SYSTEM 2316E

and

SYSTEM 2316EC

16-Zone Control Panel

Installation Instructions

C&K SYSTEMS

P/N 5-051-507-00 Rev A

Table of Contents

FCC Notice

This equipment complies with FCC Rules, Part 68.

On the outside of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. If requested, provide this information to your telephone company.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your number is called. In most, but not all areas, the sum of the REN's devices should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should call your local telephone company to determine the maximum REN for your calling area.

Should you experience trouble with the telephone lines, disconnect the equipment from the line to determine the source of the trouble. If it is determined that the equipment is malfunctioning, discontinue its use until the malfunction has been corrected. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telephone company cause to request the user to disconnect the equipment. Repairs to this equipment should be made by an authorized agent of C&K Systems, Inc. Contact your local alarm installation company for service.

Should this equipment cause harm to the telephone network, the telephone company may temporarily discontinue your service. If possible, they will provide you with advance notice. Otherwise they will notify you as soon as possible. The telephone company will also advise you of changes in its facilities, equipment, operations or procedures which could affect the operation of your equipment, allowing you the opportunity to maintain uninterrupted service. You will also be advised of your right to file a complaint with the FCC.

This equipment must not be used on party lines or coin operated phone lines.

FCC Part 15 Notice

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful 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:

- Reorient the radio/television antenna;
- Connect the AC transformer to a different outlet so that the equipment and radio/television are on different branch circuits;
- Relocate the equipment with respect to the radio/television;
- Consult the dealer or an experienced radio/television technician for help.

FCC Registration Number: C2DCHN-25602-AL-E
Ringer Equivalence: 0.67B

Industry Canada

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements documents. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals 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 Ringer Equivalence Numbers of all the devices does not exceed 5.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

IC Certification: 1140 9153 A
Ringer Equivalence: 0.5

INTRODUCTION

Scope of This Manual
This manual contains basic installation and programming information for the System 2316E and 2316EC. Additional information about remote programming, may be found in the Commander II/Monitor II Operating Manual.

Accuracy
This manual has been carefully checked for accuracy. However, C&K SYSTEMS assumes no liability for inaccuracies or actions resulting from the use of this manual. In addition, C&K reserves the right to modify the System 2316E/2316EC hardware, software, and manuals without prior notice.

UL COMPLIANCE

The System 2316EC has not been evaluated by Underwriters Laboratories, Inc.
The System 2316E is in compliance with Underwriters Laboratories, Inc. Standards UL 985, Household Warning System Units; UL 1023, Household Burglar Alarm System Units; and UL 1635, Digital Burglar Alarm Communicator System Units. **The following programming restrictions must be observed to meet UL standards**.

1. The audible must be programmed to sound at least four minutes before silencing.
2. No zone may be programmed for silent alarm.
3. Fire zones must be programmed for 3-pulse temporal audible alarm. A 3-pulse temporal is not to be used on non-fire zone types.
4. Burglar zones must be programmed for a steady audible.
5. Burglar loops (non-24-hour loops) must be programmed for NO/NC with EOL.
6. No Entry Delay may be greater than 45 seconds.
7. No Exit Delay may be greater than 60 seconds.
8. The Dynamic Battery Test must be enabled.
9. The Unit Status Report must be enabled.
10. The 24-hour Check-in must be enabled.
11. No Delay Before Dial may be programmed for the communicator.
12. The unit must not be programmed to dial a police station.
13. Use screws (supplied) to secure cover, or a lock must be installed on the cabinet.
14. All devices must be UL listed.
15. For residential fire applications, use the C&K Model 2350-SUP for Circuit Supervision.
16. Telco connections must be made using 0.4 mm (26 AWG) or larger wire.

The following additional restrictions must be observed to meet Grades A and B Mercantile Premises Alarm Systems/Safe and Vault Alarms Systems under UL 365, Police Station Connected Burglar Alarm Units and Systems and UL 609, Local Burglar Alarm Units and Systems.

1. The audible must be programmed to sound at least 15 minutes before silencing.
2. The ring-back function must be activated.
3. The arming mode must be programmed "goof-proof".
4. The control panel must be mounted in an enclosure that is:
   (a) Attack-resistant (C&K Model # 2330-UAC)
   (b) Secured with a key-lock and #6 X 1¼" sheet metal screws.
   (c) Tamper protected against cabinet door opening and removal from mounting surface.
   (d) For safe and vault applications the control panel must be monitored by a UL Listed shock sensor suitable for the protection of sheet metal enclosures.
5. The Ademco Model AD10-12 bell with Model AB bell housing must be used.
6. The power and tamper wiring between the bell and control panel must be completely enclosed in rigid conduit or electric metallic tubing for a Grade A system or flexible conduit for a Grade B system.
7. Zone(s) monitoring tamper circuitry must be 24 hours and non-shuntable.

Zone Programming

FIRE LOOP
- No Delay Before Dial
- 24-hour arming
- 3-pulse temporal audible
- Supervised
  - latching for heat
  - resetting for smoke
- Not shuntable

BURGLAR LOOP
- Steady Audible
- NO/NC with EOL
- No Delay Before Dial

Keypad Requirements
The keypad may not have the EMERGENCY symbol (✚) on it.

EUROPEAN COMPLIANCE

System 2316EC
This alarm control panel and its accessories have been tested to and conforms with the following Council Directives:

Council Directive 89/336/EEC, for Residential, Commercial, and Light Industrial Applications according to standards EN 50081-1 and EN#50082-1.

Council Directive 73/23/EEC, as detailed in Standards EN-60950 Amendments 1-4.

See section regarding AC Power (2316EC) for basic installation notes.

INSTALLATION

Mounting

The System 2316E/2316EC should be mounted in a location that allows convenient access to AC power, telephone connections, and earth ground.

1. Remove the circuit board from the cabinet. This will prevent possible damage to the circuit board when removing the knockouts.
2. Remove the knockouts, as required.
3. Mark the screw mounting holes on the wall.
4. Mount the cabinet at the desired height and pass the cables through the knockouts.
5. Replace the circuit board, remembering to connect the ground lug to the lower left corner of the circuit board.
6. Reconnect the spade lug to the lower door hinge. This provides the earth ground connection for the door.

Earth Ground
To ensure the effectiveness of the lightning and transient protection circuits, the control panel **must** be connected to "Earth Ground". Ideally, this should be a common ground to the power lines, telephone system, and security system. This type of ground, called a "Unified Earth Ground", provides the best protection. The ground connection, from a grounding rod, cold water pipe or other established ground point, is made to the green/yellow jacketed wire, providing a ground to the panel housing.

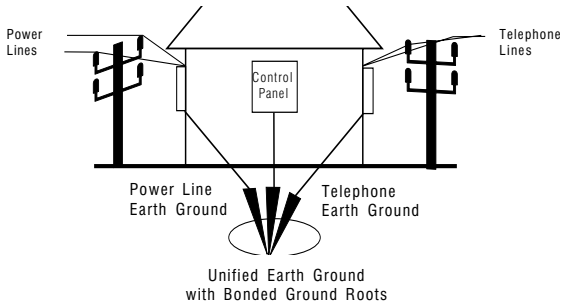
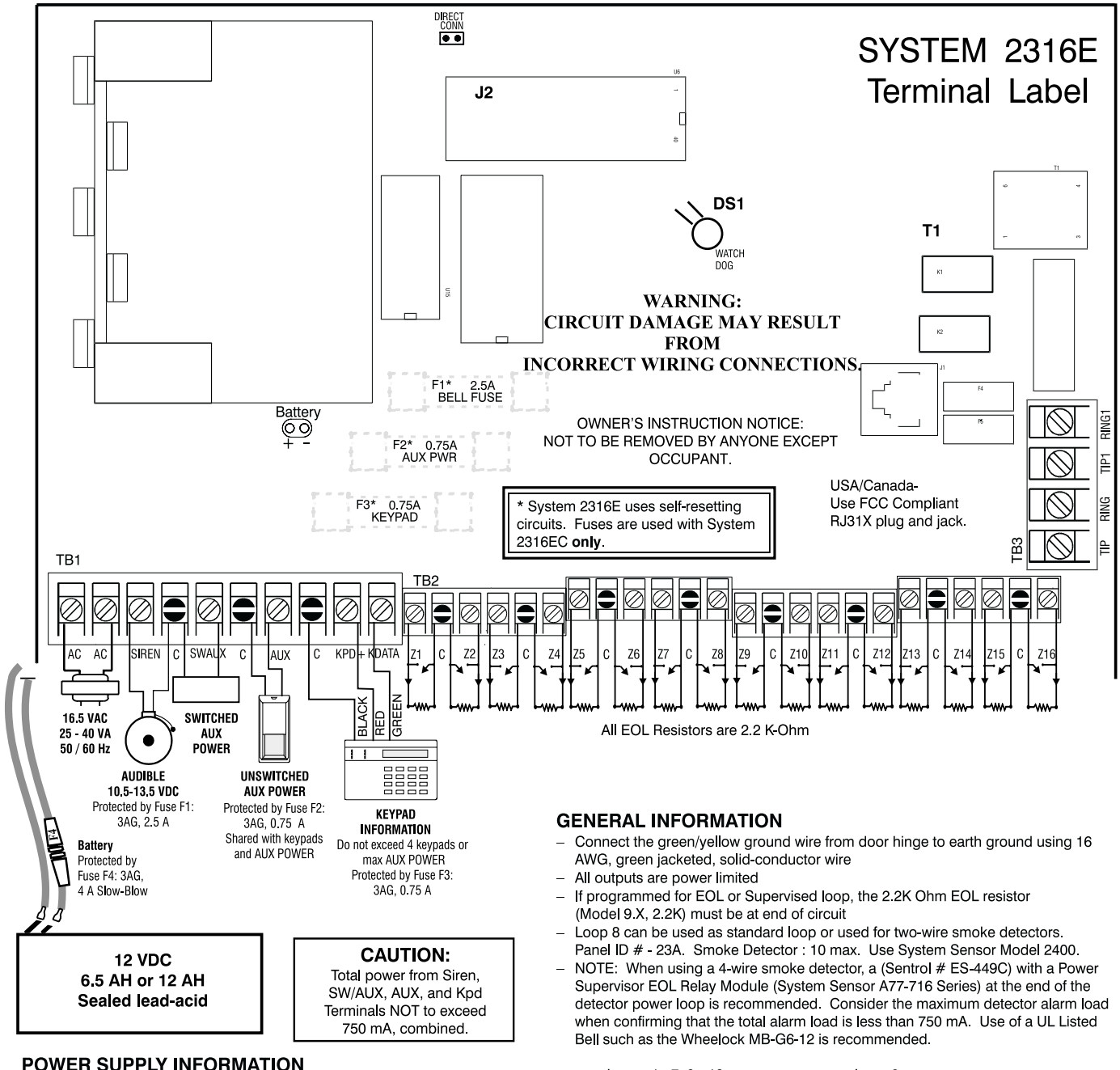


