INSTALLATION MANUAL

Cross Platform Control™

Specifications, Installation and Programming

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

ELK
PRODUCTS, INC.

Introduction

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 an the nature of the fire, and/or location of the smoke detectors, the detector, even if it operates as anticipated, may not provide 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 105F (32 to 40C), 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 waken 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.**
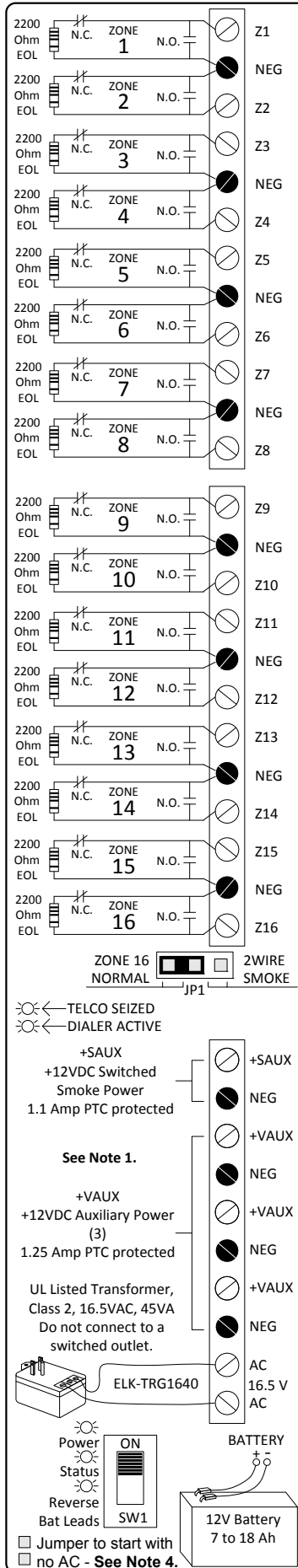
Use of this control for fire detection and/or annunciation may not be permitted by certain states, counties, municipalities or local jurisdiction. It is the responsibility of the installing alarm company to check with the local A.H.J. (Authority Having Jurisdiction) or State Fire Marshal's office prior to using this control for fire detection.
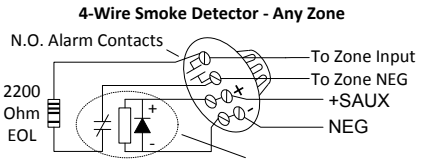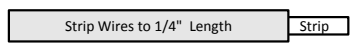
Table of Contents

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.

Strip Wires to 1/4" Length — Strip

Zones 1-16 (left side, each with 2200 Ohm EOL, N.C., ZONE #, N.O.):
- ZONE 1 — Z1, NEG
- ZONE 2 — Z2
- ZONE 3 — Z3, NEG
- ZONE 4 — Z4
- ZONE 5 — Z5, NEG
- ZONE 6 — Z6
- ZONE 7 — Z7, NEG
- ZONE 8 — Z8
- ZONE 9 — Z9, NEG
- ZONE 10 — Z10
- ZONE 11 — Z11, NEG
- ZONE 12 — Z12
- ZONE 13 — Z13, NEG
- ZONE 14 — Z14
- ZONE 15 — Z15, NEG
- ZONE 16 — Z16

ZONE 16 NORMAL / 2WIRE SMOKE — JP1

○← TELCO SEIZED
○← DIALER ACTIVE

+SAUX
+12VDC Switched
Smoke Power
1.1 Amp PTC protected
- +SAUX
- NEG

See Note 1.

+VAUX
+12VDC Auxiliary Power (3)
1.25 Amp PTC protected
- +VAUX
- NEG
- +VAUX
- NEG
- +VAUX
- NEG

UL Listed Transformer, Class 2, 16.5VAC, 45VA
Do not connect to a switched outlet.
- AC 16.5 V AC

ELK-TRG1640

○← Power
○← Status
○← Reverse Bat Leads
ON SW1

BATTERY + −
12V Battery 7 to 18 Ah

☐ Jumper to start with no AC - **See Note 4.**

4-Wire Smoke Detector - Any Zone
N.O. Alarm Contacts
2200 Ohm EOL
- To Zone Input
- To Zone NEG
- +SAUX
- NEG

U.L. Listed EOL Supervision Relay, ESL #204A or equiv. Use 2,200 Ohm EOL resistor, part # ELK-ER2200. Set JP1 to 'Normal'.
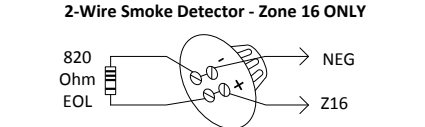
2-Wire Smoke Detector - Zone 16 ONLY
820 Ohm EOL
- NEG
- Z16

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
Refer to the Wiring & Hookup Diagram in the Installation Manual # L520 Rev. K for the 2-Wire Smoke Detector Compatibility chart.

Notes
1. Refer to Appendix F located in the Installation Manual #L520 Rev. K for the 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 7 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: 5K6AL03BELK-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
HA008F   08/13

Right side
- R1 — Grey — HOUSE PHONES
- T1 — Brown
- RING — Red
- TIP — Green — TELCO LINE

J3 — B A − C + — Aux Data Bus ††

J4 — RS232 CONN.

JP2 — Select PLC Mode
- ☐ 1 WAY (PL513/PSC04)
- ☐ 2 WAY (TW523/PSC05)
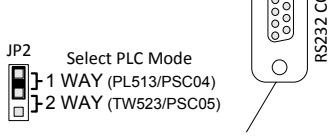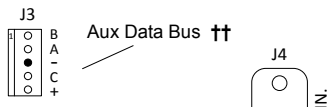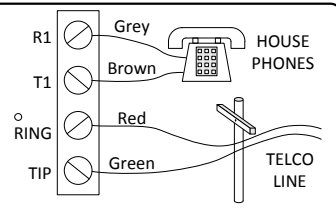
Serial Port ††
for Computer/ELKRP
See Manual

PLC †† Lighting Interface Conn.
Do Not Connect to a Phone Line!
PSC05 ††or Equivalent
J5
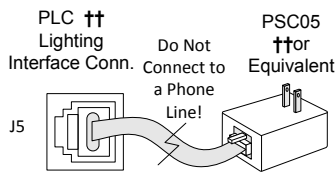
J-16 Programmable Outputs
See Note 1 & Note 2
- 1 — +12V
- NEG
- OUT 16
- OUT 15
- OUT 14
- OUT 13
- OUT 12
- OUT 11
- OUT 10
- OUT 9
- OUT 8
- OUT 7

OUT3 On LED
Dry Contact Relay rated 4A @ 12 - 24VDC **See Note 2**
- OUT 3 — N/C, COM, N/O

OUT 2 — +/− Bell (Supervised) **See Note 2**

OUT 1 — +/− Voice/Siren †† **See Note 2**

Audio Network Interface ††
O − I − B A + — J7
Data Bus Terminating Resistor — JP3

- +VKP — RED — 1.25 Amp PTC protected
- DATA A — GREEN — Keypad
- DATA B — WHITE
- NEG — BLACK — Data Bus See Note 1

Not Used - **See Note 3**

J2 — Keypad & Data Bus
J1 — NEG, DATA B, DATA A, +12V
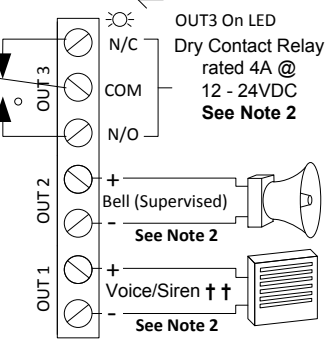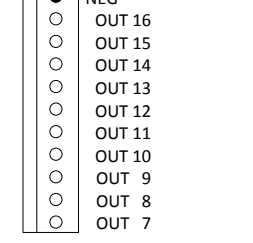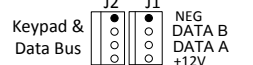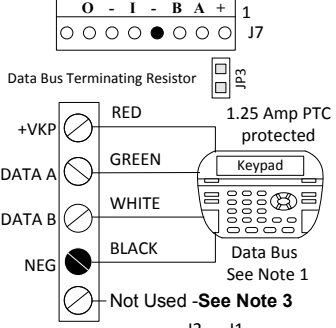
Specifications, Features, and Benefits

General:
- Large zone capacity: 16 on-board zones expandable to 208
- Up to 144 of the expandable zones may be wireless using the ELK-M1XRFTW Wireless Receiver
- 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:199 (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

Communications
- True V.22 bis Modem for fast reliable upload/download
- Optional M1XEP Ethernet Interface † for user operation, alarm reporting, programming, 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 (buttset) 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:

Part Number	Description
ELK-M1GCB	M1G Gold Board Only (No Teminals 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 † (no internal temp sensor and 2 less "F" keys)
ELK-M1KPAS	Keypad Arming Station †
ELK-M1KPNAV	Touchscreen Keypad †
ELK-M1XIN	16 Zone (input) expander
ELK-M1XOVR	16 Output expander, 8 Voltage/8 Relays
ELK-M1RB	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-C1M14GSM	Dual Path Communicator
ELK-M1XRFTW	Two-Way Wireless Receiver for ELK 6000 Xmtrs
ELK-M1XRFEG	Wireless Receiver for GE 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-M1ZTS	Zone Temperature Sensor -50 to 140 F †
ELK-RP	PC software - Free upon request

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

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).

Recommended locations and wiring methods shall be in accordance with CSA C22.1, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations; CAN/ULC-S302, Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults; and CAN/ULC-S301, Standard for Central and Monitoring Station Burglar Alarm Systems.
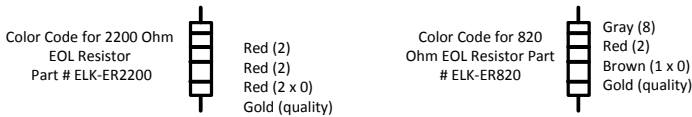
Reference NFPA70 (NEC) & Canadian Electrical Code.

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

For Installation of Residential Fire Warning Systems reference CAN/ULC-S540 Standard.

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.

Color Code for 2200 Ohm EOL Resistor Part # ELK-ER2200
Red (2)
Red (2)
Red (2 x 0)
Gold (quality)

Color Code for 820 Ohm EOL Resistor Part # ELK-ER820
Gray (8)
Red (2)
Brown (1 x 0)
Gold (quality)

2-Wire Smoke Detector Compatibility

Name	Model	Compatibility ID	Max #	Base
System Sensor	2W-B, 2WT-B, 1151, 2100, 2100T, 2151	A	20	None
Sentrol (GE) † †	429AT, 521BXT, 521B	S09A	20	None

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

Compatibility Identifier: M10001
Maximum Operating Voltage: 13.8 VDC
Max. wire resistance should not exceed 13 Ohms.
Use 18AWG Fire approved wire. Max. wire length = 1000 feet.
Do not mix different models on same circuit as proper operation may be impaired.

2-Wire Smoke Detector
820 Ohm EOL → NEG
→ Z16
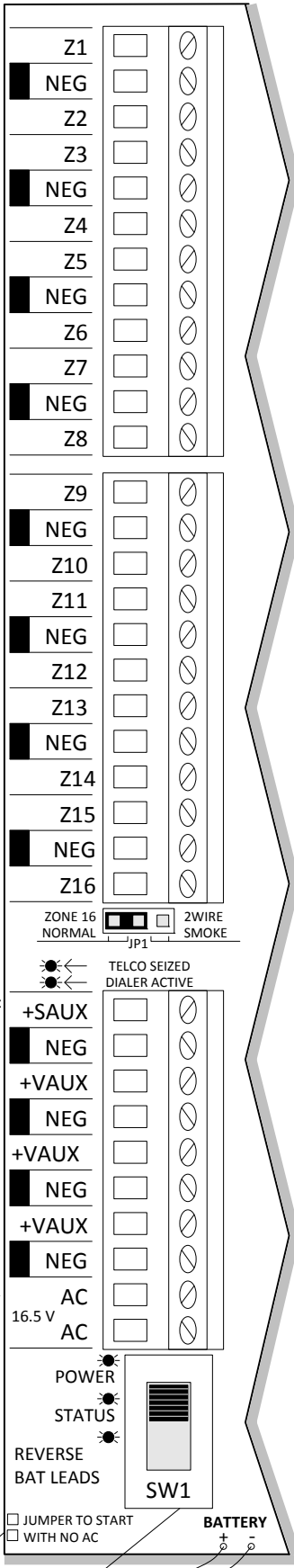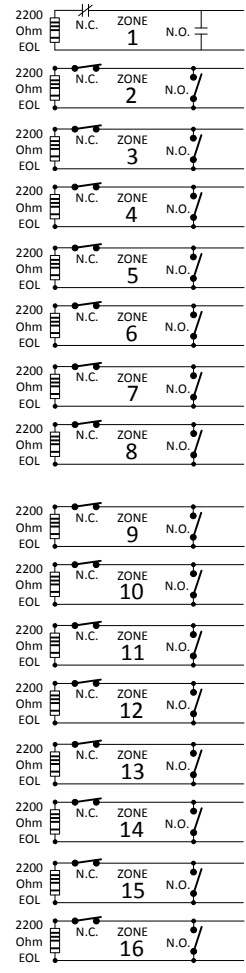
Smoke Detector covers should be kept free from dust and dirt by use of a dry or damp (water) cloth as needed. When necessary, clean the detector interior and/or replace the optical chamber according to instructions provided by the Smoke Detector Manufacturer.

N.O. Alarm Contacts
4-Wire Smoke Detector
To Zone Input
To Zone NEG
2200 Ohm EOL
U.L. Listed EOL Supervision Relay (**ESL #204** or Equivalent).

Switched +12 VDC Output protected by 1.1A PTC.
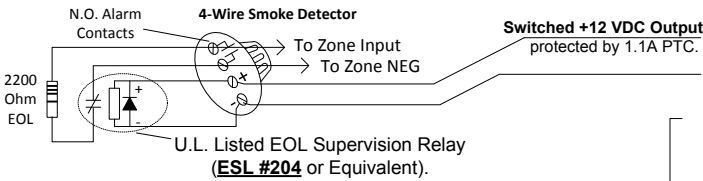
M1G "Board only" non-alarm current draw = 140mA (.14 Amp)

Auxiliary +12VDC Power Outputs protected by 1.25A PTC NOTE: Refer to Appendix F for the UL limitations on total continuous 'standby' current drain from terminals +SAUX, +VAUX, +VKP, and J16.

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

18AWG Min.
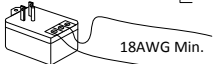
LEDS Indicators	Normal State	Descriptions
TELCO SEIZED	OFF	Phone line is good and house phones are connected. If ON constantly, the phone line may be bad. During remote mode this LED will be ON since the house phones are then disconnected from the outside line & are being powered from control.
DIALER ACTIVE	OFF	Dialer/Modem is idle. If ON, 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 it's 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.

Terminal blocks (right side):
Z1, NEG, Z2, Z3, NEG, Z4, Z5, NEG, Z6, Z7, NEG, Z8
Z9, NEG, Z10, Z11, NEG, Z12, Z13, NEG, Z14, Z15, NEG, Z16
ZONE 16 NORMAL — JP1 — 2WIRE SMOKE
TELCO SEIZED / DIALER ACTIVE
+SAUX, NEG, +VAUX, NEG, +VAUX, NEG, +VAUX, NEG, AC 16.5V, AC
POWER, STATUS, REVERSE BAT LEADS, SW1
JUMPER TO START WITH NO AC
BATTERY + −
12 Volt Sealed Lead Acid

Zones 1-16 each with 2200 Ohm EOL, N.C. / ZONE / N.O.

RJ31X JACK (ELK-RJSET)

R1 — Grey
T1 — Brown
RING — Red
TIP — Green

Demark   splices

Black
Yellow
Green
Red

HOUSE PHONES

Tip
Ring

TELCO LINE

Use 26AWG telco wire

J3
B
A
- NEG
C
+ +12V

J4

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

PC — Personal Computer (Windows Based)

JP2
PLC Mode
1 WAY
2 WAY

RS232

Serial Port (J4) ††
for Computer/ELKRP (This connection not evaluated by UL)

JP2
1 WAY (PL513/PSC04)
2 WAY (TW523/PSC05)

Select PLC Mode (JP2)
Selects single or bi-directional PLC Transmissions

Pin 2 < to > 2
Pin 3 < to > 3
Pin 5 < to > 5

Pinout for Serial Port Cable (9 pin male to 9 pin female)
Maximum recommended length = 50 ft.

Lighting †† Interface Conn.

J5

PSC05 or equiv.

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!
(This connection not evaluated by UL)

End view

Yellow
Green
Red
Black

Yellow
Green
Red
Black

Close up view of std. 4 conductor modular phone cord. When viewed as shown (back to back), the pin to pin color coding does not reverse. Cord for PLC must be similar to above.

Relay Expansion Module (ELK-M1RB)
Optional module adds 8 general purpose relays. Plugs into J16 connector.

J16
+12V (+VAUX)
NEG
16
15
14
13
12
11
10
9
8
7

OUTPUTS

+VAUX — +12V — Red
NEG — NEG — Black
OUT 16 — White
OUT 15 — Green
OUT 14 — Brown
OUT 13 — Blue
OUT 12 — Orange
OUT 11 — Yellow
OUT 10 — Violet
OUT 9 — Grey
OUT 8 — Pink
OUT 7 — Tan

* See Auxiliary Current ratings

Programmable Outputs (J16)
OUT 7 - 16 are +12V switched positive general purpose outputs rated at 50mA.

OUT3 LED

OUT3   N/O COM N/C

N/C
COM
N/O

Out 3 - Programmable General Purpose Relay
Rated at 4Amps @ 12 - 24VDC
(Dry Contacts)

OUT2   + -

Bell (Supervised)

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.

OUT1   + -

Voice/Siren †

Out 1 - Voice/Siren ††
Speaker output only (Interior)

ELK-SP35 or equiv.

Out 2 is supervised. If not used, install a 2.2K Ohm resistor to avoid Output 2 trouble condition.
NOTE: Do Not place a Direct Short Across OUTPUT 2.

J7

AUDIO NETWORK INTERFACE

Audio Network Connection (J7) ††
For Two-Way Listen-in and Future Use!

Data Bus Devices e.g. Keypads, Expanders

Jumper Terminate these two devices.

DO NOT Jumper Terminate these devices.

RS-485 DATA BUS
+VKP
DATA A
DATA B
NEG
Not Used

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

RED
GREEN
WHITE
BLACK

Min. wire gauge: 24 AWG 18 to 22 AWG is best for long distances.

A UL Listed Supplementary Power Supply may be required to meet the minimum standby power supply requirements. Refer to the Chapter containing Regulatory Agency Statements.

J2   J1
NEG
DATA B
DATA A
+12V

DATA BUS

JP3

Terminating Jumper (JP3): See important information about Data Bus Termination.

<u>DATA BUS TERMINATION IS VERY IMPORTANT!!</u>
Diagram shows 2 basic (4-wire) home run cables with daisy chained devices on each. <u>Last device</u> on each cable MUST have a Terminating Jumper installed. Jumpers are 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! The RS485 Data Bus must NEVER have more that two (2) terminating jumpers installed.
NOTE: If you want to home run more than 2 cables, run 6 or 8 conductor cable so that the data lines A & B can have a return path to series connect back out to the next device. This is best done with a ELK-M1DBH Data Bus Hub which accepts Cat5 or Cat6 cable with RJ45 plugs. For more information see diagram in keypad instructions.

This terminal (formerly earth ground) is no longer used. Do not connect this or any neg. terminals to earth ground.

Temporary Connection "Plug-in" jacks for RS-485 Data Bus (J1 & J2)
Local connection for Data Bus Devices ie: Keypads, etc. for testing purposes only.

† Not evaluated by UL   †† Not for 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.

TYPICAL BURGLARY INSTALLATION LAYOUT

TYPICAL FIRE INSTALLATION LAYOUT
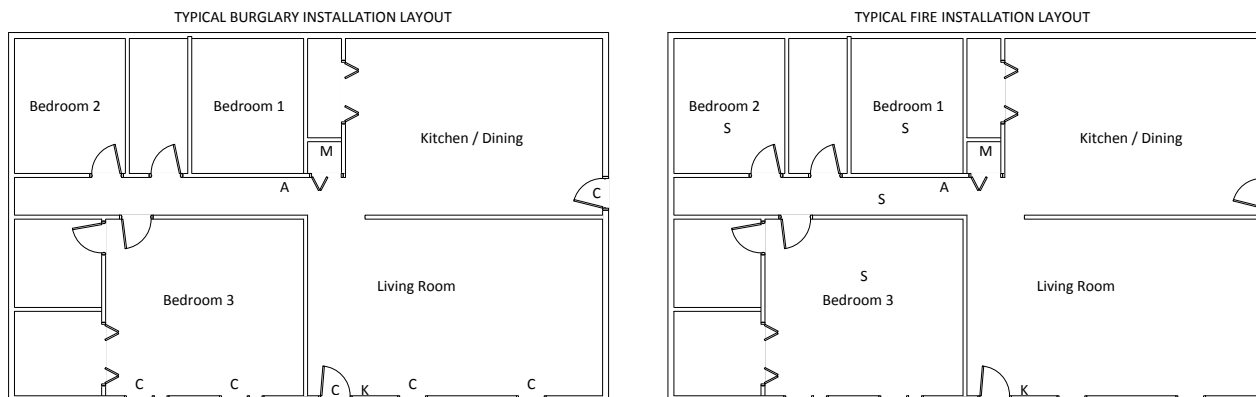
All perimeter openings below 18" should be provided with protection.

