All negative terminals on the terminal strip are at the same reference and may be used whenever a common (circuit ground) negative is required. Use caution when wiring the control to distribute the load devices among the supply and the negative terminals evenly. **NOTE: Circuit ground refers to any negative terminal connection on this control. This does not refer to the earth ground terminal or to the common terminals of Relay Output 3. These terminals are not at the same voltage potential and should not be wired so that they are electrically connected to a negative.**

**PTC (Positive Temperature Coefficient) Circuit Breakers**
The +VAUX Auxiliary power and J16 power output terminals are protected against shorts and overloads by a 1.25A PTC. A PTC is a solid state, auto-restoring type of circuit breaker. The +SAUX Switched (Smoke) power output is protected by a 1.1A PTC. The +VKP Keypad power output is protected by a 1.25A PTC. Output 2 is protected by a 1.25A PTC. **NOTE: Sometimes it may be necessary to remove power (unplug the outputs) for approx. 20 seconds after a short, to allow the PTC to reset. Even if the short is no longer present, the remaining residual current draw may be so high that the PTC cannot determine that the short is gone. If the PTC re-trips, check the field wiring and repair.**

**Transformer Primary Power Input (AC)**
The control is powered by a 16.5 VAC, 40 min. VA, UL Listed Class 2 transformer (ELK-TRG1640). The specified sized and rated transformer must be used to operate this control. The transformer must be connected to a 120 VAC, 24-hour outlet not controlled by a switch other than an approved overcurrent protection device.

Connect the transformer to the AC Terminals using 16 to 18 gauge minimum wire. Do not exceed 50 feet between the transformer and the control or run the AC power in a multiconductor with other system circuits. Leave the transformer unplugged as well as the standby battery until all other connections have been made.

**Standby Battery Connection**
Connect the BLACK wire to the Neg (-) terminal on the battery, the connect the RED wire to the Pos (+) terminal on the battery. The control is designed to operate with and recharge a 12 volt, sealed lead acid battery from 7Ah up to 18 Ah for backup of the primary power supply. The control maintains a float charge for the battery of 13.8 VDC at 100 mA. This is in addition to the continuous output of 1.5 Amps that the power supply maintains (see maximum current drains for UL Listed Systems).

**CAUTION: Do not reverse the battery leads!** The control has special circuitry which helps protect it from battery reversal damage for short durations. However, prolonged reversal of the battery leads may cause permanent damage. A reverse battery warning LED is located to the left of the power On/Off switch. If this light is ON, turn the power off immediately and correct the battery lead connections.
AC Failure, Low Battery, and Automatic Low Voltage Shutdown

During an AC power failure the battery automatically takes over and AC Fail trouble annunciates at the keypad. The communicator can be programmed to report AC Fail to the Central Station after a time delay (see Menu 12, System Option 01).

If the battery voltage falls below 11.2 VDC a Low Battery Trouble condition will occur. The communicator can be programmed to report Low Battery to the Central Station. The battery will continue to run the control until its voltage drops below 10.2 VDC, at which time the control will disconnect and shut down to prevent a false alarm and damage to the battery. The AC Fail trouble display will clear if the AC restores. However, the Low Battery Trouble requires a manual or automatic battery load test before it will clear. An automatic battery load test is performed every 24 hours. See Section 2.2 for powering up the control.

Telephone Line Connection (R1,T1,T,R)

The telephone interface is connected by the use of an approved RJ-31X interconnect jack. This device allows the subscriber to disconnect the control/communicator from the public switched telephone network in the event of a malfunction. The control is equipped with line seizure so that the premises telephone service is interrupted during communication to the central station. Connection to the approved jack is done with a RJSET cord which connects the control terminals to the RJ31X jack.

NOTE: The Telco cord can be supervised to the RJ31X or demarc block by installing an EOL resistor across the Orange and Blue wires (RJ31X terminals 2 and 7). In the control, connect the Orange and Blue leads to any 24hr Burglar zone input.

Outputs

There are 13 outputs on the main board. Outputs may be expanded utilizing output expander boards connected to the RS-485 4-wire Keypad data bus. Outputs 1 & 2 trip when any alarm is activated. All others must be enabled through the RP Rules Programming and can be triggered by multiple conditions "events". Do not exceed the current limits on voltage only outputs.

Output 1 †† is for speakers(s) ONLY (4 to 8 Ohms). If connecting more than 2, use series/parallel wiring to avoid going below a 4 ohm total load. This output is the source for voice announcements such as: Zone 1 not ready, System Armed, Alarm Activated, etc., as well as alarm siren sounds. The initial start volume and the final volume can be adjusted in programming to suit the application.

Output 2 - Connect a UL Listed Bell or Siren (self-contained). Current limited to 1 Amp. Program Global Option 26 to Voltage. This output is supervised. Speaker(s) are only permitted for non-UL installations. Series/parallel wire to avoid dropping below a 4 ohm total load.

Output 3 is a Single Pole Double Throw Relay with form “C” contacts (Com, N/O, and N/C).

Outputs 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16 are low current, positive (+) voltage only, for driving LEDs, relays, etc. Outputs 4, 5, and 6 ARE NOT available from the main board. They can only be accessed with a data bus Output expander set to address 1. This expander will replicate main board outputs 7 thru 16, while also including outputs 4, 5, and 6.

Using Output 7 (low current) with a sensitive relay to switch 24V AC to a Door Strike †

Earth Grounding

Tests have determined that the best results against lightning and transients are obtained by isolating the control from ground. Do NOT connect any of the terminals, especially the Neg. terminals to earth ground. Early production boards had an earth ground terminal. This terminal is no longer used on circuit board revision I or later. However, ancilliary devices such as the ELK-950 Surge Protector on the incoming Telephone circuit are still recommended.

Keypad & Expanders on the RS-485 Data Bus (+VKP, Data A, Data B, Neg)

Keypads and data bus expander devices connect to the four terminals marked +VKP, Data A, Data B, and Neg. The keypad plug-in wire harness color code is: Red +VKP, Green Data A, White Data B, and Black (-) Neg. The +VKP power terminal is protected by an auto reset PTC device. In the event of a short circuit or malfunction, power will be removed from all devices until the problem is resolved. Two (2) quick connect header pin plugs (J1 and J2) along the bottom of the board may be used for temporary purposes I.E. bench testing using a four conductor ribbon cable. Do not use for permanent connections.
Data Bus E.O.L. Termination - VERY IMPORTANT!

The M1 data bus conforms to EIA RS-485 standards and operates at 38,400 bits per second. The RS-485 standard stipulates there be no more than 2 home run data bus cables attached to the M1 Main Data terminals, with the end of each cable terminated by a 120 Ohm resistor connected across the data wires. The M1 board and bus devices come with built-in terminating resistors that may be activated via 2 pin jumpers (2 Gold Pins). Placing a shorting cap (included in hardware pack) on the two gold pins activates the 120 Ohm terminating resistor across Data Lines A & B. These jumpers are marked JP2 on the keypads and JP1 on the expanders. From the factory, no terminating resistors are installed. Without proper termination, noise and interference can cause data corruption and missed communications.

WARNING! Do not splice or interconnect the M1 Data Bus using Telephone type 66 or 110 punch down blocks. The RS-485 Data Bus must NEVER have more than 2 terminating resistors header/jumpers installed.

Diagram of Two (2) Home Run Cables with Devices Daisy Chained along the Data Bus

NOTE: RS-485 Data Bus Max. length of 4000 ft. Total length of 2 homeruns must not exceed that distance.

Mount M1DBH inside control. Use 4 conductor cable to connect to the M1 DB data bus terminals.

OPTION A - Using an optional ELK-M1DBH and CAT5 cables to Daisy Chain Devices

NOTE: RS-485 Data Bus Max. length of 4000 ft. Total. Each CAT5 homerun from the M1DBH must be calculated as double the running distance since the Data A & B lines travel out and then back (A1 & B1) where they are used to feed the next homerun.

OPTION B - Using 6 Conductor Cables and Series Splices to Daisy Chain Connection of Data Bus Devices

††† An Auxiliary Power Supply will be required if the control’s Aux. power load for all combined loads exceeds 1A. (450 mA for UL Commercial). Connect as shown below. Be sure to connect the negative (-) terminal of the power supply to the negative (-) terminal (Data Bus NEG) on the control.

UL Use a UL Listed, battery backed-up Power Supply for UL installations. The battery will be supplying power to the Keypads/Expanders during a power outage. The Power Supply and backup Battery should be sized to supply the Keypads/Expanders with the UL required minimum standby time.

† Not evaluated by UL
†† Not for use in UL Listed Systems
The ELK-M1DBHR † Data Bus Hub Retrofit is intended for retrofit jobs where existing 4 conductor cables are the only wires available. It creates 4 managed RS-485 branches from the single M1 main RS-485 Bus. Like the main M1 Bus, each branch can only have 2 home run cables (4 branches x 2 ea. = 8 home runs). DO NOT connect more than 2 M1DBHRs to an M1. DO NOT connect an M1DBHR on a branch of another M1DBHR. The M1DBHR CANNOT be used as an extender or a remote repeater. DO NOT remote M1DBHR(s) away from the M1. Mount close to the main M1 Control. Terminate the last (end of line) device on each home run.

Setting the Data Bus Address and Enrolling Device(s) into the System

Keypads and Expanders communicate over the RS-485 data bus. Each device must have a unique address setting (1 to 16) within it's device type. Keypads are TYPE 1, input (zone) expanders TYPE 2, output expanders TYPE 3, etc. Device types permit address numbers to be re-used on different device type. For example: a Keypad, Zone Expander, and Output Expander can each be set to address 2 on the same data bus because each device is a different device type. But duplicate addresses CANNOT exist within the same device type. I.E. Multiple keypads on the same bus cannot be set to 'like' addresses.

ADDRESS: From the factory all keypads are set to address 1. Valid addresses are 1 to 16. The first keypad on the system (Keypad 1) is automatically enrolled upon power up. Each additional keypad must be assigned a unique address and then manually enrolled from "Menu 1 - Bus Module Enrollment". (See Menu 01, for complete instructions on Bus Module Enrollment)

1. Enter Keypad setup by one of the following three (3) methods:
   a. Press and hold the " * " key for approx. 10-12 seconds (KP1 Keypads with firmware 2.1.48 or later)
   b. Press the " * " and F5 keys at the same time for approx. 10 seconds. (older KP1 Keypads)
   c. Hold ANY key pressed while applying power.

   Keypad is in setup mode when the display indicates: Exit when done. F1 Set Addr.

2. Press the F1 key to display the current address setting.

3. Set the desired address by entering a number from 1 to X.

4. Press the Exit key when done.

ENROLLING:

1. Press the ELK key, then 9 (or scroll up) to display 9 - Installation Programming. Press the RIGHT arrow key to select this menu. The Installer Program Code must be entered to access this menu.

2. Enter the Installer Program Code. (The default code is 172839)

3. The first Installer Programming menu display will be "Bus Module Enrollment"

4. Press the RIGHT arrow key to select this menu. "Enrolling Bus Modules" will display.

5. After a few seconds the display will show the total Bus Modules that are enrolled. To view the enrolled devices and/or remove a device press the RIGHT arrow key next to the word Edit.

6. Press the * or Exit keys to exit Installer Programming.

† Not evaluated by UL  ‡† Not for use in UL Listed Systems
Section 2 - Operating the System

2.1 Introduction
The control has factory default programming which make it easy to bench test prior to installation. Terminate all zones with EOL resistors, then connect a keypad, transformer, and battery. The factory (Master) user code is 3456. This code can operate all user related features of the system. This section gives an overview of powering up and basic keypad functioning.

2.2 Powering Up (One Keypad)
After all other connections have been made and checked thoroughly, the controls AC transformer and battery may be connected. The Master Power Switch located on the lower left corner can then be turned. Upon power up the control will perform self-diagnostics and auto-enroll the first keypad (Keypad Address #1). Any additional keypads or expanders must be manually enrolled using Installer Level Programming. See “Menu 01 - Bus Module Enrollment”.

NOTE: It is very important to make certain that every keypad, input expander, output expander, or any other data bus device be assigned a unique data bus address within its type. See “MENU 01 - Bus Module Enrollment” for instructions on setting keypad and expander addresses.

System Startup on Battery Only (Ordinarily the control will not startup without AC power)
If AC power is not available (new construction site, etc.) the control may be started on battery ONLY by shorting the two silver pads (located in the lower left corner of the circuit board) with a small blade screwdriver. This will temporarily bypass the AC sensing circuit and allow the control to startup. NOTE: The On/Off power switch must be in the On position.

2.3 User Codes and Authorities
The control has 199 user codes plus one installer code. Each user code may be assigned specific authorities as to what it is allowed to do. The authorities are assigned from the Installer level programming, however the code digits and user names are assigned from the keypad user menu 6 - Change User Codes. Only a Master authority level code or the Installer code is allowed to access keypad user menu 6. The User’s Guide contains a description of operations accessible to the user codes. Control operations accessed by the installer passcode are slightly different.

Factory Default for User Code 1 is: 3 4 5 6 (Master Code) (1 2 3 4 5 6 if the six digit code option is enabled)

User code may be used for functions in a specific area or system-wide. Some options may be performed at any time, even while the control is fully or partially armed. The menu system is designed to be next-step-oriented. After a brief explanation of the options, the user should be able to begin operating the system immediately. For purposes of discussion, the installer and the end consumer are both considered users, but have different capabilities.

2.4 Installer Program Code and Authorities
The installer code can access all the keypad user menus and has limited arm/disarm privileges. It may be used to arm any area and disarm any area as long as the area WAS NOT armed by a user code. The Installer code can silence 24hr alarms or a Burglary alarms in an area that was armed by the installer or in an area that is not armed. The installer code can silence a trouble condition in a disarmed area. See User’s Guide for a full description of arming and disarming procedures.

Factory Default for the Installer Program Code is: 1 7 2 8 3 9

WARNING! Do Not use 0 0 0 0 0 0 for the Installer Program Code. This will cause complete lockout of Keypad Installer Level Programming.
2.5 Keypad Overview

Ready Light - ON when all burglar zones are secure and the system is OK to arm. If OFF, one or more zones are violated (not secure). For maximum security, secure all zones before arming the system. If FLASHING, one or more force-armable zones are violated. Force arming temporarily excludes violated zone(s) from the system. If a force armed zone becomes secure while system is armed, it will automatically restore to service. This is handy for a garage door as system may be armed with the door up, but will secure when door closes.

Armed Light - ON when the system is armed. The mode of arm will be indicated by the LCD display and the Exit or Stay lighted pushbuttons. This light will be OFF when the system is disarmed.

Exit Key - May be programmed for single or double press arming to the AWAY (not occupied) mode. If ON the system is armed and all perimeter sensors and interior motions are active. The Away key may be pressed during the exit delay time to convert from Away to Away Vacation mode. Vacation mode is primarily for use with the Whenever/And/Then Rules programming of Elk-RP for long term energy savings.

Stay Key - May be programmed for single or double press arming to the STAY (occupied) mode. If ON the system is armed and all interior zones are excluded (bypassed). Only perimeter doors and windows are active in the Stay mode. This key may also be programmed to change to other Stay modes such as: Stay Instant, Stay Night, and Stay Night Instant. Since interior zones are automatically excluded once the Stay mode is activated, the M1 allows this key to Stay arm even while one or more interior zones are violated, provided they are programmed for “force arming”. The Stay Night mode re-activates any interior night zones. To prevent a false alarm the control will not allow change to the Stay Night mode when a interior night zone is violated unless it is programmed for “Force arm”.

Chime Key - Will be lighted when the Chime mode is ON. A tone or announcement will be heard when certain zone(s) are opened. If OFF the chime mode is off. There are 4 different selections: Tone only, Voice, Tone/Voice, and Off. In the programming mode this key also functions as an insert character key for text programming. The key will be lighted when Chime is ON.

Bypass Key - Pressing this key followed by a zone number and the bypass key again will exclude or bypass the selected zone. This key may also be used to delete a character during text programming. When the Bypass key is lit, one or more zones are bypassed.

* Key - Serves as a clear or reset key. If an error is made while entering digits, press this key to clear the error. Master clear is 3 presses.

# Key - This key is currently a duplicate of the Bypass key.

Numerical Keys - Used for entry of passcodes, programming, etc. Keys 2 - 9 also have an assigned alpha character for entering text.

ELK and Arrow Keys - The ELK and arrow keys have powerful functionality for both normal operation and programming. Pressing the ELK key displays relative information according to each application. The arrow keys allow scrolling through all available options. The user can activate or select the displayed option by pressing the right arrow key. Once an option has been selected, the user may be prompted for a passcode. Additional sub-menu options may appear to assist. The user may return to the status screen by pressing the * key.

### Keypad Models and Feature Comparison

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>PHYSICAL DIMENSIONS</th>
<th>DOOR COVER</th>
<th>ZONE INPUT</th>
<th>PROG. OUTPUT</th>
<th>OPT. 26 BIT PROX READER</th>
<th>TEMP SENSOR</th>
<th>FUNCTION KEYS</th>
<th>BACKLIGHTING LCD</th>
<th>KEYS</th>
<th>MOUNTING OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELKM1KP</td>
<td>6.87&quot; W x 5.25&quot; H x 1.32&quot; D</td>
<td>Yes</td>
<td>Yes (1)</td>
<td>Yes (1)</td>
<td>Yes - Int. or Ext.</td>
<td>Yes</td>
<td>(6) F1 thru F6</td>
<td>Green</td>
<td>Amber</td>
<td>Surface Only</td>
</tr>
<tr>
<td>ELKM1KP2</td>
<td>4.65&quot; W x 5.5&quot; H x .95&quot; D</td>
<td>No</td>
<td>Yes (1)</td>
<td>Yes (1)</td>
<td>Yes - Ext. Only</td>
<td>No</td>
<td>(4) F1 thru F4</td>
<td>Blue</td>
<td>Blue</td>
<td>Surface Std. (Flush w/o pt. BBK2)</td>
</tr>
<tr>
<td>ELKM1KPAS</td>
<td>1.3&quot; W x 2.62&quot; H x .3&quot; D</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>(6) F then 1-6</td>
<td>N/A</td>
<td>Blue</td>
<td>Flush Std.</td>
</tr>
</tbody>
</table>

Features and/or operational characteristics will vary by keypad style.
Keypad Menus

The control offers extended Menu Options via the center navigation “ELK” key. Some menus may require a valid code to authorize. The Factory Default Code for USER Code 1 is: 3 4 5 6
(1 2 3 4 5 6 if the six digit code option is enabled)

Access to menus 1 to 5 can be restricted via programming to only Users that have “User Code Option 8” set. Menus 6 & 8 required a Master or Installer Code. Menu 9 requires the Installer Code. Press ELK to begin, then press the UP or DOWN arrow key to select a menu. Enter a code if prompted. To select a menu press the RIGHT arrow key.

1-View/Control Automation Fncts

Allows viewing or controlling of the automation functions such as Tasks, Lighting, Outputs, Temperature Sensor, Keypad Temperature, and Thermostats. Press the RIGHT arrow key to select, then choose the desired function using the UP or DOWN arrow keys.

NOTE: The automation functions must be assigned and named using the ELK-RP software. In most cases they cannot do anything unless they have been written into one of the “Whenever/And/Then” automation rules.

† Tasks are like 1 button macros, performing multiple jobs with one push. To activate a task press the RIGHT arrow key and press UP or DOWN to scroll through the list of available tasks. To jump directly to a particular task, enter it’s two digit number. Once the task is displayed, all it takes to activate it is to press the # key. A rule to use the “Water the Lawn” task might be: WHENEVER “Water the Lawn” IS ACTIVATED THEN TURN ON Valve 19 FOR 5 MINUTES, etc.

2-Lighting

† Lighting allows the individual control of lights and/or appliances which have been assigned through the ELK-RP software. Press the RIGHT arrow key to select Lighting, then press the UP or DOWN arrow keys to scroll through the list. If you know the three digit number, you may enter it to jump directly to that Lighting/Appliance. The current state of the unit will be displayed. Press the # key to toggle (change) the unit from on > off or from off > on.

Outputs might be relays or voltages used to actuate something like a motor, fan, pump, etc. Outputs can be turned on or turned off from this menu. Press the RIGHT arrow key to select Outputs, then press the UP or DOWN arrow keys to scroll through the list. If you know the three digit number, you may enter it to jump directly to that Output. The current state of the output will display. Press the # key to toggle (change) the output from on > off or from off > on.

Remote “Zone” Temperature Sensors can be read from this menu. Press the RIGHT arrow key to select this menu, then press the UP or DOWN arrow keys to scroll through the list of available sensors. To jump directly to a particular sensor enter it’s two digit number. The current temperature will be displayed. Press the * key to exit.

Keypad Temperature Sensors can be read from this menu. Press the RIGHT arrow key to select this menu, then press the UP or DOWN arrow keys to scroll through the list of available keypads. To jump directly to a particular keypad enter it’s two digit number. The current temperature at the keypad will be displayed. Press the * key to exit.

† Thermostats can be read from this menu. Press the RIGHT arrow key to select this menu, then press the UP or DOWN arrow keys to scroll through the list of available thermostats. To jump directly to a particular thermostat enter it’s two digit number. The current temperature at the thermostat will be displayed. Press the * key to exit.

Used for resetting latched smoke detectors after a fire alarm activation.

Press the RIGHT arrow key to actuate the Reset Smoke Detector feature. This causes the power to smoke detectors to be removed for 5 seconds. During this time all fire zones will be ignored to keep an accidental alarm from occurring.

† Not evaluated by UL

Continued on next page..
Menu 3 permits a local walk test of all zones assigned to this keypad’s area. The siren(s) and communicator are disabled during a walk test. Press the RIGHT arrow key to begin a Walk Test. The keypad displays the total tested zones adjacent to the total number of zones involved. When a zone is activated, its name is displayed across the bottom and can be audible if the Chime mode is on.

Allows viewing of the past 512 activities stored in the history log. Press the RIGHT arrow key to view. History activities include: Arm, Disarm, Alarm, Trouble, etc. The top line displays the Log number, Mth/Day, Time, and event description. The log can ONLY be cleared from ElkRP.

L001 is always the most recent event. Press the UP or DOWN arrow keys to move forward and back. Event 512 will be the oldest event. The bottom line displays the event description, the extended data (zone, user, etc.) and the area number (A1-A8).

Allows viewing of the current status of all zones. Press the RIGHT arrow key to select. Press UP or DOWN to scroll through the zones or enter a three digit number to jump directly to a particular zone. I.E. for zone 16 enter 016. Press the * key to exit.

For changing a user code and/or name for codes which have been previously enabled by the Installer. Only a Master code OR the installer code can access this menu. Press the RIGHT arrow key to begin. Press UP or DOWN keys to locate a user, or enter 3 digits to jump. Press RIGHT arrow key to view the existing code. To change, enter the new code digits and listen for 3 beeps to confirm. To edit the name, press the RIGHT arrow key once, then press the DOWN arrow key. Enter the text using the letters on the keys. I.E. For "K" press the 5 key twice. Move RIGHT or LEFT with the arrow keys. Press Chime to insert a space. Press Bypass to erase a letter. The UP and DOWN arrow keys shift from upper to lower case letters. Press the ELK key to save and exit.

Allows an end user to change up to 20 settings incorporated into an automation rule. These settings can be: time of day, time duration (seconds), or a numeric value. Each custom setting has a reference number (CS) and a text description: I.E. CS01: Sprkl On 00:00 [Time] implying.

Press the UP or DOWN arrow keys to locate a setting, then press the RIGHT arrow key to select. Enter the new value and press the ELK key to save and exit.

Menu 8 consists of 8 sub-menus used for advanced system settings. Press the right arrow key and enter a valid user code. Press the UP or DOWN arrow keys to select a sub-menu or enter the one digit number to jump directly to any sub-menu. I.E. enter 6 to jump to 86.

To set the system clock press the RIGHT arrow key, then press the UP or DOWN arrow key to select the day. Next, press the RIGHT arrow key to move to Date/Time setting. Enter two digits for month, date, year, hour, and min. To exit press the * key.

To set the volume for output 1 voice messages (non-alarm) press the RIGHT arrow key and set desired volume with the UP or DOWN keys. There are 8 settings (0-7). WARNING: PROTECT EARS! Each adjustment broadcasts a test message through Output 1. To exit press the * key.

To set keypad adjustments press the RIGHT arrow key. Then press the UP or DOWN keys to select one of the three options.

To set keypad beep tones press the RIGHT arrow key, then select the desired tone using the UP or DOWN keys. There are 9 settings (0-8). When done, exit by pressing the * key.

To set key-press beep volume press the RIGHT arrow key, then select the desired volume using the UP or DOWN keys. There are 7 volume levels (1-7) plus Off (0). To exit press the * key.