Figure 1
Connecting to Earth Ground

SYSTEM 2316E Terminal Label



POWER SUPPLY INFORMATION

- Only use 12 VDC, 6.5 AH or 12 AH sealed lead-acid battery
- Replace battery every 4-6 years
- Standby time is 24 hours when total power from SW/AUX, AUX, and Kpd terminals do not exceed 120 mA using a 6.5AH (Model 1265) battery and 320mA using a 12 AH battery (PowerSonic PS12120L)
- Power demand for AUX Power, keypads, and sounders not to exceed maximum ratings
- Install transformer on unswitched power receptacle
- Maximum battery charge current = 350 mA

This equipment should be installed in accordance with Chapter 2 of the National Fire Alarm Code, ANSI/NFPA 72-1993, (National Fire Protection Association, Battery March Park, Quincy, MA 02269). Printed information describing proper installation, operation, testing maintenance, evacuation planning and repair service is to be provided with the equipment.

GENERAL INFORMATION

- Connect the green/yellow ground wire from door hinge to earth ground using 16 AWG, green jacketed, solid-conductor wire
- All outputs are power limited
- If programmed for EOL or Supervised loop, the 2.2K Ohm EOL resistor (Model 9.X, 2.2K) must be at end of circuit
- Loop 8 can be used as standard loop or used for two-wire smoke detectors. Panel ID # - 23A. Smoke Detector : 10 max. Use System Sensor Model 2400.
- NOTE: When using a 4-wire smoke detector, a (Sentrol # ES-449C) with a Power Supervisor EOL Relay Module (System Sensor A77-716 Series) at the end of the detector power loop is recommended. Consider the maximum detector alarm load when confirming that the total alarm load is less than 750 mA. Use of a UL Listed Bell such as the Wheelock MB-G6-12 is recommended.

Loops 1 - 7, 9 - 16	*Loop 8*
0 - 2 VDC = short	0 - 12.5 VDC = short
2 - 3 VDC = normal	12.5 - 13.4 VDC = normal
3 - 5 VDC = open	13.4 - 14 VDC = open

- ⊖ are electrically common

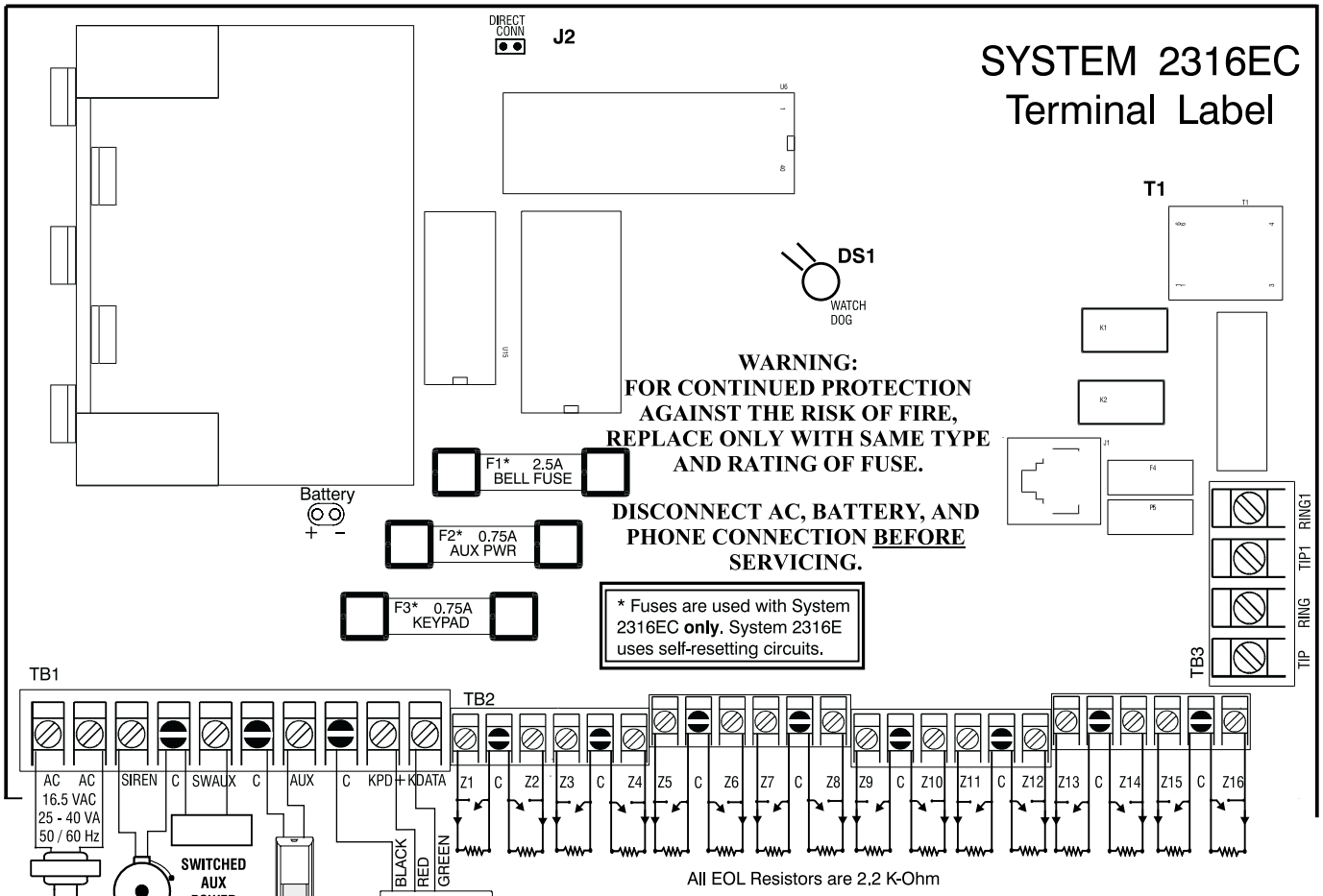
- The control unit shall be checked by a qualified technician at least every 3 years.

REFER TO THE SYSTEM 2316E INSTALLATION MANUAL P/N 5-051-507-00 Rev A FOR COMPLIANCE TO THE FOLLOWING SYSTEMS:

Household Fire and Burglary Warning System Control Unit, Local Mercantile Premise Alarm system, Local Mercantile Safe and Vault Alarm system, Police Station Connected Mercantile Premise Alarm system, Police Station Connected Mercantile Safe and Vault system.

Figure 2
System 2316E Terminal Layout

SYSTEM 2316EC Terminal Label



GENERAL INFORMATION

- Connect ground wire from door hinge to earth ground using 16 AWG, green jacketed, solid-conductor wire
- All outputs are power limited
- If programmed for EOL or Supervised loop, the 2.2K Ohm EOL resistor (Model 9.X, 2.2K) must be at end of circuit
- Loop 8 can be used as standard loop or used for switched 10-12.5 VDC at 50 mA for 2-wire powered devices. Loop 8 can support up to 10 BRK Model 2400 2-wire smoke detectors.
- Loop voltages: Normal Operation (AUX = 14.0 VDC)

Loops 1 - 7, 9 - 16	*Loop 8*
0 - 2 VDC = short	0 - 12.5 VDC = short
2 - 3 VDC = normal	12.5 - 13.4 VDC = normal
3 - 5 VDC = open	13.4 - 14 VDC = open

- ⊖ are electrically common

POWER SUPPLY INFORMATION

- Only use 12 VDC, 6.5 AH sealed lead-acid battery
- Replace battery every 3 - 5 years with C&K Model 1265
- Standby time with 1 keypad is 16 hours at 250 mA – AUX, SW/AUX Load
- Power demand for AUX Power, keypads, and sounders not to exceed maximum ratings
- Connect Mains transformer to an unswitched power receptacle
- Remove AC and battery power before replacing fuses
- Maximum battery charge current = 350 mA

REFER TO THE INSTALLATION MANUAL P/N 5-051-507-00.

P/N 5-040-531-00 Rev A

Figure 3
System 2316EC Terminal Layout

BEFORE YOU START

The System 2316E/2316EC is a fully-programmable 16-zone control panel. The system can be programmed from either an Alpha or LED keypad or remotely via the COMMANDER II/MONITOR II software package.

WIRING THE PANEL

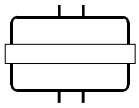
Standby Battery

The System 2316E and System 2316EC are designed to operate with a 12-volt, 6.5 AH or 12 AH, sealed lead-acid battery (C&K Model 1265 or Power Sonic PS12120L). Do not use a non-rechargeable battery or a battery other than sealed lead-acid. **It is recommended that you replace the standby battery every four to six years.** Use of the C&K Model 12V12A Battery Adapter (sold separately) is required when using the 12AH battery.