A Smoke Detector shall be located in each sleeping area and between the sleeping areas and the main living area.

Early warning fire detection is best achieved by the installation of fire detection equipment in the location shown above.

In homes basements or multiple levels at least one smoke detector shall be on each level.

Legend
M - Main Control
A - Audible Alarm
S - Smoke Detector
C - Contact
K - Keypad

First Floor

Basement
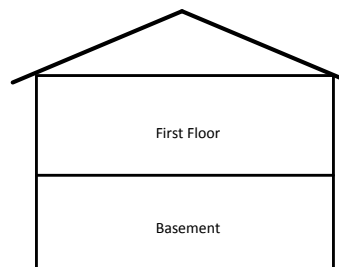
1.2 Parts Diagram & Descriptions
See Wiring & Hookup Diagram on pages 6 & 7.

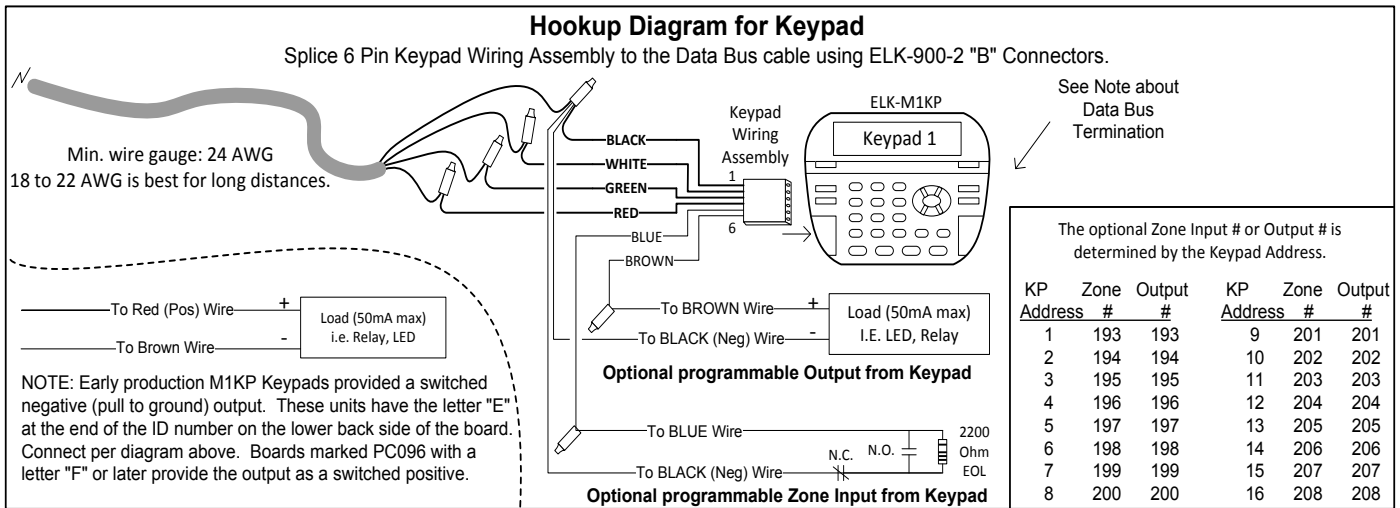## 1.3 Mounting and Wiring Preparation
Control Mounting
DO NOT MOUNT THE CONTROL OUTDOORS OR IN A DAMP LOCATION OR WHERE THE ENVIRONMENTAL CONDITIONS ARE UNSUITABLE FOR ELECTRONIC BASED EQUIPMENT. DO NOT MOUNT IN AN UNCONDITIONED ATTIC. USE COMMON SENSE AND GOOD INSTALLATION PRACTICES. A suitable location 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 unpluggable harness for connecting to the M1data bus.   Splice the Black, Red, White, and Green wires from the unpluggable 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. NOTE: 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.

Hookup Diagram for Keypad

Splice 6 Pin Keypad Wiring Assembly to the Data Bus cable using ELK-900-2 "B" Connectors.

Min. wire gauge: 24 AWG
18 to 22 AWG is best for long distances.

Keypad Wiring Assembly

ELK-M1KP
Keypad 1

See Note about Data Bus Termination

BLACK
WHITE
GREEN
RED
BLUE
BROWN

To Red (Pos) Wire +
To Brown Wire -

Load (50mA max) i.e. Relay, LED

NOTE: Early production M1KP Keypads provided a switched negative (pull to ground) output. These units have the letter "E" at the end of the ID number on the lower back side of the board. Connect per diagram above. Boards marked PC096 with a letter "F" or later provide the output as a switched positive.

To BROWN Wire
To BLACK (Neg) Wire

Load (50mA max) I.E. LED, Relay

Optional programmable Output from Keypad

To BLUE Wire
To BLACK (Neg) Wire
N.C. N.O.
2200 Ohm EOL

Optional programmable Zone Input from Keypad

The optional Zone Input # or Output # is determined by the Keypad Address.

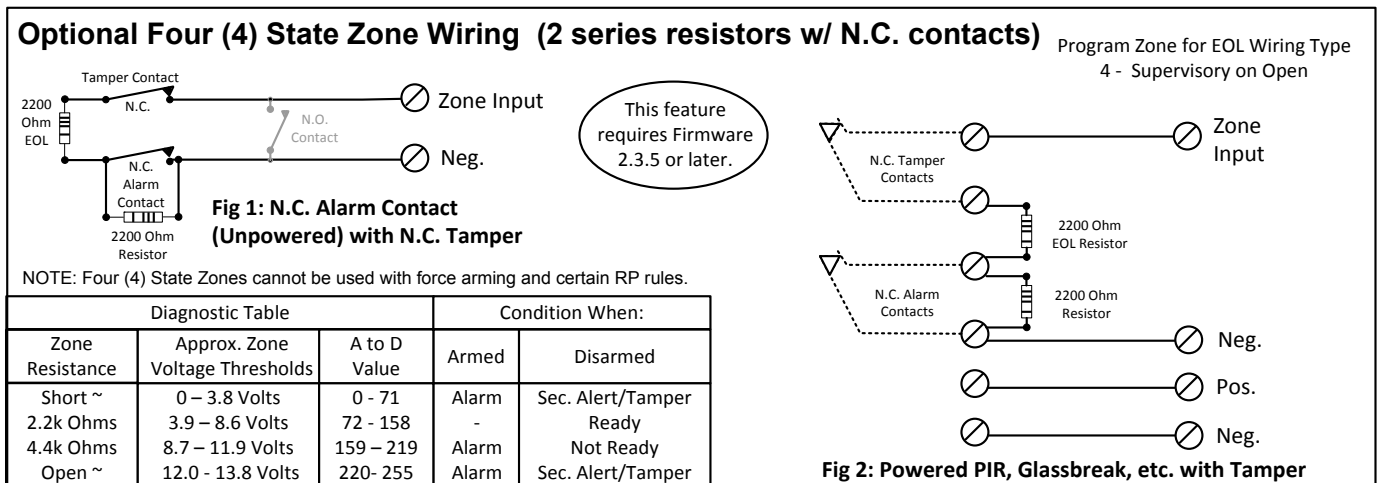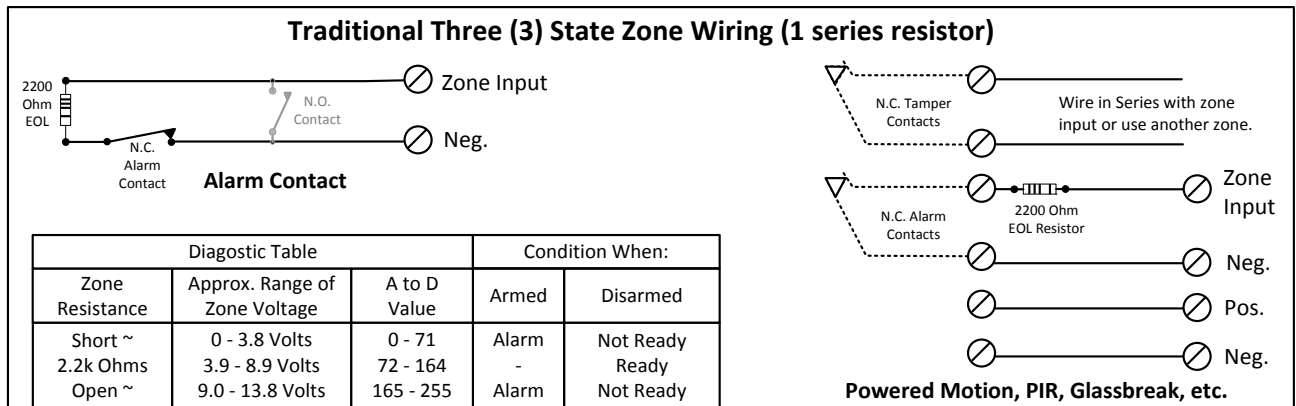| KP Address	Zone #	Output #	KP Address	Zone #	Output #
1	193	193	9	201	201
2	194	194	10	202	202
3	195	195	11	203	203
4	196	196	12	204	204
5	197	197	13	205	205
6	198	198	14	206	206
7	199	199	15	207	207
8	200	200	16	208	208

NOTE: Refer to the section 'Data Bus E.O.L. Termination' for information on multiple home run 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 beyuond 1000' is not recommended.

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 measures 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.**

Traditional Three (3) State Zone Wiring (1 series resistor)

2200 Ohm EOL
N.O. Contact
N.C. Alarm Contact
Zone Input
Neg.
Alarm Contact

N.C. Tamper Contacts — Wire in Series with zone input or use another zone.

N.C. Alarm Contacts
2200 Ohm EOL Resistor
Zone Input
Neg.
Pos.
Neg.

Powered Motion, PIR, Glassbreak, etc.

Diagostic Table			Condition When:	
Zone Resistance	Approx. Range of Zone Voltage	A to D Value	Armed	Disarmed
Short ~	0 - 3.8 Volts	0 - 71	Alarm	Not Ready
2.2k Ohms	3.9 - 8.9 Volts	72 - 164	-	Ready
Open ~	9.0 - 13.8 Volts	165 - 255	Alarm	Not Ready

Optional Four (4) State Zone Wiring (2 series resistors w/ N.C. contacts)

Program Zone for EOL Wiring Type 4 - Supervisory on Open

2200 Ohm EOL
Tamper Contact N.C.
N.O. Contact
N.C. Alarm Contact
2200 Ohm Resistor
Zone Input
Neg.

Fig 1: N.C. Alarm Contact (Unpowered) with N.C. Tamper

This feature requires Firmware 2.3.5 or later.

NOTE: Four (4) State Zones cannot be used with force arming and certain RP rules.

N.C. Tamper Contacts
N.C. Alarm Contacts
2200 Ohm EOL Resistor
2200 Ohm Resistor
Zone Input
Neg.
Pos.
Neg.

Fig 2: Powered PIR, Glassbreak, etc. with Tamper

Diagostic Table			Condition When:	
Zone Resistance	Approx. Zone Voltage Thresholds	A to D Value	Armed	Disarmed
Short ~	0 – 3.8 Volts	0 - 71	Alarm	Sec. Alert/Tamper
2.2k Ohms	3.9 – 8.6 Volts	72 - 158	-	Ready
4.4k Ohms	8.7 – 11.9 Volts	159 – 219	Alarm	Not Ready
Open ~	12.0 - 13.8 Volts	220- 255	Alarm	Sec. Alert/Tamper

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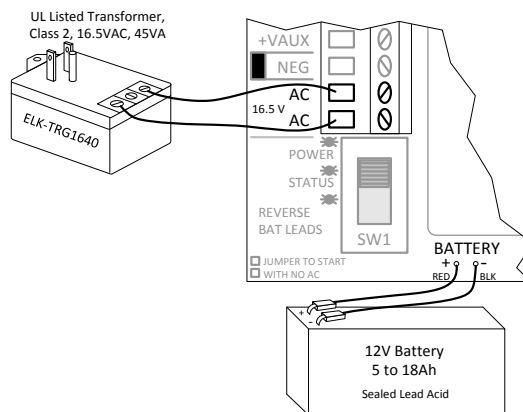
Connect the transformer to the AC Terminals using 16 to 18 gauge minimum wire. Do not exceed 50 feet between the transformer and the control or run the AC power in a multiconductor with other system circuits. Leave the transformer unplugged as well as the standby battery until all other connections have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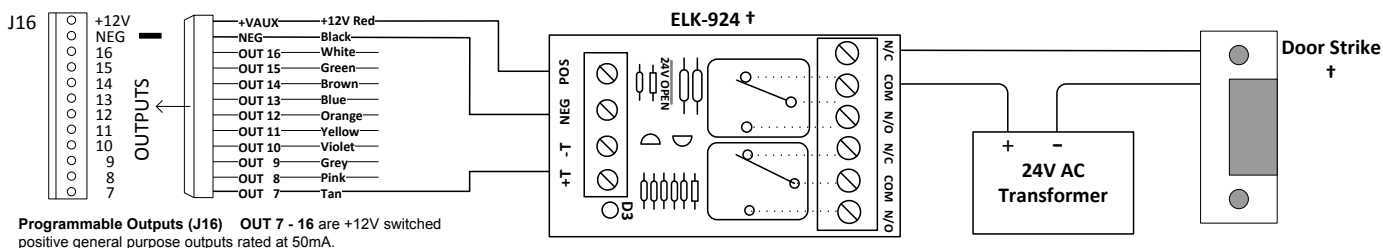
Outputs

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 do not exist in physical form however they can be implemented as phantom timers in the M1 rules engine.**

Programmable Outputs (J16) **OUT 7 - 16** are +12V switched positive general purpose outputs rated at 50mA.

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, ancillary 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.
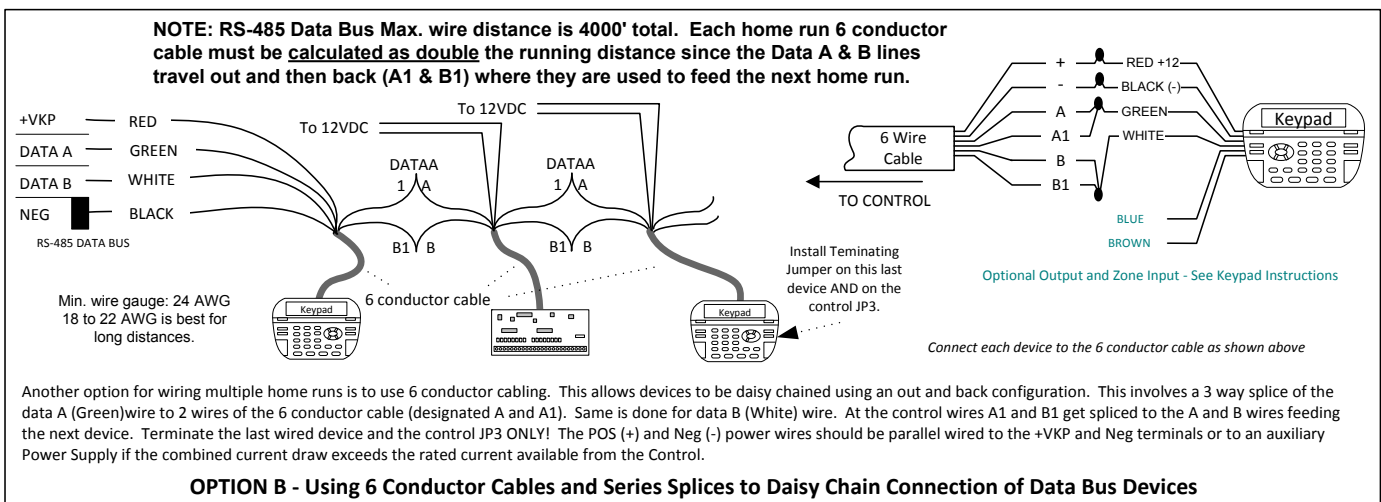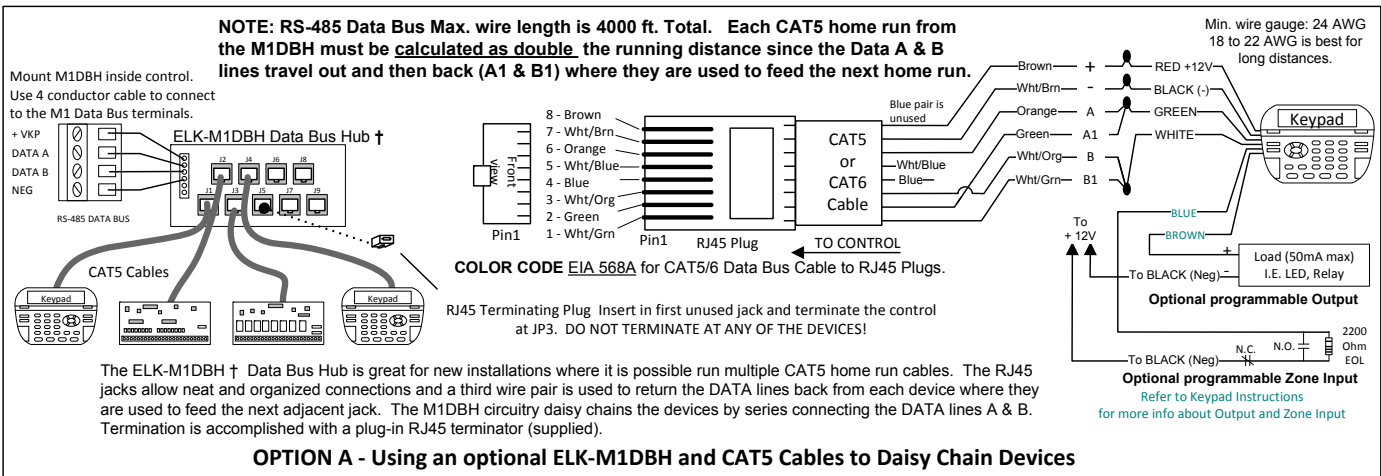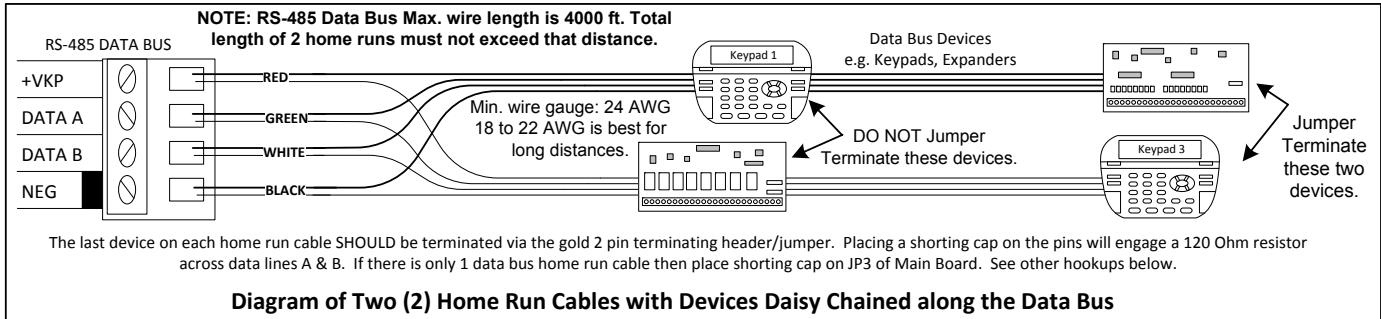
† Not evaluated by UL　　　　　　　　　†† Not for use in UL Listed Systems
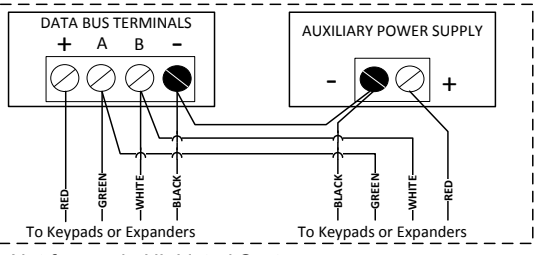
Data Bus E.O.L. Termination - VERY IMPORTANT!

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.

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

The last device on each home run cable SHOULD be terminated via the gold 2 pin terminating header/jumper. Placing a shorting cap on the pins will engage a 120 Ohm resistor across data lines A & B. If there is only 1 data bus home run cable then place shorting cap on JP3 of Main Board. See other hookups below.

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

NOTE: RS-485 Data Bus Max. wire length is 4000 ft. Total. Each CAT5 home run 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 home run.