To set backlight dim level press the RIGHT arrow key, then select the desired level using the UP or DOWN keys. There are 9 backlight levels (1-9) plus Off (0). The keypad automatically dims to this setting after 30 seconds of no activity in order to save energy. To exit press the * key.
To perform system tests press the right arrow key. Then press the up or down arrow keys to select one of the three tests.

The control's standby battery is load tested automatically every 24hrs. However, it can also be manually load tested anytime using this option. Press the right arrow key to start the test. The battery is placed under load for 30 seconds and the battery voltage and system current is displayed. If the battery falls below a set level, a Low Battery trouble will occur. If it's necessary to replace the battery, this test should be used to test and clear a Low Battery Trouble condition.

To test the keypad's LCD screen press the RIGHT arrow key. The entire screen should appear black indicating all pixels are working. To exit press the * key.

To manually test the communicator (dialer) press the RIGHT arrow key. Testing is done using the first phone number that is programmed to send a test code. If there is no phone number programmed to send a test code, the test will end. To exit this menu press the * key.

There are two types of test, silent and monitored. To silently send a test press the right arrow key from this display. To hear the test using the inside speakers (OUT1) press the up or down arrow key to bring up the following display.

This unique feature permits you to hear or "monitor" a single communicator test using the inside speakers (OUT1) eliminating the need for a telephone "Butt" set. Simply press the right arrow key from this display to begin.

Similar to above, this works for multiple communicator tests. Press the right arrow key to enable. Each communicator transmission will be monitored until mode is cancelled. Press the star (*) key three times to cancel. Cancelled automatically after 24hr daily battery test.

This special option allows any pending (not reported) dialer communications to be cleared or cancelled. Typically this will be used only for initial installation and testing.

NOTE: ALWAYS NOTIFY THE MONITORING STATION BEFORE TESTING THE DIALER! If the test should fail, a Comm Fail trouble will occur. To clear a Comm Fail the dialer must be able to complete a good communication.

To connect ELK's Remote Program PC software (RP) via the user assisted method, press the RIGHT arrow key and then select the connection mode with the UP or DOWN arrow keys.

1:Seize Line Attended Mode - 1) Allows RP connection to begin on an already established voice connection between the control phone line and the RP Computer. 2) Also useful for manually answering an incoming call from the RP Computer with programming Rings to Auto Answer.

2:Seize Line Unattended Mode - Pressing the RIGHT arrow key causes the control to dial the programmed RP telephone number. The RP Computer must be in the "wait for call" mode.

NOTE: UL requires that a Technician be On-Site when doing Remote Programming.

This is a collection of tools for diagnosing system problems. Press the RIGHT arrow key and enter a valid user code to begin. Press the UP or DOWN keys to select one of the four tools:

This tool is for use in conjunction with Tech Support to diagnose data bus retries and errors. It displays the device type and number of retries accumulated since the last power-up. T=Device type, A=The Address within the device type

This tool displays the control's voltage and average current being drawn from the power supply.

This tool allows the voltage on each zone to be displayed in real time. It changes as contacts or devices are violated. Press the RIGHT arrow key to begin.

Use the UP or DOWN keys to scroll through each zone. The displayed information consists of: the present zone voltage, the L low and H high alarm thresholds, and the analog (A to D) equivalent of the zone voltage.

This is a read only screen displaying the telephone line voltage during the last on-hook condition. It is an approximate measurement accurate to only +/−20%.
This option is used in conjunction with a house telephone (microphone) to record up to 10 custom voice messages. Each message occupies a 6 second block. Two or more consecutive blocks may be linked together for longer times. Total record time cannot exceed 60 seconds. These messages require the Elk-RP software, which utilize these messages together with the built-in 500+ word vocabulary to construct voice phrases for many uses, including the voice dialer. Press the RIGHT arrow key to begin custom message record.

Selects any one of the custom messages (VM01-VM10) for playback or recording. Press the UP or DOWN arrow keys to select. To Play the selected message press the RIGHT arrow key. The message will play through Output 1 speakers. To record a new message press the LEFT arrow key. To exit press the * key.

This sets the number of consecutive 6 sec. record blocks. The default is 01 blocks which is normally long enough for most applications. However, to create a longer message press the RIGHT arrow key and enter the number 01 to 02, etc. NOTE: Creating longer messages reduces the total number of custom messages. This screen also allows all messages to be played “PlayAll” by pressing the RIGHT arrow key. When ready to record press the LEFT arrow key.

This is the prerecord screen. To begin recording: 1) lift the house phone (off hook). 2) press the LEFT arrow key, 3) start speaking. To stop recording press the “0” key. If stop is not pressed, recording will automatically end after 6 sec. (or the total number of blocks times 6 seconds).

NOTE: A local house phone is used as the microphone. Installer programming menu 07, option 1, must be set to a 1 in order for the local phone to be recognized by the control.

This will display as soon as recording has stopped. To play the new message press the RIGHT arrow key. To record the message again press the LEFT arrow key and follow the same procedures again. To exit press the * key.

Step by step summary of procedures for recording a custom message:

1) Verify that a house telephone is connected to the control’s T1 and R1 terminals and that Installer menu 07, option 1 is set to a 1. This allows the control to recognize the telephone and allow it to be used as a microphone.
2) Go to the user menu 8-System Settings by pressing the ELK key and entering 8. Press the ▶ key and enter a valid user code. Press 87 to reach the custom message record screen.
3) Using the Up/Down arrow keys, select the voice message to record VM01 to VM10. There are 10 custom messages.
4) Press the ◄ key and select the number of 6 second blocks for your message. Hint-rehearse and time the message, if it is greater than 6 seconds then increase the number of consecutive blocks as required.
5) Lift the telephone handset and press the ◄ key to begin the recording. The recording will not start until the handset is off-hook and the ◄ key is pressed.
6) Record your message by speaking into the handset. If the message is shorter than the amount of time selected then press 0 to stop recording. Otherwise, recording will stop when the number of blocks is reached.
7) Press the Right arrow key to play the message. The message will be heard through the telephone handset if it is still off-hook. Otherwise the message will be directed to the amplifier connected to output 1.

From this menu you may press the RIGHT arrow to enter Installation Level Programming. If the Installer Programming Code has not already been entered it will be required at this time.

**NOTE:** The Remote Programming RP software can be used to lockout certain local program capabilities for “anti-takeover” purposes. The number in the lower right corner of this menu will indicate the level of lockout as follows:

- (0) = No lockout,
- (1) = Lockout Telephone number programming - view everything,
- (2) = Lockout ALL programming - view everything,
- (3) = Lockout ALL Programming and Viewing. This can only be set or removed from the ELK-RP Software.

† Not evaluated by UL
Menu 0 - Select Keypad Alternate Area - Multi-area (Partition) Operation

This menu allows the keypad to be mapped temporarily to any other area, allowing multi-area (partitioned) operation. An individually mapped area can be armed, disarmed, and controlled just as if the keypad were permanently assigned to that area. It may also be used to access a consolidated display of all areas at once, showing the status of each area.

To reach the keypad menus press the center navigation key labeled “ELK”. A user code may be required depending on how the control is programmed. The four arrow keys around the Elk key are used to scroll, backup, etc. Pressing the RIGHT arrow key will select the displayed menu.

1. Press the ELK key. Enter a user code if prompted.
2. Use the UP or DOWN arrow keys to find menu “0-Select Keypad Alternate Area”.

Press the RIGHT arrow key to select this menu and display the following:

Press the Right Arrow key to map the Keypad to the area shown. The LCD display and the Ready / Armed LEDs will show the status for the mapped area for 1 minute. During this minute, it is possible to arm, disarm, bypass, etc. the mapped area from this keypad. Each time a key is pressed the 1 minute is restarted. However, after 1 minute of no keypress activity, the keypad will return to its original primary assigned area.

ACCESSING A CONSOLIDATED DISPLAY OF ALL VALID AREAS

Entering “0” for the area number immediately maps the Keypad to a consolidated ‘snapshot’ of all authorized areas. This permits quick arming and disarming only. If an area is not ready to arm it will be necessary to map individually to that area to view the violated zone(s) and either secure or bypass them prior to arming.

This example shows all 8 areas, meaning that the User Code was valid for all 8. The display only shows the areas for which the user code is authorized.

Note the letter beneath each area number.

The single upper case “X” indicates the primary area. This area is controlled exclusively from the regular operation screens.
A lower case “r” below an area indicates the area is Ready to Arm.
A lower case “n” below an area indicates the area is Not Ready.
A upper case “A” below an area indicates the area is Armed.

This example shows the user code was only authorized for areas 1, 2, and 3. The unauthorized area(s) have a “-” below them.

To change or ‘toggle’ the arm status of an area, press the number key representing the area number. IMPORTANT: The area status is not “real time”. It is a snapshot taken when the RIGHT arrow key was pressed. If a zone has since become violated the area will still be displaying “r”, however the letter will immediately change to “n” and the keypad will emit an error tone when an attempt is made to arm by pressing the area number.

When finished, press the “*” key to exit.
Section 3 - Programming The Control

3.1 Introduction
The Security functionality of the M1 Control can be programmed either from an ELK-M1KP LCD Keypad OR from the ELK-RP PC Software. The keypad features a menu-driven "Text" based interface with simple Yes/No answers for most options. After just a short amount of experience the average installer will not even require an instruction manual to keypad program the control.

For the Automation functionality the ELK-RP PC Software is a requirement. The options and capabilities available for automation are so unique and powerful that it takes a PC to make use of all the benefits. The M1 features a powerful "Whenever/And/Then" RULES based programming that allows almost any imaginable operation.

3.2 Local Keypad Programming
There are two levels of operation for programming the control locally, user level and installer level.

- User level programming provides the ability to add, change, or delete user passcodes and names. It also allows custom automation settings to be viewed and changed. A master user code is required to access the user code and custom settings screens. User programming is explained in the User's Guide.

- Installer level programming allows total customizing of the Security operating features. Only the installer code may access this level. If the installer code is lost or forgotten, it is impossible to program the control locally. Anyone attempting installer level programming should be familiar with the contents of this publication prior to programming the control panel. If remote programming is used, it is possible to "lock out" or prevent takeover of a control by another installation company by selecting "Lockout Local Prog." This prevents the installer passcode from gaining access to programming via an LCD keypad. The installer passcode may still be used for the non-programming functions described in Chapter 2. Lockout Local Prog does not affect remote programming.

3.3 Local or Remote Computer Programming (ELK-RP) and Anti-Takeover
ELK-RP programming utilizes extensive error checking and security safeguards, including data encryption, password log-on, serial number, and dealer assigned RP access code. The serial # identifies the control to RP while the RP access code identifies the computer to the control prior to a programming session. RP loads the access code during the first connection. It cannot be viewed or changed from local keypad programming. In addition to these safeguards, you can set an anti-takeover option from RP which prevents certain keypad programming. Even a total default of the panel programming cannot reset the anti-takeover option once it is set.

The Factory Default Elk-RP Access Code is: 2 4 6 8 0 1

NOTE: UL requires that a Technician be On-Site when doing Remote Programming.

3.4 Area Partitioning
The control may be divided into 1 to 8 independent areas (partitions). Each area appears as a full-featured system, allowing one control to be shared by multiple, independent departments within a common structure. Zones, User Codes, and Keypads may be assigned to any 1 area up to the maximum number available. An example is a single building divided into room(s) to be armed/disarmed separately. Mount the control in a secure area (common utility closet) with dedicated and uninterrupted AC power and telephone service. Then assign zones, codes, and keypads to each department.

Output 1 siren/voice activates on all alarms, regardless of the area. The RP Software Rules can be used create additional (separate) outputs. When reporting to the central station events like AC Power Failure, Automatic tests, Low Battery, etc., are considered system reports and are transmitted using the Area 1 account number. If area partitioning is not desired, simply designate all zones to a single area (Area 1) which is the factory default setting for zones 1-16.

COMMON AREA - Another popular feature is the ability to have one or more areas made "common" to Area 1. This is often referred to as a "Vestibule Feature". Any of the Areas 2 thru 8 may be made common to Area 1. The result is: Area 1 cannot be armed until all its common areas are armed. Once armed, Area 1 will disarm if any common area becomes disarmed. This is good for lobbies or vestibules shared by two or more people. Each area must have its own keypad. NOTE: If you want Area 1 to automatically arm when all its common areas become armed, use a Whenever/And/Then rule from the RP software to do this.
3.5 Communicator Setup Checklist

The Communicator (Dialer) can dial up to 8 phone numbers plus RP. Digital reporting formats include: Pulse 4+2, SIA, Contact ID, and Pager. There is also a Voice † format which can be commanded from the RP Rules Programming to call a persons home or cellphone and deliver a voice message. Use the following checklist for each required telephone number.

1. Under Menu 08 - Telephone Account Setup, select one of the telephone numbers and program the following:
   Option 01: Select the desired reporting format - 0=Disable, 1=Contact ID, 2=SIA, 3=Pulse 4+2, 4=Pager, 5=Voice †
   Note: The Voice format (5) cannot be enabled from keypad programming. It can only be programmed from the Elk-RP Software using the Whenever/And/Then Rules.
   Option 02: Set the priority for the first (primary number) to 0 = Always Report.
   Option 03: Program the telephone number digits to be dialed. No special start or ending characters are required.
   Option 04: Set the dial attempts to greater than 0. For Digital reports 8 is suggested. For Voice the max. is 2.
   Option 05: Program the digits for the account number to report. Each area (partition) has its own Acct. Number.
   Option 13: Select Yes to have Area info, Zone Alarms, Zone Restores, and Zone Unbypasses reported to this Tel #.
   Option 14: Select Yes if you wish to have Zone Bypasses reported to this Tel #.
   Option 15: Select Yes if you wish to have Zone Troubles reported to this Tel #.
   Option 16: Select Yes if you wish to have User (Open/Close) Reports reported to this Tel #.
   Option 17: Select Yes if you wish to have Global System Events (AC Fail, Low Battery, etc.) reported to this Tel #.
   Option 18: Although not required, you may program a text name for each telephone number.

2. Under Menu 09 - Area Reporting Codes, select the area (partition) and program the desired options such as: Dialer Delay, Alarm Abort, Auto Open/Closings, etc. then.

3. Under Menu 10 - Zone Reporting Codes, select the zone number and program the desired options such as: Zone Alarms, Restores, Bypasses, or Trouble.
   Option A: For Zone Alarm program a two digit code. To have the automatic SIA or Contact ID report codes transmitted simply program a nonzero value. I.E. Program a 1 (01).
   Option R: For Zone Restore program a two digit code. For automatic SIA or Contact ID codes program a 1 (01).
   Option B: For Zone Bypass program a two digit code. For automatic SIA or Contact ID codes program a 1 (01).
   Option T: For Zone Trouble program a two digit code. For automatic SIA or Contact ID codes program a 1 (01).

4. Under Menu 11 - F Key Reporting Codes, select and program the alarm code for each desired Keypad Panic Key. NOTE: Keypad Panics only have Alarm report codes, they do not have restore codes. For automatic SIA or Contact ID codes program a 1 (01).

5. Under Menu 12 - Sys Report Code Options & Codes, select and program each desired option such as: AC Fail, Low Battery, Automatic Test, and other system wide options, including the time values for certain options. For automatic SIA or Contact ID report codes program a 1 (01).

6. Under Menu 13 - User Report Codes, select and program an Open or Close report code for any User(s) that you wish to track arm/disarm events, including arm/disarm by the Installer Code or Elk-RP computer.

3.6 Entering Installer Level Programming

1. Press the center ‘ELK’ key once followed by the DOWN arrow key until display reads “9-Installation Programming”. NOTE: The keypad may beep and display the following:

2. Enter the Installer Program Code when required.
   Press the right arrow key to select the “Installation Programming” option.

   The Factory Default Installer Program Code is: 1 7 2 8 3 9

For security against unauthorized programming changes, the installer code should be changed from its factory default setting. This can be done from Menu 07 - Globals System Definitions, Option 42.

Once the Installer Code has been entered, the first programming menu will display and a 4 minute timer will be started. If there is no key-press activity during this time period the control will automatically exit from the programming mode. It is easy to navigate around and between the programming menus and options using the up and down arrow keys. When the correct menu or option is located, press the right arrow key to proceed into that menu.

Refer to the Quick Reference Guide on the following page to locate a particular menu or to see what options appear under each menu. Refer to the individual menus and their option descriptions for details about each of the programmable items.

† Not evaluated by UL
### Menu 01
- Bus Mod Enroll
  - Enrolling
  - Disp Totat Modules
  - -Allow Module Edit

### Menu 02
- User Code Auth.
  - User 1
    - (1) Area #
    - (2) Am
    - (3) Disarm
    - (4) Bypass
    - (5) Access
    - (6) Temporary
    - (7) Master
    - (8) Menu 1-5
    - (9) Duress
    - (10) [Name]

### Menu 03
- Area Defs
  - Area 1
    - (1) Exit Delay 1
    - (2) Entry Delay 1
    - (3) Exit Delay 2
    - (4) Entry Delay 2
    - (5) Auto Stay
    - (6) Exit Restart
    - (7) Closing Ringback
    - (8) SgIKey Quackarm
    - (9) DblKey Quackarm
    - (10) StayKeyScroll
    - (11) Stay Instant
    - (12) Night Scroll
    - (13) Night Instant
    - (14) StayChgArmed
    - (15) [Name]

### Menu 04
- Keypad Defs
  - Keypad 1
    - (1) Area Assign
    - (2) Silent Entry
    - (3) Silent Exit
    - (4) Silent Chime
    - (5) Dark in 60 sec

### Menu 05
- Zone Defs
  - Zone 1
    - (1) Definition
    - (2) Type
    - (3) Area Assign
    - (4) Silent Alarm
    - (5) Dial Delay
    - (6) Listen-In
    - (7) Bypass
    - (8) Force Arm
    - (9) Swinger
    - (10) Per. Trip
    - (11) Fast Loop
    - (12) Chime
    - (13) Cross Zn
    - (14) [Name]

### Menu 06
- Cutoff Timers
  - (1) Burglar
  - (2) Fire
  - (3) Medical
  - (4) Police
  - (5) Carbon Mon
  - (6) Emergency
  - (7) Freeze
  - (8) Gas
  - (9) Heat
  - (10) Water
  - (11) Aux1 24hr
  - (12) Aux2 24hr

### Menu 07
- Global Options
  - (1) Tel Remote
  - (2) 12hr TimeDisp
  - (3) DD/MM Disp.
  - (4) Celcius Disp.
  - (5) DST Observe
  - (6) Fast Loop Tm
  - (7) SlowLoop Tm
  - (8) Cross SelFVer
  - (9) Cross Zn Tm
  - (10) Aud Trbls
  - (11) 6 digit codes
  - (12) CodeLockout
  - (13) Common Area
  - (14) Out1 Yelp to Buz
  - (15) Out1 Start Vol.
  - (16) Out1 Max. Alm.
  - (17) Out1 Max. Voice
  - (18) Out1 Max. NonAlm
  - (19) Out1 ‘No Talk’
  - (20) Out1 Say Sys
  - (21) Out1 Say Alms
  - (22) Out1 Say Zn Status
  - (23) Out1 Say Sys Tbl
  - (24) Out1 Say Zn Tbl
  - (25) Out1 Say Chime

### Menu 08
- Telephone #'s & Accts
  - Telephone 1
    - (1) Always Report
    - (2) Number
    - (3) Format
    - (4) Attempts
    - (5) Acct #1
    - (6) Acct #2
    - (7) Acct #3
    - (8) Acct #4
    - (9) Acct #5
    - (10) Acct #6
    - (11) Acct #7
    - (12) Acct #8
    - (13) Report Area/Alm

### Menu 09
- Area Report Codes
  - Area 1
    - (1) Dial Delay Time
    - (2) Abort Code
    - (3) Cancel Time
    - (4) Cancel Code
    - (5) Close Auto
    - (6) Close Early
    - (7) Close Extended
    - (8) Fail to Close
    - (9) Late Close
    - (10) Keyswitch Close
    - (11) Duress Code
    - (12) Open After Alarm
    - (13) Open Early
    - (14) Fail to Open
    - (15) Open Late
    - (16) Keyswitch Open
    - (17) User Lockout
    - (18) Exit Error
    - (19) Fail to Comm

### Menu 10
- Zone Rpt Codes
  - Zone 1
    - (1) Open Code
    - (2) Number
    - (3) Format
    - (4) Attempts
    - (5) Acct #1
    - (6) Acct #2
    - (7) Acct #3
    - (8) Acct #4
    - (9) Acct #5
    - (10) Acct #6
    - (11) Acct #7
    - (12) Acct #8
    - (13) Report Area/Alm
    - (14) Report Zone Troubles
    - (15) Report User Op/Cl
    - (16) Report Sys Globals

### Menu 11
- Keypad
  - Report Codes
    - Keypad 1
      - (1) F1 Key Alarm
      - (2) F2 Key Alarm
      - (3) F3 Key Alarm
      - (4) F4 Key Alarm
      - (5) F5 Key Alarm
      - (6) F6 Key Alarm

### Menu 12
- System Rpt Codes
  - Area 1
    - (1) AC Fail Delay
    - (2) AC Fail Code
    - (3) Auto Test Code
    - (4) TstTime hr:mm
    - (5) Days between Test
    - (6) Aux Overcurrent
    - (7) Exp Module Tbl
    - (8) Installer Begin
    - (9) Installer End
    - (10) Log 80% Full
    - (11) Low Battery
    - (12) Memory Error
    - (13) RP Download
    - (14) Tel Line Fault
    - (15) Output 2 Tbl

### Menu 13
- User Rpt Codes
  - User 1
    - (1) Open Code
    - (2) Close Code
    - (3) User 100
    - Installer
      - (1) Open Code
      - Close Code

### Menu 14
- Wireless Defs
  - 1: Receiver Options
    - (1) Receiver Size
    - (2) ZnBank(Start Zn)
    - (3) Reg Supv. Hrs.
    - (4) Fire Supv. Hrs.
  - 2: Transmitter Options
    - (1) Enable Xmtr.
    - (2) Supv. Type
    - (3) Enable Option 1
    - (4) Enable Option 2
    - (5) Keyfob User ID
  - 3: Learn Transmitter
    - (1) Xmtr to Learn
    - (2) Push Xmtr
  - 4: Keyfob Event Def.
    - (1) Button 1 Code
    - (2) Button 2 Code
    - (3) Button 3 Code
    - (4) Button 4 Code
    - (5) Button 5 Code
    - (6) Button 6 Code
    - (7) Button 7 Code
    - (8) Button 8 Code

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**ELK-M1G QUICK REFERENCE - MENU PROGRAMMING**

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**Page 23**
Menu 01 - Bus Module Enrollment

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

NOTE: Every data bus device: Keypad, Input (Zone) Expander, Output Expander, etc. MUST have a unique address within its type. This menu is then used to enroll the device into the system. SEE DETAILS BELOW:

Bus Module Enroll

Description of Option

Press the RIGHT arrow key to select this menu and automatically start the bus enrollment process. ALL data bus devices which are presently connected to the data bus should become enrolled.

The enrollment process only takes a few seconds. Once complete, this summary screen will appear displaying the total number of bus modules that were found and enrolled. To edit and/or view the devices individually, press the RIGHT arrow key one time.

Each enrolled keypad/device can be viewed one by one. The first device will always be Keypad 1 with a T1 (for type 1) and Addr=01 (for address 01). As explained below, different kinds of devices can be identified by their device "Type". Pressing the Up or Down arrow keys will scroll through each enrolled device.

If a device is removed from the data bus, it should be removed by repeating the enrollment process. The control will only enroll the devices that are connected. It will remove any previously enrolled devices that it does not see.

After the last device is reviewed, the next press of the Up arrow key moves to the "End Enrollment" screen which once again displays the total number of devices enrolled.

DATA BUS DEVICE TYPES AND ADDRESSES: Each data bus device is a specific “Device Type”. Keypads are TYPE 1, Input (Zone) Expanders are TYPE 2, Output Expanders are TYPE 3, Serial Port Expanders are TYPE 5. Any new devices designed will be assigned a Device Type. Every data bus device MUST have a unique “Address” setting within its type. Valid Input Expanders addresses are 2 to 13, Output Expander addresses are 1 to 13. The address determines the starting and ending zone or output numbers for that expander. See chart below:

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<tbody>
<tr>
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<td>N/A (main bd)</td>
<td>Outputs 1-16</td>
<td>6</td>
<td>Zone 81-96</td>
<td>Output 65-80</td>
<td>11</td>
<td>Zone 161-176</td>
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<tr>
<td>2</td>
<td>Zone 17-32</td>
<td>Output 17-32</td>
<td>7</td>
<td>Zone 97-112</td>
<td>Output 97-112</td>
<td>12</td>
<td>Zone 177-192</td>
<td>Output 177-192</td>
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<tr>
<td>3</td>
<td>Zone 33-48</td>
<td>Output 33-48</td>
<td>8</td>
<td>Zone 113-128</td>
<td>Output 113-128</td>
<td>13</td>
<td>Zone 193-208</td>
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<tr>
<td>4</td>
<td>Zone 49-64</td>
<td>Output 49-64</td>
<td>9</td>
<td>Zone 129-144</td>
<td>Output 129-144</td>
<td></td>
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<tr>
<td>5</td>
<td>Zone 65-80</td>
<td>Output 65-80</td>
<td>10</td>
<td>Zone 145-160</td>
<td>Output 145-160</td>
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INPUT AND OUTPUT EXPANDER ADDRESSES: Locate the bank of four white (DIP) switches along the top edge of the board. Each switch has a position of Off or On (0 or 1) and a binary value (1, 2, 4, 8). The addition of the binary values (sum total) for the switches set to the On position determines the data bus address. For example: Data bus address 5 is set by placing switches 1 and 4 to the On position (1 + 4 = 5). All other switches must be in the down or Off position.