Connect the red lead to the positive terminal of the battery and the black lead to the negative battery terminal. The battery is reverse-polarity protected. On the System 2316E, the protection is provided by a 4 amp, 3AG, slow-blow fuse (see Figure 2). The System 2316EC uses a 3 amp, 3 AG, fast-blow fuse.

AC Power (System 2316E)

AC Terminals



AC power is supplied by a 16.5 VAC, 25 - 40 VA transformer at 50 or 60 Hz. A UL listed Class 2 transformer must be used. Connect the secondary of the transformer to the AC terminals on the PCB. Use at least 1.02 mm (18 AWG) wire to reduce voltage drops. **The primary side of the transformer must be connected to an unswitched receptacle**. **Do not connect primary to Ground-Fault-Interrupt (GFI) circuits.** Secure the transformer to the wall.

AC Power (System 2316EC)

The Mains transformer and fuse block are installed at the factory. To connect the Mains power, follow the directions outlined below:

1. Remove the Mains Fuse from the fuse block.
2. Connect the Earth GND to the center terminal of the fuse block.
3. Connect the AC Mains Line and Neutral wires to the fuse block terminals. Use at least 1.02 mm (18 AWG) wire to reduce voltage drops.
4. Reinstall the Mains fuse in the Fuse Block.

Basic Installation Notes:

1. A readily accessible disconnect device shall be incorporated in the fixed wiring.
2. Mount the enclosure to the wall with the hinged side to the left.
3. Use the bottom left knockout on the enclosure for hooking up 230 VAC only.

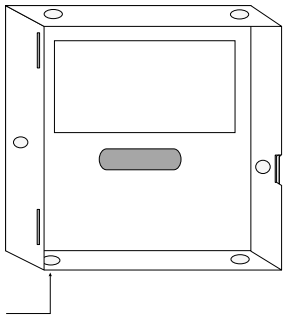


Figure 4

AC Power Failure

If an AC power failure lasts more than 15 minutes, the keypads will display a system trouble. An AC failure report will be sent, if programmed. When AC is restored for five minutes, a restoral report will be sent.

Precautions

☞ **DO NOT share the secondary of the transformer with other devices. A foreign ground can damage the power supply, voiding the warranty.**

☞ **DO NOT use any transformer other than that specified previously in the AC POWER section.**

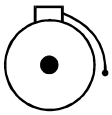
Available Power

The maximum total power available from the Siren, SWAUX, AUX, and KPD Terminals is 750 mA. The switched auxiliary (SWAUX), unswitched auxiliary (AUX), and keypads (KPD) share the same power bus.

Current draw must be reduced to 120 mA (System 2316E only) to achieve a battery backup time of 24 hours using a 6.5 AH battery.

Audible Output

Siren & C Terminals



The Siren Terminal provides up to 0.75 amps at 10.5 - 13.5 VDC. The type of voltage (steady, pulsing, 3-pulse temporal or chirp) and the time is programmable.

The C terminal provides the power return for the Siren.

The Siren output of the System 2316E is electronically protected against overload conditions by a self-resetting circuit. There are no user replaceable parts used.

The Siren output of the System 2316EC is protected by a 2.5 A, 3AG fast-blow fuse.

NOTE: If any fuse opens, remove AC and DC power, remove the short or overload condition, then replace the fuse before restoring power. Do not substitute a higher rated fuse.

Setting Up the 2350-SUP

Model 2350-SUP (sold separately) is required for UL residential fire installations and can detect opens, shorts, or ground faults which could prevent normal operation of the sounder (bell).

Mounting the 2350-SUP

Mount the 2350-SUP inside the System 2316E's housing using double sided tape. Then connect the Termination Assembly to the bell housing. The termination assembly is polarity sensitive and must be connected as shown in Figure 5.

Wiring the 2350-SUP Module

The 2350-SUP Bell Supervision Module has 5 flying leads which connect to the control panel. Each lead is 1.02 mm (18 AWG) and 30.5 cm (12 in.) long.

Wire Color	Connection
Red	V+ (Aux Power terminal)
Black	V- (Aux Power common)
Green	Earth Ground (Ring Lug)
Yellow	Bell + output terminal
White	Zone terminal (+ side)

Wiring the Termination Assembly

The Termination Assembly has 4 flying leads. Two leads connect to the control panel and the other two connect to the Bell. Each lead is 1.02 mm (18 AWG) and 15 cm (6 in.) long. The leads are labelled for proper connection.

Label	Connection
Bell +	Red lead connected to Bell
Bell -	Black lead connected to Bell
Panel +	Red lead connects to panel Siren
Panel -	Black lead connects to panel common

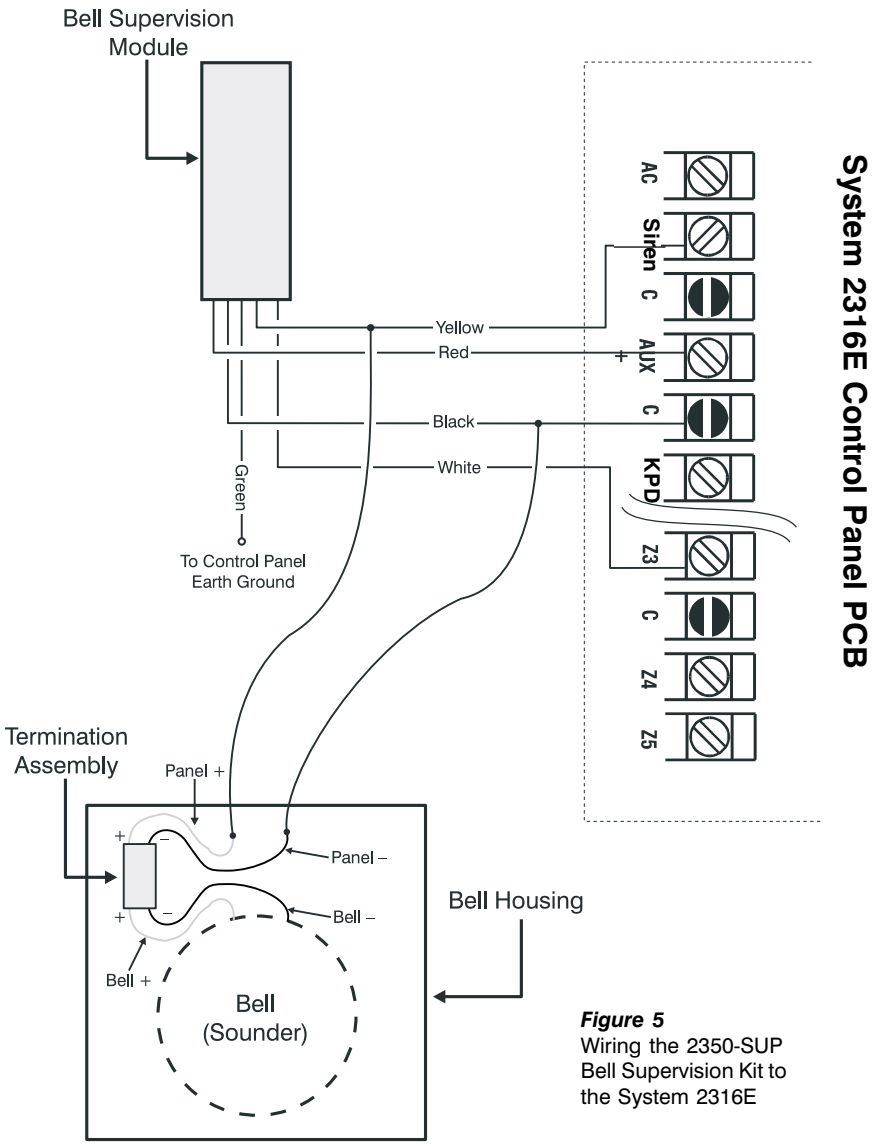


Figure 5
Wiring the 2350-SUP Bell Supervision Kit to the System 2316E

Programming the System 2316E Control Panel

For proper operation and compliance with UL 985, the 2350-SUP requires a dedicated zone programmed as follows:

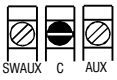
CL (Digit)	Option / Comments (Program value)
48	Trouble Report Code / cannot be disabled
1F-26, 49-50	Loop Response Time / 500 mS (2)
	Loop Arming Type / Instant (2) or 24-hour (9)
	Loop Circuit Type / Supervised (4) or (5)

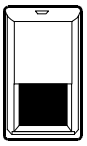
Electromagnetic Interference

Vibrating horns and bells can produce electromagnetic interference (EMI). While EMI will not damage the System 2316E/2316EC, it can cause transmission errors and mis-dialing. To minimize EMI, install a 0.01 μfd, 100 volt capacitor across the terminals of the horn or bell. The capacitor must be located at the source of the EMI (horn or bell).

Auxilliary Power

SWAUX, C, & AUX Terminals





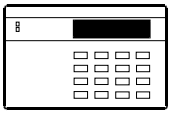
The SWAUX (Switched Aux) and AUX Terminals provide a positive 10 - 12.5 VDC output. The SWAUX Terminal is used to power devices that require switched power for resetting. Typical devices are glassbreak and smoke detectors. The C Terminal provides the common for both switched and unswitched AUX power.

The SWAUX and AUX outputs on the System 2316E are electronically protected against overload conditions by a self-resetting circuit. There are no user replaceable parts used.

The SWAUX and AUX outputs on the System 2316EC are protected by a 0.75 A, 3AG, fast-blow fuse (F2).

Arming Stations

C, KPD, & KDATA Terminals



The KPD Terminal (red) provides 11 - 14 VDC to power the keypads. The KPD+ terminal of the control panel connects to the (+) terminal on the Plus keypad (see Figure 6).

The C Terminal (black) is common. This common terminal could be shared with the AUX output. The C terminal of the control panel connects to the (-) terminal on the Plus keypad.

The KDATA Terminal (green) carries data between the keypad and the control panel. The KDATA terminal on the control panel connects to the DAT terminal on the Plus keypad.