COLOR CODE EIA 568A for CAT5/6 Data Bus Cable to RJ45 Plugs.

RJ45 Terminating Plug Insert in first unused jack and terminate the control at JP3. DO NOT TERMINATE AT ANY OF THE DEVICES!

The ELK-M1DBH † Data Bus Hub is great for new installations where it is possible run multiple CAT5 home run cables. The RJ45 jacks allow neat and organized connections and a third wire pair is used to return the DATA lines back from each device where they are used to feed the next adjacent jack. The M1DBH circuitry daisy chains the devices by series connecting the DATA lines A & B. Termination is accomplished with a plug-in RJ45 terminator (supplied).

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

NOTE: RS-485 Data Bus Max. wire distance is 4000' total. Each home run 6 conductor cable 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 home run.

Another option for wiring multiple home runs is to use 6 conductor cabling. This allows devices to be daisy chained using an out and back configuration. This involves a 3 way splice of the data A (Green)wire to 2 wires of the 6 conductor cable (designated A and A1). Same is done for data B (White) wire. At the control wires A1 and B1 get spliced to the A and B wires feeding the next device. Terminate the last wired device and the control JP3 ONLY! The POS (+) and Neg (-) power wires should be parallel wired to the +VKP and Neg terminals or to an auxiliary Power Supply if the combined current draw exceeds the rated current available from the Control.

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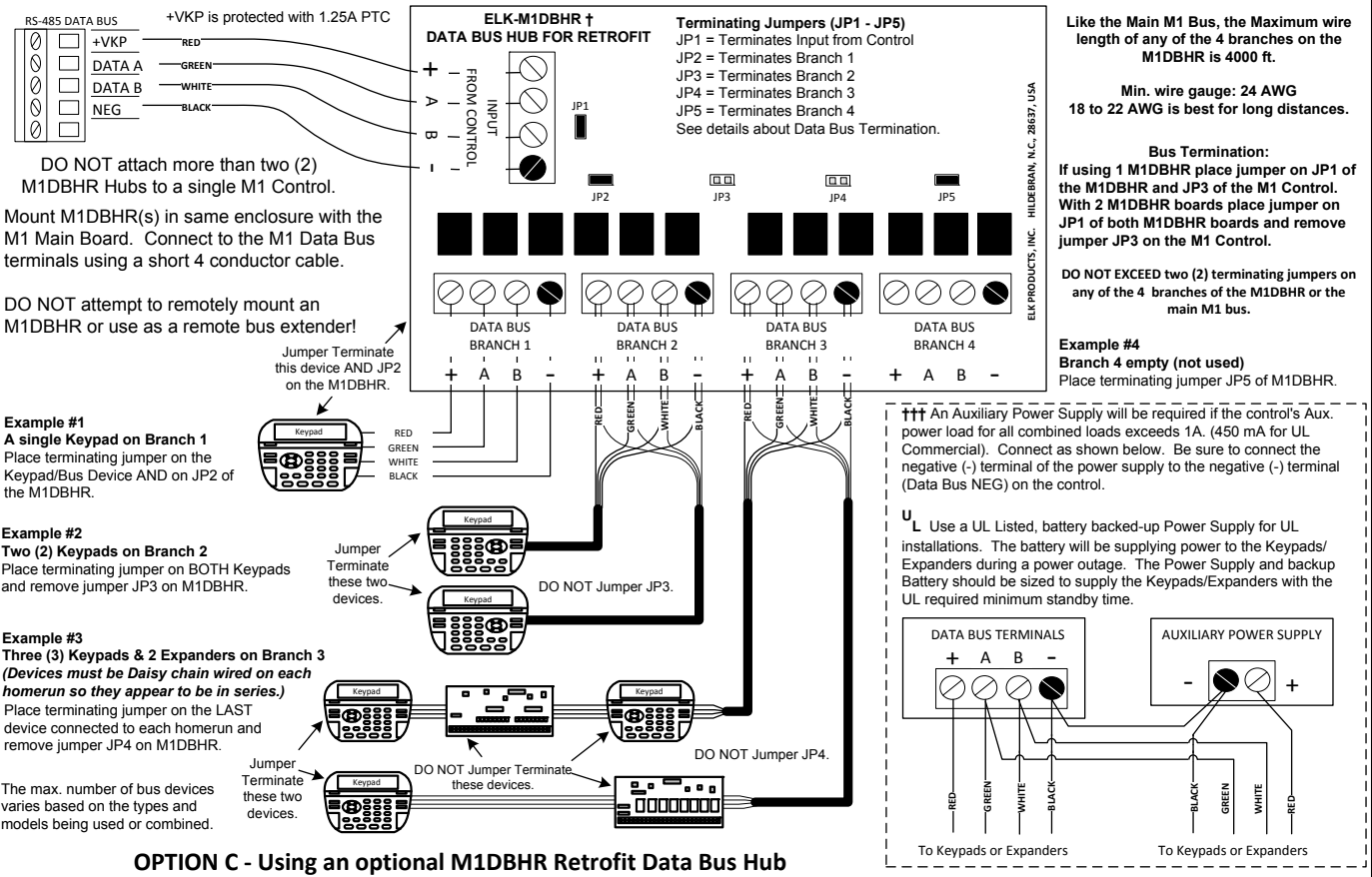
^{U}L Use a UL Listed, battery backed-up Power Supply for UL installations. The battery will be supplying power to the Keypads/Expanders during a power outage. The Power Supply and backup Battery should be sized to supply the Keypads/Expanders with the UL required minimum standby time.

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

The ELK-M1DBHR † Data Bus Hub Retrofit is NOT INTENDED for use on newly wired installations. It is expressly designed for retrofit jobs where existing 4 conductor cables are the only wires available. The M1DBHR creates 4 managed RS-485 BRANCHES from the single M1 main RS-485 Bus. Each of these branch can have only 2 home run cables (4 branches x 2 ea. = 8 home runs). WARNING! DO NOT CONNECT more than 2 M1DBHRs to an M1. DO NOT CONNECT an M1DBHR on a branch of a DBH or another M1DBHR! DO NOT ATTEMPT to use an M1DBHR as a data bus extender or repeater. DO NOT REMOTE a M1DBHR(s) away from the M1. Always mount it inside or very close to the M1 Control enclosure. Terminate the last (end of line) device on each home run.

RS-485 DATA BUS

+VKP is protected with 1.25A PTC

+VKP	RED
DATA A	GREEN
DATA B	WHITE
NEG	BLACK

DO NOT attach more than two (2) M1DBHR Hubs to a single M1 Control.

Mount M1DBHR(s) in same enclosure with the M1 Main Board. Connect to the M1 Data Bus terminals using a short 4 conductor cable.

DO NOT attempt to remotely mount an M1DBHR or use as a remote bus extender!

ELK-M1DBHR †
DATA BUS HUB FOR RETROFIT

INPUT FROM CONTROL: + A B -

JP1

Terminating Jumpers (JP1 - JP5)
JP1 = Terminates Input from Control
JP2 = Terminates Branch 1
JP3 = Terminates Branch 2
JP4 = Terminates Branch 3
JP5 = Terminates Branch 4
See details about Data Bus Termination.

ELK PRODUCTS, INC.   HILDEBRAN, N.C., 28637, USA

JP2   JP3   JP4   JP5

DATA BUS BRANCH 1   DATA BUS BRANCH 2   DATA BUS BRANCH 3   DATA BUS BRANCH 4

+ A B -   + A B -   + A B -   + A B -

Like the Main M1 Bus, the Maximum wire length of any of the 4 branches on the M1DBHR is 4000 ft.

Min. wire gauge: 24 AWG
18 to 22 AWG is best for long distances.

Bus Termination:
If using 1 M1DBHR place jumper on JP1 of the M1DBHR and JP3 of the M1 Control. With 2 M1DBHR boards place jumper on JP1 of both M1DBHR boards and remove jumper JP3 on the M1 Control.

DO NOT EXCEED two (2) terminating jumpers on any of the 4 branches of the M1DBHR or the main M1 bus.

Example #4
Branch 4 empty (not used)
Place terminating jumper JP5 of M1DBHR.

Example #1
A single Keypad on Branch 1
Place terminating jumper on the Keypad/Bus Device AND on JP2 of the M1DBHR.

Jumper Terminate this device AND JP2 on the M1DBHR.

Keypad

RED GREEN WHITE BLACK

Example #2
Two (2) Keypads on Branch 2
Place terminating jumper on BOTH Keypads and remove jumper JP3 on M1DBHR.

Jumper Terminate these two devices.

DO NOT Jumper JP3.

Keypad
Keypad

Example #3
Three (3) Keypads & 2 Expanders on Branch 3
(Devices must be Daisy chain wired on each homerun so they appear to be in series.)
Place terminating jumper on the LAST device connected to each homerun and remove jumper JP4 on M1DBHR.

Jumper Terminate these two devices.

DO NOT Jumper Terminate these devices.

DO NOT Jumper JP4.

The max. number of bus devices varies based on the types and models being used or combined.

††† 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.

DATA BUS TERMINALS   AUXILIARY POWER SUPPLY
+ A B -   - +

RED GREEN WHITE BLACK   BLACK GREEN WHITE RED

To Keypads or Expanders   To Keypads or Expanders

OPTION C - Using an optional M1DBHR Retrofit Data Bus Hub

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.

   Auth. Required
   Enter Valid Pin

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.

   01-Bus Module
   Enrollment

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.

   XX Bus Modules
   Enrolled, Edit ▶

† 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 <u>User Code 1</u> 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 <u>Installer Program Code is</u>: 1 7 2 8 3 9

WARNING! Do Not use 0 0 0 0 0 0 for the <u>Installer Program Code.</u>
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 t 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".

Available Keypads Styles

ELK-M1KP LCD Keypad
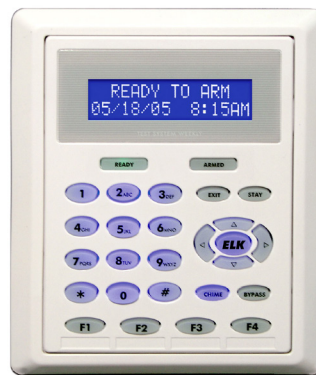
ELK-M1KP2 LCD Keypad
Smaller than M1KP.

ELK-M1KPAS Arming Station
Fits a single gang electrical box.

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

Keypad Models and Feature Comparison

PART NUMBER	PHYSICAL DIMENSIONS	DOOR COVER	ZONE INPUT	PROG. OUTPUT	OPT. 26 BIT PROX READER	TEMP SENSOR	FUNCTION KEYS	BACKLIGHTING LCD	KEYS	MOUNTING OPTIONS
ELKM1KP	6.87" W x 5.25" H x 1.32" D	Yes	Yes (1)	Yes (1)	Yes - Int. or Ext.	Yes	(6) F1 thru F6	Green	Amber	Surface Only
ELKM1KP2	4.65" W x 5.5" H x .95" D	No	Yes (1)	Yes (1)	Yes - Ext. Only	No	(4) F1 thru F4	Blue	Blue	Surface Std. (Flush w/opt. BBK2)
ELKM1KPAS	1.3" W x 2.62" H x .3" D (keypad area not incl. elect. plate)	No	No	No	No	No	(6) F then 1- 6	N/A	Blue	Flush Std.

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 four 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 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.

```
1-Tasks           ▶
```

```
Water The Lawn
01:  # Activates
```

† **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        ▶
```

```
Kitchen Lights
001:=Off, # to Chg
```

† **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.

```
3-Outputs         ▶
```

```
Pump Motor Cntrl
001:=Off, # to Chg
```

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.

```
4-Temperature     ▶
Sensor
```

```
Outside
S01:=032 Degrees
```

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.

```
5-Keypad          ▶
Temperature
```

```
Keypad 01
K01:=073 Degrees
```

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.

```
6-Thermostat      ▶
Temperature
```

```
Hallway
T01:=072 Degrees
```

† **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.

```
2-Reset           ▶
Smoke Detectors
```

```
5 Seconds Smoke
Output Reset      ▶
```

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

```
┌─────────────────────────┐
│ 3-Walk Test Area ▶      │
│ < Area?  Name >         │
└─────────────────────────┘
   ┌─────────────────────────┐
   │ 000of016 Tested ▶       │
   │ A?-Violate Zones        │
   └─────────────────────────┘
```

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, it's name is displayed across the bottom and can be audible if the Chime mode is on.

```
┌─────────────────────────┐
│ 4-View History    ▶     │
│ Log                     │
└─────────────────────────┘
   ┌─────────────────────────┐
   │ L001:01/01⬦ 08:00       │
   │ AreaArmed  103A1        │
   └─────────────────────────┘
```

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).

```
┌─────────────────────────┐
│ 5-View Status     ▶     │
│ of all zones            │
└─────────────────────────┘
```

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.

```
┌─────────────────────────┐
│ 6-Change          ▶     │
│ User Codes              │
└─────────────────────────┘
   ┌─────────────────────────┐
   │ Requires Master         │
   │ or Installer Code       │
   └─────────────────────────┘
   ┌─────────────────────────┐
   │ 001:Sel⬦     Prg ▶      │
   │ < User Name >           │
   └─────────────────────────┘
```

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 erases a letter. The UP and DOWN arrow keys shift from upper to lower case letters. Press the ELK key to save and exit.

```
┌─────────────────────────┐
│ 7-Automation      ▶     │
│ Custom Settings         │
└─────────────────────────┘
   ┌─────────────────────────┐
   │ Requires Master         │
   │ or Installer Code       │
   └─────────────────────────┘
   ┌─────────────────────────┐
   │ CS01:⬦ 00:00Time▶       │
   │ Sprklr On               │
   └─────────────────────────┘
```

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 a time of day setting. Press the RIGHT arrow key to begin.

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.

```
┌─────────────────────────┐
│ 8-System          ▶     │
│ Settings                │
└─────────────────────────┘
   ┌─────────────────────────┐
   │ Requires Master         │
   │ or Installer Code       │
   └─────────────────────────┘
   ┌─────────────────────────┐
   │ 81-Set Sys Clock ▶      │
   │ 24hr format             │
   └─────────────────────────┘
```

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.

```
   ┌─────────────────────────┐
   │ 82-Out1 Voice           │
   │ Adjust Volume    ▶      │
   └─────────────────────────┘
```

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.

```
   ┌─────────────────────────┐
   │ 83-Keypad         ▶     │
   │ Adjustments             │
   └─────────────────────────┘
      ┌─────────────────────────┐
      │ 1:Set Keypad      ▶     │
      │ Beep Tone               │
      └─────────────────────────┘
      ┌─────────────────────────┐
      │ 2:Set Keypress    ▶     │
      │ Beep Volume             │
      └─────────────────────────┘
      ┌─────────────────────────┐
      │ 3:Set Backlight   ▶     │
      │ Dim Level               │
      └─────────────────────────┘
```

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.

84-System Tests ▶	To perform system tests press the right arrow key. Then press the up or down arrow keys to select one of the three tests.
1:Battery Test for 30 Seconds ▶	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.
2:LCD Test ▶	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.
3:Communicator Manual Test ▶	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.
Send Test Silently ▶	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.
Send Test w/ Speaker Monitor ▶	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.
Turn Butt Set Monitor Mode On ▶	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.
Clear Pending Dialer Reports ▶	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.

85-Connect 'RP' Remote Program ▶	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: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 ▶	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.

86-System Diagnostics ▶	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:
1:DataBusErrors⬍ T2A1 Retry 00000	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
2:Sys Volt/Curr ⬍ 13.8V 0.440Amps	This tool displays the control's voltage and average current being drawn from the power supply.
3:Zone=001 Volts Display Level ▶	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.
Zn=001 Volt = 07.2 L04.6 H09.0 A132	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..
4:LastOnHookTele Line V=57,+-20%	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%.

```
┌─────────────────┐
│ 87-Custom       │
│ Message Record ▶│
└─────────────────┘
```

† 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.

```
┌─────────────────┐
│ VM01◆ 1 Block(s)│
│ Record<   Play> │
└─────────────────┘
```

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.

```
┌──────────────────┐
│ 6 Sec Blocks=01◆ │
│ Record<  PlayAll>│
└──────────────────┘
```

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.

```
┌──────────────────┐
│ 6 Sec Blocks=01◆ │
│ Rec<   LiftPhone!│
└──────────────────┘
```

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.*

```
┌─────────────────┐
│ VM01◆ 1 Block(s)│
│ Record<   Play> │
└─────────────────┘
```

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.

```
┌──────────────────────┐
│ 9-Installation     ▶ │
│ Programming (0)      │
└──────────────────────┘
   [Requires Installer Code]
```

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.

REFER TO PAGE 22 FOR PROGRAMMING INSTRUCTIONS

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 - cannot restore program defaults.
(2) = Lockout ALL programming - view everything - cannot restore program defaults
(3) = Lockout ALL Programming and Viewing - cannot restore program defaults. This level 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 <u>temporarily</u> 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".

```
0-Select Keypad
Alternate Area ▸
```

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

```
Auth. Required
Enter Valid PIN
```

Enter a valid user code. The control does not allow (restricts) mapping or viewing of areas that are not authorized for the user code.

MAPPING TO AN INDIVIDUAL AREA
Enter an area number from 1 to 8 OR scroll UP and DOWN with the arrow keys.

```
ChangeKPArea-1 ▸
[Area Name] A1
```

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. <u>However, after 1 minute of no keypress activity, the keypad will return to its original primary assigned area.</u>

ACCESSING A CONSOLIDATED DISPLAY OF ALL VALID AREAS
Entering "0" for the area number immediately maps the Keypad to a consolidated 'snapshot' of all <u>authorized areas</u>. 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.

```
ChangeKPArea-0 ▸
0=All Areas
```

```
Area# 1 2 3 4 5 6 7 8
Status X r r r r r r r
```

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.

```
Area# 1 2 3 4 5 6 7 8
Status X r r - - - - - r
```

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 <u>Menu 08 - Telephone Account Setup</u>, 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 <u>Menu 09 - Area Reporting Codes</u>, select the area (partition) and program the desired options such as: Dialer Delay, Alarm Abort, Auto Open/Closings, etc.
3. Under <u>Menu 10 - Zone Reporting Codes</u>, 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. <u>Under Menu 11 - F Key Reporting Codes</u>, 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 <u>Menu 12 - Sys Report Code Options & Codes</u>, 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 <u>Menu 13 - User Report Codes</u>, 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.