KEYPAD ADDRESSES: All keypads are factory set to address 1. Valid addresses are 1 to 16. The first keypad on the system (Keypad 1) is automatically enrolled upon power up. Each additional keypad must be assigned a unique address and then manually enrolled from "Menu 1 - Bus Module Enrollment". To set the address on a keypad do the following:

1. Hold down a key while applying power OR press and hold the (Asterisk) “ * ” and F5 keys for 5 seconds.
2. Press the F1 key, then use the UP or DOWN arrow keys to set the desired address number.
3. Press the EXIT key when done.

NOTE: If a device is removed from the data bus, it should be un-enrolled to prevent a trouble. To replace a defective device, set the address to the same value as the old unit and initiate the Bus Enrollment process.
Menu 02 - User Code Options

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

Default Code for User Code 1 is: 3 4 5 6 Note: If six digit code option is enabled, the default will be 1 2 3 4 5 6. See Menu 07 - Global System Definitions, Option G11

User Code Options

001 01: 12345678

Description of Option

This option assigns the areas(s) in which this code may be used. For example: if the numbers 1, 2, & 4 are displayed, the code may be used in those areas. To assign or remove an area press the numbers keys 1 thru 8. Each press toggles the number on/off.

001 02:=Yes

Selects Arm privileges. If Yes, this code can Arm it's assigned area(s) (see option 01 above) from a keypad that is also assigned to the desired area. If No, this code cannot be used to Arm.

001 03:=Yes

Selects Disarm privileges. If Yes, this user code can Disarm it's assigned area(s) (see option 01 above) from a keypad that is also assigned to the desired area. If No, this code cannot be used to Disarm.

001 04:=Yes

A Yes allows this code to Bypass zones whenever Menu 04-Keypad Definitions, Option 09, “Byp Key Req PIN” is set to Yes. Code and Keypad must be in the same area. Default value for both these options is No (code not required for bypass).

001 05:=No

A Yes allows this code to activate the Access Keypad Events 1313-1328 for the keypad where code is entered. Use the Whenever/And/Then Rules from Elk-RP to assign an output to this event for tripping a door strike or lock. Note: If this code is enabled for arming, it will be necessary to press the Exit or Stay key to arm after the code.

001 06:=No

If Yes, this code will be restricted from disarming whenever the control has been armed by a regular (non temporary) code. In other words: The control MUST be armed by this code (or another temporary code) in order for it to allow disarming by a temporary code. A temporary code might be used for cleaning, repair personnel, etc.

001 07:=Yes

A Master Code can be used to review, change, or delete other users, and to modify selected system options. Only one Master code is needed per system. For security purposes, multiple Master codes are not recommended.

001 08:=No

When Menu 07 - Global System Definitions, Option 41, “Require Code User Menu 1-5” is set to a Yes, this option is then used to set which codes are allowed to access Menus 1 - 5. NOTE: Menus 6, 7, and 8 are only available to a Master or Installer code.

001 09:=No

If Yes, this code will cause a silent Duress or “holdup” alarm to activate when the code is used to arm or disarm the system. CAUTION: The communicator report code MUST also be programmed! This feature is dangerous and should be used with caution.

001 10:User Name

To edit the User Name text (max. of 16 characters) press the left arrow key. Enter text using the number keys. I.E. For a “K” press the 5 key twice. To move the cursor, press the RIGHT or LEFT arrow keys. The Chime key inserts a space, the Bypass key erases 1 digit. The up/down keys to toggle between upper and lower case. Press the ELK key when complete.
**Menu 03 - Area Definitions**

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

### Description of Option

Of the 8 potential areas (partitions), Area 1 is the first to display. Press the right arrow key to program, or press the up or down arrow keys to select another area. To jump to a specific area enter the number (1-8). The area name is displayed on the bottom.

The amount of exit time in seconds for all zones programmed as Exit Delay 1. Range is 045 to 255 seconds. Default value is 060. **If an Exit Delay 1 zone is enabled for force arm, its exit time will be the greater of the values for Exit 1 or Exit 2. Do not enable force arm on Exit Delay 1 zones if this operation is not desired.**

The amount of entry delay time in seconds for zones programmed as Entry Delay 1. Range is 030 to 255 seconds. Default value is 030.

The amount of exit delay time in seconds for zones programmed as Exit Delay 2. Range is 045 to 255 seconds. Default value is 060. **See note above regarding force arm and Exit Delay 1 zones.**

The amount of entry delay time in seconds for zones programmed as Entry Delay 2. Range is 030 to 255 seconds. Default value is 030.

If Yes, the control will switch from AWAY mode to STAY mode at the end of the exit delay time if no exit zone is violated (no exit detected). **NOTE: This tracks the longest of the two exit timers.** All interior zones are bypassed in the STAY mode. Default value is No.

†† If this option is set to Yes (default), the exit procedures will be affected in three ways:

1) **Additional Exit1 “Grace” feature** - During the initial Exit Delay 1 time if the zone violates a second time and restores, the exit timer will automatically restart one time. I.E. If the Exit1 door is opened, closed, and then opened again the timer will restart. **NOTE: This only works on Exit Delay 1 zones and the timer only restarts one time. It does NOT work if the zone is enabled for force arm!** This feature complies with the SIA CP-01. †

2) **“Leave for Work” or “Pet” feature** - When armed in one of the Stay modes a User may press the Exit key to re-start the exit delay in order to open an exit/entry door and leave for work. The system remains in the Stay mode in case other family members are still in the house. This can also be used to let a pet outdoors. When the pet is ready to come back inside the User can press the Exit key again to restart the timer and open the door.

3) **Going from Stay to Away Mode** - When armed in one of the Stay modes a User may change the arm mode to Away by pressing the Exit key twice in short succession (within 3 seconds) and the leave the building.

**Exit Error** If an entry/exit zone is violated when the Exit Delay expires, the **Exit Error Feature** will be activated. The local siren will sound immediately and the Entry Delay warning will begin. IF the control is not disarmed before the delay expires the communicator will report the alarm along with an Exit Error code, provided these codes are programmed. An Exit Error event flag will also be set which can be used by the “Whenever/And/Then” rules (refer to the ELK-RP software) to sound a siren, or blink a light, or whatever. **Exit Error complies with SIA CP-01. †**

† Not evaluated by UL  †† Not for use in UL Listed Systems
**Menu 03 - Area Definitions (continued)**

<table>
<thead>
<tr>
<th>Area Definitions</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 07:=No Send</td>
<td>If Yes, a Closing Ringback signal (otherwise known as closing report successful) will be sent to all the keypads when the Communicator transmits a closing report and the Central Station Receiver kissoff (acknowledgement) is received. The Exit Delay time will be restarted at this time. The default value is No.</td>
</tr>
<tr>
<td>A1 08:=Yes Sgl Key QuickArm</td>
<td>If Yes, the control can be armed by a single press of the Exit or Stay keys. No code is required except to disarm. <strong>Note:</strong> This option cannot be set to Yes if “Db Key Quick Arm” (see below) is set to Yes. The default value is Yes.</td>
</tr>
<tr>
<td>A1 09:=No DblKeyQuickArm</td>
<td>If Yes, the system can be armed by a double press of the Exit or Stay keys. The second press must follow the first very quickly. <strong>Note:</strong> This option cannot be set to Yes if “Sgl Key Quick Arm” (see above) is set to Yes. The default value is No.</td>
</tr>
<tr>
<td>A1 10:=Yes Stay Key Scroll</td>
<td>If Yes, the Stay key may be pressed during the exit delay time to scroll (step) through the selected levels of Stay arming. I.E. Stay Instant, Stay Night, etc. The options below select the levels that will be available. The default value is Yes.</td>
</tr>
<tr>
<td>A1 11:=No StayInstantScr</td>
<td>If Yes, AND option 10 is set to Yes, multiple presses of the Stay key during exit delay will be able to scroll to the Stay Instant arming level. The default value is No.</td>
</tr>
<tr>
<td>A1 12:=Yes NightScroll</td>
<td>If Yes, AND option 10 is set to Yes, multiple presses of the Stay key during exit delay will be able to scroll to the Stay Night arming level. The default value is Yes.</td>
</tr>
<tr>
<td>A1 13:=No NightInstantScr</td>
<td>If Yes, AND option 10 is set to Yes, multiple presses of the Stay key during exit delay will be able to scroll to the Stay Night Instant arming level. The default value is No.</td>
</tr>
<tr>
<td>A1 14:=No StayChgIfArmed</td>
<td>†† This option should be used with caution. If Yes, the Stay key may be used to scroll or step the armed level after exit delay has expired and the control is fully armed. The default value is No.</td>
</tr>
<tr>
<td>A1 15:AreaName=Area 1</td>
<td>To program the text description of the Area Name (max. of 16 characters) press the left arrow key. Enter text using the number keys. I.E. For a “K” press the 5 key twice. To move the cursor press the right or left arrow keys. While programming the text, pressing the Chime key inserts a space, and the Bypass key erases 1 digit. The up and down arrow keys toggle between upper and lower case. Press the ELK key when complete.</td>
</tr>
</tbody>
</table>

**VACATION MODE:** During the exit delay time the Away key may be pressed to convert from Away mode to Away Vacation mode. The Away Vacation mode does not alter any of the security arming times or zones. Its primary purpose is for use with the Whenever/And/Then Rules programming of Elk-RP for enhanced energy savings modes.

†† **AUTO ARMING:** The control has an Auto Arming feature which may be setup using the “Whenever/And/Then Rules” in the ELK-RP PC Programming Software. Basically, a rule must be written to initiate the auto arm sequence at a specific time and/or date occurrence along with a programmable pre-warning time period. At the end of the pre-warn time, the system will automatically arm to the AWAY mode, bypassing any violated Burglar zones. All area keypad(s) will beep and display a warning when the initiating time occurs. Pressing the * key clears this warning for 1 minute. The auto arm time may be extended in 10 minute increments by pressing the RIGHT arrow key. No further warnings will occur until 10 minutes prior to the newly “extended” auto arm time. **Example 1:** If a scheduled AutoArm is set for 06:00pm with a pre-warn time of 20 minutes, the warning will start at 6:00pm and the auto arm will occur at 6:20pm. Pressing the RIGHT arrow key to extend the time will cause the new auto arm time to be 6:30pm.

†† Not for use in UL Listed Systems
Menu 04 - Keypad Definitions

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

Keypad Definitions

KP01: Sel → Prg → Keypad 1

Description of Option

Up to 16 Keypads may be connected. Keypad 1 is the first to display. Press the right arrow key to program, or press the up or down arrow keys to select another keypad. To jump to any keypad enter the number (1-16). The keypad name displays on the bottom.

A keypad can only be assigned as primary for a single area. However, it is possible to “Map” a keypad to another area. Refer to Keypad Menus for instructions. Select which “primary” area (1 to 8) that the keypad should be assigned. The default value is 1.

If Yes, the keypad will not produce an entry warning signal during entry delay time after violation of a delay 1 or delay 2 zone while armed. The default value is No.

If Yes, the keypad will not produce an exit warning tone during exit delay 1 or exit delay 2 times upon arming. The default value is No.

If Yes, the keypad will not produce any Chime tone even though the Chime mode may be on and a chime type zone is violated. This is good for a baby’s room, etc. The default value is No.

If Yes, the keypad will turn off all backlighting, including Armed or Ready lights, 60 secs. after arming OR no pushbutton activity. This helps prevent unauthorized viewing of arm/disarm status through a front glass window or door. Any button press resumes the status display. The default value is No. **NOTE: If any of the F Keys are being used as event indicators this will also darken them, basically making them non-usable.**

If Yes, the keypad will display the date and time on the bottom line of the LCD screen. **Not Available With M1KPAS!** If there is too much information to display at once, the bottom line of the LCD will alternate. The default value is Yes.

If Yes, the keypad will display its local temperature on the bottom line of the LCD screen. **Not Available With M1KP2 or M1KPAS!** If there is too much information to display at once, the bottom line of the LCD will alternate. The default value is Yes.

If Yes, the keypad will display the name of the area in which it belongs. If there is too much information to display at once, the bottom line of the LCD will alternate. **Not Available With M1KPAS!** The default value is Yes.

If Yes, the Bypass key cannot be used unless a valid user code is entered. **Not Available With M1KPAS!** The default value is No.

Keypad F1, F2, F3, F4, F5, F6 keys Each keypad has 6 lighted function keys that may be programmed to activate specific operations. There are 7 programming attributes for each key: 1) KeyEvent - A four digit event code for the zone definitions 0001 thru 0035, or the automation tasks 2001 - 2032. 2) KeyLight - A four digit event code which lights the key when the event is active. This can be any of the Appendix A Event Codes. 3) Light Invert - A Yes/No option which allows the light to be opposite of the event, off when active, on when not. 4) Light Blink - A Yes/No option which allows the light to blink when active. 5) Key Requires PIN - A Yes/No option used to prevent the key from activating unless a valid user code is entered. 6) Single Key Press - A Yes/No option which allows a single press of the key instead of the normal double press to activate the event. **NOTE:** In the double press mode the key’s name is displayed on the LCD screen as soon as the first press occurs. This serves to visually verify to the user that the correct key has been selected prior to the second “activating” key press. 7) Key Name - A sixteen character programmable description that describes the key’s function. I.E. Police Alarm, Garage Door, etc.
Menu 04 - Keypad Definitions (continued)

<table>
<thead>
<tr>
<th>Keypad Definitions</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>KP01 10: F1 Key Definitions</td>
<td>To program the F1 key definitions press the right arrow key. The program will branch off into the 7 options for this key. To select another option press the UP or DOWN arrow keys. To jump to a specific option enter the two digit number for that option. Key Event refers to what the key activates. F Keys can be used to activate an Alarm, an Automation Task, or by Elk-RP Whenever/And/Then Rules to activate most anything. Press the RIGHT arrow key and enter 4 digits. Enter 0000 if Elk-RP is going to be used exclusively. Enter 0001-0036 for an alarm activation (see zone Defs), or 2001-2032 for an automation task activation (see Elk-RP software). The event description is displayed along the bottom. Press the RIGHT arrow key to move to the next option.</td>
</tr>
<tr>
<td>F1 KeyEvent=0010 Evt=Fire Alarm</td>
<td></td>
</tr>
<tr>
<td>F1 KeyLight=1001 Evt=Fire Alarm</td>
<td>Key Light selects the event which will cause the key to light up. See Event Codes in Appendix A. Press the RIGHT arrow key and enter 4 digits. The bottom line displays the description of the event. Press the RIGHT arrow key to move to the next option.</td>
</tr>
<tr>
<td>F1 Key:=No Light Invert</td>
<td>Light Invert selects whether the key should be lighted when the event is On (normal) or when the event is Off (Inverted). Press the RIGHT arrow key and select 1 for Yes or 0 for No. Press the RIGHT arrow key to move to the next option.</td>
</tr>
<tr>
<td>F1 Key:=No Light Blink</td>
<td>Light Blink selects whether the key should blink when lighted or be steady. Press the RIGHT arrow key and select 1 for Yes or 0 for No. Press the RIGHT arrow key to move to the next option.</td>
</tr>
<tr>
<td>F1 Key:=No Key Requires PIN</td>
<td>Key Requires PIN selects whether the F key requires a valid user code prior to activation. Press the RIGHT arrow key and select 1 for Yes or 0 for No. Press the RIGHT arrow key to move to the next option.</td>
</tr>
<tr>
<td>F1 Key:=No SingleKeyPress</td>
<td>If this option is Yes, a single press of the F key will activate the event. If No, then two presses OR single press and hold 2 seconds is required. Press the RIGHT arrow key and select 1 for Yes or 0 for No. Press the RIGHT arrow key to move to the next option.</td>
</tr>
<tr>
<td>F1 Key Name F1 = Fire</td>
<td>The Key Name will be displayed whenever the F key is pressed. Press the LEFT arrow key and enter text using the number keys. I.E. For “K” press the 5 key twice. Move the cursor using the right or left arrow keys. The up or down arrow keys select between lower and upper case. Press the ELK key when complete.</td>
</tr>
</tbody>
</table>

KP01 11: F2 Key Definitions

KP01 12: F3 Key Definitions

KP01 13: F4 Key Definitions

KP01 14: F5 Key Definitions

KP01 15: F6 Key Definitions

KP01 16: KP Name Keypad 1

If the F2 Key is to be used, repeat the steps above.

If the F3 Key is to be used, repeat the steps above.

If the F4 Key is to be used, repeat the steps above.

If the F5 Key is to be used, repeat the steps above.  **NOTE: M1KP2 does not have an F5**

If the F6 Key is to be used, repeat the steps above.  **NOTE: M1KP2 does not have an F6**

To edit the Keypad Name press the LEFT arrow key. Enter text using the number keys. I.E. For “K” press the 5 key twice. Use the RIGHT or LEFT arrow keys to move the cursor. The UP or DOWN keys select between lower and upper case. The Chime key inserts a space, and the Bypass key erases 1 digit. Press the ELK key when complete.
Menu 05 - Zone Definitions

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

Description of Option
There are up to 208 zones. Press the UP or DOWN arrow key to scroll and select a particular zone. To jump to any zone, enter the number from 001 to 208. The zone name will display along the bottom line. Press the right arrow key to program the selected zone.

This first option is used to set the zone definition. To locate a different option press the up or down arrow key OR enter an option’s number to jump directly to it. Press the right arrow key to program the selected option. The available definitions are:

<table>
<thead>
<tr>
<th>Def</th>
<th>Zone Description</th>
<th>Operating Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>Disabled</td>
<td>- Used to remove any unused zone(s). No need to put a jumper or resistor across the terminals.</td>
</tr>
<tr>
<td>01</td>
<td>Burglar Entry/Exit 1</td>
<td>- For perimeter entry/exit doors. Allows a time delay to enter and exit during arm and disarm.</td>
</tr>
<tr>
<td>02</td>
<td>Burglar Entry/Exit 2</td>
<td>- For perimeter entry/exit doors that require more time delay during arm and disarm.</td>
</tr>
<tr>
<td>03</td>
<td>Burglar Perimeter Instant</td>
<td>- Windows and perimeter openings. Activates an immediate Burglary alarm if tripped during ANY armed mode. Does not provide any exit or entry delay.</td>
</tr>
<tr>
<td>04</td>
<td>Burglar Interior</td>
<td>- For motion detectors, interior doors, etc. Creates an instant alarm if tripped during the AWAY arm mode. This zone type IS NOT ACTIVE during the STAY, STAY INSTANT, NITE, and NITE INSTANT arm modes.</td>
</tr>
<tr>
<td>05</td>
<td>Burglar Interior Follower</td>
<td>- For motions detectors, interior doors, etc. which may be in the keypad or entry pathway. If an entry delay zone is violated first, this zone will delay (Follow) also, otherwise it will create an instant alarm. This zone type IS NOT ACTIVE during the STAY, STAY INSTANT, NITE, and NITE INSTANT arm modes.</td>
</tr>
<tr>
<td>06</td>
<td>Burglar Interior Nite</td>
<td>- For motion detectors, interior doors, etc. which are not close to sleeping areas. The primary use of this zone type is for increased security when the user is home. Interior Nite zones ARE ACTIVE during the NITE and NITE INSTANT arm modes as well as the AWAY arm mode and will create an instant alarm if tripped. This zone type is NOT ACTIVE during the STAY or STAY INSTANT arm modes.</td>
</tr>
<tr>
<td>07</td>
<td>Burglar Interior Nite Delay</td>
<td>- For motion detectors, interior doors, etc. that are not close to sleeping areas. Same as an Interior Nite zone except that Interior Nite Delay zones will delay for the entry/exit delay 1 time period. Interior Nite zones ARE ACTIVE during the NITE and NITE INSTANT arm modes providing increased security when the user is home and in bed. However, if the user accidentally wanders into a Nite Delay zone the exit delay timer will start and the tone will sound, warning the user to disarm before a false alarm occurs.</td>
</tr>
</tbody>
</table>

NOTE: If “Auto Stay, No Exit” is set to YES (see Area Definitions) and the system is armed in the Away mode, all interior zones will be bypassed if no exit is detected from the premises during the exit delay time.

QUICK VIEW OF ARMING MODES
This illustrates the condition of Burg zone types in the various arm modes. Legend: $A$ = Armed

| “-“ = Not Armed, $AN$ = Armed, No Delay |
|-----|------------------|---------------------------|
| Burg Entry/Exit (1 or 2) Zone | A  | A  | AN  | A  | AN  |
| Burg Perimeter (Instant) Zone | AN | AN | AN | AN | AN |
| Burglar Burg Interior Zone | AN | -  | -  | -  | -  |
| Burglar Follower Zone | A  | -  | -  | -  | -  |
| Burglar Inside Zone | AN | -  | -  | AN | AN |
| Burglar Interior Nite Zone | AN | -  | -  | AN | AN |
| Burglar Interior Nite Delay Zone | A  | -  | -  | A  | AN |

08 Burglar 24 hr - Intended for tamper switches, etc. Activates an immediate Burglary alarm if tripped anytime (during armed or disarmed state).

09 Burglar 24 hr Box Tamper - Intended for control, siren, and bell box tamper switches. Activates an immediate Burglary Tamper alarm if tripped anytime (armed or disarmed state).

10 Fire 24 hr Alarm - Intended for Fire alarm sensors such as smoke detectors, heat stats, pull stations, etc. Activates an immediate Fire alarm upon a short across the zone wires. A Fire Trouble will be activated if an open (break in the zone wires) should occur.

11 Fire 24 hr Verified - For smoke detectors in high-risk false alarm areas. Upon initial activation (short across the zone), the control ignores the alarm and removes smoke power for 5 seconds to reset the detectors. During this 5 seconds, and for 20 additional seconds afterwards, no alarms will be recognized from this zone. Following this is a 60 second verification time window, during which any additional activation will be regarded as verification of the initial alarm and the control will initiate a Fire Alarm. If the 60 seconds expires with no further activations, the entire process is cleared (reset). A Fire Trouble will be activated if an open (break in the zone wires) occurs.

12 Fire 24 hr Supervisory - Intended for monitoring water control valves on fire sprinkler systems. Same as Fire 24hr except that a short across the zone activates a Fire Supervisory alarm. A Fire Trouble will be activated if an open (break in the zone wires) should occur.

13 Auxiliary1 24 hr - This zone can trip anytime (armed or disarmed) and send a communicator report, but there is no audible alarm output or keypad indication provided. It is displayed in the event log. A Whenever/And/Then rule can be written from the RP software to do other things with this zone type. Resets upon restoration.