Maximum wire length for connecting any keypad is 152 m (500') of 0.643 mm (22 AWG) copper wire.

The System 2316E and System 2316EC are capable of addressing up to 16 keypads (8 Alpha and 8 LED). Each LED keypad draws approximately 35 mA of current, and the LCD (Alpha) keypad draws approximately 64 mA of current.

The KPD output on the System 2316E is electronically protected against overload by a self-resetting circuit. There are no user replaceable parts used.

The KPD output on the System 2316EC is protected by a 0.75 A, 3AG, fast-blow fuse (see Figure 2).

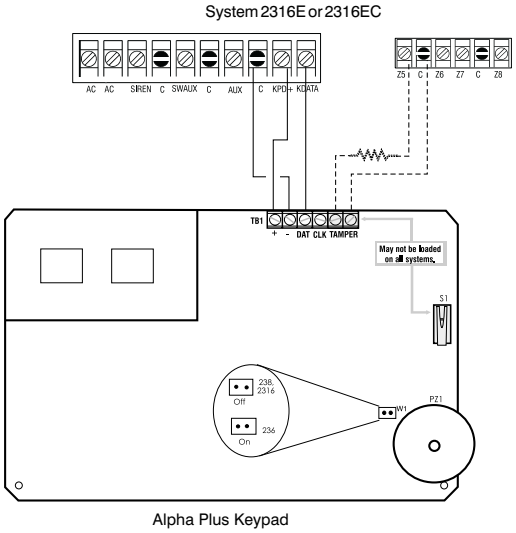


Figure 6
Connecting an Alpha Plus Series Keypad

Keypad Tamper Switch Connections
The Plus keypad also has an optional Tamper Switch. This switch is normally closed when enabled. To activate the Tamper feature, mount an M3.5 (#6) pan head screw in the wall. The head of the screw should extend out from the wall approximately 6 mm (1/4") in order to activate the switch. Connect the tamper terminals to a separate zone on the control panel. If the keypad cover is removed or the keypad is removed from the wall, a tamper condition will be detected.

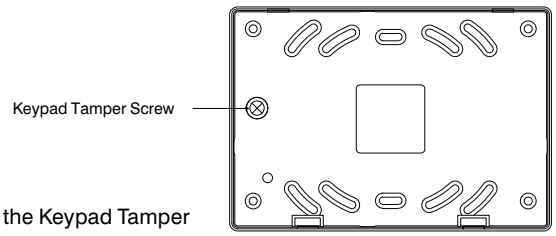


Figure 7
Activating the Keypad Tamper

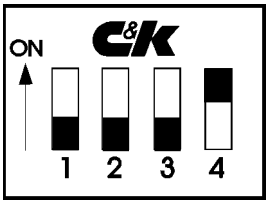
Addressing Alpha and LED Plus Keypads

Each keypad installed in the system must have its own unique address. When replacing a keypad, ensure that the replacement keypad has the same address as the previous keypad.

Addressing Alpha Plus Keypads
The Alpha Plus keypads use addresses 0 - 7. The first time you apply power to the system, any unaddressed Alpha Plus keypad will display **KEYPAD ADDRESS?**. Address each keypad by pressing a number from 0 to 7 at the respective keypad. The exact number you press is not important, as long as each keypad has a different address. The keypad will not accept any address greater than 7. If you should accidentally use the same address for more than one keypad, the system will fail to properly respond to keypad input. Refer to page 27 for assistance in correcting this problem.

Addressing LED Plus Keypads
The LED Plus keypads use addresses 8 - 15. The address on the LED Plus keypad is set by a three-position dip switch located in the lower right-hand corner of the keypad PCB (near the piezo). The table below shows the switch settings for each address.

Switches **S1-1**, **S1-2** and **S1-3** address the keypad as shown in the following table.



Switch **S1-4** must **ON** for the System 2316E or 2316EC

ADDRESS	S1-1	S1-2	S1-3
8	ON	ON	ON
9	OFF	ON	ON
10	ON	OFF	ON
11	OFF	OFF	ON
12	ON	ON	OFF
13	OFF	ON	OFF
14	ON	OFF	OFF
15	OFF	OFF	OFF

Table 1
Addressing the LED Plus Keypad

NOTE: Once all keypads have been addressed, reset the panel by pressing **[Master Combination] [*] [6] [8] [#]** or by removing and restoring both AC and DC power.

Loop Inputs

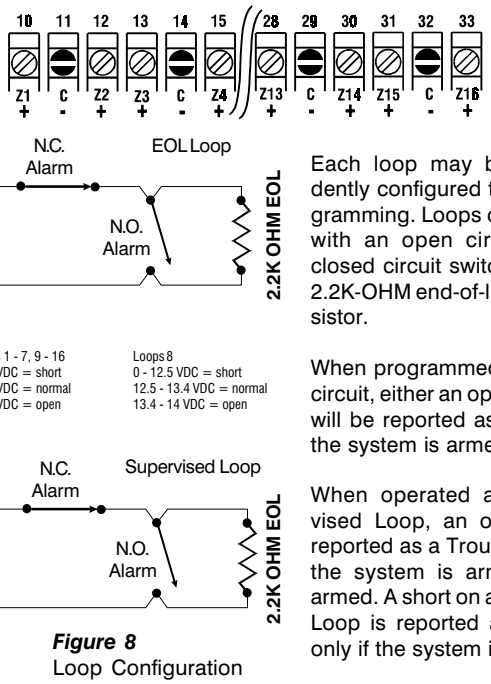


Figure 8
Loop Configuration

Each loop may be independently configured through programming. Loops can be wired with an open circuit switch, closed circuit switch, or with a 2.2K-OHM end-of-line (EOL) resistor.

When programmed as an EOL circuit, either an open or a short will be reported as an alarm if the system is armed.

When operated as a Supervised Loop, an open will be reported as a Trouble, whether the system is armed or disarmed. A short on a Supervised Loop is reported as an alarm only if the system is armed.

Powered Loop (Zone 8)
The Z8 and C terminals are a standard loop that can also power 2-wire devices. The loop can supply 10 - 12.5 VDC at 50 mA. Use Loop 8 to power 2-wire glassbreak and smoke detectors.

Tamper Switch Installation

C&K has designed the System 2316E/2316EC cabinet to use the **Ademco Model 19** tamper switch. The cabinet is constructed in order to accommodate two switches. One tamper switch is for the cover, and the second switch is for a wall tamper. To install the tamper switches:

1. Position the tamper switch inside the cabinet at the lower right corner. For the wall tamper, the plunger should go through the small hole in the back of the cabinet. For the door tamper, the plunger should face out from the cabinet (see Figure 9).
2. Connect the tamper switches in series and wire the tamper terminals to a dedicated zone of the control panel.
3. Program the dedicated zone as desired: NC, EOL, 24-hour, etc.

Once the tamper switches are installed, opening the cabinet door or removing the cabinet from the wall will result in a tamper signal at the control panel.

Tamper Switches installed in the System 2316E/2316EC cabinet

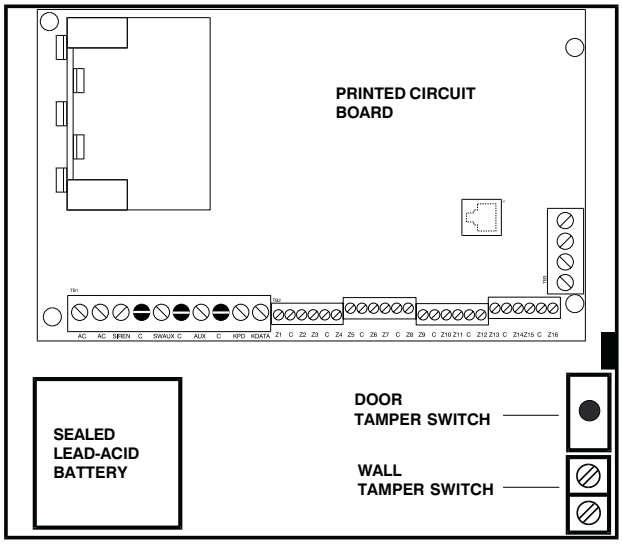
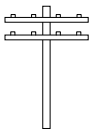


Figure 9
Connecting the Tamper Switches

Telephone Interface



The System 2316E/2316EC control panel has 4 terminals for connection to the telephone lines. These terminals are labeled: Tip, Ring, T1, and R1. Figure 10 shows how to connect the control panel to the incoming phone lines and the house phones.

Using an approved, 6 or 8 conductor telephone cable (not included), connect the cable to the control panel as listed below:

Red = Incoming Ring	Brown = Seized Tip (T1)
Green = Incoming Tip	Blue & Orange = Tamper
Gray = Seized Ring (R1)	Yellow & Black = Not Used

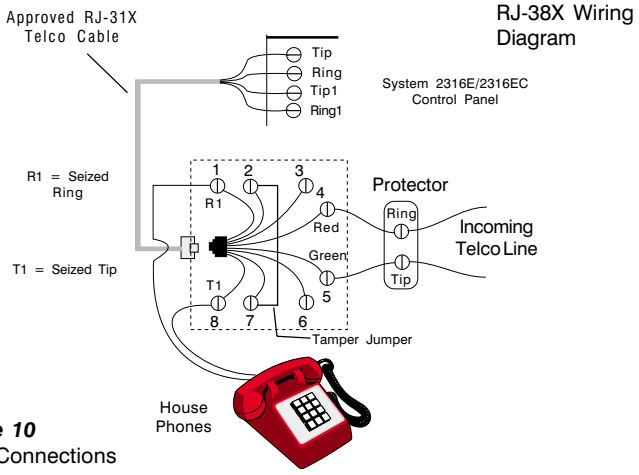


Figure 10
Telco Connections

SYSTEM START-UP

Five minutes after the panel is powered up, it will dynamically test the standby battery by interrupting AC power for two minutes and monitoring the battery under load.