```
Auth. Required
Enter Valid Pin
```

The Factory Default <u>Installer</u> 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

ELK-M1G QUICK REFERENCE - MENU PROGRAMMING

Menu 01
Bus Mod Enroll
Enrolling
-Disp Totat Modules
-Allow Module Edit

Menu 02
User Code Auth.
User 1
(1) Area #
(2) Arm
(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) SglKey Quickarm
(9) DblKey Quickarm
(10) StayKeyScroll
(11) Stay Instant
(12) Night Scroll
(13) Night Instant
(14) StayChgArmed
(15) [Name]

Menu 04
Keypad Defs
Keypad 1
(1) Area Assgn
(2) Silent Entry
(3) Silent Exit
(4) Silent Chime
(5) Dark in 60 sec
(6) Show Date/Time
(7) Show Temp
(8) Show Area
(9) Byp Req Code
(10) F1 Key Def.
(11) F2 Key Def
(12) F3 Key Def
(13) F4 Key Def
(14) F5 Key Def
(15) F6 Key Def
(16) [Name]

Menu 05
Zone Defs
Zone 1
(1) Definition
(2) Type
(3) Area Assign
(4) Silent Alarm
(5) Dialer 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 07
Global Options (cont.)
(26) Out 2 Change to Voltage
(27) Out 2 Delay Time
(28) Out 2 Sgl Alarm Lockout
(29) Rings til Answer
(30) Ring/Hang/Answer
(31) 2 Way Listen-in Enable
(32) 2 Way Callback Time
(33) CS Alm Verify Time
(34) Baud Rate Port 0
(35) Xmit Event Log
(36) Xmit Zone Changes
(37) Xmit Output Changes
(38) Xmit Task Changes
(39) Xmit Light Changes
(40) Xmit Keypad Keys
(41) Req Code User Menus 1-5
(42) Local Prog. Code
(43) Serial Number [Read Only]
(44) Software Ver. [Read Only]
(45) Default Control Options
(81) Default User Codes
(82) Default Areas Data
(83) Default Keypads Data
(84) Default Zones Data
(85) Default Zone Names
(86) Default Cutoff Timers
(87) Default Global Data
(88) Default Telephone Data
(89) Default Telephone Numbers
(90) Default Area Report Codes
(91) Default Zone Report Codes
(92) Default System Report Codes
(93) Default User Report Codes
(94) Default Voice Messages
(95) Default Wireless Definitions
(99) Default Entire Control Panel

Menu 08
Telephone #'s & Accts
Telephone #1
(1) Format
(2) Always Report
(3) Number
(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
    /Rest/Unbypass
(14) Report Zn Bypass
(15) Report Zn Troubles
(16) Report User Op/Cl
(17) Report Sys Globals
(18) [Name]

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 09
System Rpt Codes
(1) AC Fail Delay
(2) AC Fail Code
(3) Auto Test Code
(4) TstTime hr:mm
(5) Days betweenTest
(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 10
Zone Rpt Codes
Zone #1
Alarm Code
Restore Code
Bypass Code
Trouble Code

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

Menu 13
User Rpt Codes
User #1
(1) Open Code
Close Code

User 100
- Installer-
(1) Open Code
Close Code

User 101
- RP Computer
Upload/Download
(1) Open Code
Close Code

Menu 14
Wireless Defs
1: ReceiverOptions
(1) Receiver Size
(2) ZnBank(Start Zn)
(3) Reg Supv. Hrs.
(4) Fire Supv. Hrs.
2: Transmitter Opts
^ Select Transmitter
(1) Enable Xmtr.
(2) Supv. Type
(3) Enable Option 1
(4) Enable Option 2
(5) Keyfob User ID
3: Learn Transmitter
^ Select 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

Menu 01 - Bus Module Enrollment

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
Enrolling **Bus Modules**	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.
XX Bus Modules **Enrolled, Edit ▸**	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.**
Keypad T1 ◆ **Addr= 01**	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.
Keypad **T1 ◆ Addr= 02 ◀▶**	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.
End Enrollment **0x Bus Modules**	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 addresses for hardwired Input or Output Expanders are 2 thru 13. The address determines the starting and ending hardwire zone or output numbers for that expander. See chart below:

Addr	Input Exp	Output Exp	Addr	Input Exp	Output Exp	Addr	Input Exp	Output Exp
1 =	N/A (main bd)	N/A	6 =	Zone 81-96	Output 81-96	11 =	Zone 161-176	Output 161-176
2 =	Zone 17-32	Output 17-32	7 =	Zone 97-112	Output 97-112	12 =	Zone 177-192	Output 177-192
3 =	Zone 33-48	Output 33-48	8 =	Zone 113-128	Output 113-128	13 =	Zone 193-208	Output 193-208
4 =	Zone 49-64	Output 49-64	9 =	Zone 129-144	Output 129-144			
5 =	Zone 65-80	Output 65-80	10 =	Zone 145-160	Output 145-160			

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 "<u>Menu 1 - Bus Module Enrollment</u>". To set the address on a keypad do the following:
  1. Hold down a key while applying power OR press and hold the (Asterisk) " * " 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 <u>User Code 1 is: 3 4 5 6</u> 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	Description of Option
001: Sel⬍ Prg▶ **User 1**	User 1 (001) is the first to display. Press the right arrow key to program, or press the up or down arrow keys to select another user. Enter three digits to jump to a specific user. The user name is displayed along the bottom.
001 01:12345678 **Code used in Area**	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 ▶ **Arm with Code**	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 ▶ **Disarm with Code**	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 ▶ **Bypass with Code**	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 ▶ **Access with Code**	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 ▶ **Temporary Code**	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 ▶ **Master Code**	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 purposed, multiple Master codes are not recommended.
001 08: = No ▶ **Menu 1-5 Allowed**	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 ▶ **Duress**	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:Usr Name ◀ **User 1**	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.

Area Definitions	Description of Option

A1: Sel⬍   Prg▶
Area 1

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.

A1 01:= 060   ▶
Exit Delay 1 Time

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.**

A1 02:= 030   ▶
Entry Delay 1 Time

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.

A1 03:= 060   ▶
Exit Delay 2 Time

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.**

A1 04:= 030   ▶
Entry Delay 2 Time

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.

A1 05:= No   ▶
Auto Stay NoExit

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.

A1 06:= Yes   ▶
Exit 1 Time Restart

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

1) <u>Additional Exit1 "Grace" feature</u> - 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 features complies with the SIA CP-01. †

2) <u>"Leave for Work" or "Pet" feature</u> - 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) <u>Going from Stay to Away Mode</u> - 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

Area Definitions	Description of Option
A1 07:=No Send▶ **Closing Ringback**	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.

NOTE: Refer to Appendix F for Commercial Burglar requirements.

Area Definitions	Description of Option
A1 08:= Yes ▶ **Sgl Key Quickarm**	If Yes, the control can be armed by a single press of the Exit or Stay keys. No code is required except to disarm. **Note: This option cannot be set to Yes if "Dbl Key Quick Arm" (see below) is set to Yes.** The default value is Yes.
A1 09:= No ▶ **DblKeyQuickArm**	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. **Note: This option cannot be set to Yes if "Sgl Key Quick Arm" (see above) is set to Yes.** The default value is No.
A1 10:= Yes ▶ **Stay Key Scroll**	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.
A1 11:= No ▶ **StayInstantScr**	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.
A1 12:= Yes ▶ **Night Scroll**	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.
A1 13:= No ▶ **NightInstantScr**	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.
A1 14:= No ▶ **StayChgIfArmed**	†† 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.
A1 15:AreaName ◀ **Area 1**	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.

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**: Automatic Arming is a feature that can be enabled from the Elk-RP Software. Using a "Whenever/And/Then" rule, automatic arming can be set to occur on specific days and at a specific time. A pre-warning delay time may also be set. At the designated time the area keypad(s) will beep and display the pre-warning.   The User can press the asterisk key " * " to silence the warning for 1 minute. Or they can press the UP arrow key to extend the auto arm by up to 120 minutes (10 minute increments). If this is done the pre-warn will restart 10 minutes prior to the extended auto arm time. Whenever the pre-warn time expires the system will proceed to automatically arm. _Example_ 1: A scheduled AutoArm is set for 06:00pm with a pre-warn time of 20 minutes. The pre-warn will start at 6:00pm and the auto arm will occur at 6:20pm. Pressing the UP arrow key twice will extend the time to 6:40pm.

NOTE: The system will auto bypass any burglar zones that are violated when the pre-warn time expires.

†† Not for use in UL Listed Systems

Menu 04 - Keypad Definitions

04-Keypad ▶
Definitions

Keypad Definitions

Description of Option

KP01: Sel⬍   Prg▶
Keypad 1

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.

KP01 01:= 1   ▶
Area Assigned To

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.

KP01 02:= No   ▶
Silent on Entry

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.

KP01 03:= No   ▶
Silent on Exit

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.

KP01 04:= No   ▶
Silent on Chime

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.

KP01 05:= No   ▶
Go dark in 60sec

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.**

KP01 06:= Yes ▶
Show Date & Time

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.

KP01 07:= Yes ▶
Show Temperature

If Yes, the keypad will display it's 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.

KP01 08:= Yes ▶
Show Area Name

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.

KP01 09:= No   ▶
Byp Key Req PIN

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)

Keypad Definitions	Description of Option

KP01 10:F1 Key ▶
Definitions

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.

F1KeyEvent=0010▶
Evt=Fire Alarm

Key Event refers to what the key activates. F Keys can 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.

F1KeyLight=1001▶
Evt=Fire Alarm

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.

F1 Key:=No   ▶
Light Invert

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.

F1 Key:=No   ▶
Light Blink

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.

F1 Key:=No   ▶
Key Requires PIN

Key Requires PIN selects whether the F key requires a valid user code prior to activation. Press the RIGHT arrow and select 1 for Yes or 0 for No. Press the RIGHT arrow key to move to the next option.

F1 Key:=No   ▶
SingleKeyPress

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 and select 1 for Yes or 0 for No. Press the RIGHT arrow key to move to the next option.

F1 Key Name   ◆▶
F1 = Fire

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.

KP01 11:F2 Key ▶
Definitions

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

KP01 12:F3 Key ▶
Definitions

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

KP01 13:F4 Key ▶
Definitions

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

KP01 14:F5 Key ▶
Definitions

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

KP01 15:F6 Key ▶
Definitions

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

KP01 16:KP Name◀
Keypad 1

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

```
┌─────────────────────────┐
│ 05-Zone            ▶    │
│ Definitions             │
└─────────────────────────┘
```

Zone Definitions

```
┌─────────────────────────┐
│ ZN001: Sel◆  Prg▶       │
│ Zone 001                │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│ ZN001 01:Def=01 ▶       │
│ Burg  Entry/Exit1       │
└─────────────────────────┘
```

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 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:

Def	Zone Description	Operating Characteristics
00	**Disabled**	- Used to remove any unused zone(s). No need to put a jumper or resistor across the terminals.
01	**Burglar Entry/Exit 1**	- For perimeter entry/exit doors. Allows a time delay to enter and exit during arm and disarm.
02	**Burglar Entry/Exit 2**	- For perimeter entry/exit doors that require more time delay during arm and disarm.
03	**Burglar Perimeter Instant**	- Windows and perimeter openings. Activates an immediate Burglary alarm if tripped during ANY armed mode. Does not provide any exit or entry delay.
04	**Burglar Interior**	- 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.
05	**Burglar Interior Follower**	- 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.
06	**Burglar Interior Nite**	- 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.
07	**Burglar Interior Nite Delay**	- 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 entry delay timer will start and the tone will sound, warning the user to disarm before a false alarm occurs.

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.

	Away	Stay	Stay Instant	Nite	Nite Instant
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	-	-	-	-
Burg Interior Follower Zone	A	-	-	-	-
Burg Interior Nite Zone	AN	-	-	AN	AN
Burg Interior Nite Delay Zone	A	-	-	A	AN

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

Def	Zone Description	Operating Characteristics
08	**Burglar 24 hr**	- Activates a Burglary alarm if violated anytime (during armed or disarmed state).
09	**Burglar 24 hr Box Tamper**	- Activates a Tamper trouble if violated while control is disarmed. Activates a Tamper Alarm if violated while control is armed. Intended for control, siren, and bell box tamper switches.
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. A short across the zone activates a Fire Supervisory alarm annunciated at the Keypad. It does NOT activate the Fire Bell or Siren. An open of the zone (break in the zone wires) will activate a Fire Trouble annunciated at the Keypad.
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 restoral.
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 restoral.

Def	Zone Description	Operating Characteristics
15	† **Keyfob** - Used when a wireless keyfob is enrolled into a receiver at this zone ID location.	
16	**Non Alarm -** 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.	
17	†† **Carbon Monoxide 24 hr** - 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".	
18	**Emergency 24 hr** - Similar to Def 17, this zone creates an alarm if tripped anytime (armed or disarmed).	
19	†† **Freeze Alarm 24 hr** - Similar to Def 17, this zone creates an alarm if tripped anytime (armed or disarmed).	
20	†† **Gas Alarm 24 hr** - Similar to Def 17, this zone creates an alarm if tripped anytime (armed or disarmed).	
21	†† **Heat Alarm 24 hr** - Similar to Def 17, this zone creates an alarm if tripped anytime (armed or disarmed).	
22	**Medical Alarm 24 hr** - Activates an immediate Medical alarm if tripped anytime (armed or disarmed).	
23	**Police Alarm w/Indication 24 hr** - Activates an audible Police (Holdup) alarm if tripped (armed or disarmed).	
24	**Police Alarm no Indication 24 hr** - Activates an non-audible Police (Silent) alarm if tripped (armed or disarmed).	
25	†† **Water Alarm 24 hr** - Activates an immediate Water alarm if tripped anytime (armed or disarmed).	
26	**Keyswitch Momentary** - Intended for a spring loaded momentary key switch. Toggles the armed state (disarmed/armed) with each trip.	
27	**Keyswitch Momentary - Away Mode** - Intended for a spring loaded momentary key switch. Arms the area in the AWAY mode with each trip.	
28	**Keyswitch Momentary - Stay Mode** - Intended for a spring loaded momentary key switch. Arms the area in the STAY mode with each trip.	
29	**Keyswitch Momentary - Disarm Only** - For a spring loaded momentary key switch. Disarms with each trip.	
30	**Keyswitch On/Off (Maintained)** - Intended for a 2 position On/Off key switch. Arms the area in Open position. Disarms the area in the Closed position.	
31	†† **Mute All Area Audibles** - For silencing all area audibles by a two-way listen-in module (other manufacturer).	
32	**Power Supervisory 24 hr** - 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.	
33	† **Temperature** - 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 that 200ms) response.**	
34	† **Analog** - 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.**	

ZN001 02: Type=0▶
0=EOL Supervised

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

Type	Wiring Configuration	Operating Description
0	**EOL Supervised.** EOL resistor is 2,200 Ohms * Type 0 is the factory default for all zones including wireless. While disarmed a violation will occur if the hardwire loop opens or shorts, or the wireless sensor is opened or tampered. **NOTE**: <u>For UL Tamper Supervision with ELK-M1XRFTW wireless burglary sensors</u>, Zone Type 4 (see below) shall be used to provide daytime tamper (disarmed) notification from the wireless sensor.		
1	**Normally Closed only**. No resistor required.		
2	**Normally Open only**. No resistor required.		
3	**EOL Supervised with SECURITY ALERT on Short**. **[Burglar & Keyswitch Zones Only)** While disarmed a Security "Day" Alert will occur if the zone wiring is SHORTED. Keypads will beep and display Security Alert and the zone number/name. Pressing Star key silences the keypad. A user code must be entered to reset/acknowledge the alert. While armed an alarm will occur regardless of whether the zone wiring is OPENED or SHORTED.		
4	**Four (4) State EOL Supervised with SECURITY ALERT on <u>Open or Short</u>. [Burglar & Keyswitch Zones Only]** Four (4) State EOL provides both alarm notification (armed) and daytime tamper (not armed) notification from a zone. It utilizes two (2) EOL resistors (1 in series with the loop and 1 in parallel with the alarm contact), and N/C contacts for alarm and tamper contacts. While disarmed the Zone will be violated (Not Ready) when the alarm contact opens. But if the tamper contact opens, OR if the zone wiring is open (cut) or shorted the keypads will beep and display Security Alert and the zone number/name. Pressing Star will silence the keypad. A user code must be entered to reset/acknowledge the alert. While armed an alarm will occur regardless of what condition (open, short, etc.) occurs to the loop. This zone type is intended for daytime tamper notification from a zone sensor.		
5	**Fire, 4-Wire Smoke Detector** with 2,200 Ohm EOL resistor. Trouble on open, alarm on short. (Zones 1 to 16).		
6	**Fire, 2-wire Smoke Detector** with 820 Ohm EOL resistor. (ZONE 16 ON)		

Four (4) State EOL Supervised REQUIRES M1 Firmware 4.3.5 or higher

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ZN001 03:Area=1 ▶
[A r e a   N a m e]

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

Zone Definitions   **Description of Option**

| ZN001 04:= No ▶ |
| Silent Alarm |

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.

| ZN001 05:= Yes ▶ |
| Dialer Delay |

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.

| ZN001 06:= No ▶ |
| Enable Listen-In |

† 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 *55* to activate listen-in. The Central Station can renew or terminate listen-in remotely. NOTE: Two-Way must be enabled (Menu 07-Globals) and an interface (ELK-M1TWI) with one or more microphone/speakers (ELK-M1TWS) must be installed. Default setting is No.

| ZN001 07:= No ▶ |
| Zone Bypassable |

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.

| ZN001 08:= No ▶ |
| Force Armable |

†† 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 <u>during</u> 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.

| ZN001 09:= No ▶ |
| SwingerShutdown |

†† 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.

| ZN001 10:= No ▶ |
| Req PeriodicTrip |

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.

| ZN001 11:= No ▶ |
| FastLoopResponse |

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.**

| ZN001 12:= No ▶ |
| Enable Chime |

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.

| ZN001 13:= No ▶ |
| In CrossZonePool |

†† 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. <u>**DO NOT program Entry/exit zones as Cross zones.**</u> Default is No. **NOTE: The Cross Zone feature shall NOT be used on Fire zones.**

| ZN001 14:Name ◀ |
| Zone 001 |

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.

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

Menu 06 - Alarm Duration Timers

06-Alarm Cutoff ▸ 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
CT01:=00600 sec ▸ **Burg Duration**	††† Burglar Alarm duration time in seconds. Default time is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT02:=00000 sec ▸ **Fire Duration**	Fire Alarm duration time in seconds. Default time is 65535 sec. (never cutoff). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT03:=00600 sec ▸ **Med Duration**	Medical Alarm duration time in seconds. Default is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT04:=00600 sec ▸ **Pol Duration**	Audible Police Alarm duration time in seconds. Default time is 00600 sec. (10 min). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT05:=00600 sec ▸ **CO Duration**	CO (Carbon Monoxide) Alarm duration time in seconds. The default time is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT06:=00600 sec ▸ **Emer Duration**	Emergency Alarm duration time in seconds. The default time is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT07:=00600 sec ▸ **Frez Duration**	Freeze Alarm duration time in seconds. The default time is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT08:=00600 sec ▸ **Gas Duration**	Gas Alarm duration time in seconds. The default time is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT09:=00600 sec ▸ **Heat Duration**	Heat Alarm duration time in seconds. The default time is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT10:=00600 sec ▸ **Watr Duration**	Water Alarm duration time in seconds. The default time is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT11:=00600 sec ▸ **Aux1 Duration**	Aux 1 Alarm duration time in seconds. The default time is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.
CT12:=00600 sec ▸ **Aux2 Duration**	Aux 2 Alarm duration time in seconds. The default time is 00600 sec. (10 min.). Main control board Outputs 1 and 2 will activate and continue to remain activated until this duration timer expires. If additional outputs are desired they must be programmed using the † RP software "Rules" function.

† RP software not evaluated by UL   ††† 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 TelRmtCtl **In&OutsidTeleCtl**	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 ▸ **CelciusTempDisp**	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 Digits ▸ **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.

Global Sys Definitions   **Description of Option**

G13:_____▶
Common To Area1

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.**

G14:=No Out1&2▶
Chg YelpToBuzzer

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.

G15:=1 Out1Start▶
Alarm Volum-Tst ▶

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).

G16:=7 Out1 Max▶
Siren 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.

G17:=5 Out1 Max▶
VoiceAlmVol-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.

G18:=2 Out1 Non▶
AlmVoiceVol-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.

G19:= No Out1 ▶
SuppressAllVoice

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.

G20:= Yes Out1 ▶
Say SystmMessages

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.

G21:= Yes Out1 ▶
Say Alarms

Selects whether Alarm messages will be spoken through Output 1.

G22:= Yes Out1 ▶
Say Zone Status

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

G23:= Yes Out1 ▶
Say SystemTrouble

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

G24:= Yes Out1 ▶
Say Zone Trouble

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

G25:= Yes Out1 ▶
Say Chime

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

Global Sys Definitions	Description of Option

G26:= No ▶
Out2 Voltage Out

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:=000sec Out2▶
Delay Turn-On

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 Out2 ▶
SingleAlmLockout

† 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 Rings ▶
Until AutoAnswer

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 ▶
Ring/Hang/Answer

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!**

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.

G31:= No 2Way ▶
Listen-In Enable

† 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

G32:=00sec 2Way▶
Callback Time

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 01 to 60 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 00 to disable.

G33:= 000sec CS ▶
Verify Call Time

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.

G34:= 9 115200 ▶
Baud Rate Port 0

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.

G35:= No Xmit ▶
Event Log- ASCII

The control can transmit ASCII data via it's RS-232 port to automation types of equipment. The ELK ASCII Protocol document is available upon request. This first option sets the control to transmit all event log information immediately as it occurs.

G36:= No Xmit ▶
Zone Chgs- ASCII

This option sets the control to transmit zone status changes immediately as they occur. The ELK ASCII Protocol document is available upon request.

G37:= No Xmit ▶
OutputChgs-ASCII

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

Global Sys Def	Description of Option
G38:= No Xmit ▸ **Task Chgs - ASCII**	**†** This option sets the control to transmit automation task status changes immediately as they occur.
G39:= No Xmit ▸ **Light Chgs-ASCII**	**†** This option sets the control to transmit automation lighting status changes immediately as they occur.
G40:= No Xmit ▸ **Keypad Key Chgs**	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..
G41:= No Require **Code UserMenu1-5**	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.
G42:= 172839 ▸ **Local Prog Code**	This is the 6 digit Installer program code that is required in order to access the local installer programming mode. **NOTE: Be careful when changing this code as it will be impossible to program the panel if the code is programmed wrong or forgotten.**
G43:= D1234567 ▸ **Serial Number**	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.
G44:xxxxxxxxxxxx **Axxxxxx Bxxxxxx**	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.
G45:= DefaultCtl ▸ **81=User Codes**	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.
82=Areas Data	Entering 82 from this screen causes all area definitions to be factory defaulted.
83=Keypads Data	Entering 83 from this screen causes all keypad definitions to be factory defaulted.
84=Zones Data	Entering 84 from this screen causes all zone definitions to be factory defaulted.
85=Zone Names	Entering 85 from this screen causes all zone names to be factory defaulted.
86=CutoffTimes	Entering 86 from this screen causes all the cutoff timers to be factory defaulted.
87=Global Data	Entering 87 from this screen causes all global system defs to be factory defaulted.
88=TeleAcct Data	Entering 88 from this screen causes all telephone reporting setup to be factory defaulted.
89=Tele #'s Only	Entering 89 from this screen causes all telephone numbers ONLY to be factory defaulted.
90=AreaRptCodes	Entering 90 from this screen causes all area report codes to be factory defaulted.
91=ZoneRptCodes	Entering 91 from this screen causes all zone report codes to be factory defaulted.
92=SysRptCodes	Entering 92 from this screen causes all system report codes to be factory defaulted.
93=UserRptCodes	Entering 93 from this screen causes all user report codes to be factory defaulted.
94=VoiceMessages	Entering 94 from this screen causes all voice messages to be factory defaulted.
95=WirelessDef	Entering 95 from this screen causes all wireless definitions to be factory defaulted.
99=Entire Panel	Entering 99 from this screen causes the entire panel programming to be factory defaulted.

† Not evaluated by UL

Menu 08 - Telephone Account Setup

┌─────────────────────────┐
│ **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.

Telephone Acct Setup   **Description of Option**

┌─────────────────────────┐
│ **T1: Sel⬥ Prg** ▶ │
│ **[Name for Tel#1]** │
└─────────────────────────┘

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.

┌─────────────────────────┐
│ **T1: 01: Format=0**▶ │
│ **0=Disabled** │
└─────────────────────────┘

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

00 = Disable reporting	03 = Pulse 4+2	06 = † Ethernet (M1XEP)
01 = Contact ID	04 = Pager DTMF tones	07 = † Serial (M1XSP)
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.

┌─────────────────────────┐
│ **T1: 02:= 0** ▶ │
│ **0=Always Report** │
└─────────────────────────┘

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.**

┌─────────────────────────┐
│ **T1: 03: Num =** │
│ │
└─────────────────────────┘

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   Slash (/) = forces the dialer to pause for 125 milliseconds.
Asterisk (*) = simulates the * key on a touch tone phone   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. Key 1 produces characters 1, #, *, and /. Key 2 produces 2, A, B, and C. Key 3 produces 3, and D. When complete press down arrow to return to numbers.

┌─────────────────────────┐
│ **T1: 04:= 08** ▶ │
│ **Dial Attempts** │
└─────────────────────────┘

The transmitter shall make no less that five nor more than ten attempts to contact the central-station or residential monitoring station receiver, deliver an acceptable message, and receive a sign-off signal. If transmitter has made the maximum number of attempts to contact the receive and has not received an acceptable sign-off signal, an indication of this failure shall be presented to the alarm system user. Default setting is 08 and the range is 01 to 15 attempts. Refer to Appendix F Regulatory Agency Statements for more info.

┌─────────────────────────┐
│ **T1: 05:= 000000** ▶ │
│ **Acct # for Area 1** │
└─────────────────────────┘

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.

┌─────────────────────────┐
│ **T1: 06:= 000000** ▶ │
│ **Acct # for Area 2** │
└─────────────────────────┘

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.

┌─────────────────────────┐
│ **T1: 07:= 000000** ▶ │
│ **Acct # for Area 3** │
└─────────────────────────┘

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

Telephone Acct Setup	Description of Option
T1: 08:= 000000 ▸ **Acct # for Area 4**	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.
T1: 09:= 000000 ▸ **Acct # for Area 5**	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.
T1: 10:= 000000 ▸ **Acct # for Area 6**	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.
T1: 11:= 000000 ▸ **Acct # for Area 7**	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
T1: 12:= 000000 ▸ **Acct # for Area 8**	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.

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

T1: 13:= Yes Rpt ▸ **AreaAlms,RestUnbp**	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.
T1: 14:= No Rpt ▸ **Bypasses**	This YES or NO option identifies whether this telephone number should report the Zone Bypasses from the ZONE REPORTING CODES menu.
T1: 15:= No Rpt ▸ **Zone Troubles**	This YES or NO option identifies whether this telephone number should report the Zone Troubles from the ZONE REPORTING CODES menu.
T1: 16:= No Rpt ▸ **User ReportCodes**	This YES or NO option identifies whether this telephone number should report the user opening and closing codes from the USER REPORTING CODES menu.
T1: 17:= Yes Rpt ▸ **Global SysEvents**	This YES or NO option identifies whether this telephone number should report the global system event codes from SYS REPORT OPTIONS & CODES menu.
T1: 18: Name ◂ **[Name for Tel#1]**	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.

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 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.

Area Report Codes	Description of Option
AR1:Sel⬍ Prg ▶ **Report Codes Area 1**	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.
AR1 01:000= Sec ▶ **Dialer Delay Time**	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).
AR1 02:Code= 00 ▶ **Alm Abort Code**	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).
AR1 03:000= Sec ▶ **Cancel Window Time**	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 000 to 255 seconds. Default is 000 (no report).
AR1 04:Code= 00 ▶ **Alm Cancel Code**	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).
AR1 05:Code= 00 ▶ **Close Automatic**	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).
AR1 06:Code= 00 ▶ **Close Early**	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).
AR1 07:Code= 00 ▶ **Close Extended**	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).
AR1 08:Code= 00 ▶ **Fail To Close**	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).
AR1 09:Code= 00 ▶ **Late Close**	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).
AR1 10:Code= 00 ▶ **Keyswitch Close**	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).

Area Report Codes	Description of Option
AR1 11:Code= 00 ▶ **Duress Code**	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).
AR1 12:Code= 00 ▶ **Open After Alrm**	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).
AR1 13:Code= 00 ▶ **Open Early**	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).
AR1 14:Code= 00 ▶ **Fail To Open**	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).
AR1 15:Code= 00 ▶ **Open Late**	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).
AR1 16:Code= 00 ▶ **Open Keyswitch**	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).
AR1 17:Code= 00 ▶ **User Lockout**	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).
AR1 18:Code= 00 ▶ **Exit Error**	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).
AR1 19:Code= 00 ▶ **Fail Communicate**	Fail to communicate displays on the keypad and the event log when the communicator fails to complete it's 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).

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

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

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