14 Auxiliary2 24 hr - This zone can trip anytime (armed or disarmed) and send a communicator report, but there is no audible alarm output or keypad indication provided. It is displayed in the event log. A Whenever/And/Then rule can be written from the RP software to do other things with this zone type. Resets upon restoration.
Menu 05 - Zone Definitions (continued)

<table>
<thead>
<tr>
<th>Def</th>
<th>Zone Description</th>
<th>Operating Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>† Keyfob</td>
<td>Used when a wireless keyfob is enrolled into a receiver at this zone ID location.</td>
</tr>
<tr>
<td>16</td>
<td>Non Alarm</td>
<td>Intended for use in Whenever/And/Then rules from the Remote Programming RP software. This zone type DOES NOT ACTIVATE any alarm and is not logged in the Event log. No reset is required.</td>
</tr>
<tr>
<td>17</td>
<td>†† Carbon Monoxide 24 hr</td>
<td>Activates an immediate Carbon Monoxide alarm if tripped anytime (armed or disarmed). The keypad will display the alarm as well as the event log. This type of alarm can be silenced/reset with a valid User Code. The audible alarm can be set in “Cutoff Timers”.</td>
</tr>
<tr>
<td>18</td>
<td>Emergency 24 hr</td>
<td>Similar to Def 17, this zone creates an alarm if tripped anytime (armed or disarmed).</td>
</tr>
<tr>
<td>19</td>
<td>†† Freeze Alarm 24 hr</td>
<td>Similar to Def 17, this zone creates an alarm if tripped anytime (armed or disarmed).</td>
</tr>
<tr>
<td>20</td>
<td>†† Gas Alarm 24 hr</td>
<td>Similar to Def 17, this zone creates an alarm if tripped anytime (armed or disarmed).</td>
</tr>
<tr>
<td>21</td>
<td>†† Heat Alarm 24 hr</td>
<td>Similar to Def 17, this zone creates an alarm if tripped anytime (armed or disarmed).</td>
</tr>
<tr>
<td>22</td>
<td>Medical Alarm 24 hr</td>
<td>Activates an immediate Medical alarm if tripped anytime (armed or disarmed).</td>
</tr>
<tr>
<td>23</td>
<td>Police Alarm w/Indication 24 hr</td>
<td>Activates an audible Police (Holdup) alarm if tripped (armed or disarmed).</td>
</tr>
<tr>
<td>24</td>
<td>Police Alarm no Indication 24 hr</td>
<td>Activates an non-audible Police (Silent) alarm if tripped (armed or disarmed).</td>
</tr>
<tr>
<td>25</td>
<td>† Water Alarm 24 hr</td>
<td>Activates an immediate Water alarm if tripped anytime (armed or disarmed).</td>
</tr>
<tr>
<td>26</td>
<td>Keyswitch Momentary</td>
<td>Intended for a spring loaded momentary key switch. Toggles the armed state (disarmed/armed) with each trip.</td>
</tr>
<tr>
<td>27</td>
<td>Keyswitch Momentary - Away Mode</td>
<td>Intended for a spring loaded momentary key switch. Arms the area in the AWAY mode with each trip.</td>
</tr>
<tr>
<td>28</td>
<td>Keyswitch Momentary - Stay Mode</td>
<td>Intended for a spring loaded momentary key switch. Arms the area in the STAY mode with each trip.</td>
</tr>
<tr>
<td>29</td>
<td>Keyswitch Momentary - Disarm Only</td>
<td>For a spring loaded momentary key switch. Disarms with each trip.</td>
</tr>
<tr>
<td>30</td>
<td>Keyswitch On/Off (Maintained)</td>
<td>Intended for a 2 position On/Off key switch. Arms the area in Open/Close position. Disarms the area in the Closed position.</td>
</tr>
<tr>
<td>31</td>
<td>†† Mute All Area Audibles</td>
<td>For silencing all area audibles by a two-way listen-in module (other manufacturer).</td>
</tr>
<tr>
<td>32</td>
<td>Power Supervisory 24 hr</td>
<td>For supervising an external power supply which provides alarm/trouble contacts. Wire the power supply contacts to open the zone in a Low Battery event and short the zone in an AC Failure event.</td>
</tr>
<tr>
<td>33</td>
<td>† Temperature</td>
<td>For use with ELK-M1ZTS Temperature Sensors. Requires the use of Whenever/And/Then rules from the ELK-RP software. NOTE: This definition is for ZONES 1 thru 16 ONLY! Temperature zones must be set to FAST LOOP (less than 200ms) response.</td>
</tr>
<tr>
<td>34</td>
<td>† Analog</td>
<td>For sensors that produce a variable voltage (0 to 12 volt range). Requires the Whenever/And/Then rules from the ELK-RP software. NOTE: This definition is only available with the ELK-M1G (Gold) control.</td>
</tr>
</tbody>
</table>

**ZN001 02:** Type=0

0=EOL Supervised

Refer to wiring configuration for zones. Burglar and Keyswitch zones may be set to: 0, 1, 2, 3, & 4. Other non-fire zones may be set to: 0, 1 or 2 only. Fire zones may be set to 5=EOL Supervised 4-wire detectors, 6=EOL Supervised 2-wire detectors (zone 16 ONLY!)

<table>
<thead>
<tr>
<th>Type</th>
<th>Wiring Configuration</th>
<th>Operating Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>EOL Supervised, 2,200 Ohm resistor</td>
<td>(Zones 1 - 16 are defaulted to Type=0)</td>
</tr>
<tr>
<td>1</td>
<td>Normally Closed only</td>
<td>No resistor required.</td>
</tr>
<tr>
<td>2</td>
<td>Normally Open only</td>
<td>No resistor required.</td>
</tr>
<tr>
<td>3</td>
<td>EOL Supervised with SECURITY ALERT on Short. (Burglar &amp; Keyswitch Zones Only)</td>
<td>When control is disarmed a Security “Day” Alert will occur if the zone wiring is SHORTED. Keypads will beep and display the alert and zone name. Press Star key to silence. User code must be entered to reset/acknowledge the alert. When control is armed an alarm will occur regardless of whether the zone wiring is OPENED or SHORTED.</td>
</tr>
<tr>
<td>4</td>
<td>EOL Supervised - 4 State Wiring, with SECURITY ALERT on Open or Short. (Burglar &amp; Keyswitch Zones Only)</td>
<td>Effective with firmware 4.3.5 this type provides 4 State Zone Wiring option, which uses 2 series EOL resistors, 1 in series with the loop and 1 in parallel with the alarm contacts. When control is disarmed a Security “Day” Alert will occur if the zone wiring is OPENED (tamper switch) or SHORTED. Keypad(s) will beep and display the alert and zone name. Ideal for tampering motions, etc. Press Star key to silence. User code must be entered to reset/acknowledge the alert. When control is armed an alarm will occur regardless of whether the zone is OPENED or SHORTED. NOTE: To define additional output/options on types 3 &amp; 4 use the ElkRP Whenever/Then rules.</td>
</tr>
<tr>
<td>5</td>
<td>Fire, 4-Wire Smoke Detector</td>
<td>with 2,200 Ohm EOL resistor. Trouble on open, alarm on short. (Zones 1 to 16).</td>
</tr>
<tr>
<td>6</td>
<td>Fire, 2-wire Smoke Detector</td>
<td>with 820 Ohm EOL resistor. (ZONE 16 ONLY)</td>
</tr>
</tbody>
</table>

† Wireless transmitter zones set as Type 0 will provide both tamper and alarm notification while armed. Setting as a Type 3 or 4 adds tamper activation during the disarmed state as well. Setting as Type 1 disables tamper from that wireless zone/sensor.

**ZN001 03:** Area=1

Enter the area (partition) number that this zone is to be assigned to. A zone can only reside in one area and fire zones can only reside in Area 1.

† Not evaluated by UL
†† Not for use in UL Listed Systems
**Menu 05 - Zone Definitions (continued)**

<table>
<thead>
<tr>
<th>Zone Definitions</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ZN001 04:</strong> =No Silent Alarm</td>
<td>A zone programmed “Yes” for Silent Alarm will not cause any audible alarm event from a programmable output OR from any keypad. However, a visual display will occur on the keypad(s) which are assigned to the same area as the zone.</td>
</tr>
<tr>
<td><strong>ZN001 05:</strong> =Yes Dialer Delay</td>
<td>Helps reduce false alarm dispatches. Upon an alarm this zone the communicator will delay dialing for the “Dialer Delay” time in Menu 09-Area Reporting Codes. If a valid code is entered before the delay expires, report will ABORT. The communicator will transmit an Alarm Abort code if programmed in Menu 09. NOTE: Dialer Delay Time will only start once per alarm, regardless of additional zone trips. Default No.</td>
</tr>
<tr>
<td><strong>ZN001 06:</strong> =No Enable Listen-In</td>
<td>† Allows zone to trigger a listen-in session after alarm is reported. Control will hold the line for 60 seconds after ‘kiss-off’, allowing Central Station to enter <em>55</em> to activate listen-in. The Central Station can renew or terminate listen-in remotely. NOTE: Two-Way must be enabled (Menu 07-Global) and an interface (ELK-M1TWI) with one or more microphone/speakers (ELK-M1TWS) must be installed. Default setting is No.</td>
</tr>
<tr>
<td><strong>ZN001 07:</strong> =No Zone Bypassable</td>
<td>A Yes allows zone to be manually bypassed. A bypassed zone will be ignored by the system. Burglar zone bypasses are cancelled upon a disarm. To bypass a zone: Press the Bypass key + [zone number] + the Bypass key once again. Default setting is Yes.</td>
</tr>
<tr>
<td><strong>ZN001 08:</strong> =No Force Armable</td>
<td>†† Force Arm allows a violated zone to be temporarily bypassed upon arming. Prior to arm, the READY light blinks if force arm zone(s) are the only zones violated. The keypad will display READY FORCE. Force arm zone(s) automatically return to service if they become normal while armed. CAUTION! Force arm operates uniquely on entry/exit zones! - Entry/Exit zones that are also force armable can be violated during the exit delay and still become force armed, allowing a user to arm, open a garage door, back out, and close the door at their leisure, without creating a false alarm and without a long exit delay time. As soon as the garage door is closed, it will return to service. Default setting is No.</td>
</tr>
<tr>
<td><strong>ZN001 09:</strong> =No SwingerShutdown</td>
<td>†† Prevents a runaway communicator by shunting zone after 2 trips. Zone cannot send another alarm until control is reset OR a 48 hour time period elapses. Default No.</td>
</tr>
<tr>
<td><strong>ZN001 10:</strong> =No Req PeriodicTrip</td>
<td>This type zone must be tripped at least once per disarm cycle*. This prevents blocked PIRs or seldom used doors from being left not secure. Keypad will display “Not Ready” if a periodic zone has not been tripped. * NOTE: A periodic trip will not be required for a disarm period of 1 hour or less. Default setting is No.</td>
</tr>
<tr>
<td><strong>ZN001 11:</strong> =No FastLoopResponse</td>
<td>Response is the time the zone must be violated before the system detects it. If No, the zone responds to the Slow response time. The time values are in milliseconds and they are programmed in the Menu 07 Global Sys. Definitions menu. Default setting is No. NOTE: Slow loop response shall NOT be used on Fire zones.</td>
</tr>
<tr>
<td><strong>ZN001 12:</strong> =No Enable Chime</td>
<td>Each zone may be selected to be included in the Chime annunciation whenever Chime Mode is turned on from the keypad. Most zone types may be included via this option. Default setting is No.</td>
</tr>
<tr>
<td><strong>ZN001 13:</strong> =No In CrossZonePool</td>
<td>†† Burglar zones “In CrossZonePool” can’t cause alarms unless another zone in the pool also activates within a time window OR unless “Cross Zone Self Ver” [Menu 07 - Global System Definitions] is enabled. DO NOT program Entry/exit zones as Cross zones. Default is No. NOTE: The Cross Zone feature shall NOT be used on Fire zones.</td>
</tr>
<tr>
<td><strong>ZN001 14:</strong> Name Zone 001</td>
<td>To program the text description of the Zone Name (max. of 16 characters) press the left arrow key. Enter text using the number keys. I.E. For a “K” press the 5 key twice. To move the cursor press the right or left arrow keys. While programming the text, pressing the Chime key inserts a space and the Bypass key erases 1 digit. The up and down arrow keys move between upper and lower case. Press the ELK key when complete.</td>
</tr>
</tbody>
</table>

† Not evaluated by UL  †† Not for use in UL Listed Systems
Menu 06 - Alarm Duration Timers
Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

Each alarm type has a cutoff timer. Any output(s) activated by the alarm type will turn off when the cutoff timer expires. If multiple alarm types are assigned to a single output, all alarms must turn off before the output can turn off. Range is 00000 to 65535 seconds. 00000=Never turn on. 65535=Never turn off  

NOTE: 65535 sec = 1,092 minutes or 18.2 hrs.

### Alarm Cutoff Timers
#### Description of Option

<table>
<thead>
<tr>
<th>Timer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT01:00600 sec</td>
<td>Burglar Alarm duration time in seconds. Default time is 00600 sec (10 min.). Burglar always activates Siren/Voice Output (Out1) and Siren Output (Out2). Additional outputs may be programmed using the RP software “Rules” function.</td>
</tr>
<tr>
<td>CT02:00000 sec</td>
<td>Fire Alarm duration time in seconds. Default time is 65535 sec. (never cutoff). Fire always activates Siren/Voice Output (Out1) and Siren Output (Out2). Additional outputs may be programmed using the RP software “Rules” function.</td>
</tr>
<tr>
<td>CT03:00600 sec</td>
<td>Medical Alarm duration time in seconds. Default is 00600 sec (10 min.). Medical always activates Siren/Voice Output (Out1) and Siren Output (Out2). Additional outputs may be programmed using the RP software “Rules” function.</td>
</tr>
<tr>
<td>CT04:00600 sec</td>
<td>Audible Police Alarm duration time in seconds. Default time is 00600 sec (10 min). Audible Police always activates Siren/Voice Output (Out1) and Siren Output (Out2). Additional outputs may be programmed using the RP software “Rules” function.</td>
</tr>
<tr>
<td>CT05:00600 sec</td>
<td>CO (Carbon Monoxide) Alarm duration time in seconds. The default time is 00600 sec. (10 min.). This alarm type is not preassigned to any outputs. The RP software “Rules” function must be used to assign outputs.</td>
</tr>
<tr>
<td>CT06:00600 sec</td>
<td>Emergency Alarm duration time in seconds. The default time is 00600 sec. (10 min.). This alarm type is not preassigned to any outputs. The RP software “Rules” function must be used to assign outputs.</td>
</tr>
<tr>
<td>CT07:00600 sec</td>
<td>Freeze Alarm duration time in seconds. The default time is 00600 sec. (10 min.). This alarm type is not preassigned to any outputs. The RP software “Rules” function must be used to assign outputs.</td>
</tr>
<tr>
<td>CT08:00600 sec</td>
<td>Gas Alarm duration time in seconds. The default time is 00600 sec. (10 min.). This alarm type is not preassigned to any outputs. The RP software “Rules” function must be used to assign outputs.</td>
</tr>
<tr>
<td>CT09:00600 sec</td>
<td>Heat Alarm duration time in seconds. The default time is 00600 sec. (10 min.). This alarm type is not preassigned to any outputs. The RP software “Rules” function must be used to assign outputs.</td>
</tr>
<tr>
<td>CT10:00600 sec</td>
<td>Water Alarm duration time in seconds. The default time is 00600 sec. (10 min.). This alarm type is not preassigned to any outputs. The RP software “Rules” function must be used to assign outputs.</td>
</tr>
<tr>
<td>CT11:00600 sec</td>
<td>Aux1 Alarm duration time in seconds. The default time is 00600 sec. (10 min.). This alarm type is not preassigned to any outputs. The RP software “Rules” function must be used to assign outputs.</td>
</tr>
<tr>
<td>CT12:00600 sec</td>
<td>Aux2 Alarm duration time in seconds. The default time is 00600 sec. (10 min.). This alarm type is not preassigned to any outputs. The RP software “Rules” function must be used to assign outputs.</td>
</tr>
</tbody>
</table>

††† See Appendix F for UL & ULC Requirements
Menu 07 - Global System Definitions

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

Global Sys Definitions

Description of Option

G01:=0 TelRmtCtrl
In&OutsideTeleCtrl

Telephone Remote Control allows any phone to become a basic keypad. This feature can be set for interior use only (1), interior & exterior use (2), or disabled (0). The M1VB Voice Module (standard on most units) is required for this feature. Default is (0) disabled.

G02:=Yes
12Hr Time Disp

Keypads that are programmed to show time and date on their second display line will either display 12 hour format or 24 hour military format, depending upon this option. Default is Yes

G03:=No
DD/MM Date Disp

If this option is No, the date will display as Month/Day/Year. If this option is Yes, the date will display as Day/Month/Year. Default No.

G04:=No
Celcius TempDisp

Keypads that are programmed to show temperature on their second display line will either display as Celsius or Fahrenheit, depending upon this option. Default is No.

G05:=Yes
Daylight Savings

The system will automatically adjust its internal clock for daylight savings time changes if this option is set to ‘Yes’. Default is Yes.

G06:=0040 ms
Fast Loop Resp

Sets the time that a “Fast Loop” zone must remain open before the control responds. To set, press the RIGHT arrow key and enter a number from 002 to 255. Time is adjusted in 10 millisecond increments from 20ms to 2550ms (2.55 seconds). Default is 40ms.

G07:=0400 ms
Slow Loop Resp

Sets the time that a “Slow Loop” zone must remain open before the control responds. A “Slow Loop” zone is basically any zone that does not have the “FastLoopResponse” option enabled in Menu 05 - Zone Definitions. To set, press the RIGHT arrow key and enter a number from 002 to 255. Time is adjusted in 10 millisecond increments from 20ms to 2550ms (2.55 seconds). Default is 400ms.

G08:=No
CrossZoneSelfVer

Zones programmed with the ‘Cross Zone’ option may be allowed to self-verify an alarm condition. I.E. A second trip of the same zone within the Cross Zone Verify Time window will be considered a verified alarm. Default is No. 

NOTE: The Cross Zone feature shall NOT be used on Fire zones.

G09:=030
CrossZoneVerTime

This timer function is the amount of time in seconds that is allowed for two or more ‘Cross Zone’ zones to verify each other in an alarm condition OR for a second trip of the same zone when ‘CrossZoneSelfVer’ has been enabled. Default is No. 

NOTE: The Cross Zone feature shall NOT be used on Fire zones.

G10:=Yes
Audible Troubles

This option selects whether ordinary non-fire system troubles will cause audible alerts to sound. This option does not affect fire trouble conditions, which will always be audible. Default is No.

G11:=No
6 Digit UserCode

The control supports up to 99 User codes, plus the Installer code. The User codes can be either 4 digits in length or 6 digits, depending upon this option. Default is No (4 digits). 

NOTE: The Installer code is ALWAYS 6 digits.

G12:=99
WrongCodeLockout

To prevent a would be thief or hacker from being able to hunt for a valid user code, the system can automatically lock out all code entry for 1 minute after a sequence of invalid digits. The range of value can be set from 13 to 99. Default is 99.
Menu 07 - Global System Definitions  (continued)

Global Sys Definitions

Description of Option

Any of the Areas 2 thru 8 may be made common to Area 1. The result is: Area 1 cannot be armed until all its common areas are armed. Once armed, Area 1 will disarm if any common area becomes disarmed. This is good for lobbies or vestibules shared by two or more persons. Each area must have its own keypad. **NOTE:** If you want Area 1 to automatically arm when all its common areas become armed, use a Whenever/And/Then rule from the RP software to do this.

G13: Common To Area1

Changes the Burglar Yelp sound on outputs 1 & 2 to a pulsing Buzzer sound. **NOTE:** Out1 is designed for 8 Ohm - 20 watt min. speakers (up to 4 max) and has adjustable volume settings. Default is No.

G14: =No Out1&2 Chg YelpToBuzzer

Options G15 thru G18 set the start and final volume levels for alarms and non alarms. G15 sets the initial siren/bell volume of Output 1 upon initial alarm activation. The range of settings is selectable from 0 to 7 (0 = lowest, 7 = loudest).

G15:=1 Out1Start Alarm Volum-Tst

Sets the maximum siren/bell volume of Output 1. The sound starts at the initial setting and increases (volume step) every 10 seconds until the max. is reached. Volume stepping reduces noise and confusion with user caused false alarms. Default is 7.

G16:=7 Out1 Max Siren Volum-Tst

Sets the maximum volume of Output 1 for Voice alarm messages. Just as in G16, with a low initial setting, the voice alarm message starts low and automatically increases (volume stepping) over a period of time until the max. is reached. Default is 5.

G17:=5 Out1 Max VoiceAlmVol-Tst

Sets the maximum volume of Output 1 for Voice non-alarm messages. Non-alarm messages consist of system status, zone status, and various operating helpful hints that are produced for the user during non-alarm conditions. Default is 2.

G18:=2 Out1 Non AlmVoiceVol-Tst

Selects whether or not voice messages are to be spoken through Output 1. Selecting “Yes” completely eliminates all spoken voice messages from Output 1. Selecting “No” allows voices to be spoken based upon the settings of G20 through G25. Default is No.

G19:=No Out1 SuppressAllVoice

Selects whether System “non-alarm” messages will be spoken through Output 1. System messages include: “System is Armed”, “System is Disarmed”, etc. Default is Yes.

G20:=Yes Out1 SaySystmMessages

Selects whether Alarm messages will be spoken through Output 1.

G21:=Yes Out1 Say Alarms

Selects whether Zone status messages will be spoken through Output 1.

G22:=Yes Out1 Say Zone Status

Selects whether System Trouble messages will be spoken through Output 1.

G23:=Yes Out1 SaySystemTrouble

Selects whether Zone Trouble messages will be spoken through Output 1.

G24:=Yes Out1 Say Zone Trouble

Selects whether Chime Event messages will be spoken through Output 1.

G25:=Yes Out1 Say Chime
Menu 07 - Global System Definitions (continued)

Global Sys Definitions | Description of Option
--- | ---
G26:=No | Allows Output 2 to be converted from a siren driver into a voltage only output. If set to “No” the control produces alarm sounds for use with 8 Ohm speakers. If set to “Yes” the control will produce +12 Volts for use with self-contained sirens or bells. Default is No.

G27:=000secOut2 | Ordinarily, Outputs 1 & 2 activate immediately on alarms. However, Output 2 can be time delayed up to 255 seconds. Using Output 1 strictly for interior sounders and Output 2 for outside sounders, a false alarm will be heard inside first, giving the user time to disarm before any outside sounders are activated. A “good neighbor” feature. Default is 000.

G28:=No | Output 2 can be set to alarm only once per armed cycle for burglary type alarms. This feature is intended for noise abatement. The dialer will continue to transmit all alarms that may occur. THIS ONLY LOCKS OUT AUDIBLE FROM OUTPUT 2.

G29:=00 Rngs | The control must be set to auto answer an incoming call in order for Telephone Remote Control or the Remote Programming (RP) to be accessed remotely. The range of rings can be set from 1 to 15. A value of “0” disables auto answer.

G30:=No | A Yes enables faster connection from an outside telephone. It works as follows: Call the control and hang up after 1 or 2 rings. This starts a 45 second timer. Call the control a 2nd time during this 45 second time and the control will answer on the first ring. In some cases this Ring/Hang/Answer option may be the only way to get around telephone company provided answering services. **Option 29 MUST also be set!**

G31:=No | NOTE: If an on-site answering machine picks up, the RP software and the control will automatically attempt to override the machine using tone sniffing methods.

G32:=00sec 2Way | If this option to Yes ONLY when an ELK-M1TWI Two Way Listen-In interface is installed. This enables the correct software commands and procedures to make the two way functional. Refer also to the instructions that are shipped with the ELK-M1TWI

G33:=000sec CS | If Two Way is enabled, this timer provides a window for the CS to enter * 55 * and activate two way listen-in by holding the phone line off-hook for 001 to 255 seconds after a kissoff. Upon hangup, this timer re-starts to provide a window for the CS to callback and initiate two way. Control will answer an incoming call on the first ring. Enter 000 to disable.

G34:=9 15200 Baud Rate Port 0 | Allows the Central Station alarm verification by suspending (holding) new alarms after the initial alarm kissoff. The phone line is kept free for this time period. The time value can be from 001 to 255 seconds. Long time periods are not recommended. Enter 000 to disable.

G35:=No | This location is used to set the “revert back to” baud rate for the on-board RS-232 serial port which is Port 0. The available selections are: 0 or 1=300 baud, 2=1200, 3=2400, 4=4800, 5=9600, 6=14400, 7=19200, 8=38400, and 9=115200. Factory default: 115,200.

G36:=No | The control can transmit ASCII data via it’s RS-232 port to automation types of equipment. The ELKASCII Protocol document is available upon request. This first option sets the control to transmit all event log information immediately as it occurs.

G37:=No Xmit | This option sets the control to transmit zone status changes immediately as they occur. The ELKASCII Protocol document is available upon request.

G38:=No | This option sets the control to transmit output status changes immediately as they occur.