Standby Battery Time

Using a 12 AH Battery	
AUX POWER DRAIN*	STANDBY TIME
320 mA	24 hours

* Total power for all keypads, auxiliary, and Loop 8.

Using a 6.5 AH Battery	
AUX POWER DRAIN*	STANDBY TIME
50 mA	32 hours
120 mA	24 hours
250 mA	16 hours
500 mA	10 hours

* Total power for all keypads, auxiliary, and Loop 8.

If you replace the battery after a SYSTEM TROUBLE - LOW BATTERY message, you must test the battery under load conditions. Press [*] [6] [4] [#] to start the Dynamic Battery Test.

Voltage Variations

Output voltages at the SW/AUX, AUX, and KPD terminals may vary from 9.0 to 14.4 VDC (worst case), depending on the load, battery condition, and AC line voltage.

FACTORY SETTINGS

Default Program Setup

The default programming of the SYSTEM 2316E/EC will allow you to operate it as a local panel without any additional programming. The actual default programming values are shown on the Programming Worksheet (the last 4 pages of this manual).

NOTE: If you connect power before wiring the loops, install a 2.2K-Ohm EOL resistor across each loop.

Combinations

Installer combination: 0 1 2 3 4 5
User #1 (Master) combination: 1 2 3 4
Users #2 - 32: disabled
Default installer combination: yes
Guest combination: no
Combination required: no
Faulted Arming type: goof-proof
Opening/Closing: no Users authorized to send reports
Duress: disabled

Reporting

Account #1 and #2: disabled
Dialing type: pulse
RPS allowed: yes

Zones
Zone 1 = Entry/Exit delay - EOL circuit
Zone 2 = doors or windows - EOL circuit
Zone 3 = doors or windows - EOL circuit
Zone 4 = doors or windows - EOL circuit
Zone 5 = doors or windows - EOL circuit
Zone 6 = doors or windows - EOL circuit
Zone 7 = doors or windows - EOL circuit
Zone 8 = fire or smoke - supervised EOL circuit
Zone 9 = interior - EOL circuit
Zone 10 = interior - EOL circuit
Zone 11 = interior - EOL circuit
Zone 12 = interior - EOL circuit
Zone 13 = interior - EOL circuit
Zone 14 = interior - EOL circuit
Zone 15 = interior - EOL circuit
Zone 16 = interior - EOL circuit
Emergency soft zone: steady audible, non-reporting
Fire soft zone: 3-pulse temporal audible, non-reporting
Police soft zone: pulsing audible, non-reporting

Testing
Test report interval: 7 days and disabled

Timing
Entry time: 60 seconds and prewarn
Exit time: 30 seconds and prewarn
Bell time: 5 minutes

Unit Control
Local system: yes
Dynamic battery test: off

PROGRAMMING OPTIONS

The following is an alphabetical listing of all System 2316E/2316EC programming options, including Command Locations and Digit Positions. Digit Positions are inside parentheses ( ). **NOTE:** All Command Locations are in Hexadecimal.

Option	Location
Account #1	0C (1 - 6)
Account #2	10 (1 - 6)
AC Power Line Frequency	2F (5)
Alarm Receiver Select by Loop	1F - 26 & 49 - 50 (1)
Alarm Reporting Code by Loop	17 - 1E & 40 - 47 (1 - 2)
Audible Time	2D (5)
Autohome Enable	09 (5)
Bell Reverse Operation	2E (3)
Cancel Report Code	2A (5)
Cancel Report Receiver Select	2A (6)
Closing Report Code	2C (3)
Closing Report Receiver Select	2C (4)
Combination Command	09 (2)
Daily Battery Test Enable	2F (2)
Default Installer Combination	09 (3)
Delay Before Dial by Loop	30 - 3F (4)
Delay Before Dial Time	0B (1)
Dial Attempts	0B (6)
Dial Type	0B (2)
Disable Loop LEDs	2E (5)
Door Chime Enable by Loop	30 - 3F (1)
Duress Report Code	2D (1)
Duress Receiver Select	2D (2)
Emergency Bell Type	27 (4)
Emergency Receiver Select	27 (3)
Emergency Report Code	27 (1 - 2)
Entry Delay Time	2D (3)
Entry Pre-alarm Enable	2E (1)
Exit Delay Time	2D (4)
Exit Pre-alarm Enable	2E (2)
Faulted Arming Type	09 (4)
Fire Bell Type	28 (4)
Fire Receiver Select	28 (3)
Fire Report Code	28 (1 - 2)
Four Minute Power Up Delay Enable	2F (3)
Group Shunt Enable	30 - 3F (3)
Guest Combination	08 (2 - 6)
Guest Combination Time	09 (1)
Installer Combination	00 (1 - 6)
Keypad RPS Enable	0B (3)
Local System Only	2F (1)
Loop Arming Type	1F - 26 & 49 - 50 (4)
Loop Bell Type	1F - 26 & 49 - 50 (5)
Loop Circuit Type	1F - 26 & 49 - 50 (6)
Loop Response Time	1F - 26 & 49 - 50 (2)
Loop Restore Type	1F - 26 & 49 - 50 (3)
Master Code (User #1)	01 (2 - 6)
Opening Report Code	2C (1)
Opening Report Receiver Select	2C (2)
Phone Ring Type	0B (5)
Police Bell Type	29 (4)
Police Receiver Select	29 (3)
Police Report Code	29 (1 - 2)
Receiver #1 Message Format	0A (2)
Receiver #1 Phone Number	0D - 0F (1 - 6)
Receiver #1 Receiver Format	0A (1)
Receiver #2 Message Format	0A (4)
Receiver #2 Phone Number	11 - 13 (1 - 6)
Receiver #2 Receiver Format	0A (3)
Restore Receiver Select	2A (2)
Restore Reporting Code by Loop	17 - 1E & 40 - 47 (3 - 4)
Ring Back Enable	2E (4)
RPS Enable	0B (4)
RPS Phone Number	14 - 16 (1 - 6)
Set Test Report Countdown Timer	A0 (1)
Set Real-Time Clock	B3 & B4 (1 - 6)
Shunt Enable	30 - 3F (2)
Shunt Receiver Select	2A (1)
Shunt Reporting Code by Loop	17 - 1E & 40 - 47 (5 - 6)
Soft Zone Operation Enable	2F (4)
Test Report Code	2B (1 - 2)
Test Report Interval	2B (4)
Test Report Receiver Select	2B (3)
Trouble Report Code	48 (1)
Trouble Report Receiver Select	48 (2)
Trouble Restore Code	48 (3)
Trouble Restore Receiver Select	48 (4)
Unit Status Code	2A (3)
Unit Status Receiver Select	2A (4)
User Arming Type	01 - 08 & 51 - 68 (1)
User Combinations	01 - 08 & 51 - 68 (2 - 6)

PROGRAMMING THE PANEL

You can program the SYSTEM 2316E/2316EC from an LED or LCD keypad, as well as remotely using the COMMANDER II software. Information on remote programming is available in the COMMANDER II/ MONITOR II Operating Manual. This installation manual includes a brief description of each programming option beginning on page 12.

Starting Panel Programming

To activate installer programming, key in the [Installer Combination] [*] [0] [#]. The default Installer Combination is **0 1 2 3 4 5**. When using an LED Plus keypad, the PROGRAM LED will light to indicate that you are in the programming mode. The LCD display of the Alpha Plus keypad will read **CMD DATA** on the top line, indicating that the programming mode is active.

Programming with the LED Plus Keypad

Programming with an LED Plus keypad is a one-step process. Key in the two-digit address (Command Location), followed immediately by the desired programming values (program data). Press the [#] key to store the data. The LED Plus keypad does not display any programmed values. If you are not certain that the correct programming values have been entered, program the Command Location again.

Warning: If you enter a Command Location and then press the [#] key without entering any program data, the keypad will beep five times, indicating an error. To correct this problem, simply re-enter the Command Location and Data, then press the [#] key.

Programming with the Alpha Plus Keypad

Entering program data with an Alpha Plus keypad is a two-step process. First, key in the two-digit address (Command Location) to be programmed and press the [#] key. The Alpha Plus keypad will display the value previously programmed into that location. Then enter the data you wish stored at that location and press the [#] key to store the data. You can also scroll through the Command Locations in numerical order by alternately pressing and releasing the [#] key.

NOTE: Command Locations A0, B3, and B4 must be addressed directly. The data stored at these locations is not displayed. To program them: Enter the Command Location and press the [#] key. Enter the data to be stored and again press the [#] key.

Programming Hexadecimal Numbers

Data is programmed into the panel using the hexadecimal number system, which consists of the digits 0 - 9 and the letters A - F. The digits 0 - 9 are entered directly from the keypad. The chart below shows how to enter the hexadecimal digits A through F.

PROGRAMMING CONVERSIONS	
Hexadecimal Value	**Key Strokes**
A	✻ 0
B	✻ 1
C	✻ 2
D	✻ 3
E	✻ 4
F	✻ 5

The same procedure is used with both the LED and the Alpha Plus keypads.

End of Programming Segment

The last two Command Locations are CL 68 and B4. When you press the [#] key at these locations, the program will advance to CL 69 or CL B5, respectively. These locations are not used in the SYSTEM 2316E/2316EC. If you enter CL 69 or CL B5, either press [*] [#] to exit programming, or press the Command Location number and [#] for the programming location you want. (Remember when using the LED keypad to enter the Command Location, the Data, then the [#] key.)

PROGRAMMING THE ALPHA Plus KEYPAD

In order to program the Alpha Plus keypad, you must have it wired to the SYSTEM 2316E/2316EC, have power applied to the panel, and have the keypad properly addressed. **You can only program when the panel is disarmed**.

NOTE: Programming The Keypad is NOT the same as Keypad Programming. (Keypad programming is used to program the control panel.)