```
┌─────────────────────────────┐
│ 10-Zone Reportng            │
│ 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

```
┌─────────────────────────────┐
│ Z001: Sel⬥ Prg  ▶           │
│ [Name of Zone]              │
└─────────────────────────────┘
```

```
┌─────────────────────────────┐
│ Z001:A=00 R=00 ▶            │
│ Byp=00  Tbl=00              │
└─────────────────────────────┘
```

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:

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

Zone RCs	Alarms CID	SIA	Restore CID	SIA	Bypass CID	SIA	Trouble CID	SIA
18 = Emergency Alarm	101	QA	101	Q R	572	QB	----	----
19 = Freeze Alarm	159	ZA	159	Z R	572	ZB	----	----
20 = Gas Alarm	151	GA	151	G R	572	GB	----	----
21 = Heat Alarm	114	KA	114	K R	572	KB	----	----
22 = Medical Alarm	100	MA	100	M R	572	MB	----	----
23 = Police Alarm	120	P A	120	P H	572	PB	----	----
24 = Police No Indication	120	P A	120	H H	572	PB	----	----
25 = Water Alarm	154	WA	154	WR	572	WB	----	----
26 = Key Mom Arm/Disarm	----	----	----	----	----	----	----	----
27 = Key Mom Arm Away	----	----	----	----	----	----	----	----
28 = Key Mom Arm Stay	----	----	----	----	----	----	----	----
29 = Key Mom Disarm	----	----	----	----	----	----	----	----
30 = Key On/Off	----	----	----	----	----	----	----	----
31 = Mute Audibles	----	----	----	----	----	----	----	----
32 = Power Supervisory	338	YT	338	YR	572	UB	----	----
33 = Temperature	----	----	----	----	----	----	----	----
34 = Analog Zone	----	----	----	----	----	----	----	----

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

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.

F-Key Report Codes

FK01: A=00 ▶
[KP01 FKey01]

Description of Option

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

FK02:A=00   ▶
[KP01 FKey02]

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:

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

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	Description of Option
SR01: 015 = AC Fail **Rpt Delay - Min ▸**	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.
SR02: T=00 R=00 ▸ **AC Fail Codes**	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).
SR03: 00 = Auto ▸ **Test Code**	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).
SR04: = 00:00 ▸ **Auto Test Hr:Min**	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)
SR05: 000=Days ▸ **Between AutoTest**	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.
SR06: T=00 R=00 ▸ **Aux Overcurrent**	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).
SR07: T=00 R=00 ▸ **Exp Module Tbl**	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).
SR08: 00=Instal ▸ **Program Begin**	Used to report when the Installer Level of Programming has been entered. Range is 00 to FF. Default is 00 (no report).
SR09: 00=Instal ▸ **Program End**	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).

Sys Rpt Code Options	Description of Option
SR10: 00= Log ▸ 80% Full	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.
SR11: T=00 R=00 ▸ Low Battery	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).
SR12: T=00 ▸ Memory Error	**THIS PROGRAMMING LOCATION IS NO LONGER USED**
SR13: 00= Up/ ▸ Download End	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).
SR14: T=00 R=00 ▸ Phone Line Fault	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).\n\nTo avoid nuisance reports caused by brief phone outages caused by telephone linemen or central office repairs, there is a 3 minute (default) time delay before telephone line fault is annunciated and reported. The delay time is programmed from 01 to 31 seconds but ONLY by use of the ElkRP Programming Software. [A delay of 01 is the same as 00 or instant]
SR15: T=00 R=00 ▸ Output 2 Trouble	T (Trouble) is code reported upon an open circuit occurring on Output 2. R (Restore) is code reported upon restoral of the connection. Range is 00 to FF. Default is 00 (no report).

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

System RCs	CID	SIA	System RCs	CID	SIA
AC Fail	301	A T	Log 80% Full	623	J L
AC Restore	301	A R	Low Backup Battery	302	Y T
Automatic Test	602	R P	Low Battery Restore	302	Y R
Aux Over Current	312	Y P	Memory Error	304	Y F
Aux Over Current Restore	312	Y Q	Remote Programming End	412	R S
Expansion Module Trouble	333	E T	Telephone Line Fault	351	L T
Expansion Module Restore	333	E R	Telephone Line Restore	351	L R
Local Programming Begin	627	L B	Output 2 Trouble	322	Y A
Local Programming End	628	L X	Output 2 Restore	322	Y H

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
UR001: Sel⬍ Prg ▶ **[Name of User]**	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.
UR001:O=00 C=00 ▶ **[Name of User]**	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.
UR201:O=00 C=00 ▶ **Installer Op/Close**	
UR202:O=00 C=00 ▶ **Up/Dnload Op/Cl**	The total number of available User Codes is dependent on the Version of Firmware that is operating in the control.
UR203:O=00 C=00 ▶ **Quick Arm**	

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

User RCs	CID	SIA
Open	401	OP
Close	401	CL

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 Setup

```
┌─────────────────┐
│ 1 4 - W i r e l e s s │
│ S e t u p       ▶ │
└─────────────────┘
```

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.

There are four (4) submenus: 1-Receiver Options, 2-Xmitter Options, 3-Xmitter Enroll, and 4-Keyfob Event Definitions. Use the UP or DOWN arrow keys to locate the desired submenu, then press the right arrow key to select. The Elk-M1XRFTW Two-Way Receiver supports up to 144 of the Elk6000 series two-way wireless sensors (zones). Refer to the M1XRFTW Installation Instructions for a listing of the compatible Elk6000 series sensors. Elk produces two other models of "M1XRF" Wireless Receivers that support wireless sensors made by other companies. **†**

NOTE: The M1 will voice announce a relative transmission level from 1 to 8 (8 being the highest level) at the time of enrollment of each wireless sensor AND during the "Walk Test Area" function activated from the keypad user menus.

Wireless Submenu	Description
1:Rec Sel◆ Prg▶ **Receiver Options**	This submenu is for Receiver (Transceiver) options. To select this menu press the RIGHT arrow key, or press the Up or Down arrow keys to scroll the submenus.
RO3:=024 Hours ▶ **Reg. Supervision**	Burglary (non-fire) sensors. Sets the expiration timeout for zones assigned as <u>Supervisory Type 1</u>. Default is 024 hours. Range is 001 to 255 hours. A sensor set for Supervisory Type 1 will be declared missing if it fails to check-in during this timeout period. Sub-menu 2: Transmitter Opt 02 is location to the Supervisory TypesFire. (see below)
RO4:=004 Hours ▶ **Fire Supervision**	**†** Fire sensors. Sets the expiration timeout of zones assigned as <u>Supervisory Type 3</u>. Default is 004 hours. Range is 001 to 255 hours. A Type 3 sensor will be declared missing if it fails to check-in during this timeout period.
RO5:=No ▶ **UL Wireless-Jam**	For UL listed installations with the Elk-XRFTW Transceiver this option should be enabled. This provides a trouble indication in the event of an attempt to jam the wireless frequency. And in the event the M1XRFTW Transceiver ever become inoperable or missing the M1 will violate all wireless unarmed burglar zones and trouble all wireless fire zones.
2:Xmit Sel◆ Prg▶ **Transmitter Opt ▶**	This submenu is for specific transmitter (sensor) options. To select this menu press the RIGHT arrow key, or press the Up or Down arrow keys to scroll to another submenu.
WZn017:Sel◆ Prg▶ **Wireless Zone**	From the initial zone displayed, locate the desired wireless zone using the UP and DOWN arrow keys. Press the RIGHT arrow key to select and program the displayed transmitter.
WZn017 01: = No ▶ **Enable Transmitr**	Displays if a transmitter is enabled or disabled. This option CANNOT be used to add a new device. It can only be used to temporarily suspend or disabled an already enrolled device. This will automatically be set to Yes when a new sensor is added via the enroll process.
WZn017 02:=0 ▶ **Supervision Type**	This sets the Supervisory Type for each sensor. For Burglar (non-fire) sensors set the Type as "1" = Reg. (Normal) Supervision. For Fire Sensors **†** set the Type as "3" = Fire Supervision. For Keychain Remotes **†** (Fobs) or sensors that may be taken from the premises set the Type as "0" = non supervised. See receiver selections R02 and R03 for supervision time values. Valid values are: 0, 1, or 3 Factory default setting is "1" = Reg. (Normal) Supervision.
WZn017 03: = No ▶ **Enable Option 1**	This is relevant to only a few select sensors. Factory default is No. **See the List of Elk 6000 Series Wireless Sensors to determine which transmitters use this option.**
WZn017 04: = No ▶ **Enable Option 2**	This is relevant to only a few select sensors. Factory default is No. **See the List of Elk 6000 Series Wireless Sensors to determine which transmitters use this option.**
WZn017 05: = 001 ▶ **Keyfob User ID**	A User ID code may be assigned to wireless sensors like Keychain Remotes (Fobs). This ID will be used in the M1 event log to identify the Fob that was used to arm or disarm the Control. Valid range is 001 to 255. NOTE: Standard M1 User codes are 001 to 199.
WZn017 06: = No ▶ **PIR Auto Restore**	This option (PIR Auto Restore) is not currently used by the M1XRFTW.

WZn017 shown only as an example!

† Not evaluated by UL

```
┌─────────────────────┐
│ 3:Learn Sel⬥  Prg▶  │
│ WirelessTransmtr    │
└─────────────────────┘
```

This submenu is used to manually enroll transmitters (sensors). To select this menu press the RIGHT arrow key, or press the Up or Down arrow keys to scroll submenus.

```
┌─────────────────────┐
│ WZone = 017 HW◀     │
│ TransmitrToLrn  ▶   │
└─────────────────────┘
```

Select the zone for the new transmitter (sensor) by entering the three (3) digit zone number OR by scrolling to the zone number using the UP and DOWN arrow keys. NOTE: If a transmitter is already enrolled for this zone the display will resemble 3c below. Otherwise, it will display "TransmitrToLrn".

WZone = 17 shown as example

Press the RIGHT arrow key to select and program the zone.

```
┌─────────────────────┐
│ WZone = xxx Push    │
│ TransmiterButton    │
└─────────────────────┘
```

As this message is displayed the M1 will speak: "Press Transmitter Button for Zone XXX". Go to the transmitter (sensor) and execute the enroll process according the sensor instructions. In most cases this requires inserting the battery. If successful the keypad will chime and M1 will speak: "[Zone Number/Name] Enrollment." Refer to step 3c below.

```
┌─────────────────────┐
│ WZone = xxx         │
│ Enrolled ABCDE1     │
└─────────────────────┘
```

The TXID of the newly enrolled transmitter (sensor) will momentarily display. Rapid Enroll will then auto-advance to the next zone (step 3b) to permit sequential enrollment of transmitters. Press the ELK key twice to exit the enrollment after all new sensors have been enrolled.

DELETING A WIRELESS SENSOR - To delete an existing sensor navigate to option "WZnxxxx 01" and select "No". NOTE: Manually setting the Loop to 0 will also delete a sensor.

```
┌─────────────────────┐
│ WZone = xxx HW◀     │
│ A0000000 Loop=0     │
└─────────────────────┘
```

SETTING THE LOOP #. For Keychain remotes the Loop # does not matter! - For single zone sensors like the ELK-6020 and 6021 the Loop # should be 2 but the M1 factory default Loop # 0 will also recognize the built-in reed switch without having to change (program) the Loop from 0 to 2. - For multi-zone sensors like the ELK-6022 the Loop # is VERY IMPORTANT!
From step 3a press the Keypad LEFT arrow marked "HW". The TXID in decimal notation will display on the lower left. Press the RIGHT arrow to move the cursor over to Loop =. Enter 1, 2, or 3 according to the sensor instructions. Refer to the "Elk 6000 Series Wireless Sensors" for more information.

```
┌─────────────────────┐
│ 4:KeyfobSel⬥  Prg▶  │
│ Event Definition    │
└─────────────────────┘
```

† This submenu is used to program the operation or "action" for Keychain Remote (FOB) buttons. Each button can be assigned one of six (6) separate operations as explained below. To select this menu press the RIGHT arrow key.

```
┌─────────────────────┐
│ Key=1 Evt=0000 ▶    │
│ [name of event]     │
└─────────────────────┘
```

Press the UP or DOWN arrow keys to select a key (button) 1 to 8. Some Keychain Remote models may not support all the programmable buttons. The event or operation for each button is set by a four (4) digit event code. The range of event codes is 0000 to 0030   See M1 Installer Manual, Appendix A, Event Codes.

```
┌─────────────────────┐
│ Key=2 Evt=0000 ▶    │
│ [name of event]     │
└─────────────────────┘
```

Factory default = Only keys (buttons) 1 and 2 have a default setting.

```
┌─────────────────────┐
│ Key=3 Evt=0000 ▶    │
│ [name of event]     │
└─────────────────────┘
```

Key (Button) & Symbol	M1 Factory Default Event & Operation
Key1 - Lock	Event=0027 - KeyMomAway (Arm the Control)
Key2 - Unlock	Event=0029 - KeyMomDisarm (Disarm the Control)
Key3 - *i* Status Inquiry	Event=0000 - unprogrammed See NOTE 1 below
Key4 - Red Triangle	Event=0000 - unprogrammed See NOTE 2 below

```
┌─────────────────────┐
│ Key=4 Evt=0000 ▶    │
│ [name of event]     │
└─────────────────────┘
```

NOTE 1: Key (button) 3 on a 6010 Keychain Remote ALWAYS performs a system status Inquiry when pressed momentarily. This same key may be pressed and held for four (4) seconds to activate M1 programmable Key3 event. Factory default is 0000 (do nothing)

```
┌─────────────────────┐
│ Key=5 Evt=0000 ▶    │
│ [name of event]     │
└─────────────────────┘
```

NOTE 2: Key (button) 4 on a 6010 Keychain Remote REQUIRES a press and hold for two (2) full seconds in order to activate M1 programmable Key4 event. This can be any event, however the most common use is for emergency panic (Police Panic event 0023 or 0024). Factory default is 0000 (do nothing)

```
┌─────────────────────┐
│ Key=6 Evt=0000 ▶    │
│ [name of event]     │
└─────────────────────┘
```

DOUBLE KEY (BUTTON) PRESSES
M1 programmable Key7 event may be triggered by pressing the top 2 keys (buttons) together for ~3 seconds, and Key8 event may be triggered by pressing and holding the bottom 2 keys.

```
┌─────────────────────┐
│ Key=7 Evt=0000 ▶    │
│ [name of event]     │
└─────────────────────┘
```

SWAPPING THE KEY (BUTTON) FUNCTIONS
The M1 programmable keychain events are GLOBAL for all units. While it is not possible to fully customize the keys for multiple persons, it is possible to swap keys 1,2,3,4 to become keys 5,6,7,8. This allows 2 different remotes or people to activate different events. Enable Option 1 from **Menu 14, sub-menu 2:Xmit Transmitter Opt.**

```
┌─────────────────────┐
│ Key=8 Evt=0000 ▶    │
│ [name of event]     │
└─────────────────────┘
```