† Not evaluated by UL  †† Not for use in UL Listed Systems
Menu 07 - Global System Definitions (continued)

<table>
<thead>
<tr>
<th>Global Sys Def</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>G38:=No Xmit</strong>&lt;br&gt;Task Chgs - ASCII</td>
<td>† This option sets the control to transmit automation task status changes immediately as they occur.</td>
</tr>
<tr>
<td><strong>G39:=No Xmit</strong>&lt;br&gt;Light Chgs - ASCII</td>
<td>† This option sets the control to transmit automation lighting status changes immediately as they occur.</td>
</tr>
<tr>
<td><strong>G40:=No Xmit</strong>&lt;br&gt;Keypad Key Chgs</td>
<td>Sets the control to transmit keypad key changes. This includes the Chime, Bypass, Exit, Stay keys, the ELK key and it’s surrounding arrow keys, and the F keys. It does not transmit any of the numeric keys.</td>
</tr>
<tr>
<td><strong>G41:=No Require Code UserMenu1-5</strong></td>
<td>Allows User Menus 1 through 5 to be blocked from view until a valid User code is entered. If set to “Yes”, only User Codes which have the “Menu 1-5 Allowed” option enabled will be able to view or access Menus 1 through 5. Default is No.</td>
</tr>
<tr>
<td><strong>G42:=172839</strong>&lt;br&gt;Local Prog Code</td>
<td>This is the 6 digit Installer program code that is required in order to access the local installer programming mode. <strong>NOTE: Be careful when changing this code as it will be impossible to program the panel if the code is programmed wrong or forgotten.</strong></td>
</tr>
<tr>
<td><strong>G43:=D1234567</strong>&lt;br&gt;Serial Number</td>
<td>This is a read-only location. Each control is assigned a unique serial number for identification of the unit regarding warranty, technical support, anti-takeover, and other issues that may arise.</td>
</tr>
<tr>
<td><strong>G44:xxxxxxxxxxxx Axxxxxx Bxxxxxx</strong></td>
<td>This is a read-only location displaying information about the current software and bootloader revision that the control is operating with. This will only be needed with the assistance of a factory technical support person.</td>
</tr>
<tr>
<td><strong>G45:=DefaultCtl</strong>&lt;br&gt;81=User Codes</td>
<td>Allows factory default values to be restored by individual menus/categories. Press the right arrow, then press the up or down arrow keys to scroll through the choices. To factory default any single category enter the displayed number. E.G., enter 81 from this screen to default all User Codes. Be patient as it may take a minute or more to default some items.</td>
</tr>
<tr>
<td>82=Areas Data</td>
<td>Entering 82 from this screen causes all area definitions to be factory defaulted.</td>
</tr>
<tr>
<td>83=Keypads Data</td>
<td>Entering 83 from this screen causes all keypad definitions to be factory defaulted.</td>
</tr>
<tr>
<td>84=Zones Data</td>
<td>Entering 84 from this screen causes all zone definitions to be factory defaulted.</td>
</tr>
<tr>
<td>85=Zone Names</td>
<td>Entering 85 from this screen causes all zone names to be factory defaulted.</td>
</tr>
<tr>
<td>86=CutoffTimes</td>
<td>Entering 86 from this screen causes all the cutoff timers to be factory defaulted.</td>
</tr>
<tr>
<td>87=Global Data</td>
<td>Entering 87 from this screen causes all global system defs to be factory defaulted.</td>
</tr>
<tr>
<td>88=TeleAcct Data</td>
<td>Entering 88 from this screen causes all telephone reporting setup to be factory defaulted.</td>
</tr>
<tr>
<td>89=Tele #’s Only</td>
<td>Entering 89 from this screen causes all telephone numbers ONLY to be factory defaulted.</td>
</tr>
<tr>
<td>90=AreaRptCodes</td>
<td>Entering 90 from this screen causes all area report codes to be factory defaulted.</td>
</tr>
<tr>
<td>91=ZoneRptCodes</td>
<td>Entering 91 from this screen causes all zone report codes to be factory defaulted.</td>
</tr>
<tr>
<td>92=SysRptCodes</td>
<td>Entering 92 from this screen causes all system report codes to be factory defaulted.</td>
</tr>
<tr>
<td>93=UserRptCodes</td>
<td>Entering 93 from this screen causes all user report codes to be factory defaulted.</td>
</tr>
<tr>
<td>94=VoiceMessages</td>
<td>Entering 94 from this screen causes all voice messages to be factory defaulted.</td>
</tr>
<tr>
<td>95=WirelessDef</td>
<td>Entering 95 from this screen causes all wireless definitions to be factory defaulted.</td>
</tr>
<tr>
<td>99=Entire Panel</td>
<td>Entering 99 from this screen causes the entire panel programming to be factory defaulted.</td>
</tr>
</tbody>
</table>

† Not evaluated by UL
Menu 08 - Telephone Account Setup

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

Description of Option

The control can dial up to 8 telephone numbers plus the ELK-RP number. Each of the 8 phone numbers can be used to report alarms, troubles, closings, opening, etc. in digital format as well as pager formats. Use the up/down arrow keys to select the telephone number, then press the right arrow key to program the options, starting with option 01.

This selects the reporting format to be used with this number. The available formats are:

- 00 = Disable reporting
- 03 = Pulse 4+2
- 01 = Contact ID
- 04 = Pager DTMF tones
- 02 = SIA
- 05 = † Voice Message

Note: Voice Message Format can only be utilized from the Elk-RP Computer software in concert with a Whenever/And/Then rule.

0 = Always Report, meaning the number will be dialed when its “report to” options are activated. 1 = Backup, meaning the number will ONLY be dialed if the previous sequential number failed to complete its call. When backup is selected the “report to” options will be copied from the previous number and ONLY the name, number, format, and dial attempts may be edited. To edit any “report to” options you must temporarily set this value to 0.

NOTE: Telephone # 1 cannot be set as a backup since it is the first number. A backup cannot have another backup.

Up to 20 digits may be entered for a telephone number. Valid numeric digits are: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0. In addition, the following special characters may be programmed. The cursor automatically moves right each time a digit is entered.

- Comma (,) = forces the dialer to pause for 2 seconds
- Asterisk (*) = simulates the * key on a touch tone phone
- Slash (/) = forces the dialer to pause for 125 milliseconds
- Pound (#) = simulates the # key on a touch tone phone
- B = Program the 1st dialed digit as a “B” to force Pulse (rotary) dialing. Elsewhere in dial string a “B” will be handled as a DTMF tone signal
- C = Not Used
- D = Program the 1st dialed digit as a “D” to force Dial tone detection prior to dialing. Otherwise, it dials regardless of dial tone presence. Anywhere else in the dial string a “D” will simply be handled as a DTMF tone signal. EXCEPTION: Digit D (Dial tone detect) can be the 2nd digit but ONLY if B (Pulse dial) is the 1st dialed digit.

To enter special characters place the cursor where desired and press the up arrow key. The 1 key produces characters 1, #, *, and /. The 2 key produces 2, A, B, and C. The 3 key produces 3, and D. When finished press the down arrow key to return to numbers.

This sets the number of dial attempts (re-dials) that the communicator will make to this number before a Comm Fail (fail to report) is logged. Valid range is 01 to 15 attempts. Default is 08.

The Account number for Area 1 (up to 6 digits) when it is reported to this telephone number. Since all 6 digits must be entered, enter leading zeros (0’s) if a shorter account number is required.

The Account number for Area 2 (up to 6 digits) when it is reported to this telephone number. Since all 6 digits must be entered, enter leading zeros (0’s) if a shorter account number is required.

The Account number for Area 3 (up to 6 digits) when it is reported to this telephone number. Since all 6 digits must be entered, enter leading zeros (0’s) if a shorter account number is required.

† Not evaluated by UL
Menu 08 Telephone Account Setup (continued)

**Telephone Acct Setup**

<table>
<thead>
<tr>
<th>T1:</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:</td>
<td>The Account number for Area 4 (up to 6 digits) when it is reported to this telephone number. Since all 6 digits must be entered, enter leading zeros (0's) if a shorter account number is required.</td>
</tr>
<tr>
<td>09:</td>
<td>The Account number for Area 5 (up to 6 digits) when it is reported to this telephone number. Since all 6 digits must be entered, enter leading zeros (0's) if a shorter account number is required.</td>
</tr>
<tr>
<td>10:</td>
<td>The Account number for Area 6 (up to 6 digits) when it is reported to this telephone number. Since all 6 digits must be entered, enter leading zeros (0's) if a shorter account number is required.</td>
</tr>
<tr>
<td>11:</td>
<td>The Account number for Area 7 (up to 6 digits) when it is reported to this telephone number. Since all 6 digits must be entered, enter leading zeros (0's) if a shorter account number is required.</td>
</tr>
<tr>
<td>12:</td>
<td>The Account number for Area 8 (up to 6 digits) when it is reported to this telephone number. Since all 6 digits must be entered, enter leading zeros (0's) if a shorter account number is required.</td>
</tr>
</tbody>
</table>

**THE FOLLOWING 5 OPTIONS DEFINE WHAT IS REPORTED BY THIS TELEPHONE #**

<table>
<thead>
<tr>
<th>T1:</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:</td>
<td>This YES or NO option identifies whether this telephone number should report misc. options from the AREA REPORTING CODES menu, Zone Alarms, Restores, and Unbypasses from the ZONE REPORTING CODES menu, and Keypad Alarms from the KEYPAD F-KEY REPORTING CODES menu.</td>
</tr>
<tr>
<td>14:</td>
<td>This YES or NO option identifies whether this telephone number should report the Zone Bypasses from the ZONE REPORTING CODES menu.</td>
</tr>
<tr>
<td>15:</td>
<td>This YES or NO option identifies whether this telephone number should report the Zone Troubles from the ZONE REPORTING CODES menu.</td>
</tr>
<tr>
<td>16:</td>
<td>This YES or NO option identifies whether this telephone number should report the user opening and closing codes from the USER REPORTING CODES menu.</td>
</tr>
<tr>
<td>17:</td>
<td>This YES or NO option identifies whether this telephone number should report the global system event codes from SYS REPORT OPTIONS &amp; CODES menu.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T1:</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>18:</td>
<td>To edit or program a text description name (max. of 16 characters) such as “ACME Central Station” for the Telephone number press left arrow key. Spell out the text using the number keys. I.E. For a “K” press the 5 key twice. To move the cursor press the right or left arrow keys. While programming the text, pressing the Chime key inserts a space, and the Bypass key erases 1 digit. The up and down arrow keys toggles between upper and lower case. Press the ELK key when complete.</td>
</tr>
</tbody>
</table>
Menu 09 - Area Reporting Codes

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

NOTE: Enter a two digit value to enable a particular report code. To disable a report code enter 00. When SIA or Contact ID is the reporting format, the two digit value can simply be 01 since the control automatically produces the correct code according to the SIA or Contact ID protocol. For 4+2 pulse format, enter a value from 01 to FF. To enter A thru F HEX characters press the RIGHT arrow key to position the cursor under the desired digit, then press the UP arrow (shift) key once. Each press of the 2 key will now produce the following: 2, A, B, C. Each press of the 3 key will now produce the following: 3, D, E, F. Press the RIGHT arrow key to cancel shift and move to the next character. See Appendix for a summary of the SIA and Contact ID codes.

Area Report Codes

<table>
<thead>
<tr>
<th>Report Codes Area 1</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR1: Sel ▷ Prg ReportCodesArea1</td>
<td>Each of the eight (8) Areas has specific communicator reporting codes for events that only occur within that area. Using the up/down arrow keys, select the appropriate area, then press the right arrow key to begin starting with option 01.</td>
</tr>
<tr>
<td>AR1 01:000=Sec ▷ Dialer Delay Time</td>
<td>Dialer Delay Time is an amount of time following an alarm during which the report may be aborted if the area is disarmed by a valid user. An optional alarm abort code may be programmed to report. Range is 000 to 255 seconds. Default is 000 (delay disabled).</td>
</tr>
<tr>
<td>AR1 02:Code= 00 ▷ Alm Abort Code</td>
<td>Alarm Abort code is an optional code that may be reported when an alarm is aborted during the Comm Abort Time window. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 03:000=Sec ▷ CancelWindowTime</td>
<td>Cancel Window Time is the time following an alarm during which a cancel code will be reported if the area is disarmed. Cancel is not the same as abort since the alarm has already reported. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 04:Code= 00 ▷ Alm Cancel Code</td>
<td>Alarm Cancel code is the code that will be reported if the area in alarm is disarmed within the Cancel Window Time. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 05:Code= 00 ▷ Close Automatic</td>
<td>Close Automatic code will be reported anytime the area is armed automatically by a Rule from the RP software programming. Refer to the ELK-RP Rules Programming instructions. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 06:Code= 00 ▷ Close Early</td>
<td>Close Early code will be reported if the area is closed prior to a programmed Expected Arm time. Refer to the ELK-RP Rules Programming instructions. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 07:Code= 00 ▷ Close Extended</td>
<td>Close Extended code will be reported if a programmed Expected Arm time is extended by a valid user. Refer to the ELK-RP Rules Programming instructions. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 08:Code= 00 ▷ Fail To Close</td>
<td>Fail to Close code will be reported if the area is not armed by a programmed Expected Arm time. Refer to the ELK-RP Rules Programming instructions. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 09:Code= 00 ▷ Late Close</td>
<td>Late to Close code will be reported if the area is armed after a programmed Expected Arm time. Refer to the ELK-RP Rules Programming instructions. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 10:Code= 00 ▷ Keyswitch Close</td>
<td>Keyswitch Close code will be reported in place of a user code whenever the area is armed by a keyswitch. Refer to the ELK-RP Rules Programming instructions. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
</tbody>
</table>
Menu 09 - Area Reporting Codes (continued)

<table>
<thead>
<tr>
<th>Area Report Codes</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR1 11:Code= 00</td>
<td>Duress Code will be reported if the area is armed or disarmed by a valid user code that is programmed with the duress attribute. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 12:Code= 00</td>
<td>Open After Alarm code will be reported whenever a valid user arrives and disarms the area following an alarm activation. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 13:Code= 00</td>
<td>Open Early code will be reported if the area is disarmed prior to a programmed Expected Disarm time. Refer to the ELK-RP Rules Programming instructions. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 14:Code= 00</td>
<td>Fail to Open code will be reported if the area is not disarmed by a programmed Expected Disarm time. Refer to the ELK-RP Rules Programming instructions. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 15:Code= 00</td>
<td>Open Late code will be reported if the area is disarmed after a programmed Expected Disarm time. Refer to the ELK-RP Rules Programming instructions. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 16:Code= 00</td>
<td>Open Keyswitch code will be reported in place of a user code whenever the area is disarmed by a Keyswitch zone. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 17:Code= 00</td>
<td>User Lockout code will be reported if someone repeatedly enters digits (see Menu 07 - Global System Definitions, Option 12 for the maximum number of digits allowed) in an attempt to hack out a valid user code. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 18:Code= 00</td>
<td>Exit Error Code can be used to identify an accidental alarm caused by an error while arming. Locally, it works as follows: If an exit delay rolls directly into entry delay as a result of a zone being left violated, the entry delay warning AND the siren will sound. If the control is not disarmed prior to the entry delay expiring, the communicator will report the alarm along with the Exit Error code. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>AR1 19:Code= 00</td>
<td>Fail to Communicate displays on the keypad and the event log when the communicator fails to complete its report using the number of dial attempts. A good communications report must occur in order to reset/clear the failure. If this fail to communicate report code is enabled, it will be reported with next good communications to indicate a “past” failure. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
</tbody>
</table>

Based on the event, the CID (Contact ID) or SIA Codes for Area Reporting Codes will be:

<table>
<thead>
<tr>
<th>Area RCs</th>
<th>CID</th>
<th>SIA</th>
<th>Area RCs</th>
<th>CID</th>
<th>SIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm Abort</td>
<td>406</td>
<td>O C</td>
<td>Open After Alarm</td>
<td>450</td>
<td>O R</td>
</tr>
<tr>
<td>Alarm Cancel</td>
<td>406</td>
<td>O C</td>
<td>Early Open</td>
<td>451</td>
<td>O K</td>
</tr>
<tr>
<td>Automatic Close</td>
<td>403</td>
<td>C A</td>
<td>Fail To Open</td>
<td>453</td>
<td>O I</td>
</tr>
<tr>
<td>Early Close</td>
<td>451</td>
<td>C K</td>
<td>Late Open</td>
<td>452</td>
<td>O J</td>
</tr>
<tr>
<td>Closing Extended</td>
<td>464</td>
<td>C E</td>
<td>Key Switch Open</td>
<td>409</td>
<td>O S</td>
</tr>
<tr>
<td>Fall To Close</td>
<td>454</td>
<td>C I</td>
<td>Keypad Locked Out</td>
<td>461</td>
<td>J A</td>
</tr>
<tr>
<td>Late Close</td>
<td>452</td>
<td>C J</td>
<td>Exit Error</td>
<td>457</td>
<td>EE</td>
</tr>
<tr>
<td>Key Switch Close</td>
<td>409</td>
<td>C S</td>
<td>Fail To Communicate</td>
<td>354</td>
<td>R T</td>
</tr>
<tr>
<td>Duress</td>
<td>121</td>
<td>H A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: On CID reporting the 3 digit code will be preceded by a “1” for a new event or an opening. It will be preceded by a “3” for a restore or a closing event.
Menu 10 - Zone Reporting Codes

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

NOTE: Enter a two digit value to enable a report code. To disable a report code enter 00. When SIA or Contact ID is the reporting format, the two digit value can simply be 01 since the control automatically produces the correct code according to the SIA or Contact ID protocol. For 4+2 pulse format, enter a value from 01 to FF. To enter the A thru F HEX characters press the RIGHT arrow key to position the cursor under the desired digit, then press the UP arrow (shift) key once. Each press of the 2 key will now produce the following: 2, A, B, C. Each press of the 3 key will now produce the following: 3, D, E, F. Press the RIGHT arrow key to cancel shift and move to the next character. See Appendix for a summary of the SIA and Contact ID codes.

### Zone Report Codes

<table>
<thead>
<tr>
<th>Zone RCs</th>
<th>Alarms</th>
<th>Restore</th>
<th>Bypass</th>
<th>Trouble</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 = Burglar/Entry Exit</td>
<td>134 BA</td>
<td>134 B R</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>02 = Burglar/Entry Exit 2</td>
<td>134 BA</td>
<td>134 B R</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>03 = Burglar Perim Inst</td>
<td>131 BA</td>
<td>131 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>04 = Burglar Interior</td>
<td>132 BA</td>
<td>132 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>05 = Burglar Int Follower</td>
<td>132 BA</td>
<td>132 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>06 = Burglar Int Night</td>
<td>135 BA</td>
<td>135 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>07 = Burglar Int Nt Fllwr</td>
<td>135 BA</td>
<td>135 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>08 = Burglar 24 Hour</td>
<td>133 BA</td>
<td>133 B R</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>09 = Burglar Box Tamper</td>
<td>137 TA</td>
<td>137 T R</td>
<td>573 TB</td>
<td>370 BT</td>
</tr>
<tr>
<td>10 = Fire Alarm</td>
<td>110 FA</td>
<td>110 F R</td>
<td>571 FB</td>
<td>373 FT</td>
</tr>
<tr>
<td>11 = Fire Verified</td>
<td>110 FA</td>
<td>110 F R</td>
<td>571 FB</td>
<td>373 FT</td>
</tr>
<tr>
<td>12 = Fire Supervisory</td>
<td>200 FS</td>
<td>200 F R</td>
<td>571 FB</td>
<td>373 FT</td>
</tr>
<tr>
<td>13 = Aux Function 1</td>
<td>150 UA</td>
<td>150 U R</td>
<td>572 UB</td>
<td>-----</td>
</tr>
<tr>
<td>14 = Aux Function 2</td>
<td>150 UA</td>
<td>150 U R</td>
<td>572 UB</td>
<td>-----</td>
</tr>
<tr>
<td>15 = Keyfob</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>16 = Non Alarm</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>17 = Carbon Monoxide</td>
<td>162 GA</td>
<td>162 GR</td>
<td>572 GB</td>
<td>-----</td>
</tr>
</tbody>
</table>

### Description of Option

Each of the 208 Zones has specific communicator reporting codes for Alarm, Restore, Bypass, and Trouble. Using the up/down arrow keys, select the appropriate zone, then press the right arrow key to begin programming of that zone.

The cursor starts at the 00 beside A (Alarm). Enter the desired two digit reporting code and press the right arrow key to advance to the R (Restore). To jump the cursor to another report without changing this one simply press the right arrow key. The next press of the right arrow key after Tbl (Trouble) will advance the screen back to the beginning of that zone. Range is 00 to FF. Default for all entries is 00 (no report).

NOTE: Each reporting code must be programmed according to the desired reporting format. However, for SIA and Contact ID formats the actual reporting digits will be produced by the control according to the type of alarm or event. The only programming required to enable reporting with the SIA and Contact ID formats is to set the programmed code to a non zero (0) value. See below:

### Based on the zone definition, the CID (Contact ID) or SIA formats for Zone Reporting Codes will be:

<table>
<thead>
<tr>
<th>Zone RCs</th>
<th>Alarms</th>
<th>Restore</th>
<th>Bypass</th>
<th>Trouble</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 = Burglar/Entry Exit</td>
<td>134 BA</td>
<td>134 B R</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>02 = Burglar/Entry Exit 2</td>
<td>134 BA</td>
<td>134 B R</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>03 = Burglar Perim Inst</td>
<td>131 BA</td>
<td>131 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>04 = Burglar Interior</td>
<td>132 BA</td>
<td>132 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>05 = Burglar Int Follower</td>
<td>132 BA</td>
<td>132 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>06 = Burglar Int Night</td>
<td>135 BA</td>
<td>135 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>07 = Burglar Int Nt Fllwr</td>
<td>135 BA</td>
<td>135 R B</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>08 = Burglar 24 Hour</td>
<td>133 BA</td>
<td>133 B R</td>
<td>573 BB</td>
<td>370 BT</td>
</tr>
<tr>
<td>09 = Burglar Box Tamper</td>
<td>137 TA</td>
<td>137 T R</td>
<td>573 TB</td>
<td>370 BT</td>
</tr>
<tr>
<td>10 = Fire Alarm</td>
<td>110 FA</td>
<td>110 F R</td>
<td>571 FB</td>
<td>373 FT</td>
</tr>
<tr>
<td>11 = Fire Verified</td>
<td>110 FA</td>
<td>110 F R</td>
<td>571 FB</td>
<td>373 FT</td>
</tr>
<tr>
<td>12 = Fire Supervisory</td>
<td>200 FS</td>
<td>200 F R</td>
<td>571 FB</td>
<td>373 FT</td>
</tr>
<tr>
<td>13 = Aux Function 1</td>
<td>150 UA</td>
<td>150 U R</td>
<td>572 UB</td>
<td>-----</td>
</tr>
<tr>
<td>14 = Aux Function 2</td>
<td>150 UA</td>
<td>150 U R</td>
<td>572 UB</td>
<td>-----</td>
</tr>
<tr>
<td>15 = Keyfob</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>16 = Non Alarm</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>17 = Carbon Monoxide</td>
<td>162 GA</td>
<td>162 GR</td>
<td>572 GB</td>
<td>-----</td>
</tr>
</tbody>
</table>

NOTE: On CID reporting the 3 digit code is preceded by a “1” for new events or a “3” for restore (previous reported) events.
Menu 11 - Keypad F-Key Reporting Codes

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

Referring back to Menu 04-Keypad Definitions, each F Key (F1 thru F6) can be programmed to activate a specific event. If the programmed "activate event" is an alarm such as: Burg, Fire, Medical, Police Panic, etc., then it is possible to have an alarm report code transmitted when an F Key is used to activate that event. Enter a two digit value for the 'A' alarm report code. To disable the alarm report code enter 00. If the reporting format is SIA or Contact ID, the value can simply be 01 because the control will automatically produces the correct code according to alarm type using the SIA or Contact ID protocol. For 4+2 pulse format, enter a value from 01 to FF. To enter the A thru F HEX characters press the RIGHT arrow key to position the cursor under the desired digit, then press the UP arrow (shift) key once. Each press of the 2 key will now produce the following: 2, A, B, C. Each press of the 3 key will now produce the following: 3, D, E, F.

Press the RIGHT arrow key to cancel shift and move to the next character.

Each Keypad has 6 programmable F keys. This menu displays the F keys starting at FK01 thru FK06 for Keypad 1, then FK07 thru FK13 for Keypad 2, etc. Use the UP and DOWN arrow keys to select the appropriate keypad and key, then press the RIGHT arrow key to programming the code. It may take some experimenting but it is possible to jump directly to a specific keypad and key by entering a two digit number.

To program the alarm report code press the RIGHT arrow key to move the cursor into the A= column, then enter a two digit value. Range is 00 to FF. Default is 00 (no report). To return back to the left column to select another key or keypad press the ELK key.