To Exit Panel Programming

When you have finished programming, press [*] [#]. The panel will also exit the programming mode if you do not press any key within a five minute period.

You can program the Alpha Plus keypads for special messages, each of the 16 zone labels, and the keypad address. **Zone Labels** display during the walk-test and when the [#] key is pressed during alarm memory or faults. The programmable **Service Message** is displayed during AC failure, fuse failure, communication failure, or low battery. The **Dealer Message** displays when the system is disarmed. The keypad address is initially displayed only during system start up (see page 8, Addressing Alpha Plus Keypads).

These messages can be programmed directly from the Alpha Plus keypad or remotely using the COMMANDER II/MONITOR II software package. For more detailed information about remote programming, refer to the COMMANDER II/MONITOR II Operating Manual.

Keypad Message Programming

The Alpha keypad programming template is used to allow the installer to program messages and zone descriptions into the Alpha Plus keypads. The template (see Figure 11 below) should be used when programming the keypad.

To activate the keypad programming mode, enter the [Installer's Code] [*] [0] [1] [#]. Information may be entered into the keypad in the form of letters (upper and lower case), numbers (0 - 9), and 22 special symbols. All characters are displayed in the order listed above, such as upper and lower case letters, numbers, and special symbols. The [Space] character precedes the letter A.

To enter a Message or Label, use the [2] key to scroll through the characters until you reach the desired character. If you scroll past the desired character, the [8] key may be used to scroll backwards. When the desired character is displayed, press the [6] key to move the cursor to the next character position. The [4] key moves the cursor to the left. When all characters have been entered, press the [#] key to write the message and move to the next message position. Use the [0] key to move backward through the messages.

The message order is as follows:

- SERVICE MESSAGE
- DEALER MESSAGE
- SOFT ZONE IDENTIFIERS (A, B, and C)
- HARDWIRED LOOP IDENTIFIERS
- KEYPAD ADDRESS

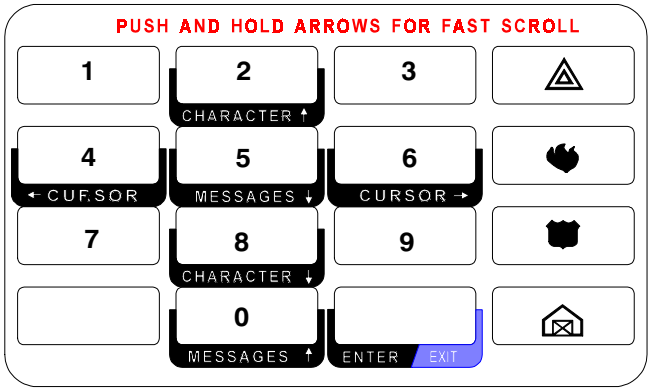


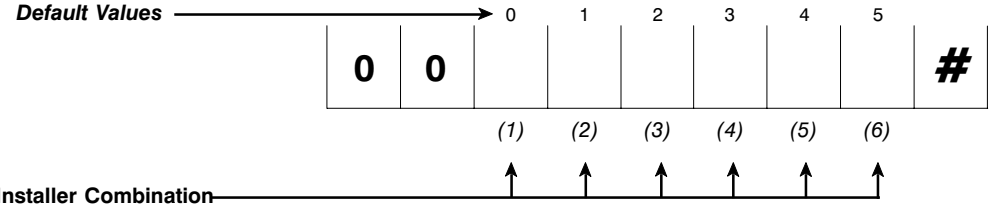
Figure 11
ALPHA PLUS Programming Template

To exit Alpha Plus Keypad Programming

When you have finished programming, press [*] [#]. ***The keypad will also exit the programming mode if you do not press any key within a five minute period.***

CL 00 - 08 & 51 - 68

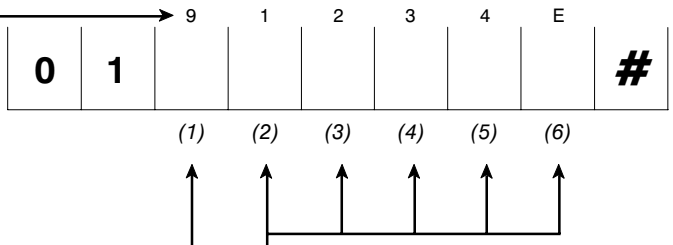
Command Location 00: Installer Combination



Digit Positions (1) - (6): Installer Combination

Combination must have 6 digits. Valid entries are 0 - 9.

Command Location 01 - 08 and 51 - 68: User Arming Type and Combination



01 = User #1 (Master)
02 = User #2
03 = User #3
04 = User #4
05 = User #5
06 = User #6
07 = User #7
08 = User #8 (Guest)
51 = User #9
52 = User #10
53 = User #11
54 = User #12
55 = User #13
56 = User #14
57 = User #15
58 = User #16
59 = User #17
5A = User #18
5B = User #19
5C = User #20
5D = User #21
5E = User #22
5F = User #23
60 = User #24
61 = User #25
62 = User #26
63 = User #27
64 = User #28
65 = User #29
66 = User #30
67 = User #31
68 = User #32

Default Values are different for each user. Refer to the SYSTEM 2316E/2316EC Programming Worksheet at the end of this manual for other user default values.

Digit Position (1): Arming Type

1 = Arm Only, No Closing (C) Report, No Shunting
2 = Disarm Only, No Opening (O) Report, No Shunting
3 = Arm and Disarm, No O/C Reports, No Shunting

4 = Arm Only, with Closing Report, No Shunting
5 = Disarm Only, with Opening Report, No Shunting
6 = Arm and Disarm, with O/C Reports, No Shunting

7 = Arm Only, No Closing Report, Shunting Allowed
8 = Disarm Only, No Opening Report, Shunting Allowed
9 = Arm and Disarm, No O/C Reports, Shunting Allowed

✻0 = Arm Only, with Closing Report, Shunting Allowed
✻1 = Disarm Only, with Opening Report, Shunting Allowed
✻2 = Arm and Disarm, with O/C Reports, Shunting Allowed

NOTE: Opening and Closing Reports must be enabled. See CL 2C Digit Positions 1 and 3 for additional information.

NOTE: Some programming locations allow variable-length data and require an End-of-Number (EON) character. Program ✻ 4 ("E") after the last digit. Fill remaining unused Positions with "0". The EON character is not required if the last digit is in position 6.

Digit Positions (2) - (6): Arming Combination (PIN)

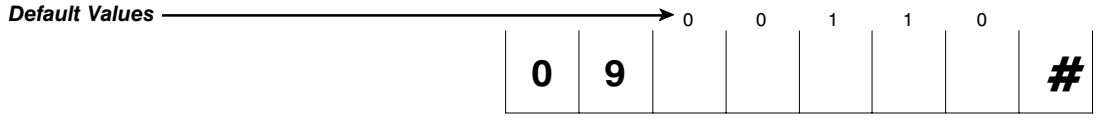
Combination may have from 2 - 5 digits. Valid entries are 0 - 9.

PROGRAMMING CONVERSIONS

Hexadecimal Value	Key Strokes
A	✻ 0
B	✻ 1
C	✻ 2
D	✻ 3
E	✻ 4
F	✻ 5

CL 09 and 0A

Command Location 09: Arming/Combination Options



Digit Position (1): Guest Combination Time

0 = Guest Time Disabled
1 = 1 day
2 = 2 days
3 = 3 days
4 = 4 days
5 = 5 days
6 = 6 days
7 = 7 days
8 = 8 days
9 = 9 days
✻ 0 = 10 days
✻ 1 = 11 days
✻ 2 = 12 days
✻ 3 = 13 days
✻ 4 = 14 days
✻ 5 = 15 days

Digit Position (2): Combination Command

0 = No
1 = Yes; requires combination for Shunt, Group Shunt, Instant Arm, keypad activated RPS, and Test (central station and bell)

Digit Position (3): Default Installer Combination

0 = No; this enables the Pirate-Guard™ feature for added security
1 = Yes; combination changes back to factory value on power loss

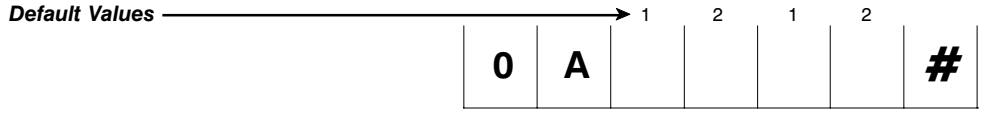
Digit Position (4): Faulted Arming Type

1 = Goof-Proof: zones must be normal or shunted to arm
2 = Force Arm: faulted zones will be shunted at end of Exit Delay
3 = Chirp-Alert: faulted zones will chirp bell upon transition from Exit Delay to Entrance Delay

Digit Position (5): Autohome Enable

0 = No; this disables the Autohome Arming feature
1 = Yes; when enabled, automatically shunts all zones designated as Group Shunt if exit door is not opened during Exit Delay (See CL 30 - 3F Digit Position 3 for Group Shunt Enable option)

Command Location 0A: Communications Formats



Digit Position (1): Receiver #1 Receiver Format

1 = Fast "A", 2300 Hz
2 = Slow "B", 1400 Hz
3 = SumCheck, 1400 Hz
4 = SumCheck, 2300 Hz
5 = CFSK III
6 = DTMF, 1400 Hz

Digit Position (2): Receiver #1 Message Format

2 = 3/1 Extended
3 = 4/2 (2-digit reporting code)
5 = CFSK III
6 = SumCheck (DTMF)

Digit Position (3): Receiver #2 Receiver Format

1 = Fast "A", 2300 Hz
2 = Slow "B", 1400 Hz
3 = SumCheck, 1400 Hz
4 = SumCheck, 2300 Hz
5 = CFSK III
6 = DTMF, 1400 Hz

Digit Position (4): Receiver #2 Message Format

2 = 3/1 Extended
3 = 4/2 (2-digit reporting code)
5 = CFSK III
6 = SumCheck (DTMF)

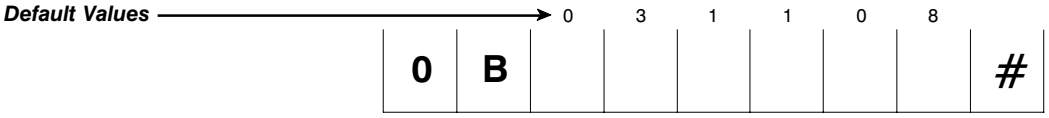
Valid combinations of Receiver Format and Message Format are listed below.