† Not evaluated by UL

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.
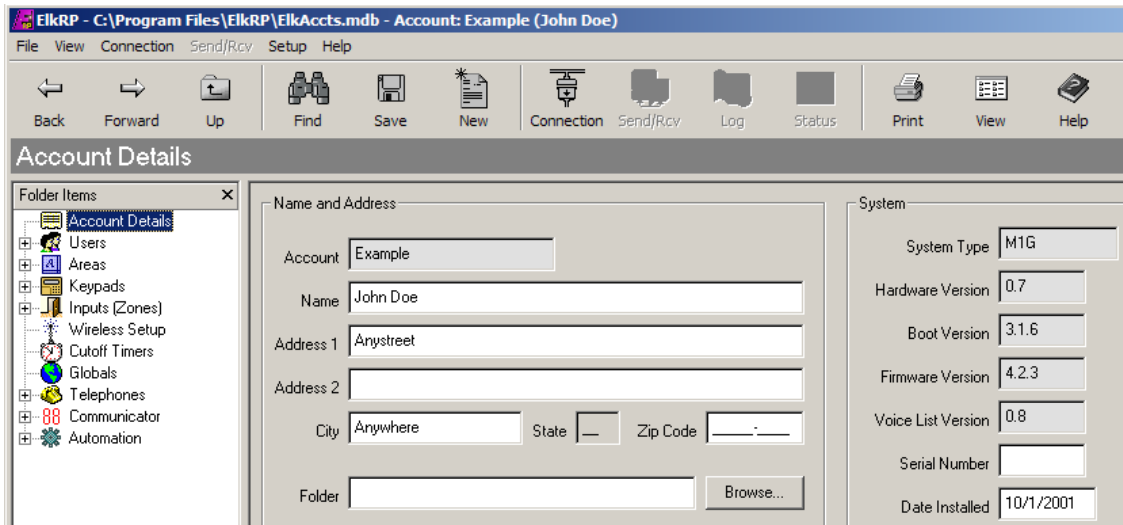
4.1.1 RP Connection Methods

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).**
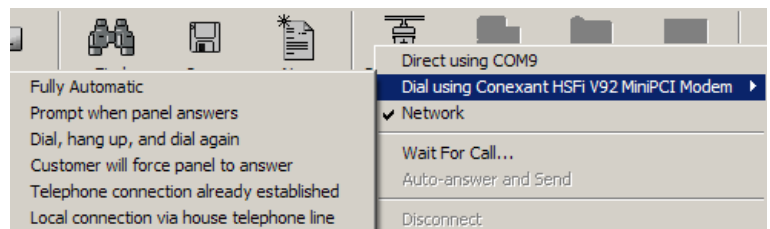
2. **Dial-up using Modem** and phone line - RP is compatible with virtually all computer modems, even 56k modems. This is due to the M1's built-in V.22 bis "True" modem, which handles data transfer at 2,400 baud. The 6 dial-up options are:

   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 the database. If there are any conflicts (differences), a pop-up resolution window display 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 it's 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 that 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.
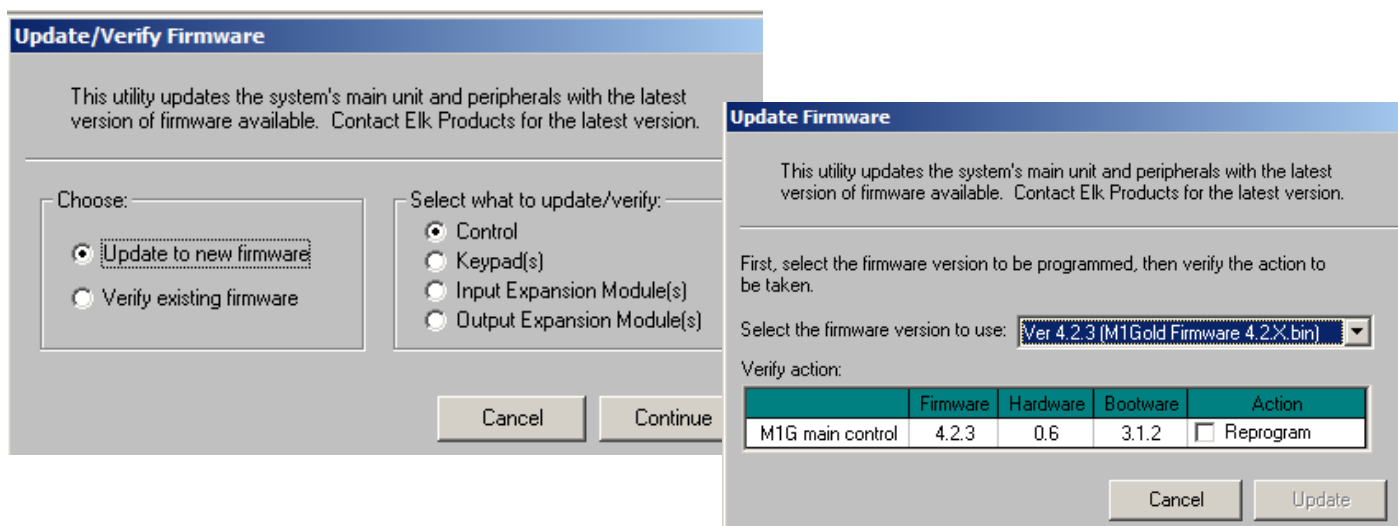
4.3 Automation Rules and Attributes

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 task 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.**

Lighting

Folder Items ✕

- Account Details
- ⊞ Users
- ⊞ Areas
- ⊞ Keypads
- ⊞ Inputs (Zones)
- Wireless Setup
- Cutoff Timers
- Globals
- ⊞ Telephones
- ⊞ Communicator
- ⊟ Automation
  - Tasks
  - **Lighting**

Device	Name	Format	Type	2-way	Show	Voice Description
1 (A1)	Mst Bedrm Lamp	Preset Dim	Dimmer			Master Bedroom
2 (A2)	Night Light	Standard	On/off switch		✕	Night Light
3 (A3)	Flood Light	Compose	Dimmer		✕	Flood Lights
4 (A4)	Porch Light	Extended	Dimmer		✕	Porch Light
5 (A5)	Garage Light	Extended	Dimmer		✕	Garage Light
6 (A6)	Living Rm Light	Preset Dim	Dimmer		✕	Living room Light
7 (A7)	Porch Fan	Standard	Appliance		✕	Porch Fan
8 (A8)						
9 (A9)						
10 (A10)						
11 (A11)						
12 (A12)						

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.

Output	Name	Show	Voice Description
9	Air Cond	✕	Air Condition
10	Door Lock	✕	Main Entry Door Lock
11	Output 011		

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.

Sunrise/Sunset

Folder Items ✕

- Account Details
- ⊞ Users
- ⊞ Areas
- ⊞ Keypads
- ⊞ Inputs (Zones)
- Wireless Setup
- Cutoff Timers
- Globals
- ⊞ Telephones
- ⊞ Communicator
- ⊟ Automation
  - Tasks
  - Lighting
  - Outputs
  - Sunrise/Sunset
  - ⊞ Voice

Latitude: 35 Degrees 44 Minutes ☑ North ☐ South

Longitude: 81 Degrees 20 Minutes ☑ West ☐ East

Send Control   Not Conn

Time Zone: -5 North America Eastern Time

Click to calculate all sunrise and sunset times based on the latitude and longitude entered above. ☞ [Calculate]

Sunrise/sunset times listed above have been calculated based on latitude, longitude, and time zone values entered.

		Sunrise	Sunset
January	1	07:35 AM	05:23 PM
	2	07:35 AM	05:24 PM
	3	07:35 AM	05:25 PM
	4	07:35 AM	05:26 PM

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.

† Not evaluated by UL

† 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.

System Arm/Disarm (vm)

Message	Word 1	Word 2	Word 3	Word 4	Word 5
Alarm Silence (vm212)	[200ms Silence]	Alarm	Silence	{Blank}	{Blank}
Alarm Acknowledged (vm213)	[200ms Silence]	Alarm	Acknowledged	{Blank}	{Blank}
(Area X) Is Armed Away Mode (vm214)	Is armed	[200ms Silence]	Away	Mode	{Blank}
(Area X) Is Armed Stay Mode (vm215)	Is armed	[200ms Silence]	Stay	Mode	{Blank}
(Area X) Is Armed Stay Instant (vm216)	Is armed	[200ms Silence]	Stay	Instant	Mode
(Area X) Is Armed Night Mode (vm217)	Is armed	[200ms Silence]	Night	Mode	{Blank}
(Area X) Is Armed Night Instant (vm218)	Is armed	[200ms Silence]	Night	Instant	Mode
(Area X) Is Armed Vacation Mode (vm219)	Is armed	[200ms Silence]	Vacation	Mode	{Blank}
(Area X) Exit Delay Is About To Expire (vm220)	Exit	Delay	Is about to expire	{Blank}	{Blank}
Auto Arm In 1 Minute (vm221)	Auto	Arm	In	[Insert Condition]	Minute
Exit Error (vm222)	Exit	Error	[200ms Silence]	[200ms Silence]	Zone
Closing Ring Back (vm223)	[800hz Tone]	Closed	Report	Acknowledged	[200ms S
System Is Armed (vm225)	System	Is armed	[200ms Silence]	{Blank}	{Blank}
(Area X) Is Disarmed (vm226)	Is disarmed	[200ms Silence]	{Blank}	{Blank}	{Blank}
Say Name of Area 1 (vm312)	Area	One	{Blank}	{Blank}	{Blank}
Say Name of Area 2 (vm313)	Area	Two	{Blank}	{Blank}	{Blank}
Say Name of Area 3 (vm314)	Area	Three	{Blank}	{Blank}	{Blank}
Say Name of Area 4 (vm315)	Area	Four	{Blank}	{Blank}	{Blank}
Say Name of Area 5 (vm316)	Area	Five	{Blank}	{Blank}	{Blank}
Say Name of Area 6 (vm317)	Area	Six	{Blank}	{Blank}	{Blank}
Say Name of Area 7 (vm318)	Area	Seven	{Blank}	{Blank}	{Blank}
Say Name of Area 8 (vm319)	Area	Eight	{Blank}	{Blank}	{Blank}

Folder Items: Account Details, Users, Areas, Keypads, Inputs (Zones), Wireless Setup, Cutoff Timers, Globals, Telephones, Communicator, Automation, Tasks, Lighting, Outputs, Sunrise/Sunset, Voice, System Alarms (vm), System Troubles (vm), System Arm/Disarm (vm), Zone Conditions (vm), System Miscellanous (vm), Phone Control (vm), Zone Types (vm)

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.

Custom Settings

Custom Setting	Name	Type	Value
1	Water On Tm	1 = Timer	0
2		0 = Number	0
3		0 = Number	0
4		0 = Number	0

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.

Counters

Counter	Name
1	Memory01
2	Memory02
3	Memory03

† 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.
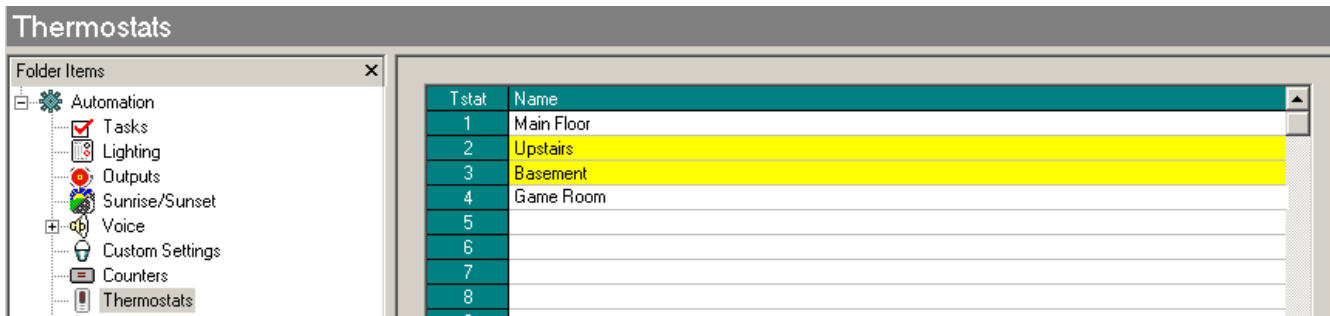
TEXTS - This section allows custom text messages to be constructed and formatted. These messages can be transmitted to an LCD keypad or out one of the RS232 serial ports to a PC or some other type of equipment. I.E. Touchscreen, Lighting centers, etc. A message to the keypad could be "Happy Birthday" 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
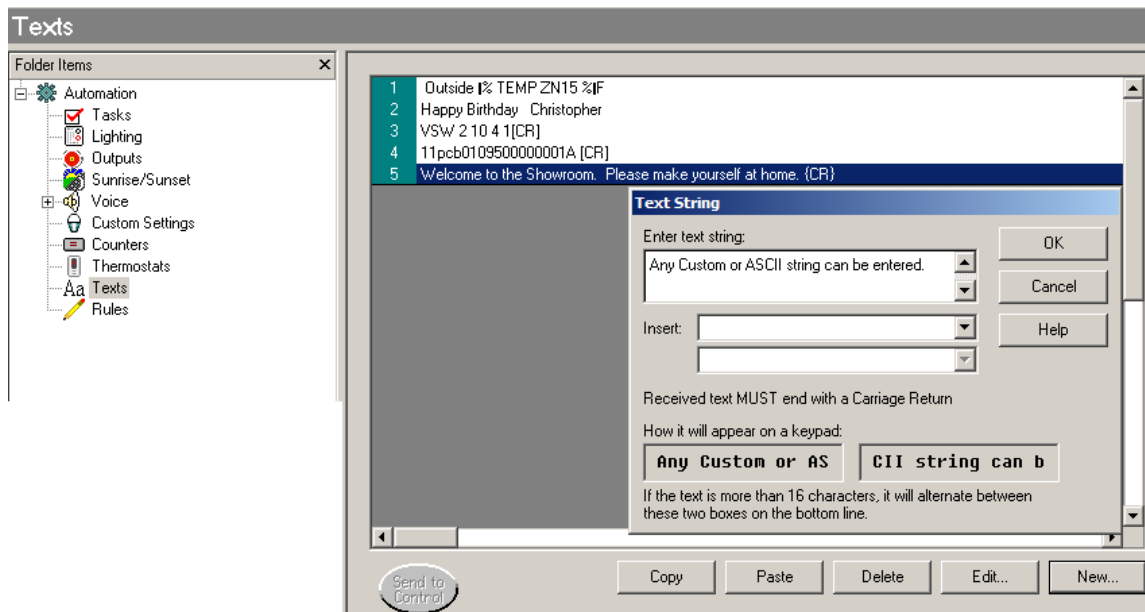
RULES - This section essentially brings all the power of the control's automation and its features together. Rules consist of three major elements: A WHENEVER ("triggering") condition, one or more ANDs ("qualifiers"), and one or more THENs ("activations"). Rules utilize the various elements of the previously 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.
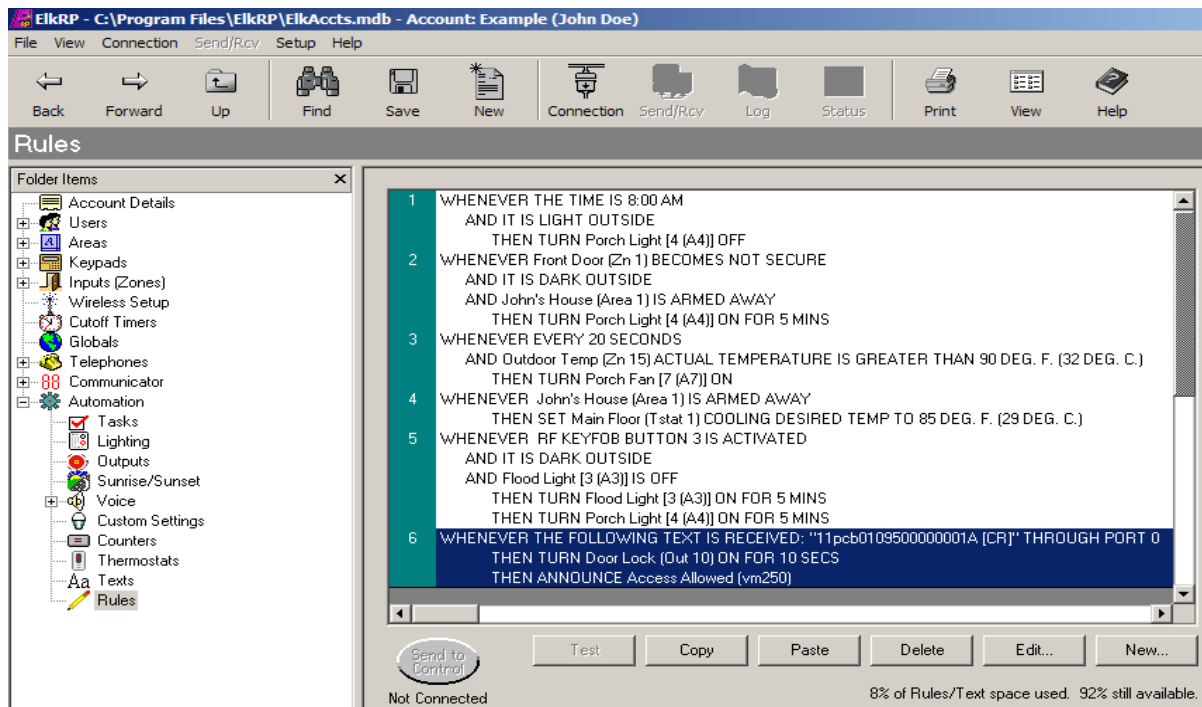
WHENEVER - The first element of a rule and the starting point of every rule is a triggering event. Every rule must have a triggering event in order to be started. A triggering event can be a time of day occurrence, a zone opening or closing, the security system going from armed to disarmed, a light changing 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
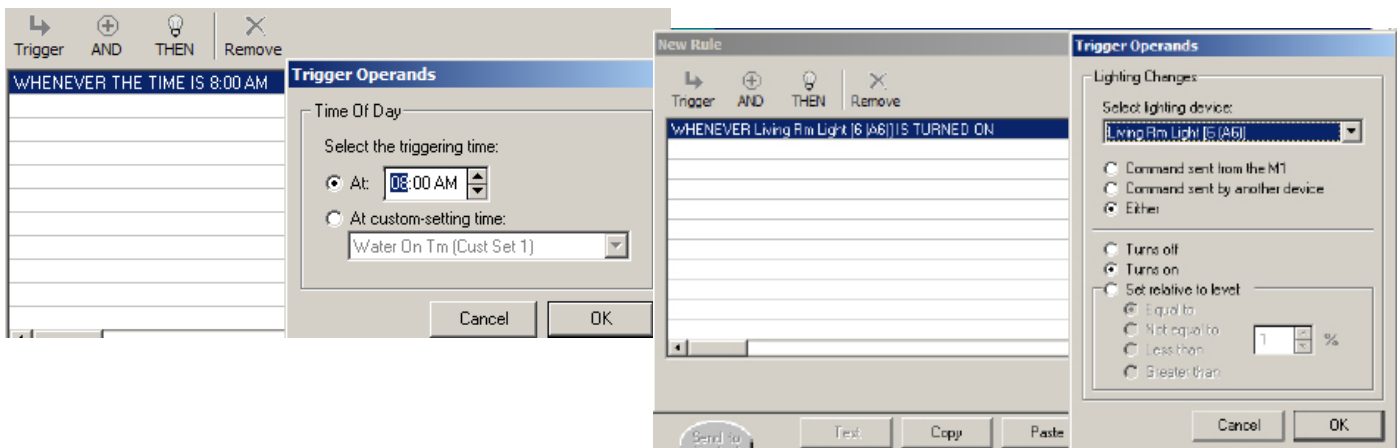
An important point to remember is that a WHENEVER gets triggered by the transition of its event from one state to another. In example 1, the trigger occurs when the time of day goes from 07:59AM to 08:00AM. In example 2, the trigger occurs when the living room light goes from off to on. Some WHENEVER 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 <u>optional</u> 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
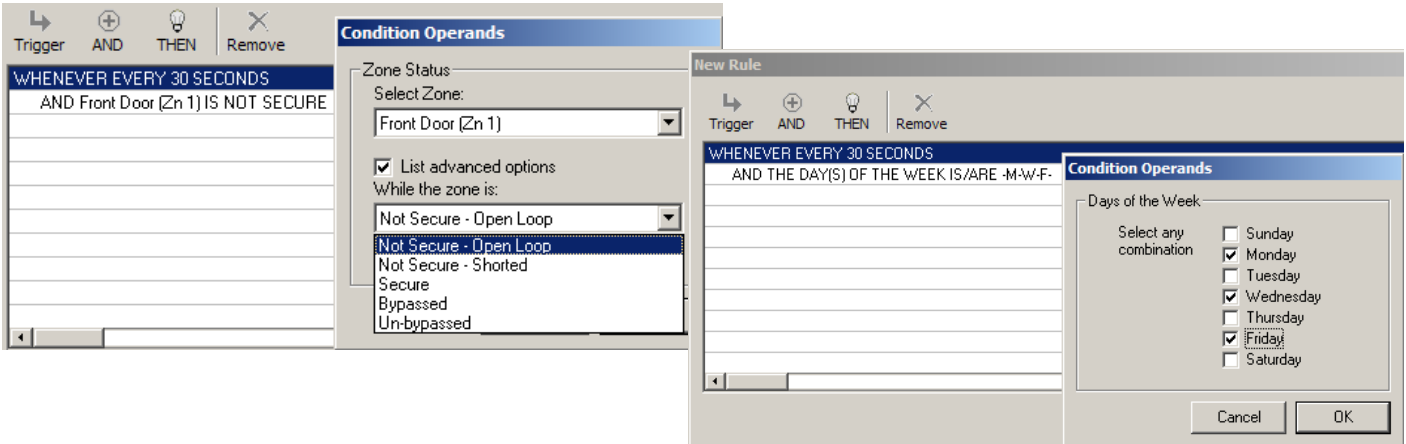
THEN - The third and final element of a rule is the action that you wish to occur as a result of the Rule being triggered and all the qualifiers being true. Below are some examples of THEN actions:

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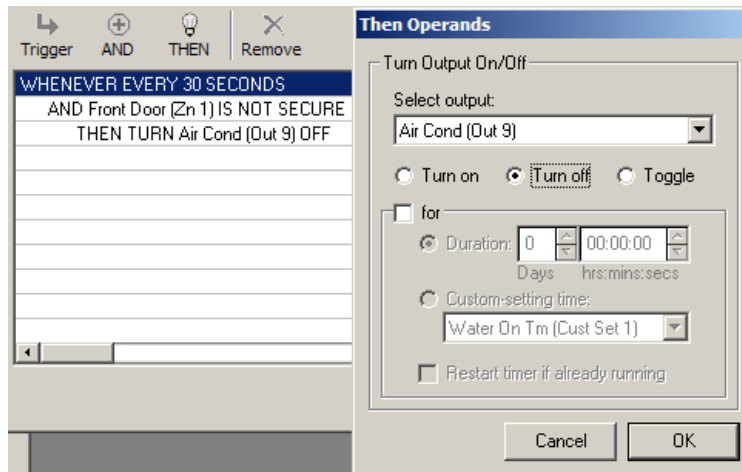
Here is an example of a rule used to turn off the air condition anytime the front door is left open by the kids. It consists of a 30 second timer for the WHENEVER trigger an AND to test the door's open/closed state, and a THEN to turn off the output that controls the air condition.