NOTE: Each reporting code must be programmed according to the desired reporting format. However, for SIA and Contact ID formats the actual reporting digits will be produced by the control according to the type of alarm or event. The only programming required to enable reporting with the SIA and Contact ID formats is to set the programmed code to a non zero (0) value. See below:

Based on the F Key Event definition, the CID (Contact ID) or SIA formats will be:

<table>
<thead>
<tr>
<th>Keypad Alarm RCs</th>
<th>Alarms</th>
<th>Keypad Alarm RCs</th>
<th>Alarms</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 = Disabled</td>
<td>CID SIA</td>
<td>18 = Emergency</td>
<td>101 QA</td>
</tr>
<tr>
<td>01 = Burglar Entry/Exit 1</td>
<td>134 BA</td>
<td>19 = Freeze Alarm</td>
<td>159 ZA</td>
</tr>
<tr>
<td>02 = Burglar Entry/Exit 2</td>
<td>134 BA</td>
<td>20 = Gas Alarm</td>
<td>151 GA</td>
</tr>
<tr>
<td>03 = Burglar Perim Inst</td>
<td>131 BA</td>
<td>21 = Heat Alarm</td>
<td>114 KA</td>
</tr>
<tr>
<td>04 = Burglar Interior</td>
<td>132 BA</td>
<td>22 = Medical Alarm</td>
<td>100 MA</td>
</tr>
<tr>
<td>05 = Burglar Int Follower</td>
<td>132 BA</td>
<td>23 = Police Alarm</td>
<td>120 PA</td>
</tr>
<tr>
<td>06 = Burglar Int Night</td>
<td>135 BA</td>
<td>24 = Police No Indication</td>
<td>120 PA</td>
</tr>
<tr>
<td>07 = Burglar Int Nt Delay</td>
<td>135 BA</td>
<td>25 = Water Alarm</td>
<td>154 WA</td>
</tr>
<tr>
<td>08 = Burglar 24 Hour</td>
<td>133 BA</td>
<td>26 = Key Mom Arm/Disarm</td>
<td>----</td>
</tr>
<tr>
<td>09 = Burglar Box Tamper</td>
<td>137 TA</td>
<td>27 = Key Mom Arm Away</td>
<td>----</td>
</tr>
<tr>
<td>10 = Fire Alarm</td>
<td>110 FA</td>
<td>28 = Key Mom Arm Stay</td>
<td>----</td>
</tr>
<tr>
<td>11 = Fire Verified</td>
<td>110 FA</td>
<td>29 = Key Mom Disarm</td>
<td>----</td>
</tr>
<tr>
<td>12 = Fire Supervisory</td>
<td>200 FS</td>
<td>30 = Key On/Off</td>
<td>----</td>
</tr>
<tr>
<td>13 = Aux1 24hr Alarm</td>
<td>150 UA</td>
<td>31 = Mute Audibles</td>
<td>----</td>
</tr>
<tr>
<td>14 = Aux2 24hr Alarm</td>
<td>150 UA</td>
<td>32 = Power Supervisory</td>
<td>338 YT</td>
</tr>
<tr>
<td>15 = Keyfob</td>
<td>---- ----</td>
<td>33 = Temperature</td>
<td>----</td>
</tr>
<tr>
<td>16 = Non-Alarm</td>
<td>---- ----</td>
<td>34 = Analog</td>
<td>----</td>
</tr>
<tr>
<td>17 = Carbon Monoxide</td>
<td>162 GA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: On CID reporting the 3 digit code will be preceded by a “1”.
Menu 12 - Sys Report Code Options & Codes

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

System Report Codes and Options are global to the entire system such as Low Battery, AC Fail, etc. Using the up/down arrow keys, select the appropriate option, then press the right arrow key to begin programming that option.

NOTE: Enter a two digit value to enable a report code, enter 00 to disable. With SIA or Contact ID format, the two digit value can be 01 as the control automatically inserts the correct code according to the SIA or Contact ID protocol. For 4+2 pulse format, enter 01 to FF. For A thru F HEX characters press the RIGHT arrow key to position the cursor under the desired digit, then press the UP arrow (shift) key once. Presses of the 2 key produces the following: 2, A, B, C. Presses of the 3 key produces the following: 3, D, E, F. Press the RIGHT arrow key to cancel shift and move to the next character. See Appendix for a summary of the SIA and Contact ID codes.

Sys Rpt Code Options

<table>
<thead>
<tr>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting of AC Fail may be delayed from 001 to 255 minutes. Default is 15 minutes. Setting this location to 255 results in no AC failure at the keypad or reporting by the dialer.</td>
</tr>
<tr>
<td>SR01: 015=AC Fail Rpt Delay - Min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>T (Trouble) code is code reported upon AC failure, after any AC Fail Rpt delay time. R (Restore) is code reported immediately upon restoral of the AC power. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR02: T=00 R=00 AC Fail Codes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Test code is used to verify that the telephone line and internal communications circuitry is functioning properly. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR03: 00 = Auto Test Code</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Test Hr:Min may be set to occur at any specific hour and minute, using military time format. IE: 7:30 is AM, 19:30 is 7:30pm. Default is 00:00 (Midnight)</td>
</tr>
<tr>
<td>SR04: =00:00 Auto Test Hr:Min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can be used to skip Auto Test for a number of days, (000 to 255). A value of 000 or 001 is one in the same, resulting in the test code being reported daily at the Auto Test time.</td>
</tr>
<tr>
<td>SR05: 000=Days Between AutoTest</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>T (Trouble) is code reported when auxiliary power overload is detected. R (Restore) is code reported when the overload ceases. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR06: T=00 R=00 Aux Overcurrent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>T (Trouble) is code reported when an enrolled data bus module fails to respond or is missing. R (Restore) is code reported when module is restored. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR07: T=00 R=00 Exp Module Tbl</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used to report when the Installer Level of Programming has been entered. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR08: 00=Instal Program Begin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used to reporting when Installer Programming has ended. Report not sent until the * key is pressed 3 time, signifying final program end. If the * key sequence is not pressed, the report will occur automatically at Midnight. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR09: 00=Instal Program End</td>
</tr>
</tbody>
</table>
**Menu 12 - Sys Report Code Options & Codes** (continued)

<table>
<thead>
<tr>
<th>Sys Rpt Code Options</th>
<th>Description of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR10: 00 = Log 80% Full</td>
<td>Log 80% Full reports whenever the Event Log becomes 80% full. Range is 00 to FF. Default is 00 (no report). The Elk-RP is required to download the log and/or clear it.</td>
</tr>
<tr>
<td>SR11: T=00 R=00 Low Battery</td>
<td>T (Trouble) is code reported if battery test drops below 11.2 Volts. R (Restore) is code reported once battery test passes at 11.5 Volts or higher. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR12: T=00 Memory Error</td>
<td>Code reported upon completion of a Up/Download session. This can be used as a verification that the control was accessed. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR13: 00 = Up/Download End</td>
<td>T (Trouble) is code reported upon detection of Voltage/Current loss on the telephone line. R (Restore) is code reported immediately upon restoral of the telephone line. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR14: T=00 R=00 Phone Line Fault</td>
<td>T (Trouble) is code reported upon an open circuit occuring on Output 2. R (Restore) is code reported upon restoral of the connection. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
<tr>
<td>SR15: T=00 R=00 Output 2 Trouble</td>
<td>T (Trouble) is code reported upon an open circuit occuring on Output 2. R (Restore) is code reported upon restoral of the connection. Range is 00 to FF. Default is 00 (no report).</td>
</tr>
</tbody>
</table>

**Based on the event, the CID (Contact ID) or SIA Codes for System Reporting Codes will be:**

<table>
<thead>
<tr>
<th>System RCs</th>
<th>CID</th>
<th>SIA</th>
<th>System RCs</th>
<th>CID</th>
<th>SIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Fail</td>
<td>301</td>
<td>AT</td>
<td>Log 80% Full</td>
<td>623</td>
<td>JL</td>
</tr>
<tr>
<td>AC Restore</td>
<td>301</td>
<td>AR</td>
<td>Low Backup Battery</td>
<td>302</td>
<td>YT</td>
</tr>
<tr>
<td>Automatic Test</td>
<td>602</td>
<td>RP</td>
<td>Low Battery Restore</td>
<td>302</td>
<td>YR</td>
</tr>
<tr>
<td>Aux Over Current</td>
<td>312</td>
<td>YP</td>
<td>Memory Error</td>
<td>304</td>
<td>YF</td>
</tr>
<tr>
<td>Aux Over Current Restore</td>
<td>312</td>
<td>YQ</td>
<td>Remote Programming End</td>
<td>412</td>
<td>RS</td>
</tr>
<tr>
<td>Expansion Module Trouble</td>
<td>333</td>
<td>ET</td>
<td>Telephone Line Fault</td>
<td>351</td>
<td>LT</td>
</tr>
<tr>
<td>Expansion Module Restore</td>
<td>333</td>
<td>ER</td>
<td>Telephone Line Restore</td>
<td>351</td>
<td>LR</td>
</tr>
<tr>
<td>Local Programming Begin</td>
<td>627</td>
<td>LB</td>
<td>Output 2 Trouble</td>
<td>322</td>
<td>YA</td>
</tr>
<tr>
<td>Local Programming End</td>
<td>628</td>
<td>LX</td>
<td>Output 2 Restore</td>
<td>322</td>
<td>YH</td>
</tr>
</tbody>
</table>

**NOTE:** On CID reporting the 3 digit code is preceded by a “1” for new events or a “3” for restore (previous reported) events.

**NOTE:** UL requires that a Technician be On-Site when doing Remote Programming.
Menu 13 - User Report Codes

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the * or Exit key.

NOTE: Enter a two digit value to enable a report code. To disable a report code enter 00. When SIA or Contact ID is the reporting format, the two digit value can simply be 01 since the control automatically produces the correct code according to the SIA or Contact ID protocol. For 4+2 pulse format, enter a value from 01 to FF. To enter the A thru F HEX characters press the RIGHT arrow key to position the cursor under the desired digit, then press the UP arrow (shift) key once. Each press of the 2 key will now produce the following: 2, A, B, C. Each press of the 3 key will now produce the following: 3, D, E, F. Press the RIGHT arrow key to cancel shift and move to the next character. See Appendix for a summary of the SIA and Contact ID codes.

User Report Codes

Description of Option

Each of the 99 User Codes and the Installer has communicator reporting codes for Open (disarm) and Close (arm). Using the up/down arrow keys, select the appropriate user, then press the right arrow key to begin programming of that user’s report codes.

The cursor starts at the 00 beside O (Open). Enter the desired two digit reporting code and press the right arrow key to advance to the C (Close). Range is 00 to FF. Default is 00 (no report). To jump the cursor to the next report code without changing this one simply press the right arrow key. The next press of the right arrow key will advance back to the beginning screen.

The total number of available User Codes is dependent on the Version of Firmware that is operating in the control.

The CID (Contact ID) or SIA Codes for User Reporting Codes are:

<table>
<thead>
<tr>
<th>User RCs</th>
<th>CID</th>
<th>SIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>401</td>
<td>OP</td>
</tr>
<tr>
<td>Close</td>
<td>401</td>
<td>CL</td>
</tr>
</tbody>
</table>

NOTE: On CID reporting the 3 digit code is preceded by a “1” for an opening event or a “3” for a closing event.
Menu 14 - Wireless Definitions

Press RIGHT arrow key to select this menu. Press UP or DOWN arrow keys to select another menu. The ELK key backs up one menu level. To exit press the " or Exit key.

Elk manufacturers add-on “M1XRF” Wireless Receivers that can be used to add multiple wireless zones (up to 144) to the M1. Please refer to the particular instructions that are packed with the Elk Receivers.

M1 is also compatible with the GE “Caddx” brand receiver model NX548E (48 zones) using the GE transmitters. Instructions below detail how to use and program with the GE receiver, including notes for the discontinued GE models NX408E (8 zn), NX416E (16 zn), and NX448E (48 zn) receivers. Only 1 Receiver may be connected to the control. A special 5 pin wiring harness (ELK-W035A) is required and it plugs into connector J3 “Aux Data Bus” located on the upper right side of the board.

![Wireless Definitions Diagram]

Compatibility NX"E" receivers can be identified by serial # that begin with 231, 232, or 233. Older "non-compatible" receivers begin with 99, 100, & 101.

**Wireless Definitions**

<table>
<thead>
<tr>
<th>Menu</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:Rec Sel† Prg</td>
<td>Receiver Options</td>
</tr>
<tr>
<td>RO1:=0 Rec Size+</td>
<td>Selects the size of the connected Receiver to reserve the appropriate number of zones. For a NX408E (8 zones) enter a 0, NX416E (16 zones) enter a 1, NX448E 48 or NX548E (48 zones) enter a 2.</td>
</tr>
<tr>
<td>RO2:=00 ZnBank †</td>
<td>Starting Zone xxx Using the receiver size setting and this starting number, the M1 blocks out the required number of zones. If a hardwired zone expander is encountered, resulting in a duplicate zone, the M1 will error tone and return to a 00 setting. To resolve the conflict: move the starting zone to another setting, move the conflicting zone expander to another address, or reduce the receiver size setting. Valid starting zones must be increments of 16:</td>
</tr>
<tr>
<td>02=(Zone 17) 04=(Zone 33) 06=(Zone 49) 08=(Zone 65) 10=(Zone 81) 12=(Zone 97) 14=(Zone 113) 16=(Zone 129) 18=(Zone 145) 20=(Zone 161) 22=(Zone 177) Example: Entering a value of 2 for receiver size and 02 for starting zone would block out 48 zones from 17 thru 64 as wireless. NOTE: If an 8 zone receiver is installed, the upper 8 zones are not available (wasted) as far as the control is concerned. The NX416E and NX448E are therefore better economic choices.</td>
<td></td>
</tr>
<tr>
<td>RO3:=24 Hours †</td>
<td>Reg. Supervision R03: Reg. Supervision sets the interval, in hours, for “check-in” by transmitters which are programmed for “Supervision Type 1”, see transmitter option 01. Valid range is 001 to 255 hours, however a value lower than 4 is not recommended. Default value is 24.</td>
</tr>
<tr>
<td>RO4:=004 Hours †</td>
<td>Fire Supervision R04: Fire Supervision sets the interval, in hours, for “check-in” by transmitters which are programmed for “Supervision Type 2” (Fire), see transmitter option 02. Valid range is 001 to 255 hours, however a value lower than 4 is not recommended. Default value is 004.</td>
</tr>
</tbody>
</table>

† Not evaluated by UL
Press the RIGHT arrow key to select 2:Xmit Transmitter Opt.

Use the UP and DOWN arrow keys to locate a particular wireless transmitter. Press the RIGHT arrow key to select and program the displayed transmitter.

This selection determines whether or not the transmitter is enabled. Whenever you enroll a new transmitter this location will be automatically set to Yes. To permanently or temporarily disable this transmitter program this to No.

This selection determines the “Supervision Type” for the transmitter. 0=No Supervision, 1=Regular Supervision, 3=Fire Supervision. See receiver selections R02 and R03 for supervision time values. Default is 1.

This selection corresponds to the Caddx Transmitter Option 1 which deals with enabling or disabling the internal reed switch on the individual Caddx transmitter so that an external switch may be hardwired to the transmitter. Refer to the Caddx NX Series Receiver Instructions, Option 1, for complete details.

This selection corresponds to the Caddx Transmitter Option 2 which deals with whether an external switch should be normally open (N/O) or normally closed (N/C). For N/O set option to No. For N/C set option to Yes. Refer to the Caddx NX Series Receiver Instructions, Option 2, for complete details.

If the transmitter is a keyfob, this sets the User ID to be logged when the keyfob is used to arm or disarm. Valid range is 001 to 255. Numbers 001 to 099 mirror the keypad user codes. To report an open/close from a keyfob, program the corresponding keypad user code to report. A report will be sent regardless of whether it was a user code or a keyfob that armed/disarmed the system. NOTE: Since there are no open/close report codes beyond user 99, any keyfob ID that is set higher that 99 will utilize the opening/closing report code for User 99.

Press the RIGHT arrow key to select 3:Learn Wireless Transmitters.

Press the UP or DOWN arrow keys to locate the wireless zone that you wish to enroll. Then press the RIGHT arrow key to continue.

Go to the transmitter and press the tamper or enroll button. The keypad should emit a short tone when the transmitter becomes enrolled.

Press the RIGHT arrow key to select 4:Keyfob Event Definition

Press the UP or DOWN arrow keys to locate the keyfob button to program. There are a total of 8 programmable buttons, however only 6 of the 8 may be used on the keyfob. The valid activation events programmable for each button ranges from 0000-0030 (utilizing the Zone Definitions table) and 2001-2032 (utilizing Appendix A, Event Codes).

The standard buttons are as follows: Button 1 (Lock), 2 (Unlock), 3 (Light), and 4 (Asterisk). For Button 7 press a combination of buttons 1 & 2 together at the same time. For Button 8 press a combination of buttons 3 & 4 together at the same time.

Button 3 on a keyfob can be changed to 5 by setting the transmitter Option 1 to Yes. Button 4 on a keyfob can be changed to 6 by setting the transmitter Option 2 to Yes.
Section 4 - PC Programming and Automation Capabilities

4.1 ELK-RP Software

ELK-RP (RP) is a Windows based software package that is compatible with Windows 98 and later. It features an extremely intuitive user interface and contains all data in a central database. RP can be run on a single PC or over a local area network (LAN) with multiple operators. In addition to the traditional security programming features, RP allows you to create and manage the automation functionality in the control. The following information is a brief overview including illustrations of the various screens. Please refer to RP’s on-line help file for specific operation details.

4.1.1 RP Connection Methods

There are 3 methods for the RP software to connect with the control. Regardless of the method, the control’s serial number and RP access code MUST match in order for the connection to be successful. The connection methods are:

1. Direct using Com_ (PC Com port) - Requires a 9 pin serial cable from the PC’s RS-232 Com port to the M1’s on-board 9 pin serial port. Data transfer is 115,200 baud. NOTE: If your computer only has a USB port, an approved converter (USB to RS-232) is available from ELK (ELK-USB232).

2. Dial-up using Modem and phone line - RP is compatible with virtually all computer modems, even 56k modems. This is due to the M1’s built-in V.22 bis “True” modem, which handles data transfer at 2,400 baud. The 6 dial-up options are:
   - **Fully Automatic** - RP dials the control phone number and listens for the control to answer on it’s “rings until answer” setting. If an answering machine answers, RP will transmit codes to override it automatically.
   - **Prompt when answer** - RP dials and listens for the control to answer. It waits for a manual OK before connecting.
   - **Dial, hang up, dial again** - This is faster than waiting on the control’s “rings until answer” setting. It is also useful for reaching premises that have telephone company answer/forward services. The control must be enabled for this option. After dialing, RP leaves the PC speaker on, and prompts you to click “Hang-up” after you hear two rings. It then forces a time delay before allowing you to click OK to start the second dial. As long as the control properly detects the first two rings and subsequent hang-up, it will wait up to 45 seconds for a second call and answer that call on the first ring.
   - **Customer will force answer** - Similar to method 1 except the User must enter keypad menu 8, option 5, item 1 to force the control to answer. This is necessary if the “rings until answer” or “dial/hang-up/dial” options are not programmed.
   - **Telephone connection already established** - If a voice connection is already established using the control’s phone line and the PC’s phone line, this method can be used to take over the connection and initiate an immediate connection.
   - **Local connection via house telephone line** - Convenient way to connect locally from virtually any house phone jack that is on the same phone line as the one attached to the control. Connect the PC modem to the phone wall jack, click on Local Connection, and RP will pick up the line and enter the access codes required to connect with the control.

3. Network - With an optional ELK-M1XEP Ethernet Port module you can connect over a Local or Wide Area Network. (Contact ELK for details)

NOTE: UL requires that a Technician be On-Site when doing Remote Programming.
4.1.2 Check for Conflicts

During the connect and disconnect process RP performs an automatic check of the data stored in the control and compares it to the database. If there are any conflicts (differences), a pop-up resolution window displays them, and allows corrections to be made. ELK regards “Check for Conflicts” to be an especially important feature. It can point out any changes that have occurred such as a user having added or changed a code. The resolution window allows you to receive the control’s data into the database (accept the local version) or send the RP data to the control (accept the database version). **NOTE:** Checking for conflicts adds considerable time to the connect/disconnect process, especially on dial-up connections. For this reason, the automatic check for conflicts may be disabled from the SETUP menu. A manual Check for Conflicts can be selected from the Send/Rcv icon.

4.1.3 Sending and Receiving Data

RP allows many options and groups of options to be sent or received individually, which greatly reduces the on-line connect time if there are only a few items to be changed. However, a full send or receive occurs very quickly, thanks to the M1’s built-in V.22 bis “True” Modem. RP features easy to use menus & toolbar icons and makes extensive use of the right mouse button to perform operations. Try right clicking on any item or icon to see the available options.

4.2 Update/Verify Firmware in the Control and Peripherals

The control stores its operating firmware in “Flash” memory. This state-of-the-art memory allows electronic field updates to the control and its peripherals, and eliminates the old fashion method of changing IC chips or shipping boards back to the factory. As new firmware updates become available, they will be posted on ELK’s website [www.elkproducts.com] in a password restricted “M1 Dealers ONLY” location. **NOTE:** Firmware updating can only be done from a Direct to PC Com port connection or an optional Ethernet Network connection. Due to the amount of data that has to be transferred, Dial-up connections cannot be used to perform firmware updates.

**How to Update Firmware:**
1. Connect a 9 pin serial cable from the Computer’s Serial Port to the 9 Pin RS232 Connector on the control.
2. Start RP and open the account belonging to that particular control. Click on the Connection menu icon and establish a connection using the Direct using Com option.
3. Click on Update/Verify Firmware from the Send/Rcv menu icon.
4. On the Update/Verify screen, select the device to be updated (Control, Keypad, etc.) along with the “Update to new firmware” option. Then click Continue.
5. The Update Firmware screen displays the device name, the current Firmware, Hardware, and Bootware version, and a pull down window for selecting the firmware version to use on the update. Always select the latest firmware version (highest number). Be sure to save all update (.bin) files that are downloaded or received via CDROM into the ~Program Files\ElkRP\Updates directory on your computer. This is where RP looks for all update files.
6. Click on the check box for “Update”. If “Reprogram” or “Rollback” is displayed the firmware file is the same as or older than what is in the control. Reprogramming with the same firmware is a waste of time but was included for factory testing purposes. Rollback is not recommended except under the guidance of Elk Technical Support.

**NOTE:** The option for “Verify existing firmware” on the Update/Verify screen is normally not required except for factory diagnostics. If the control has multiple keypads, expanders, etc., RP will display the details about each one onscreen with a check box for selecting units for updating.
4.3 Automation Rules and Attributes

The RP Automation Programming software offers powerful, easy to setup and manage, life style enhancement features. The automation programming allows mixing and matching of lighting components, outputs (relays or voltage), thermostats, temperature sensors, and all the security inputs and features to integrate functions that add value and appeal to the owner/user. Lights can be set to turn on and off in response to a time or day, a certain sensor, or according to the arm/disarm status of the security control. Outputs can be set to control door strikes, irrigation sprinklers, circulating pumps valves, etc.

The power behind the automation features is the unique RULES Engine. Rules are expressions of what you would like to happen at a given time or in response to a set of circumstances. The following information is intended to provide an overview of the vast automation features in the control.

† TASKS - A Task is similar to a computer macro, in that a single activation can result in multiple actions or events. The actions and triggering of a Task must be written or developed in a Whenever/And/Then Rule. The purpose of the task screen is to assign each task its own 16 character description, 6 word voice phrase, and the ability to “Show” on the keypad or the telephone remote control menu. Up to 32 Tasks can be programmed. Examples are “Water the Lawn” which could be used to turn on a series of outputs or relays to control underground water valves for a certain time duration. “Welcome Home” could be used to control a series of lights at a given time or day or in response to someone disarming the security system. The following shows several tasks and the voice description word listing.
LIGHTING - The control can handle up to 256 Light (or appliance) devices. Each is assigned to one of 256 addresses. Each device is displayed in a column format with the following options and settings: **Name** - Each device can be given a 16 character name (description) which is displayed on the keypad when the light is being controlled. **Format** - This pull down box selects the protocol of the device. The available Lighting formats are: Standard, Extended, Preset dim, Compose, Serial Port. The Serial port format is for UPB, ALC, Centralite, others through an ELK-M1XSP Lighting/Thermostat/Serial Expander Interface. **Type** - This pull down box selects the whether the device is a: On/Off Switch, Dimmer, or Appliance. **Show** - If this box is checked the device will appear “show” on the keypad and telephone remote as you scroll through the automation control menus. **2-way** - This checkbox is used to record whether the device is capable of replying back to commands. **Voice Description** - Click on this box to pop up a window for programming a custom 6 word voice phrase. The voice is used primarily during a telephone remote session. **NOTE:** Additional lighting formats are in development, including the new Z-Wave wireless devices. Even if a lighting product is not directly supported, it is always possible to use RS-232 ASCII strings for communicating lighting control.

### OUTPUTS -

These can be in the form of voltage only, relays, or a combination of the two. Up to 208 outputs may be controlled. The first 32 outputs have a 16 character description, 6 word voice phrase, and the “Show” on keypad or telephone remote option. However, any output may be controlled from the keypad or telephone remote by entering its number. Outputs can be used to actuate door locks, motors, fan, pumps, etc.

### SUNRISE/SUNSET -

Sunrise and sunset can be used to control lighting and other entities. This section is the setup for the built-in Astronomical clock, which is capable of calculating sunrise and sunset times automatically. The inputs necessary to setup the control for sunrise/sunset are latitude, longitude, and the time zone value where the control is installed. Latitude/longitude information can often be found printed on city or state highway maps, or it can be researched on the internet. After entering the required information, click calculate and then send to the control.

**NOTE:** The Time Zone automatically assumes “standard time”. Therefore, the calculated times will reflect standard time. If the control is set for “Observe Daylight Savings Time” the sunrise/sunset times will be adjusted by the control accordingly.
† **VOICE** - This section is used to setup and customize many of the 6 word phrases that can be spoken by the control during a certain event or when commanded by an automation rule. The capabilities of this section are quite powerful. The library contains over 500+ words in addition to specialized speech commands for inserting conditions, current time, status/state, time delays, and even an 800hz tone. In addition, any of the 10 custom recordable messages can be included when building these 6 word phrases.