Message Format	Receiver Format(s)
3/1 Extended	All formats, **except** CFSK III and DTMF, 1400 Hz
4/2 (2-digit reporting)	Fast "A", 2300 Hz and Slow "B", 1400 Hz only
CFSK III	CFSK III only
SumCheck (DTMF)	DTMF, 1400 Hz only

PROGRAMMING CONVERSIONS

Hexadecimal Value	Key Strokes
A	✻ 0
B	✻ 1
C	✻ 2
D	✻ 3
E	✻ 4
F	✻ 5

Command Location 0B: Communications Control



Digit Position (1): Delay Before Dial Time

0 = 0 secs	4 = 40 secs	8 = 80 secs	✻2 = 120 secs
1 = 10 secs	5 = 50 secs	9 = 90 secs	✻3 = 130 secs
2 = 20 secs	6 = 60 secs	✻0 = 100 secs	✻4 = 140 secs
3 = 30 secs	7 = 70 secs	✻1 = 110 secs	✻5 = 150 secs

Digit Position (2): Dial Type

1 = DTMF - Touch Tone (10/sec)
2 = DTMF (5/sec)
3 = Pulse (10/sec)

Digit Position (3): Enable Keypad Activated RPS

0 = No
1 = Yes; allows remote programming to start from on-site keypad command

Digit Position (4): RPS Enable

0 = No
1 = Yes; allows remote programming to start from off-premise location

Digit Position (5): Phone Ring Type

0 = Single ring; uniformly timed rings with long pauses between rings
1 = Double ring; rings twice quickly followed by a long pause then rings twice again

Digit Position (6): Dialing Attempts

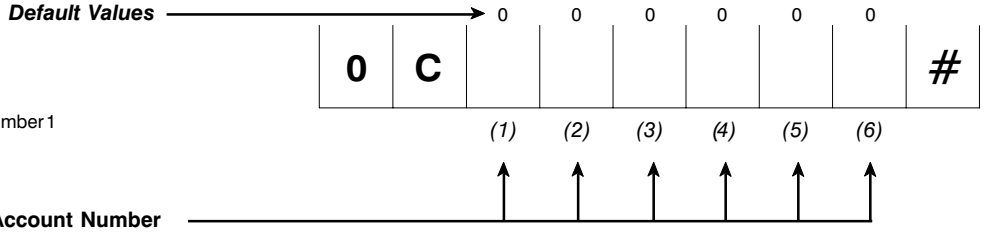
1 = 1 try	5 = 5 tries	9 = 9 tries	✻3 = 13 tries
2 = 2 tries	6 = 6 tries	✻0 = 10 tries	✻4 = 14 tries
3 = 3 tries	7 = 7 tries	✻1 = 11 tries	✻5 = 15 tries
4 = 4 tries	8 = 8 tries	✻2 = 12 tries	

NOTE: If the panel fails to make a connection, the number of Dialing Attempts programmed causes the following operation:

Even number of Dialing Attempts (2, 4, 6 etc.) -- the Dialing Attempts sequence is repeated every four hours until connection is made.

Odd number of Dialing Attempts (1, 3, 5 etc.) -- the Dialing Attempts sequence only occurs once, even if connection was not made.

Command Location 0C: Account Number 1



Account Number 1 is used in conjunction with Receiver Number 1

Digit Positions (1) - (6): Account Number

Valid entries are 0 - F.
The Account Number is right justified. The last digit must be in Position (6).
The SYSTEM 2316E/2316EC will read the account number using:
- Digit Positions (4) - (6) with 3-digit accounts
- Digit Positions (3) - (6) with 4-digit accounts
- Digit Positions (1) - (6) with 6-digit accounts

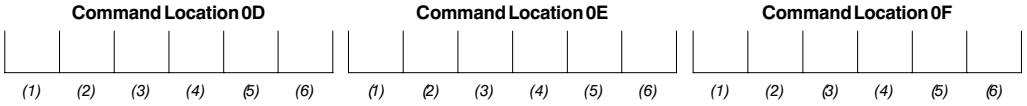
Fill all unused Digit Positions with 0s.

PROGRAMMING CONVERSIONS

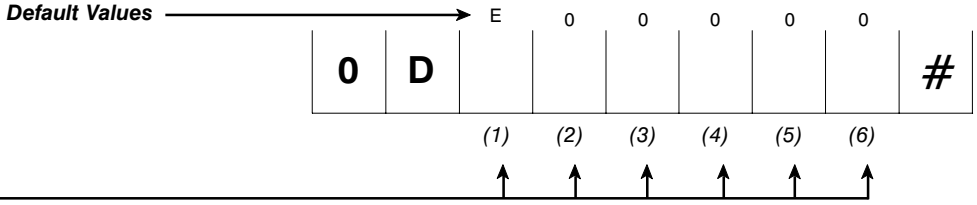
Hexadecimal Value	Key Strokes
A	✻ 0
B	✻ 1
C	✻ 2
D	✻ 3
E	✻ 4
F	✻ 5

Command Locations 0D - 0F: Receiver #1 Phone Number

Order in which the numbers will be dialed



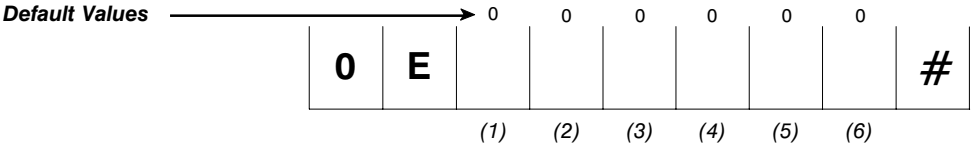
Command Location 0D: Receiver #1 Phone Number (digits 1 - 6)



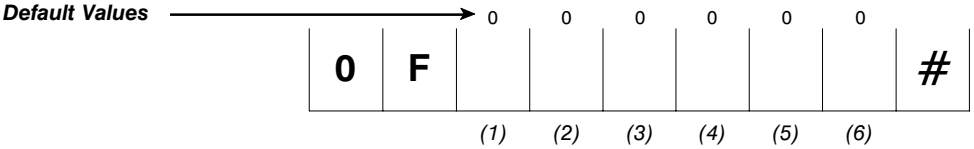
0 - 9 = dialing digits
✻ 0 = dial tone detect
✻ 2 = * (DTMF dialing only, not used in pulse dialing)
✻ 3 = # (DTMF dialing only, not used in pulse dialing)
✻ 4 = end of number
✻ 5 = 5 second delay

Digit (1) is dialed first.
You must place a ✻4 (EON) after the last digit to be dialed. Fill in remaining positions with "0". The zeroes will not be dialed.

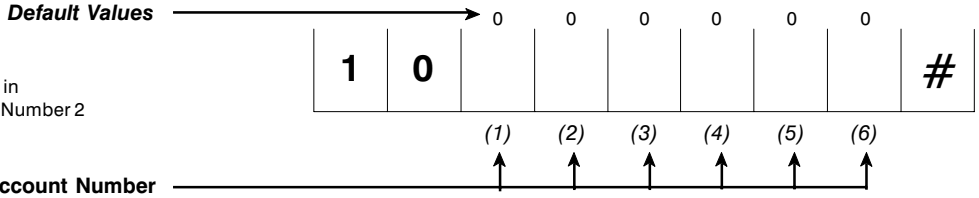
Command Location 0E: Receiver #1 Phone Number (digits 7 - 12)



Command Location 0F: Receiver #1 Phone Number (digits 13 - 18)



Command Location 10: Account Number 2



Account Number 2 is used in conjunction with Receiver Number 2

Valid entries are 0 - F.
The Account Number is right justified. The last digit must be in Position (6).
The SYSTEM 2316E/2316EC will read the account number using:
- Digit Positions (4) - (6) with 3-digit accounts
- Digit Positions (3) - (6) with 4-digit accounts
- Digit Positions (1) - (6) with 6-digit accounts

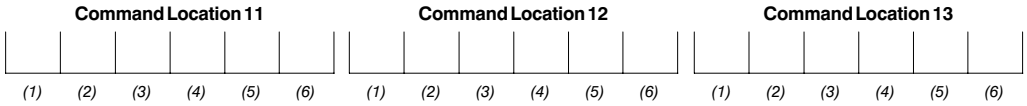
Fill all unused Digit Positions with 0s.