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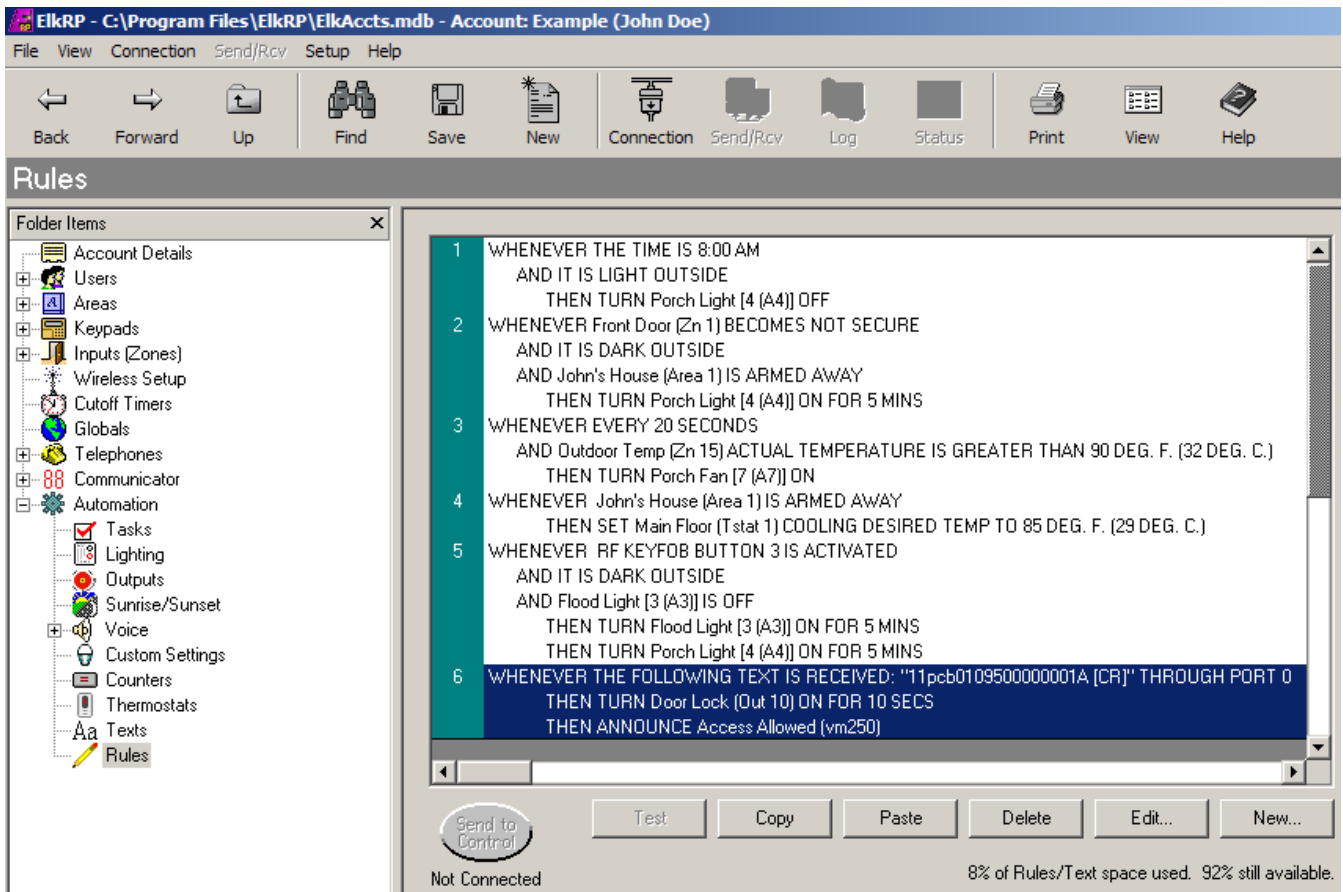
Rule 1 is an energy saving example. It automatically turns off the Porch lights at 8:00AM everyday if it is light outside.

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.
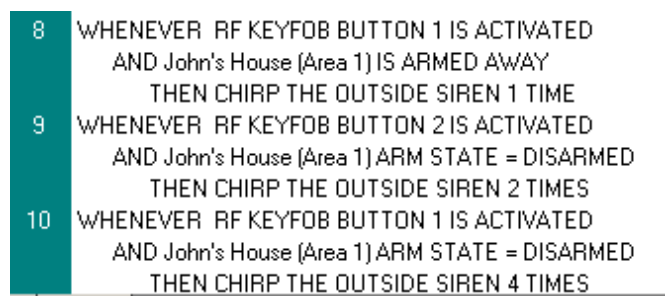
Appendix A - Event Codes

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 04 - Keypad Definitions. The activation event code can be any of 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 digits event 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.

Event Description	Reset	Event Description	Reset	Event Description	Reset	Event Description	Reset
0000 = No Event	N	1031 = Police Alarm in Area 1	TMC	1095 = Water Alarm in Area 1	TMC	1159 = Low Battery Restore	B
		1032 = Police Alarm in Area 2	TMC	1096 = Water Alarm in Area 2	TMC	1160 = Control Over Current Restore	B
0001 = Burg Entry/Exit 1		1033 = Police Alarm in Area 3	TMC	1097 = Water Alarm in Area 3	TMC	1161 = Expansion Module Restore	B
0002 = Burg Entry/Exit 2		1034 = Police Alarm in Area 4	TMC	1098 = Water Alarm in Area 4	TMC	1162 = Output 2 Restore	B
0003 = Burg Perimeter Instant		1035 = Police Alarm in Area 5	TMC	1099 = Water Alarm in Area 5	TMC	1163 = Telephone Line Restore	B
0004 = Burglar Interior		1036 = Police Alarm in Area 6	TMC	1100 = Water Alarm in Area 6	TMC		
0005 = Burg Interior Follower		1037 = Police Alarm in Area 7	TMC	1101 = Water Alarm in Area 7	TMC	1164 = Alarm Memory	A
0006 = Burglar Interior Nite		1038 = Police Alarm in Area 8	TMC	1102 = Water Alarm in Area 8	TMC	1165 = Alarm Memory in Area 1	TMC
0007 = Burg Int Nite Delay						1166 = Alarm Memory in Area 2	TMC
0008 = Burglar 24 hour		1039 = Aux1 24 hr in Area 1	TMC	1103 = Any Alarm in Area 1	TMC	1167 = Alarm Memory in Area 3	TMC
0009 = Burg 24hr Box Tamper		1040 = Aux1 24 hr in Area 2	TMC	1104 = Any Alarm in Area 2	TMC	1168 = Alarm Memory in Area 4	TMC
0010 = Fire 24 hour		1041 = Aux1 24 hr in Area 3	TMC	1105 = Any Alarm in Area 3	TMC	1169 = Alarm Memory in Area 5	TMC
0011 = Fire 24 hour Verified		1042 = Aux1 24 hr in Area 4	TMC	1106 = Any Alarm in Area 4	TMC	1170 = Alarm Memory in Area 6	TMC
0012 = Fire 24 hour Supervisory		1043 = Aux1 24 hr in Area 5	TMC	1107 = Any Alarm in Area 5	TMC	1171 = Alarm Memory in Area 7	TMC
0013 = Auxiliary1 24 hour		1044 = Aux1 24 hr in Area 6	TMC	1108 = Any Alarm in Area 6	TMC	1172 = Alarm Memory in Area 8	TMC
0014 = Auxiliary2 24 hour		1045 = Aux1 24 hr in Area 7	TMC	1109 = Any Alarm in Area 7	TMC		
0015 = Keyfob		1046 = Aux1 24 hr in Area 8	TMC	1110 = Any Alarm in Area 8	TMC	1173 = Area Armed	N
0016 = Non Alarm						1174 = Area Disarmed	N
0017 = Carbon Monoxide 24 hour		1047 = Aux2 24 hr in Area 1	TMC	1111 = Any Keypad Code-Lockout	N	1175 = Area 1 Arm State	N
0018 = Emergency 24 hour		1048 = Aux2 24 hr in Area 2	TMC	1112 = Keypad 01 Code-Lockout	N	1176 = Area 2 Arm State	N
0019 = Freeze Alarm 24 hour		1049 = Aux2 24 hr in Area 3	TMC	1113 = Keypad 02 Code-Lockout	N	1177 = Area 3 Arm State	N
0020 = Gas Alarm 24 hour		1050 = Aux2 24 hr in Area 4	TMC	1114 = Keypad 03 Code-Lockout	N	1178 = Area 4 Arm State	N
0021 = Heat Alarm 24 hour		1051 = Aux2 24 hr in Area 5	TMC	1115 = Keypad 04 Code-Lockout	N	1179 = Area 5 Arm State	N
0022 = Medical Alarm 24 hour		1052 = Aux2 24 hr in Area 6	TMC	1116 = Keypad 05 Code-Lockout	N	1180 = Area 6 Arm State	N
0023 = Police Alarm 24 hr w/indication		1053 = Aux2 24 hr in Area 7	TMC	1117 = Keypad 06 Code-Lockout	N	1181 = Area 7 Arm State	N
0024 = Police Alarm 24 hr no indication		1054 = Aux2 24 hr in Area 8	TMC	1118 = Keypad 07 Code-Lockout	N	1182 = Area 8 Arm State	N
0025 = Water Alarm 24 hour				1119 = Keypad 08 Code-Lockout	N		
0026 = Keyswitch Momentary		1055 = CO Alarm in Area 1	TMC	1120 = Keypad 09 Code-Lockout	N	1183 = Area 1 is Armed Away	N
0027 = Keyswitch Mom't - Away Mode		1056 = CO Alarm in Area 2	TMC	1121 = Keypad 10 Code-Lockout	N	1184 = Area 2 is Armed Away	N
0028 = Keyswitch Mom't - Stay Mode		1057 = CO Alarm in Area 3	TMC	1122 = Keypad 11 Code-Lockout	N	1185 = Area 3 is Armed Away	N
0029 = Keyswitch Mom't - Disarm Only		1058 = CO Alarm in Area 4	TMC	1123 = Keypad 12 Code-Lockout	N	1186 = Area 4 is Armed Away	N
0030 = Keyswitch On/Off		1059 = CO Alarm in Area 5	TMC	1124 = Keypad 13 Code-Lockout	N	1187 = Area 5 is Armed Away	N
0031 = Mute All Area Audibles		1060 = CO Alarm in Area 6	TMC	1125 = Keypad 14 Code-Lockout	N	1188 = Area 6 is Armed Away	N
0032 = Power Supervisory 24 hour		1061 = CO Alarm in Area 7	TMC	1126 = Keypad 15 Code-Lockout	N	1189 = Area 7 is Armed Away	N
0033 = Temperature 24 hour		1062 = CO Alarm in Area 8	TMC	1127 = Keypad 16 Code-Lockout	N	1190 = Area 8 is Armed Away	N
0034 = Analog 24 hour							
		1063 = Emergency Alm in Area 1	TMC	1128 = Fire Trouble, Any Zone	TMC	1191 = Area 1 is Armed Stay	N
1000 = No Event	N	1064 = Emergency Alm in Area 2	TMC	1129 = Burglar Trouble, Any Zone	TMC	1192 = Area 2 is Armed Stay	N
1001 = Fire Alarm	TMC	1065 = Emergency Alm in Area 3	TMC	1130 = Fail to Communicate Tbl		1193 = Area 3 is Armed Stay	N
1002 = Fire Supervisory	TMC	1066 = Emergency Alm in Area 4	TMC	1131 = RF Sensor Low Battery Tbl	N	1194 = Area 4 is Armed Stay	N
1003 = Burglar Alarm, Any Area	TMCB	1067 = Emergency Alm in Area 5	TMC	1132 = RF Jamming Trouble	N	1195 = Area 5 is Armed Stay	N
1004 = Medical Alarm, Any Area	TMC	1068 = Emergency Alm in Area 6	TMC	1133 = Lost Keypad Trouble	N	1196 = Area 6 is Armed Stay	N
1005 = Police Alarm, Any Area	TMC	1069 = Emergency Alm in Area 7	TMC	1134 = Lost Input Expander Tbl	N	1197 = Area 7 is Armed Stay	N
1006 = Aux1 24 hr, Any Area	TMC	1070 = Emergency Alm in Area 8	TMC	1135 = Lost Output Expander Tbl	N	1198 = Area 8 is Armed Stay	N
1007 = Aux2 24 hr, Any Area	TMC			1136 = EEprom Memory Error Tbl	C		
1008 = CO Alarm, Any Area	TMC	1071 = Freeze Alarm in Area 1	TMC	1137 = Flash Memory Error Trouble	C	1199 = Area 1 is Armed Stay Instant	N
1009 = Emergency Alm, Any Area	TMC	1072 = Freeze Alarm in Area 2	TMC	1138 = AC Failure Trouble	N	1200 = Area 2 is Armed Stay Instant	N
1010 = Freeze Alarm, Any Area	TMC	1073 = Freeze Alarm in Area 3	TMC	1139 = Control Low Battery Trouble	N	1201 = Area 3 is Armed Stay Instant	N
1011 = Gas Alarm, Any Area	TMC	1074 = Freeze Alarm in Area 4	TMC	1140 = Control Over Current Trouble	N	1202 = Area 4 is Armed Stay Instant	N
1012 = Heat Alarm, Any Area	TMC	1075 = Freeze Alarm in Area 5	TMC	1141 = Expansion Module Trouble	N	1203 = Area 5 is Armed Stay Instant	N
1013 = Water Alarm, Any Area	TMC	1076 = Freeze Alarm in Area 6	TMC	1142 = Output 2 Supervisory Tbl	N	1204 = Area 6 is Armed Stay Instant	N
1014 = Alarm, Any Area	TMC	1077 = Freeze Alarm in Area 7	TMC	1143 = Telephone Line Fault Tbl		1205 = Area 7 is Armed Stay Instant	N
		1078 = Freeze Alarm in Area 8	TMC			1206 = Area 8 is Armed Stay Instant	N
1015 = Burglar Alarm in Area 1	TMC			1144 = Restore Fire Zone	B		
1016 = Burglar Alarm in Area 2	TMC	1079 = Gas Alarm in Area 1	TMC	1145 = Restore Fire Supv Zone	B	1207 = Area 1 is Armed Night	N
1017 = Burglar Alarm in Area 3	TMC	1080 = Gas Alarm in Area 2	TMC	1146 = Restore Burglar Zone	B	1208 = Area 2 is Armed Night	N
1018 = Burglar Alarm in Area 4	TMC	1081 = Gas Alarm in Area 3	TMC	1147 = Restore Medical Zone	B	1209 = Area 3 is Armed Night	N
1019 = Burglar Alarm in Area 5	TMC	1082 = Gas Alarm in Area 4	TMC	1148 = Restore Police Zone	B	1210 = Area 4 is Armed Night	N
1020 = Burglar Alarm in Area 6	TMC	1083 = Gas Alarm in Area 5	TMC	1149 = Restore Aux1 24 hr Zone	B	1211 = Area 5 is Armed Night	N
1021 = Burglar Alarm in Area 7	TMC	1084 = Gas Alarm in Area 6	TMC	1150 = Restore Aux2 24 hr Zone	B	1212 = Area 6 is Armed Night	N
1022 = Burglar Alarm in Area 8	TMC	1085 = Gas Alarm in Area 7	TMC	1151 = Restore CO Zone	B	1213 = Area 7 is Armed Night	N
		1086 = Gas Alarm in Area 8	TMC	1152 = Restore Emergency Zone	B	1214 = Area 8 is Armed Night	N
1023 = Medical Alarm in Area 1	TMC			1153 = Restore Freezer Zone	B		
1024 = Medical Alarm in Area 2	TMC	1087 = Heat Alarm in Area 1	TMC	1154 = Restore Gas Zone	B	1215 = Area 1 is Armed Night Instant	N
1025 = Medical Alarm in Area 3	TMC	1088 = Heat Alarm in Area 2	TMC	1155 = Restore Heat Zone	B	1216 = Area 2 is Armed Night Instant	N
1026 = Medical Alarm in Area 4	TMC	1089 = Heat Alarm in Area 3	TMC	1156 = Restore Water Zone	B	1217 = Area 3 is Armed Night Instant	N
1027 = Medical Alarm in Area 5	TMC	1090 = Heat Alarm in Area 4	TMC	1157 = Communication Fail Restore	B	1218 = Area 4 is Armed Night Instant	N
1028 = Medical Alarm in Area 6	TMC	1091 = Heat Alarm in Area 5	TMC	1158 = AC Fail Restore	B	1219 = Area 5 is Armed Night Instant	N
1029 = Medical Alarm in Area 7	TMC	1092 = Heat Alarm in Area 6	TMC			1220 = Area 6 is Armed Night Instant	N
1030 = Medical Alarm in Area 8	TMC	1093 = Heat Alarm in Area 7	TMC			1221 = Area 7 is Armed Night Instant	N
		1094 = Heat Alarm in Area 8	TMC			1222 = Area 8 is Armed Night Instant	N

These 34 events are Zone Definitions shown here for convenience.

Appendix A - Event Codes (cont.)