**CUSTOM SETTINGS** - These are 20 memory locations which may be assigned a 12 character description, a function type (one of 3), and a starting value. An authorized user can then access the custom settings from keypad user menu 7 - Automation Custom Settings, and modify the value whether it be a numeric value, a timer (seconds), or a time-of-day. Incorporating custom settings in rules provides the user the ability to modify how the rule will operate. For instance, the user can modify the time or duration for the lawn sprinklers which have been programmed to turn on automatically. The function types include: A 5 digit raw number with a range of 00000 to 65,535, a 5 digit timer (seconds) with a range of 00000 to 65,535 seconds, or a Time (time of day) which is formatted as 00:00 with a range of 00:00 to 23:59.

**COUNTERS** - These memory locations (often called flags) can be set, incremented, decremented, or compared by an automation rule to track an event or keep up with how many times an event has occurred. There are a total of 64 counters. Each can be programmed with a 12 character description, making it easy to reference in an automation rule.

† Not evaluated by UL
**THERMOSTATS** - HVAC Thermostats may be read and/or controlled by the control and its automation rules engine. This menu allows each thermostat to be assigned a 12 character description for easy reference in an automation rule. Currently compatible thermostats include: RCS, Aprilaire, and HAI. Due to the various data protocols, a Lighting/Thermostat/Serial Interface Expander (ELK-M1XSP) is needed to couple the data bus to HVAC thermostats. Depending on the brand of thermostat, its wiring interface (RS-232 or RS-485), up to 16 HVAC thermostats can be controlled. Many communicating thermostats operate stand-alone when they are not being remotely commanded by an automation controller.

<table>
<thead>
<tr>
<th>Text</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main Floor</td>
</tr>
<tr>
<td>2</td>
<td>Library</td>
</tr>
<tr>
<td>3</td>
<td>Basement</td>
</tr>
<tr>
<td>4</td>
<td>Game Room</td>
</tr>
</tbody>
</table>

**TEXTS** - This section allows custom text messages to be constructed and formatted. These messages can be transmitted to an LCD keypad or out one of the RS232 serial ports to a PC or some other type of equipment. I.E. Touchscreen, Lighting centers, etc. A message to the keypad could be “Happy Birthday” or “Please Pay Your Bill”, while a message going out a serial port might be a series of ASCII characters formatted to a certain manufacturers protocol. Special options built into this menu include: automatic display of temperature readings from Zone Temperature Sensors (ELK-M1ZTS) and from the temperature sensor built into an LCD Keypad. The sending or receiving of text messages is controlled by the automation rules engine. **NOTE:** Text messages share the same memory space as rules. The total number of text messages and rules is limited by the M1 model that you are installing.

† Not evaluated by UL
RULES - This section essentially brings all the power of the control’s automation and its features together. Rules consist of three major elements: A WHENEVER (“triggering”) condition, one or more ANDs (“qualifiers”), and one or more THENs (“activations”). Rules utilize the various elements of the previously described sections in addition to the many control conditions (arm, disarm, alarms, etc.), plus many of the event codes listed in Appendix A. For example: A rule might be triggered by a Task to activate a specific light and output, but only if the control is armed in a specific mode.

WHENEVER - The first element of a rule and the starting point of every rule is a triggering event. Every rule must have a triggering event in order to be started. A triggering event can be a time of day occurrence, a zone opening or closing, the security system going from armed to disarmed, a light changing from on to off, or literally hundreds of other events. Below are some examples of WHENEVER elements:

Example 1 = WHENEVER THE TIME IS 08:00AM
Example 2 = WHENEVER Living Rm Light [6 (A6)] IS TURNED ON

An important point to remember is that a WHENEVER gets triggered by the transition of its event from one state to another. In example 1, the trigger occurs when the time of day goes from 07:59AM to 08:00AM. In example 2, the trigger occurs when the living room light goes from off to on. Some WHENEVER elements may even include the word “BECOMES”, which clearly implies that the event has to change from its current condition and “become” the alternate condition. Just remember, a rule can only be triggered by the transition of an event from one condition to another.
**AND** - The second and optional element of a rule is a qualifier. Rules can have one or more qualifiers OR none at all. Even though qualifiers are not required, they are ideal for filtering out actions that should not occur under certain circumstances. A qualifier can be a time, day(s), the state of light or dark, the state of a zone, output, or light, and hundreds of other variables. The state of light or dark can be determined by the Sunrise/Sunset settings from the M1’s Astronomical Clock. Below are some examples of AND (qualifiers):

Example 3 = AND Front Door (Zn 1) IS NOT SECURE  
Example 4 = AND THE DAY(S) OF THE WEEK IS/ARE -M-W-F-  
Example 5 = AND IT IS DARK OUTSIDE  
Example 6 = AND John’s House (Area 1) IS ARMED AWAY

**THEN** - The third and final element of a rule is the action that you wish to occur as a result of the Rule being triggered and all the qualifiers being true. Below are some examples of THEN actions:

Example 7 = THEN TURN Air Cond (Out 9) OFF  
Example 8 = THEN TURN Living Rm Light [6 A6] OFF  
Example 9 = THEN SET Main Floor (Tstat 1) OFF  
Example 10 = THEN TURN All Lights On

Here is an example of a rule used to turn off the air condition anytime the front door is left open by the kids. It consists of a 30 second timer for the WHENEVER trigger an AND to test the door’s open/closed state, and a THEN to turn off the output that controls the air condition.

WHenever Every 30 Seconds  
AND Front Door (Zn 1) IS NOT SECURE  
THEN TURN Air Cond (Out 9) OFF
Examples of Rules - Shown below are a series of rules that should help illustrate the power and results that rules can provide. Look closely at the ones that have multiple ANDs and THENs. Rules with Multiple ANDs and THENs work as follows: When the WHENEVER element is triggered, each one of the AND elements is evaluated to determine if the condition its testing is true. If any one of the ANDs are not true, the rule engine stops executing the rule immediately. However, if all ANDs are true then the rule engine moves on to the THEN elements, executing each one of them.

Rule 1 is an energy saving example. It automatically turns off the Porch lights at 8:00AM everyday if it is light outside.

Rule 2 is a courtesy light example. It will turn on the Porch light for 5 minutes when the Front door opens (exiting the building) provided it is dark outside and the control has been armed to the away mode.

Rule 3 is a comfort example. It periodically (every 20 seconds) checks the temperature reading of the Outdoor Temp sensor and turns on the Porch Fan if the temperature becomes greater than 90 degrees. NOTE: An additional AND element could be added to prevent the fan from operating on certain days or at certain times.

Rule 4 is another energy savings example. It adjusts the cooling setpoint of the Main Floor Thermostat to 85 degrees whenever the control is armed to the away mode.

Rule 5 is especially great for a homeowner arriving home after dark. If they are equipped with an RF (wireless) Keyfob and they press button #3, the rule will turn on the outside Flood lights and Porch lights for 5 minutes, provided it is dark outside and the Flood lights are not already on. If the Floodlights were already on the rule would stop. This prevents the lights from going off after 5 minutes if you intentionally had already turned them on manually.

Rule 6 shows how an ASCII string coming in from the serial port (port 0) could be used to unlock a door strike for 10 seconds and announce “Access Allowed”. This string could come from Access Control system.

In this last example, three rules are used to chirp the outside siren based on the input of a RF Keyfob to arm the control.

Rule 8 makes the siren chirp once if the control successfully arms when the user presses button 1.

Rule 9 makes the siren chirp twice if the control disarms when the user presses button 2.

Rule 10 makes the siren chirp four times (error tone) if the control fails to arm when the user presses button 1.
## Appendix A - Event Codes

Event Codes are four digit numbers used to represent alarms, troubles, arm/disarms, restores, and various other conditions that occur within the control. For the most part, they are used only internally by the control’s software. For example: turning on the alarm output. However, there are cases where the installer may need these codes. Case #1 - Keypad F key programming. Each of the Keypad F keys may be programmed to activate a particular condition such as Emergency Panic Alarm. See Menu 01 - Keypad Definitions for the zone definition codes. The F1 key may also be programmed to light up or "illuminate" when a condition is active. The F1 key can illuminate when the Emergency Panic Alarm is active by programming the four digit event code 1009 = Emergency Alarm. Case #2 - Event History log. Each of the 512 entries in the event history log is represented by one of these 4 digit codes, along with the time, date, area, and/or user code. It may be necessary or helpful to have these codes handy to fully interpret the log.

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000 = Event</td>
<td>N</td>
</tr>
<tr>
<td>0034 = Analog 24 hour</td>
<td>TMC</td>
</tr>
</tbody>
</table>

### Event Codes Table

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>1009 = Low Battery Restore B</td>
<td>TMC</td>
<td></td>
</tr>
<tr>
<td>1093 = Heat Alarm in Area 7 TMC</td>
<td>TMC</td>
<td></td>
</tr>
<tr>
<td>1108 = Any Alarm in Area 6 TMC</td>
<td>TMC</td>
<td></td>
</tr>
<tr>
<td>1167 = Alarm Memory in Area 3 TMC</td>
<td>TMC</td>
<td></td>
</tr>
<tr>
<td>1169 = Alarm Memory in Area 5 TMC</td>
<td>TMC</td>
<td></td>
</tr>
<tr>
<td>1175 = Area 1 Arm State N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1180 = Area 6 Arm State N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1181 = Area 7 Arm State N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1182 = Area 8 Arm State N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1191 = Area 1 is Armed Away N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1193 = Area 3 is Armed Away N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1194 = Area 4 is Armed Away N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1195 = Area 5 is Armed Away N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1196 = Area 6 is Armed Away N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1197 = Area 7 is Armed Away N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1199 = Area 1 is Armed Stay Instant N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1200 = Area 2 is Armed Stay Instant N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1201 = Area 3 is Armed Stay Instant N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1202 = Area 4 is Armed Stay Instant N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1203 = Area 5 is Armed Stay Instant N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1204 = Area 6 is Armed Stay Instant N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1205 = Area 7 is Armed Stay Instant N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1206 = Area 8 is Armed Stay Instant N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1207 = Area 1 is Armed Night N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1208 = Area 2 is Armed Night N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1209 = Area 3 is Armed Night N</td>
<td>N</td>
<td></td>
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<tr>
<td>1210 = Area 4 is Armed Night N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1211 = Area 5 is Armed Night N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1212 = Area 6 is Armed Night N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1213 = Area 7 is Armed Night N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1214 = Area 8 is Armed Night N</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

### M1G Installation and Programming

- M1G Installation and Programming
  - 1222 = Area 8 is Armed Night Instant N
  - 1221 = Area 7 is Armed Night Instant N
  - 1220 = Area 6 is Armed Night Instant N
  - 1219 = Area 5 is Armed Night Instant N
  - 1218 = Area 4 is Armed Night Instant N
  - 1217 = Area 3 is Armed Night Instant N
  - 1216 = Area 2 is Armed Night Instant N
  - 1215 = Area 1 is Armed Night Instant N

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Reset</th>
<th>Event</th>
<th>Description</th>
<th>Reset</th>
<th>Event</th>
<th>Description</th>
<th>Reset</th>
<th>Event</th>
<th>Description</th>
<th>Reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>1223</td>
<td>Area 1 is Armed Vacation</td>
<td>N</td>
<td>1223</td>
<td>N</td>
<td>1223</td>
<td>N</td>
<td>1223</td>
<td>N</td>
<td>1223</td>
<td>N</td>
<td>1223</td>
</tr>
<tr>
<td>1224</td>
<td>Area 2 is Armed Vacation</td>
<td>N</td>
<td>1225</td>
<td>Area 3 is Armed Vacation</td>
<td>N</td>
<td>1226</td>
<td>Area 4 is Armed Vacation</td>
<td>N</td>
<td>1227</td>
<td>Area 5 is Armed Vacation</td>
<td>N</td>
</tr>
<tr>
<td>1229</td>
<td>Area 7 is Armed Vacation</td>
<td>N</td>
<td>1230</td>
<td>Area 8 is Armed Vacation</td>
<td>N</td>
<td>1231</td>
<td>Area 1 is Force Armed</td>
<td>N</td>
<td>1232</td>
<td>Area 2 is Force Armed</td>
<td>N</td>
</tr>
<tr>
<td>1234</td>
<td>Area 4 is Force Armed</td>
<td>N</td>
<td>1235</td>
<td>Area 5 is Force Armed</td>
<td>N</td>
<td>1236</td>
<td>Area 6 is Force Armed</td>
<td>N</td>
<td>1237</td>
<td>Area 7 is Force Armed</td>
<td>N</td>
</tr>
<tr>
<td>1239</td>
<td>Zone Bypassed</td>
<td>N</td>
<td>1240</td>
<td>All Zones Unbypassed</td>
<td>B</td>
<td>1241</td>
<td>Burglar Zone Fault</td>
<td>N</td>
<td>1242</td>
<td>Burglar Status</td>
<td>N</td>
</tr>
<tr>
<td>1243</td>
<td>Area 1 Burglar Status</td>
<td>N</td>
<td>1244</td>
<td>Area 2 Burglar Status</td>
<td>N</td>
<td>1245</td>
<td>Area 3 Burglar Status</td>
<td>N</td>
<td>1246</td>
<td>Area 4 Burglar Status</td>
<td>N</td>
</tr>
<tr>
<td>1248</td>
<td>Area 6 Burglar Status</td>
<td>N</td>
<td>1249</td>
<td>Area 7 Burglar Status</td>
<td>N</td>
<td>1250</td>
<td>Area 8 Burglar Status</td>
<td>N</td>
<td>1251</td>
<td>Area 1 Chime Mode</td>
<td>N</td>
</tr>
<tr>
<td>1253</td>
<td>Area 3 Chime Mode</td>
<td>N</td>
<td>1254</td>
<td>Area 4 Chime Mode</td>
<td>N</td>
<td>1255</td>
<td>Area 5 Chime Mode</td>
<td>N</td>
<td>1256</td>
<td>Area 6 Chime Mode</td>
<td>N</td>
</tr>
<tr>
<td>1258</td>
<td>Area 8 Chime Mode</td>
<td>N</td>
<td>1259</td>
<td>Area 1 Chime Alert</td>
<td>B</td>
<td>1260</td>
<td>Area 2 Chime Alert</td>
<td>B</td>
<td>1261</td>
<td>Area 3 Chime Alert</td>
<td>B</td>
</tr>
<tr>
<td>1263</td>
<td>Area 5 Chime Alert</td>
<td>B</td>
<td>1264</td>
<td>Area 6 Chime Alert</td>
<td>B</td>
<td>1265</td>
<td>Area 7 Chime Alert</td>
<td>B</td>
<td>1266</td>
<td>Area 8 Chime Alert</td>
<td>B</td>
</tr>
<tr>
<td>1268</td>
<td>Area 1 Entry Delay</td>
<td>N</td>
<td>1269</td>
<td>Area 2 Entry Delay</td>
<td>N</td>
<td>1270</td>
<td>Area 3 Entry Delay</td>
<td>N</td>
<td>1271</td>
<td>Area 4 Entry Delay</td>
<td>N</td>
</tr>
<tr>
<td>1273</td>
<td>Area 6 Entry Delay</td>
<td>N</td>
<td>1274</td>
<td>Area 7 Entry Delay</td>
<td>N</td>
<td>1275</td>
<td>Area 8 Entry Delay</td>
<td>N</td>
<td>1276</td>
<td>Exit Delay Active</td>
<td>N</td>
</tr>
<tr>
<td>1278</td>
<td>Area 2 Exit Delay</td>
<td>N</td>
<td>1279</td>
<td>Area 3 Exit Delay</td>
<td>N</td>
<td>1280</td>
<td>Area 4 Exit Delay</td>
<td>N</td>
<td>1281</td>
<td>Area 5 Exit Delay</td>
<td>N</td>
</tr>
<tr>
<td>1283</td>
<td>Area 7 Exit Delay</td>
<td>N</td>
<td>1284</td>
<td>Area 8 Exit Delay</td>
<td>N</td>
<td>1285</td>
<td>Area 1 Exit Delay Expires</td>
<td>N</td>
<td>1286</td>
<td>Area 2 Exit Delay Expires</td>
<td>N</td>
</tr>
<tr>
<td>1288</td>
<td>Area 4 Exit Delay Expires</td>
<td>N</td>
<td>1289</td>
<td>Area 5 Exit Delay Expires</td>
<td>N</td>
<td>1290</td>
<td>Area 6 Exit Delay Expires</td>
<td>N</td>
<td>1291</td>
<td>Area 7 Exit Delay Expires</td>
<td>N</td>
</tr>
</tbody>
</table>

### Appendix A - Event Codes (cont.)

<table>
<thead>
<tr>
<th>Event Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1233 to 1299</td>
<td>Area 1 Exit Delay Error</td>
</tr>
<tr>
<td>1300 to 1399</td>
<td>Area 2 Exit Delay Error</td>
</tr>
<tr>
<td>1400 to 1499</td>
<td>Area 3 Exit Delay Error</td>
</tr>
<tr>
<td>1500 to 1599</td>
<td>Area 4 Exit Delay Error</td>
</tr>
<tr>
<td>1600 to 1699</td>
<td>Area 5 Exit Delay Error</td>
</tr>
<tr>
<td>1700 to 1799</td>
<td>Area 6 Exit Delay Error</td>
</tr>
<tr>
<td>1800 to 1899</td>
<td>Area 7 Exit Delay Error</td>
</tr>
<tr>
<td>1900 to 1999</td>
<td>Area 8 Exit Delay Error</td>
</tr>
</tbody>
</table>

### "Reset" Attribute

The letter(s) displayed in the Reset column indicate what condition(s) it takes to clear an event once it has been activated. For example: the letters TMC indicate the event will reset when the output timer ends, or when manually turned off, or when a valid user code is entered, whichever comes first. The reset attributes are shown only for informational purposes. They are set by the factory and cannot be altered.

**NOTE:**

The reset attributes are shown only for informational purposes. They are set by the factory and cannot be altered.
Appendix B - Telephone Remote Control

There are two methods of entry:

Operation from an Inside Telephone:
1. Lift the telephone and listen for dial tone.
2. Press * * * to alert the control. (To hear over the inside speakers press * 0 * instead.)
   The control will pick, disconnect the phone line and dial tone, and announce: “Please enter security code”.
3. Enter a valid user code. If code is correct the control should announce: “Access Authorized”.
4. Enter a menu selection OR press 0 to hear the entire menu.

Operating from an Outside Telephone:
1. Dial-in to the phone number attached to the control.
   After a programmed number of rings the control should answer with four short beeps. If an answering machine
   picks up, wait for the message to quit and proceed as follows:
2. Press * * * to alert the control. The control will announce: “Please enter security code”.
3. Enter a valid user code. If code is correct the control should pickup announce: “Access Authorized”.
4. Enter a menu selection OR press 0 to hear the entire menu.

**Menu Selections:** Main menu options are underlined.

**For Help - press 0.** A voice message will explain the function of each key.

**For Arm Status - press 1.** A voice message will identify whether the system is currently armed or disarmed and will allow the
state to be changed. There are two options:
   If Disarmed - Press 1 for list of Arming options. There are 6 options:
      Press 1 for Away mode.
      Press 2 for Stay mode.
      Press 3 for Stay Instant mode.
      Press 4 for Armed Night mode.
      Press 5 for Armed Night Instant mode.
      Press 6 for Vacation mode.
   If Armed – Press 2 to disarm.

**For Automation Control - press 2.** A voice message will prompting you to select one of the following automation options:

   **For Automation Task - press 1.** Tasks are like computer macros. They can be programmed and named using the RP
   software and are used to perform a chain or series of events upon activation. Upon entry into this menu, any task which
   was designated to “Show” will be announced by name and by number. To choose a task, enter its number. For fastest
   operation, add a 0 in front of single digit numbers. I.E. for a 3 enter 03. NOTE: Any valid task can be selected by entering
   it’s two digit number, even if it was not announced. The task name will then be repeated along with the prompt: **To
   Activate - press #.** This should cause the events to activate.

   **For Light Control - press 2.** This menu allows direct control any light device and can even be used for PLC appliance
   modules. Lights are programmed and named using RP software. Upon entry into this menu, any light which was
   designated to “Show” will be announced by name and number. To choose a light, enter it’s three digit number. For
   fastest operation, add 0’s in front of numbers less than three digits. NOTE: Any valid light can be selected by entering it’s
   three digit number, even if it was not announced. The light name will then be repeated along with it’s current status (On/Off)
   and the prompt: **To Change - press #.** The light should change state.

   **For Output Control - press 3.** This menu allows direct control any valid output on the control. Outputs are programmed
   and named using RP software. Upon entry into this menu, any output which was designated to “Show” will be
   announced by name and number. To choose an output, enter it’s three digit number. For fastest operation, add 0’s in
   front of numbers less than three digits. NOTE: Any valid output can be selected by entering it’s three digit number, even if
   it was not announced. The output name will then be repeated along with it’s current status (On/Off) and the prompt: **To
   Change - press #.** The output should change state.

   **For Sensor Temperature - press 4.** Temperature sensors can be connected to the first 16 zones on the control. This
   menu allows you to hear the current temperature of any valid sensor. Upon entry into this menu, any sensor programmed
   designated to “Show” by the RP software will be announced by number. To choose a sensor, enter it’s two digit number.
   Add 0’s in front of numbers single digits. NOTE: Any valid sensor can be selected by entering it’s two digit number, even
   if it was not announced. The sensor number will then be repeated along with it’s current reading.
Automation Menu continued

**For Keypad Temperature - press 5.** Certain models of keypads have a built-in temperature sensor. This menu allows you to hear the current temperature of any valid keypad sensor. Upon entry into this menu, any keypad sensor designated to “Show” by the RP software will be announced by number. To choose a keypad sensor, enter it’s two digit number. Add 0’s in front of numbers single digits. NOTE: Any valid keypad sensor can be selected by entering it’s two digit number, even if it was not announced. The keypad sensor number will then be repeated along with it’s current reading.

**For Thermostat Temperature - press 6.** Specific brands of HVAC thermostats can be connected to the control. This menu allows you to hear the current temperature of any valid thermostat. Upon entry into this menu, any thermostat designated to “Show” by the RP software will be announced by number. To choose a thermostat, enter it’s two digit number. Add 0’s in front of numbers single digits. NOTE: Any valid thermostat can be selected by entering it’s two digit number, even if it was not announced. The thermostat number will then be repeated along with it’s current reading.

**For Trouble Status press 3.** Upon entry into this menu, any current system troubles will be announced by name. This will deliver a voice message stating that system is normal or the first system trouble that is present. Options: Each time 3 is pressed the next system trouble is identified.

**For Zone Status press 4.** Upon entry into this menu, any current zone troubles will be announced by name. This will deliver a voice message stating either that “no zones violated” or “zone xx violated”. Additional presses of the 4 key will announce additional troubled zones, if any exist.

**For Audio Monitor press 7.** This only works if a 2 way listen-in interface is installed. (ELK-M1TWI) It will open an audio path from the phone to the listen-in board and the output 1 speakers. For full operating instructions see Appendix D.

**To exit and hang-up press 9.** This will deliver the good-bye voice message. The telephone remote control operation has ending.

**To hear menu options press 0.** This will deliver a voice message explaining the function of each key.

* NOTE: If no response or key presses are heard by the control, the item or menu will be repeated once again. If no key presses are received within a 30 second time frame the message “Hanging Up, Good-bye” will be heard and the control will then disconnect.

**WHAT HAPPENS IF THE PHONE LINE IS BUSY?**
If the dialer is in use (such as during an alarm message report) then no dial tone will be heard and the offhook sequence will be ignored. The best thing to do at that point is to try again later (when the dialer is free) or hold onto the phone and wait till dialer hangs up. When the phone line is released (idle) dial tone will again be heard and you can then enter the offhook sequence.

**WHAT HAPPENS IF AN ALARM OCCURS?**
If the control is programmed to communicate alarms to a central monitoring station, it will automatically pick up the phone line and disconnect all calls when an alarm occurs. During this time period the telephone remote control will be inoperable. However, the installer may elect to program a communicator delay before dial time which would permit the telephone remote to function for a short time period immediately after an alarm. During this time it would be possible to enter the offhook sequence of * * * and enter all the proper codes to disarm and/silence the alarm.
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### Appendix C - Voice Message Vocabulary (cont.)

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Items below are special words and phrases which may be used to resolve unusual situation. For example: Custom 1 thru 10 are 6 second locations that you may custom record. The items shown in [ ] can be used to speak (say) the time, or condition based on the system or zone status.