Event Description	Reset	Event Description	Reset	Event Description	Reset	Event Description	Reset
1223 = Area 1 is Armed Vacation	N	1293 = Automatic Closing	B	1363 = Remote Programming Start	N	3100 = F4 Key, Any KP Is Pressed	B
1224 = Area 2 is Armed Vacation	N	1294 = Early Closing	B	1364 = Remote Programming Stop	B	3101 = F5 Key, Any KP Is Pressed	B
1225 = Area 3 is Armed Vacation	N	1295 = Closing Time Extended	B	1365 = AC Fail Tbl - Power Supv Zn	N	3102 = F6 Key, Any KP Is Pressed	B
1226 = Area 4 is Armed Vacation	N	1296 = Fail to Close	B	1366 = Low Batt Tbl - Pwr Supv Zn	N	3103 = Any KP Key Is Pressed	F
1227 = Area 5 is Armed Vacation	N	1297 = Late to Close	B	1367 = System Start Up	N	3104 to 4000 = No Event	
1228 = Area 6 is Armed Vacation	N	1298 = Keyswitch Closing	B	1368 = Control Low Volt Shutdown	N		
1229 = Area 7 is Armed Vacation	N	1299 = Duress	B	1369 = RF Keyfob Button 1	B	4001 to 4208 = Zone State 1 to 208	T
1230 = Area 8 is Armed Vacation	N	1300 = Exception Opening	B	1370 = RF Keyfob Button 2	B	4209 to 5000 = No Event	
		1301 = Early Opening	B	1371 = RF Keyfob Button 3	B		
1231 = Area 1 is Force Armed	N	1302 = Fail to Open	B	1372 = RF Keyfob Button 4	B	5001 to 5208 = Bypass State 1 to 208	T
1232 = Area 2 is Force Armed	N	1303 = Late to Open	B	1373 = RF Keyfob Button 5	B	5209 to 6000 = No Event	
1233 = Area 3 is Force Armed	N	1304 = Keyswitch Opening	B	1374 = RF Keyfob Button 6	B		
1234 = Area 4 is Force Armed	N			1375 = RF Keyfob Button 7	B	6001 to 6208 = Alm Memory 1 to 208	T
1235 = Area 5 is Force Armed	N	1305 = Area 1 Closing Ring Back	B	1376 = RF Keyfob Button 8	B	6209 to 7000 = No Event	
1236 = Area 6 is Force Armed	N	1306 = Area 2 Closing Ring Back	B	1377 = Lost Serial Port Exp Tbl	N		
1237 = Area 7 is Force Armed	N	1307 = Area 3 Closing Ring Back	B	1378 = Rule Triggered Voice Dial	B	7001 to 7208 = Output State 1 to 208	N
1238 = Area 8 is Force Armed	N	1308 = Area 4 Closing Ring Back	B	1379 = Dialer Report Cleared	B	7209 to 8000 = No Event	
		1309 = Area 5 Closing Ring Back	B	1380 = Central Station Kissoff	B		
1239 = Zone Bypassed	N	1310 = Area 6 Closing Ring Back	B	1381 = Transmitter Supervision Loss	N	8001 thru 9999 = No Event	
1240 = All Zones Unbypassed	B	1311 = Area 7 Closing Ring Back	B	1382 = Smoke Detector Clean Me			
1241 = Burglar Zone Fault	N	1312 = Area 8 Closing Ring Back	B	1383 = Ethernet Trouble			
				1384 = Ethernet Restore			
1242 = Burglar Status	N	1313 = Access Keypad 1	TM	1385 = AC Restore - Pwr Supv Zn			
1243 = Area 1 Burglar Status	N	1314 = Access Keypad 2	TM	1386 = Low Batt Rest - Pwr Sup Zn			
1244 = Area 2 Burglar Status	N	1315 = Access Keypad 3	TM	1387 = CO Trouble			
1245 = Area 3 Burglar Status	N	1316 = Access Keypad 4	TM				
1246 = Area 4 Burglar Status	N	1317 = Access Keypad 5	TM	1388 to 2000 = No Event/Not Used			
1247 = Area 5 Burglar Status	N	1318 = Access Keypad 6	TM				
1248 = Area 6 Burglar Status	N	1319 = Access Keypad 7	TM	2001 = Automation Control 1	TF		
1249 = Area 7 Burglar Status	N	1320 = Access Keypad 8	TM	~			
1250 = Area 8 Burglar Status	N	1321 = Access Keypad 9	TM	2032 = Automation Control 32	TF		
		1322 = Access Keypad 10	TM				
1251 = Area 1 Chime Mode	N	1323 = Access Keypad 11	TM	2033 to 3000 = No Event/Not Used	N		
1252 = Area 2 Chime Mode	N	1324 = Access Keypad 12	TM				
1253 = Area 3 Chime Mode	N	1325 = Access Keypad 13	TM	3001 = F1 Key on Keypad 1	F		
1254 = Area 4 Chime Mode	N	1326 = Access Keypad 14	TM	3002 = F2 Key on Keypad 1	F		
1255 = Area 5 Chime Mode	N	1327 = Access Keypad 15	TM	3003 = F3 Key on Keypad 1	F		
1256 = Area 6 Chime Mode	N	1328 = Access Keypad 16	TM	3004 = F4 Key on Keypad 1	F		
1257 = Area 7 Chime Mode	N	1329 = Access, Any Keypad	TM	3005 = F5 Key on Keypad 1	F		
1258 = Area 8 Chime Mode	N			3006 = F6 Key on Keypad 1	F		
		1330 = Keypad Beep Area 1	N	3007 to 3012 = F1 to F6 on KP 2	F		
1259 = Area 1 Chime Alert	B	1331 = Keypad Beep Area 2	N	3013 to 3018 = F1 to F6 on KP 3	F		
1260 = Area 2 Chime Alert	B	1332 = Keypad Beep Area 3	N	3019 to 3024 = F1 to F6 on KP 4	F		
1261 = Area 3 Chime Alert	B	1333 = Keypad Beep Area 4	N	3025 to 3030 = F1 to F6 on KP 5	F		
1262 = Area 4 Chime Alert	B	1334 = Keypad Beep Area 5	N	3031 to 3036 = F1 to F6 on KP 6	F		
1263 = Area 5 Chime Alert	B	1335 = Keypad Beep Area 6	N	3037 to 3042 = F1 to F6 on KP 7	F		
1264 = Area 6 Chime Alert	B	1336 = Keypad Beep Area 7	N	3043 to 3048 = F1 to F6 on KP 8	F		
1265 = Area 7 Chime Alert	B	1337 = Keypad Beep Area 8	N	3049 to 3054 = F1 to F6 on KP 9	F		
1266 = Area 8 Chime Alert	B			3055 to 3060 = F1 to F6 on KP 10	F		
		1338 = Area 1 Exit Error	N	3061 to 3066 = F1 to F6 on KP 11	F		
1267 = Entry Delay Active	N	1339 = Area 2 Exit Error	N	3067 to 3072 = F1 to F6 on KP 12	F		
1268 = Area 1 Entry Delay	N	1340 = Area 3 Exit Error	N	3073 to 3078 = F1 to F6 on KP 13	F		
1269 = Area 2 Entry Delay	N	1341 = Area 4 Exit Error	N	3079 to 3084 = F1 to F6 on KP 14	F		
1270 = Area 3 Entry Delay	N	1342 = Area 5 Exit Error	N	3085 to 3090 = F1 to F6 on KP 15	F		
1271 = Area 4 Entry Delay	N	1343 = Area 6 Exit Error	N	3091 to 3096 = F1 to F6 on KP 16	F		
1272 = Area 5 Entry Delay	N	1344 = Area 7 Exit Error	N				
1273 = Area 6 Entry Delay	N	1345 = Area 8 Exit Error	N	3097 = F1 Key, Any KP Is Pressed	B		
1274 = Area 7 Entry Delay	N			3098 = F2 Key, Any KP Is Pressed	B		
1275 = Area 8 Entry Delay	N	1346 = Audio Amplifier Status	TMC	3099 = F3 Key, Any KP Is Pressed	B		
		1347 = Control Power Status	N				
1276 = Exit Delay Active	N	1348 = Light	N				
1277 = Area 1 Exit Delay	N	1349 = Dark	N				
1278 = Area 2 Exit Delay	N	1350 = Security (Day) Alert	TMC				
1279 = Area 3 Exit Delay	N	1351 = Dialer Abort	B				
1280 = Area 4 Exit Delay	N	1352 = Dialer Cancel	B				
1281 = Area 5 Exit Delay	N	1353 = Dialer Auto Test	B				
1282 = Area 6 Exit Delay	N	1354 = Local Programming Begin	N				
1283 = Area 7 Exit Delay	N	1355 = Local Programming End	B				
1284 = Area 8 Exit Delay	N	1356 = Keyswitch Security Alert	TMC				
		1357 = Event Log is 80% Full	N				
1285 - Area 1 Exit Delay Expires	N	1358 = Telephone Line Is Ringing	B				
1286 - Area 2 Exit Delay Expires	N	1359 = Telephone Line Seized Status	T				
1287 - Area 3 Exit Delay Expires	N	1360 = Telephone Line Hook Status	T				
1288 - Area 4 Exit Delay Expires	N	1361 = Telephone Local Access	T				
1289 - Area 5 Exit Delay Expires	N	1362 = Telephone Remote Access	T				
1290 - Area 6 Exit Delay Expires	N						
1291 - Area 7 Exit Delay Expires	N						
1292 - Area 8 Exit Delay Expires	N						

"Reset" Attribute

The letter(s) displayed in 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.

NOTE:

The reset attributes are shown only for informational purposes. They are set by the factory and cannot be altered.

N	(0)	Event follows the activation
T	(1)	Event clears when output timer ends
M	(2)	Event clears when manually turned off
C	(4)	Event clears upon User Code entry
A	(16)	Event clears upon Arming
D	(32)	Event clears upon Disarming
B	(64)	Event clears almost immediately "Blip"
F	(128)	Event toggles with each activation

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.

† Not evaluated by UL

Appendix B - Telephone Remote Control (cont.)

<u>Automation Menu continued</u>

<u>For Keypad Temperature - press 5</u>. 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.

<u>For Thermostat Temperature - press 6</u>. 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.

<u>For Trouble Status press 3</u>. 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.

<u>For Zone Status press 4</u>. 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.

<u>For Audio Monitor press 7.</u> 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.

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

<u>To hear menu options press 0</u>. 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/or silence the alarm.

Appendix C - Voice Message Vocabulary *RP only *

Word or Phrase

{Blank} = 0
Zero = 21
One = 22
Two = 23
Three = 24
Four = 25
Five = 26
Six = 27
Seven = 28
Eight = 29
Nine = 30
Ten = 31
Eleven = 32
Twelve = 33
Thirteen = 34
Fourteen = 35
Fifteen = 36
Sixteen = 37
Seventeen = 38
Eighteen = 39
Nineteen = 40
Twenty = 41
Thirty = 42
Forty = 43
Fifty = 44
Sixty = 45
Seventy = 46
Eighty = 47
Ninety = 48
Hundred = 49
Thousand = 50
[200ms Silence] = 51
[500ms Silence] = 52
[800hz Tone] = 53

A

A = 54
Access = 55
Acknowledged = 56
AC power = 57
Activate = 58
Activated = 59
Active = 60
Adjust = 61
Air = 62
Alarm = 63
Alert = 64
All = 65
AM = 66
An = 67
And = 68
Answer = 69
Any = 70
Are = 71
Area = 72
Arm = 73
Armed = 74
At = 75
Attic = 76
Audio = 77
Auto = 78
Authorized = 79
Automatic = 80
Automation = 81
Auxiliary = 82
Away = 83

Word or Phrase

B

B = 84
Back = 85
Barn = 86
Basement = 87
Bathroom = 88
Battery = 89
Bedroom = 90
Been = 91
Bell = 92
Bottom = 93
Break = 94
Breakfast = 95
Bright = 96
Building = 97
Burglar = 98
Button = 99
By = 100
Bypassed = 101

C

Cabinet = 102
Call = 103
Camera = 104
Cancel = 105
Carbon monoxide = 106
Card = 107
Center = 108
Central = 109
Change = 110
Check = 111
Chime = 112
Circuit = 113
Clear = 114
Closed = 115
Closet = 116
Code = 117
Cold = 118
Condition = 119
Connect = 120
Control = 121
Cool = 122
Cooling = 123
Corner = 124
Crawlspace = 125

D

Danger = 126
Day = 127
Deck = 128
Decrease = 129
Defective = 130
Degrees = 131
Delay = 132
Den = 133
Denied = 134
Detected = 135
Detector = 136
Device = 137
Dial = 138
Dialing = 139
Dim = 140
Dining room = 141
Disable = 142
Disarm = 143
Disarmed = 144
Dock = 145
Door = 146

Word or Phrase

Doors = 147
Down = 148
Driveway = 149

E

East = 150
Emergency = 151
Enable = 152
End = 153
Energy = 154
Enrollment = 155
Enter = 156
Entering = 157
Entertainment = 158
Enter the = 159
Entry = 160
Environment = 161
Equipment = 162
Error = 163
Evacuate = 164
Event = 165
Exercise = 166
Expander = 167
Exit = 168
Exterior = 169

F

F = 170
Fail = 171
Failure = 172
Family room = 173
Fan = 174
Feed = 175
Fence = 176
Fire = 177
First = 178
Flood = 179
Floor = 180
Followed = 181
Force = 182
Fountain = 183
Foyer = 184
Freeze = 185
Front = 186
Full = 187
Furnace = 188
Fuse = 189

G

Game = 190
Garage = 191
Gas = 192
Gate = 193
Glass = 194
Go = 195
Good = 196
Good-bye = 197
Great = 198
Group = 199
Guest = 200
Gun = 201

H

Hall = 202
Hallway = 203
Hanging up = 204
Hang up = 205
Has = 206

Word or Phrase

Has Expired = 207
Have = 208
Hear menu options = 209
Heat = 210
Help = 211
High = 212
Hold = 213
Home = 214
Hot = 215
Hot tub = 216
House = 217
Humidity = 218
HVAC = 219

I

If = 220
Immediately = 221
In = 222
Inches = 223
Increase = 224
Inner = 225
Input = 226
Inside = 227
Instant = 228
Interior = 229
In The = 230
Intruder = 231
Intrusion = 232
Invalid = 233
Is = 234
Is about to expire = 235
Is active = 236
Is armed = 237
Is canceled = 238
Is closed = 239
Is disarmed = 240
Is low = 241
Is off = 242
Is OK = 243
Is on = 244
Is open = 245

J

Jacuzzi = 246
Jewelry = 247

K

Keep = 248
Key = 249
Keypad = 250
Kitchen = 251

L

Lamp = 252
Laundry = 253
Lawn = 254
Leak = 255
Leave = 256
Left = 257
Less = 258
Level = 259
Library = 260
Light = 261
Lights = 262
Line = 263
Living room = 264
Loading = 265
Lobby = 266

Appendix C - Voice Message Vocabulary (cont.)

Word or Phrase

Location = 267
Lock = 268
Low = 269
Lower = 270

M

M = 271
Machine = 272
Mail = 273
Main = 274
Mains = 275
Manual = 276
Master = 277
Max = 278
Media = 279
Medical = 280
Medicine = 281
Memory = 282
Menu = 283
Message = 284
Middle = 285
Minute = 286
Missing = 287
Mode = 288
Module = 289
Monitor = 290
More = 291
Motion = 292
Motor = 293

N

Next = 294
Night = 295
No = 296
Normal = 297
North = 298
Not = 299
Notified = 300
Now = 301
Number = 302
Nursery = 303

O

Of = 304
Off = 305
Office = 306
Oh = 307
OK = 308
On = 309
On-line = 310
Only = 311
Open = 312
Operating = 313
Option = 314
Or = 315
Other = 316
Out = 317
Outlet = 318
Output = 319
Outside = 320
Over = 321
Overhead = 322

P

Panel = 323
Panic = 324
Parking = 325
Partition = 326

Word or Phrase

Patio = 327
Pause = 328
Perimeter = 329
Personal = 330
Phone = 331
Place = 332
Play = 333
Please = 334
Plus = 335
PM = 336
Police = 337
Pool = 338
Porch = 339
Port = 340
Pound = 341
Pounds = 342
Power = 343
Press = 344
Pressure = 345
Problem = 346
Program = 347
Protected = 348
Pump = 349

R

Radio = 350
Raise = 351
Ready = 352
Rear = 353
Receiver = 354
Record = 355
Recreation = 356
Relay = 357
Remain calm = 358
Remote = 359
Repeat = 360
Report = 361
Reporting = 362
Reset = 363
Restored = 364
Return = 365
Right = 366
Roof = 367
Room = 368
Running = 369

S

Safe = 370
Save = 371
Screen = 372
Second = 373
Secure = 374
Security = 375
Select = 376
Sensor = 377
Serial = 378
Service = 379
Set = 380
Setback = 381
Set point = 382
Setting = 383
Shed = 384
Shipping = 385
Shock = 386
Shop = 387
Shorted = 388
Shunted = 389
Side = 390

Word or Phrase

Silence = 391
Siren = 392
Sliding = 393
Smoke = 394
Someone = 395
South = 396
Spare = 397
Speaker = 398
Sprinkler = 399
Stairs = 400
Stairway = 401
Star = 402
Start = 403
Status = 404
Stay = 405
Stock = 406
Stop = 407
Storage = 408
Storm = 409
Studio = 410
Study = 411
Sump = 412
Sun = 413
Switch = 414
System = 415

T

Tamper = 416
Tank = 417
Task = 418
Telephone = 419
Television = 420
Temperature = 421
Test = 422
Thank you = 423
That = 424
The = 425
Theater = 426
Thermostat = 427
Third = 428
Time = 429
Toggle = 430
Top = 431
Transformer = 432
Transmitter = 433
Trespassing = 434
Trouble = 435
Turn = 436
Twice = 437
Type = 438

U

Under = 439
Unit = 440
Unlocked = 441
Unoccupied = 442
Up = 443
User = 444
Utility = 445

V

Vacation = 446
Valve = 447
Video = 448
Violated = 449
Visitor = 450

Word or Phrase

W

Wake up = 451
Walk = 452
Wall = 453
Warehouse = 454
Warning = 455
Water = 456
Way = 457
Welcome = 458
West = 459
What = 460
When = 461
Where = 462
Will = 463
Window = 464
Windows = 465
With = 466
Work = 467

Y

Yard = 468
Year = 469
You = 470

Z

Zone = 471
Zones = 472

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]
[Say Off/On] = 511
[Say On/Off] = 512
[Say Open/Closed] = 510
[Say Secure/Not Secure] = 506
[Say Unlocked/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" program-ming 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
   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).
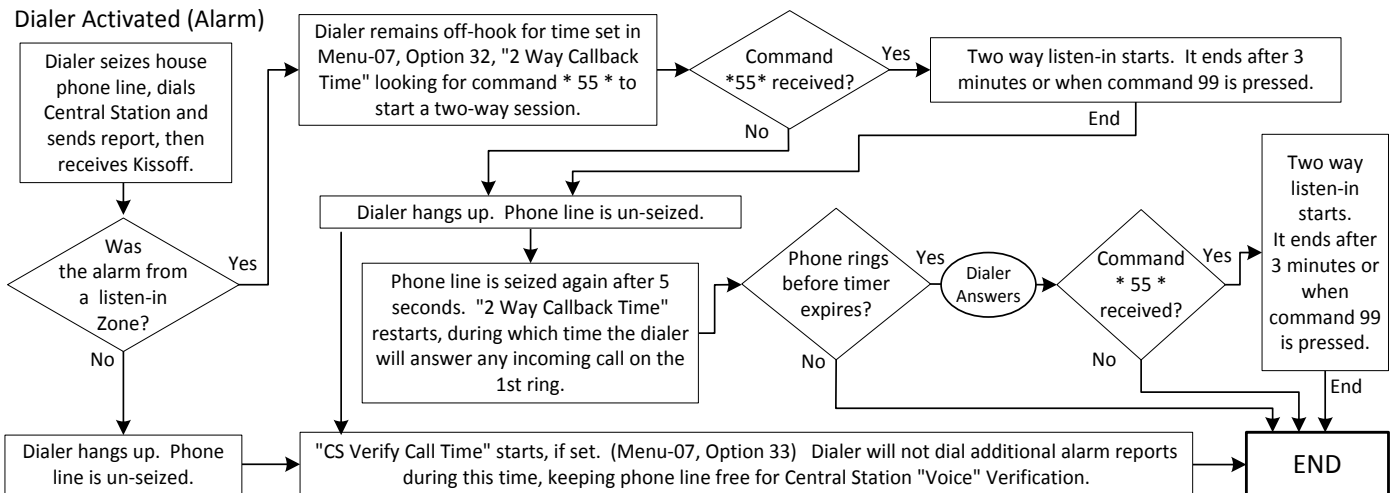
† Not evaluated by UL

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

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

* 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.

† Not evaluated by UL

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 REN's on the telephone line may result in the devices not ringing in response to an incoming call. Typically, the sum of REN's 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.
* Reorient the receiving antenna until interference is induced or eliminated.
* 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 power 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) 8 Ah 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.
* In the event of unsuccessful communication, a digital alarm communicator transmitter shall make a minimum of 5 and a maximum of 10 attempts. Where the maximum number of attempts to complete the sequence is reached, an indication of the failure shall be made at the premises.

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 363474-01or 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 or364591-11 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.

Appendix F - Regulatory Agency Statements (cont)

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.

† Not evaluated by UL

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.
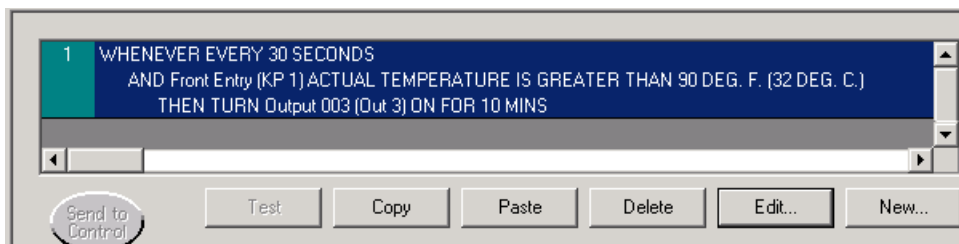
** Numerous WHENEVERS may be used for a temperature rule, i.e., time occurrence, arming of the system, etc. but NOT a direct temperature change or reading. However, you can use a AND command to compare or "test" a temperature reading against a target value each time the trigger occurs. The target compare 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)
** Alternate Method: Hold any key pressed while applying power to the keypad.
2. Press the F2 key and the LCD will display: **Temperature Degrees F = XX.X** (This is the current temperature)
3. Use 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. Press the Exit key twice do return back to the regular operation mode.

† 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.

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