- Custom1 = 1
- Custom2 = 2
- Custom3 = 3
- Custom4 = 4
- Custom5 = 5
- Custom6 = 6
- Custom7 = 7
- Custom8 = 8
- Custom9 = 9
- Custom10 = 10

[Insert Condition] = 2
[Insert Time] = 3
[Intruder Message] = 473
[Inverted Condition] = 4
[Say Closed/Open] = 509
[Say Down/Up] = 507
[Say Locked/Unlocked] = 496
[Say Not Secure/Secure] = 505
[Say Number] = 508
[Say Off/On] = 511
[Say On/Off] = 512
[Say Open/Closed] = 510
[Say Secure/Not Secure] = 506
[Say Unlock/Locked] = 495
[Say Up/Down] = 508
Appendix D - Two Way “Listen-in/Talk” Interface  

Using a Two Way Interface board (ELK-M1TWI), the control can accommodate up to 3 zones of listen-in. Each zone can have up to 4 microphones for a total of 12 listen-in points. Talk back is delivered through the speakers connected to Output 1. A two way session can be triggered by any number of zones when an alarm occurs. Two way can also be triggered during a Telephone Remote Control session. Instructions for the ELK-M1TWI are included with the interface.

OPERATION

1. Two way Listen-in must first be enabled from Menu 07-Global System Options. There are two required options. Option 31, “2Way Listen-in Enable” (No or Yes) and Option 32, “2Way Callback Time” (000 to 255 seconds). These options are defaulted to No and 000. In addition, you must also decide which zone(s) need to activate listen-in and set their “Enable Listen-in” programming option. Whenever a Central Station alarm message is transmitted for one of these zones, the dialer provides two methods for initiating a listen-in session.

1a. Hold the Line - After alarm kissoff the dialer will hold the phone line open for the amount of time programmed in Option 32, “2Way Callback Time”. This can be from 001 to 255 seconds. During this time the Operator may pick up the line and press * 55 * to initiate an immediate two way session. If the control does not receive * 55 * during the time period it will hang up and release the phone line.

1b. Callback - Upon hangup the control uses the same time value (Option 32, “2Way Callback Time”) to begin a callback time window. During this time window the control will answer any incoming call on the 1st ring, and allow the Operator to press * 55 * to initiate a two way session.

2. Two way may also be initiated by calling in using the Telephone Remote Control, and pressing 7 - “Audio Monitor”.

3. Once a two way session has begun, it will continue for 3 minutes before automatically disconnecting. To extend the two way session for 3 additional minutes you must press command 7.

TONE COMMANDS

* 55 * BEGIN LISTEN-IN Used by Operator to begin a listen-in session.

1 TALK Talk through all speakers connected to Output 1.

2 LISTEN All 3 microphone zones are enabled initially. Use key 4 to change mics.

3 SENSITIVITY INCREASE Raise the microphone gain.

4 MICROPHONE SELECT 4+0 Selects ALL microphones, 4+1 Mic1 zone, 4+2 Mic2 zone, 4+3 Mic3 zone

[future use]

5 [future use]

6 SENSITIVITY DECREASE Lowers the microphone gain.

7 EXTEND TIME for 3 minutes

8 - 8 TERMINATE SESSION and enable 1 ring callback answer for selected time.

9 - 9 TERMINATE SESSION without enabling callback answer mode.

0 [future use]

* CANCEL last key-press (undo )

# [future use]

The Two-Way talk-back volume from Output 1 can be adjusted from level of 0 - 7 using ONLY the ElkRP Remote Programming Software; (Globals G29-G42 Special Tab).

Dialer Activated (Alarm)

Dialer seizes house phone line, dials Central Station and sends report, then receives Kissoff.

Was the alarm from a listen-in Zone?

Yes

Dialer remains off-hook for time set in Menu-07, Option 32, “2 Way Callback Time” looking for command * 55 * to start a two-way session.

* 55 * received?

Yes Two way listen-in starts. It ends after 3 minutes or when command 99 is pressed.

No Dialer hangs up. Phone line is un-seized.

Dialer hangs up. Phone line is un-seized.

Phone line is seized again after 5 seconds. “2 Way Callback Time” restarts, during which time the dialer will answer any incoming call on the 1st ring.

Phone rings before timer expires?

Yes Dialer Answers * 55 * received?

Yes Two way listen-in starts. It ends after 3 minutes or when command 99 is pressed.

No No

Dialer Answers

Dialer will not dial additional alarm reports during this time, keeping phone line free for Central Station “Voice” Verification.

CS Verify Call Time" starts, if set. (Menu-07, Option 33) Dialer does not dial additional alarm reports during this time, keeping phone line free for Central Station "Voice" Verification.

END

† Not evaluated by UL

M1G Installation and Programming
### Appendix E - SIA CP-01 Compliance †

This control has been self-verified to be compliant with the SIA CP-01 Control Panel Standard - Features for False Alarm Reduction

**PROGRAMMABLE FEATURES, SHIPPING DEFAULTS, AND RECOMMENDED PROGRAMMING**

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>CP-01 Std. Par. #</th>
<th>REQUIREMENT</th>
<th>ALLOWABLE RANGE / PURPOSE</th>
<th>RECOMMENDED PROGRAMMING *</th>
<th>SHIPPING DEFAULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit Delay Time 1 &amp; Exit Delay Time 2</td>
<td>4.2.2.1</td>
<td>Required (programmable)</td>
<td>45 - 120 sec. (2 minutes) for full or auto arming. Shall not exceed 255 seconds</td>
<td>60 Seconds</td>
<td>60 Seconds</td>
</tr>
<tr>
<td>Silent on Exit (Disable Exit Progress Annunciation - ie: Silent Exit)</td>
<td>4.2.2.2</td>
<td>Allowed</td>
<td>Individual keypads may be disabled</td>
<td>All Audible Annunciators</td>
<td>All Audible Annunciators</td>
</tr>
<tr>
<td>Exit Time Restart</td>
<td>4.2.2.3</td>
<td>Required Option</td>
<td>Only one restart during arming.</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Auto Interior Off (Auto &quot;Stay&quot; Arm on Unvacated Premises)</td>
<td>4.2.2.5</td>
<td>Required Option (except for remote arm)</td>
<td>Away arm changes to Stay Arm if there is no exit detected.</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Entry Delay Time 1 &amp; Entry Delay Time 2</td>
<td>4.2.3.1</td>
<td>Required (programmable)</td>
<td>30 sec. to at least 240 sec. (4 minutes) minimum **</td>
<td>At least 30 Seconds **</td>
<td>30 Seconds</td>
</tr>
<tr>
<td>Comm Abort Time (Abort Window) for Non-Fire Zones. 000 time = Disabled</td>
<td>4.2.5.1</td>
<td>Required Option</td>
<td>May be disabled - by zone or zone type</td>
<td>Enabled (all zones)</td>
<td>Enabled</td>
</tr>
<tr>
<td>Comm Abort Window Time - for Non-Fire Zones</td>
<td>4.2.5.1</td>
<td>Required (programmable)</td>
<td>15 sec. - 45 sec. **</td>
<td>At least 15 seconds</td>
<td>30 Seconds</td>
</tr>
<tr>
<td>Abort Annunciation ***</td>
<td>4.2.5.1.2</td>
<td>Required</td>
<td>Annunciate that no alarm was transmitted</td>
<td>Enabled</td>
<td>Enabled - No disable option</td>
</tr>
<tr>
<td>Cancel Annunciation ***</td>
<td>4.2.5.4.1</td>
<td>Required</td>
<td>Annunciate that a Cancel was transmitted</td>
<td>Enabled</td>
<td>Enabled - No disable option</td>
</tr>
<tr>
<td>Duress (Individual User Code Option)</td>
<td>4.2.6.1 &amp; 4.2.6.2</td>
<td>Allowed Option</td>
<td>Cannot be a 1+ or derivative of another user. No duplicates with other user codes</td>
<td>Disabled</td>
<td>Disabled</td>
</tr>
<tr>
<td>Cross Zoned (Zone Option)</td>
<td>4.3.1</td>
<td>Required Option</td>
<td>Violation of a zone defined as Cross zone requires verification by another zone</td>
<td>Enabled and two (or more) zones programmed</td>
<td>Enabled</td>
</tr>
<tr>
<td>Cross Zone Verify Time</td>
<td>4.3.1</td>
<td>Allowed</td>
<td>Programmable from 1 to 255 seconds.</td>
<td>Time based on walk path in protected premises</td>
<td>30 Seconds</td>
</tr>
<tr>
<td>Single Alarm Lockout (Swinger Shutdown)</td>
<td>4.3.2</td>
<td>Required (programmable)</td>
<td>For all non-fire zones, shut down at 1 trip.</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Fire Verified Zone Definitions (Fire Alarm Verification)</td>
<td>4.3.3</td>
<td>Required Option</td>
<td>Depends on Panel and Sensors</td>
<td>Enabled unless sensors can self-verify</td>
<td>Disabled</td>
</tr>
<tr>
<td>Call Waiting Cancel ***</td>
<td>4.5</td>
<td>Required</td>
<td>Call waiting cancel prefix code may be dialed on initial attempt ONLY.</td>
<td>Depends on User Phone Line</td>
<td>Blank - Not Programmed</td>
</tr>
</tbody>
</table>

* Programming at installation may be subordinate to other UL requirements for the intended application.
** Combined Entry Delay and Abort Window should not exceed 1 minute.
*** Feature is pre-defined in the panel software and may not be altered.
Appendix F - Regulatory Agency Statements

FCC:  This control complies with Part 68 of the FCC rules. On the front nameplate of the main control board is a label that contains, among other information, the FCC certification number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company. This equipment uses an RJ31X jack to connect to the telephone network. The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. Typically, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line (as determined by the total RENs) contact the local telephone company.

If this equipment should happen to cause harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn’t practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service. If trouble is experienced with this equipment, please contact the manufacturer for repair and warranty information. Elk Products, Inc. 3266 Hwy 70 W. Hildebran, NC 28637 828-397-4200 If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

There are no user serviceable components in this product. All necessary repairs must be made by the manufacturer. Other repair methods may invalidate the FCC registration on this product. This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs. This equipment is hearing-aid compatible.

This control complies with Part 15 of FCC Rules which are designed to provide reasonable protection against such interference in a residential installation. The FCC requires the following statement for your information:

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer’s instructions, may cause interference to radio and television reception. It has been type tested. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
* If using an indoor antenna, have a quality outdoor antenna installed.
* Move the receiver away from the security control.
* Move the antenna leads away from any wire runs to the security control.
* Have the security control plugged into a different outlet so that it and the receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user or installer may find a booklet titled “Interference Handbook” prepared by the Federal Communications Commission helpful: This booklet is available from the U.S. Government Printing Office, Washington, DC 20402. The user shall not make any changes or modifications to the equipment unless authorized by the Installation Instructions or Users Manual. Unauthorized changes or modifications could void the user’s authority to operate the equipment.

Canada IC: [ 4353A-M1GCB REN 0.3B ] This product meets the applicable Industry Canada technical specifications. The REN “Ringer Equivalence Number” is an indication of the maximum number of devices allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices does not exceed five.

UNDERWRITERS LABORATORIES (UL) INFORMATION / REQUIREMENTS

The M1 has been evaluated to the following Standards:
UL Standard 985, Household Fire Warning System Units
UL Standard 1023, Household Burglar-Alarm System Units
UL Standard 1635, Digital Alarm Communicator System Units,
UL Standard 1637, Home Health Care Signaling Equipment
ULC/ORD C1023-74, Canadian Standard for Household Burglar Alarm System Units,
ULC S545-02, Canadian Standard for Residential Fire Warning System Control Units.
UL Standard 1610, Central-Station Burglar-Alarm Units
UL Standard 365, Police Station Connected Burglar Alarm Units and Systems
UL Standard 609, Local Burglar Alarm Units and Systems
ULC S303, Canadian Standard for Local Burglar Alarm Units and Systems
CAN/ULC-S304-06, Canadian Standard for Signal Receiving Centre and Premise Burglar Alarm Control Units.
CSA C22.2 No. 205-M1983 – Canadian Standard for Signal Equipment

MINIMUM SYSTEM CONFIGURATIONS FOR UL INSTALLATIONS

Household Burglary (UL 1023), Household Fire (UL 985), Digital Alarm Communicator (UL 1635) Listed Installations

* At least one compatible keypad is needed for all applications.
* At least one bell fixture is required for all applications.
* Household Burg requires 4 hours of standby power. Limit combined continuous current draw from terminals +SAUX, +VAUX, +VKP, and connector J16 to 1 Amp max. and use one (1) 8 Ah battery. A supplementary UL Listed, Battery Backed-up, Supervised Power Supply must be connected to provide additional Keypads and Expanders if the combined continuous current draw from terminals +SAUX, +VAUX, +VKP, and connector J16 exceeds 1 Amp.
* Household Fire/Home Health Care requires 24 hours of standby power. Limit combined continuous current draw from terminals +SAUX, +VAUX, +VKP, and connector J16 to 500 mA and use two (2) 8Ah batteries in parallel.
* Force Arming and Auto Arming shall not be enabled.
* For Household Fire Listed Installations the indicating devices shall be a Wheelock 34T-12 or equivalent.
* Initiating and indicating devices must be rated at 11.5 to 12.4 VDC.
* For Household applications the minimum alarm cutoff time for the audible devices shall be 5 minutes.
* Zone Swinger Shutdown shall not be enabled.
* Remote Downloading shall not be used on UL Listed systems.
* Communicator Dial Delay time shall be set to “0”.
* For Household Burg Listed Installations the maximum entry delay time shall be 45 seconds and the max. exit delay time shall be 120 seconds.
* 24-hour communicator test transmission is required.
* The silent keypad option shall not be enabled.
* The number of dial attempts must be set from 5 - 10.
* Fail to communicate report code must be enabled.
Appendix F - Regulatory Agency Statements (cont)

Home Health Care (UL 1637) Listed Installations
Requirements described under UL985 plus:
* A minimum of two (2) keypads are required with one keypad powered from "+VKP" and one keypad powered from "+VAUX".

Commercial - Central Station (UL 1610), Police Station Connected (UL 365), Local Burglar Alarm (UL 609) Listed Installations
Requirements described under UL1023 plus:
* The Alarm Cutoff timer must be set to 00900 sec. (15 min.) or greater.
* UL Commercial Burg requires 4 hours of standby power. Limit combined continuous current draw from terminals +SAUX, +VAUX, +VKP, and connector J16 to 450 mA max. and use one (1) 8 Ah battery. A supplementary UL Listed, Battery Backed-up Power Supply must be connected to power additional Keypads and Expanders if the combined continuous current draw from terminals +SAUX, +VAUX, +VKP, and connector J16 exceeds 450 mA.
* An acceptable Commercial enclosure must be used (see Listed Enclosures below)
* A UL Listed Tamper Switch(s) must be installed on the enclosure and connected to a 24 hour Burg Tamper defined Zone.
* All Keypads need to be installed within the protected area (they have no tamper)
* DO NOT USE an A B Attack Cabinet for the external sounder
* A Whenever/And/Then rule should be written (using ElkRP software) to enable the Output 2 Siren to ‘chirp’ upon closing ringback.

UL Canada Listed Installations (ULC S304 and ULC S303)
Requirements described under UL1023, 1610 plus:
* The Alarm Cutoff timer must be set to 00900 sec. (15 min.) or greater.
* UL Canada Commercial Burg requires 24 hours of standby power. Limit combined continuous current draw from terminals +SAUX, +VAUX, +VKP, and connector J16 is 450 mA max. and use two (2) 8 Ah batteries in parallel.
* Zone Expanders must be in an acceptable Commercial enclosure (see Listed Enclosures below)
* Communications Channel Security Applications: Low Risk, Passive Level 1 (P1), Extent 1 (CAN/ULC-S302)
* For Phone Line Fault, the delay time setting must be for Max. 3 minutes.
* For System Report Codes and Options, the setting must be for Max. 90 seconds for reporting changes in the status of the control unit, including alarm, trouble, open and close signals.

LISTED ENCLOSURES:
For Household Burglar or Household Fire Listed Installations one of the following enclosures must be used:
* ELK 14" Enclosure model ELK-SWB14 or ELK-UB14
* ELK 28" Enclosure model ELK-SWB28
* OnQ Legrand 14" Enclosure models 363474-01 or 363474-11 utilizing the Universal Mounting plate part no. 364453. Not LISTED FOR CANADA
* OnQ Legrand 28" Enclosure models 363475-01, 363475-11, 364591-01, 364591-02 or 364591-11 utilizing the Universal Mounting plate part no. 364453. Not LISTED FOR CANADA
* OnQ Legrand 42" Enclosure models 363476-01, 363476-11, 364592-01, 364592-02, or 364592-11 utilizing the Universal Mounting plate part no. 364453. Not LISTED FOR CANADA

For Commercial Listed Installations the following enclosure must be used:
* ELK-TB14 Tamper Resistant Enclosure

SUPPLEMENTARY POWER SUPPLY:

This diagram shows how to properly connect a Supplementary UL Listed, Battery Backed-up Power Supply when the combined total current draw from the control is more than the allowable current as per the UL requirements.

** The battery on the supplementary power supply will be supplying power during a power outage to the Data Bus Devices connected to it. The Power Supply and backup Battery should be sized to supply the UL required minimum standby time according to the Data Bus Devices e.g. Keypads, Expanders connected.
NOTE: A recent revision to UL985 requires that a minimum 1/4" separation be provided and maintained between power-limited conductors and non-power-limited conductors. Because the Battery conductor leads are non-power-limited, we recommend they be routed in the shortest and most direct path from the Control to the Battery itself, regardless of the enclosure type of brand. For 28” or larger enclosures, a battery shelf (e.g. ELK-SWS) may be necessary. Under no circumstances should any “power-limited” conductors be routed within 1/4” of the non-power-limited battery leads. The best procedure is to avoid the shaded “KEEP OUT” area entirely, as depicted in these diagrams.
Appendix G - Additional ELK-M1KP Keypad Information

OPTIONAL PROX CARD READER †
Prox cards/fobs are enrolled into a User Code location using the same procedures used to add/change User Code PINs.
1. Press the ELK key, then press the 6 key (or scroll up) to display 6 - Change User Codes. Press the RIGHT arrow key to select this menu. A Master user code (PIN) must be entered to gain access to this menu.
2. Enter the three digit number of the desired User Code location (001 to 099) or use the UP or DOWN arrow keys to scroll through the codes. Then select CHG by pressing the RIGHT arrow key.
3. The keypad will display any existing 4 or 6 digit code that is programmed for this user along with any programmed name.
4. Place a new (not previously enrolled) prox card/fob near the Keypad's right speaker grill below the Stay key. The read range is approximately 1/8" to 3/8". The Keypad should beep 3 times and display the card/fob 12 digit ID.
5. If the card/fob is rejected, a low error tone and Code Not Authorized, Redo will display. Causes for reject include: A. The card/fob has already been enrolled (duplicate codes are not allowed) OR B. The facility code in the card/fob does not match the reader facility code. A prox reader can only read cards/fobs with a matching facility code.
6. Once a prox card/fob is enrolled in a user code location, its capabilities are set by the User Code Options found in Installer Menu 02. The commonly used options are: Arm the Control, Disarm the Control, or Access event.

A keypad access event occurs when a valid prox card/fob is read at a keypad. Nothing will happen until this event is utilized in a Whenever/And/Then Rule from the Elk-RP software. An Access event can be used to create virtually any desired reaction, i.e., turn on an output, a light, close/open a relay, etc. The following rule example turns on Output 003 for 10 seconds when a valid prox card/fob (with Access Option enabled) is read at Keypad 01. This could be used to break power to a door strike.

WHENEVER Keypad 01 Access is Activated
THEN Turn On Output 003 for 10 seconds.

M1KP KEYPAD ON-BOARD TEMPERATURE SENSOR †
The ELK-M1KP Keypad has an on-board temperature sensor. (NOTE: The ELK-M1KP2 & M1KPAS devices DO NOT HAVE an on-board temp sensor.) The temperature may be displayed and/or used with the Elk-RP Whenever/And/Then Rules to cause an action or control something. i.e., a fan, pump, light, etc.

Using a Keypad temperature reading in an ELK-RP Whenever/And/Then Rule to create an action or output
The following rule example will turn on Output 3 for 10 minutes when the Keypad temperature reading exceeds 90 degrees.
1. Start RP and open an account. Click the Automation tab and the Rules tab followed by New.
2. Click Trigger, then point to Time Occurrence, then Every X Seconds, and then click to select. **
3. In the block beside the words Fixed Value, type in 30 and click OK.
4. Click And, followed by Temperature which is located near the bottom of the drop down list.
5. Highlight the Keypad temperature sensor (by name), click the Greater than button, and change the temperature selection number to 90. Make sure the button beside F is selected, and click OK.
6. Click Then, followed by Turn Output On/Off. Highlight Output 3 (use the scroll down arrow), make sure the button beside Turn on is selected, then select the box labeled For. Highlight the hrs:mins:secs window and enter 00:10:00 (10 minutes). Click OK. Double check everything and click Done.

** Numerous WHENEVERS may be used for a temperature rule, i.e., time occurrence, arming of the system, etc. but NOT a direct temperature change or reading. However, you can use a AND command to compare or "test" a temperature reading against a target value each time the trigger occurs. The target compare options are "Equal to, Not equal to, Less than, and Greater than". The "Equal to" is not recommended as a compare option because it may be impossible for a temperature reading to be exactly at the target value when the trigger occurs.

M1KP Temp Sensor Calibration - It may be necessary to re-calibrate the temp sensor for certain locations.
1. Press and hold the "*" key, followed by the F5 key **. HOLD BOTH keys pressed for 5-10 secs or until the LCD displays Exit when done. F1 Set Addr. (This is Keypad setup mode)
2. Press the F2 key and the LCD will display: Temperature Degrees F = XX.X (This is the current temperature)
3. Press the UP or DOWN arrow keys to adjust the temp display until it approximates the desired setting. Each press changes the setting by approximately 3 tenths of a degree (00.3)
4. Once a prox card/fob is enrolled in a user code location, its capabilities are set by the User Code Options found in Installer Menu 02. The commonly used options are: Arm the Control, Disarm the Control, or Access event.

† Not evaluated by UL
M1 LIMITED WARRANTY

The ELK-M1 and its associated component products are warranted by Elk Products, Inc. ("Manufacturer") against defects in material and workmanship for a period of two (2) years from the date of manufacture. If product is found to be defective during the first 180 days, manufacturer may allow an over the counter exchange, subject to inspection and approval by one of it’s representatives. Manufacturer’s obligations under this Limited Warranty shall be limited to repairing or replacing, at its option, free of charge, during this warranty period, any product returned to Manufacturer freight prepaid. After the expiration of the warranty period, product will be repaired based on a fixed charge per device.

Manufacturer shall have no obligation under this Limited Warranty or otherwise if (1) the Product has been damaged by negligence, accident, mishandling, lightning or flood, or other Acts of God, (2) the Product has not been operated in accordance with its operating instructions, (3) the Product has been altered or repaired by anyone outside Manufacturer’s authorized facilities (4) adaptations or accessories have been made or attached to the Product which, in Manufacturer’s sole determination, have adversely affected its performance, safety or reliability.

If a Product should malfunction or fail during it’s warranty period, contact ELK or one of its authorized distributors for a Return Authorization (RMA) number. Returned Products must include a complete description of the problem, along with the RA number clearly marked on outside of the package. Manufacturer will not be responsible for any unnecessary items included with any returned Product.

THIS WARRANTY IS THE EXCLUSIVE WARRANTY FOR ANY PRODUCT. MANUFACTURER SPECIFICALLY DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR OF MERCHANTABILITY. MANUFACTURER SHALL NOT BE LIABLE IN TORT, INCLUDING NEGLIGENCE OR STRICT LIABILITY, AND SHALL HAVE NO LIABILITY AT ALL FOR INJURY TO PERSONS OR PROPERTY. MANUFACTURER’S LIABILITY FOR FAILURE TO FULFILL ITS OBLIGATION UNDER THIS LIMITED WARRANTY OR ANY OTHER LIABILITY IN CONNECTION WITH A PRODUCT SHALL BE LIMITED TO THE AMOUNT OF THE PURCHASE PRICE RECEIVED BY MANUFACTURER FOR THE PRODUCT. THE REMEDIES STATED IN THIS LIMITED WARRANTY ARE THE CUSTOMER’S EXCLUSIVE REMEDIES AGAINST MANUFACTURER REGARDING ANY PRODUCT. UNDER NO CIRCUMSTANCES SHALL MANUFACTURER BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS AND REVENUES, INCONVENIENCE OR INTERRUPTIONS IN OPERATIONS, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSSES OF ANY KIND. THESE LIMITATIONS AND DISCLAIMERS ARE NOT MADE BY MANUFACTURER WHERE PROHIBITED BY LAW. SOME STATES PROHIBIT LIMITATIONS OF WARRANTIES AND THE CUSTOMER MAY HAVE ADDITIONAL RIGHTS IN THOSE STATES.
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