PROGRAMMING CONVERSIONS

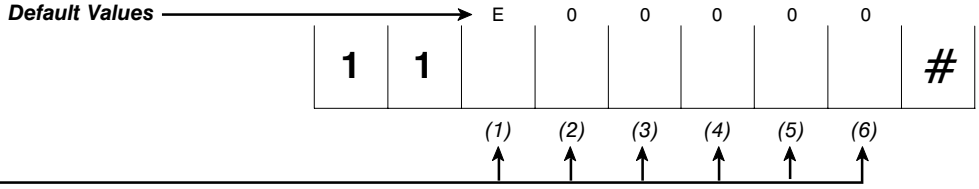
Hexadecimal Value	Key Strokes
A	✻ 0
B	✻ 1
C	✻ 2
D	✻ 3
E	✻ 4
F	✻ 5

Command Locations 11 - 13: Receiver #2 Phone Number

Order in which the numbers will be dialed



Command Location 11: Receiver #2 Phone Number (digits 1 - 6)

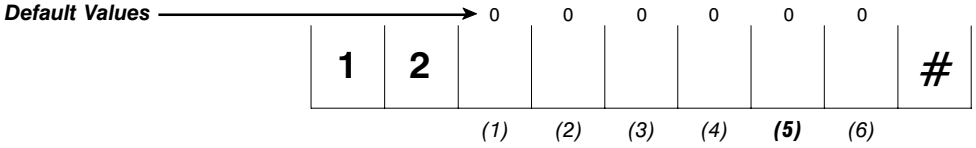


Digit Positions (1) - (6):

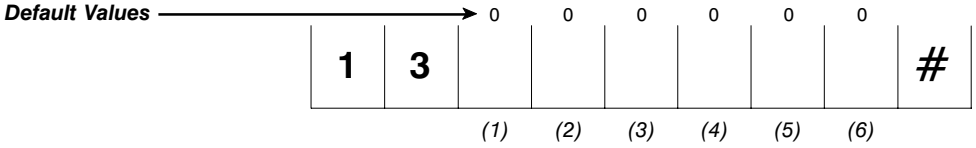
0 - 9 = dialing digits
✻0 = dial tone detect
✻2 = * (DTMF dialing only, not used in pulse dialing)
✻3 = # (DTMF dialing only, not used in pulse dialing)
✻4 = end of number
✻5 = 5 second delay

Digit (1) is dialed first.
You must place a ✻ 4 (EON) after the last digit to be dialed. Fill in remaining positions with "0". The zeroes will not be dialed.

Command Location 12: Receiver #2 Phone Number (digits 7 - 12)

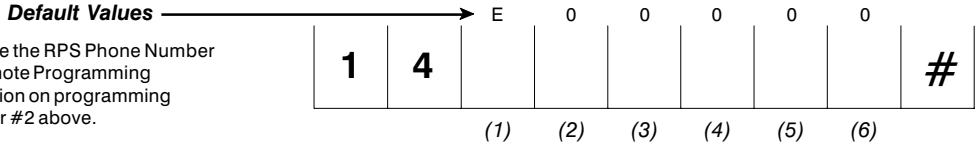


Command Location 13: Receiver #2 Phone Number (digits 13 - 18)



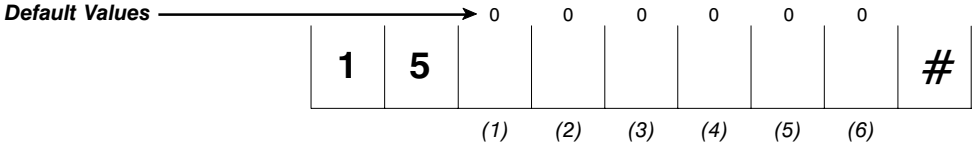
Command Locations 14 - 16: RPS Phone Number

Command Location 14: RPS Phone Number (digits 1 - 6)

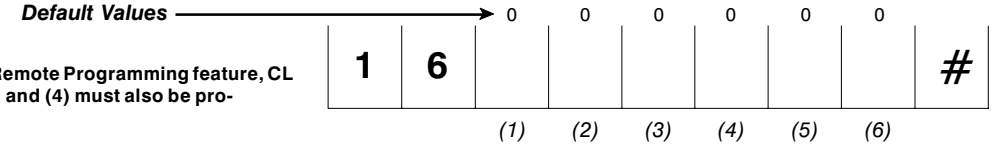


Command Locations 14 - 16 store the RPS Phone Number used by the COMMANDER II Remote Programming Software. For additional information on programming these Locations, refer to Receiver #2 above.

Command Location 15: RPS Phone Number (digits 7 - 12)



Command Location 16: RPS Phone Number (digits 13 - 18)



NOTE: In order to utilize the Remote Programming feature, CL 0B, Digit Positions (3) and (4) must also be programmed with YES.

CL 17 - 1E & 40 - 47, 1F - 26 & 49 - 50

Command Locations 17 - 1E & 40 - 47: Loop Reporting Codes

***Default Values**
Loop 1 shown

0	1	E	1	0	0
1	7							#
		(1)	(2)	(3)	(4)	(5)	(6)	

17 = Loop 1
18 = Loop 2
19 = Loop 3
1A = Loop 4
1B = Loop 5
1C = Loop 6
1D = Loop 7
1E = Loop 8
40 = Loop 9
41 = Loop 10
42 = Loop 11
43 = Loop 12
44 = Loop 13
45 = Loop 14
46 = Loop 15
47 = Loop 16

***Default Values are different for each loop. Refer to the SYSTEM 2316E/2316EC Programming Worksheet at the end of this manual.**

Digit Positions (1) & (2): Alarm Reporting Code
Program 00 to disable Event Reporting for a loop.

Digit Positions (3) & (4): Restore Reporting Code
Program 00 to disable Event Reporting for a loop.

Digit Positions (5) & (6): Shunt Reporting Code
Program 00 to disable Event Reporting for a loop.

Command Locations 1F - 26, & 49 - 50: Loop Control

***Default Values**
Loop 1 shown

1	2	1	3	3	3
1	F							#
		(1)	(2)	(3)	(4)	(5)	(6)	

1F = Loop 1
20 = Loop 2
21 = Loop 3
22 = Loop 4
23 = Loop 5
24 = Loop 6
25 = Loop 7
26 = Loop 8
49 = Loop 9
4A = Loop 10
4B = Loop 11
4C = Loop 12
4D = Loop 13
4E = Loop 14
4F = Loop 15
50 = Loop 16

***Default Values are different for each loop. Refer to the SYSTEM 2316E/2316EC Programming Worksheet at the end of this manual.**

Digit Position (1): Alarm Receiver Select
0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Digit Position (2): Loop Response Time
0 = 5 milliseconds
1 = 250 milliseconds
2 = 500 milliseconds
3 = 750 milliseconds

Digit Position (3): Loop Restore Type
0 = No Restoral Report sent
1 = Restoral sent when loop normal
2 = Restoral sent when loop normal and bell silences
3 = Restoral sent when loop normal and system disarmed

Digit Position (4): Loop Arming Type
1 = Interior: delayed during E/E delays
2 = Instant
3 = Delay
4 = Long Delay: delay two times as long
5 = Day/Instant: buzzer on day fault
6 = Day/Delay: buzzer on day fault
7 = Day/Instant with bell
8 = Day/Delay with bell
9 = 24 Hours: always armed

Digit Position (5): Loop Bell Type
1 = 3-pulse temporal
2 = Pulsing
3 = Steady
4 = Chirp
5 = Silent with no LED
6 = Silent with LED

Digit Position (6): Loop Circuit Type
1 = Normally Open Circuit
2 = Normally Closed Circuit
3 = End Of Line (EOL)
4 = Supervised, bell latched
5 = Supervised, bell not latched

NOTE: A Loop programmed as type 4 or 5 will report any open as a Trouble condition, regardless of panel armed status.

PROGRAMMING CONVERSIONS

Hexadecimal Value	Key Strokes
A	* 0
B	* 1
C	* 2
D	* 3
E	* 4
F	* 5

Command Location 27: Soft Zone A (Emergency)

This Zone is identified by the "E" key on the Alpha and LED Plus keypads.

Digit Positions (1) and (2): Emergency Report Code

Program 00 to disable alarm reporting for Emergency zone.

Digit Position (3): Emergency Zone Receiver Select

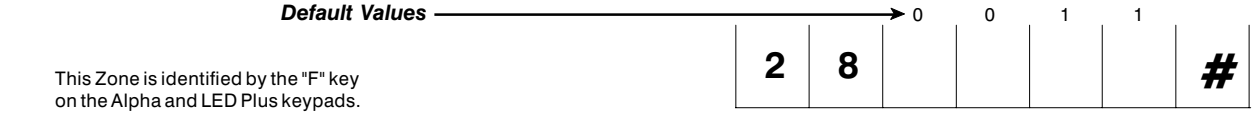
0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Digit Position (4): Emergency Loop Bell Type

1 = 3-pulse temporal
2 = Pulsing
3 = Steady
4 = Chirp
5 = Silent

NOTE: Command Location 2F Digit Position (4) must be programmed to YES to enable Soft Zones.

Command Location 28: Soft Zone B (Fire)



This Zone is identified by the "F" key on the Alpha and LED Plus keypads.

Digit Positions (1) and (2): Fire Report Code

Digit Position (3): Fire Receiver Select

Digit Position (4): Fire Loop Bell Type

Refer to CL 27 for information about programming this zone.

Command Location 29: Soft Zone C (Police)

This Zone is identified by the "P" key on the Alpha and LED Plus keypads.

Digit Positions (1) and (2): Police Report Code

Digit Position (3): Police Zone Receiver Select

Digit Position (4): Police Loop Bell Type

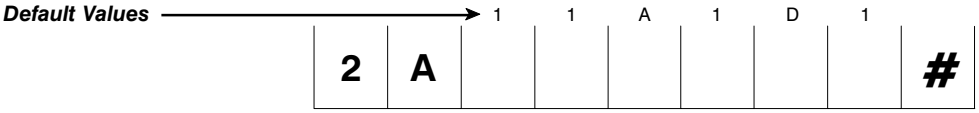
Refer to CL 27 for information about programming this zone.

PROGRAMMING CONVERSIONS

Hexadecimal Value	Key Strokes
A	✻ 0
B	✻ 1
C	✻ 2
D	✻ 3
E	✻ 4
F	✻ 5

CL 2A and 2B

Command Location 2A: Event Reporting



Digit Position (1): Shunt Receiver Select

See also CL 17 - 1E & 40 - 47 Digit Positions (5) and (6).

0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Digit Position (2): Restore Receiver Select

See also CL 17 - 1E & 40 - 47 Digit Positions (3) and (4).

0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Digit Position (3): Unit Status Report Code

Valid entries are 0 - F.
The panel will add a fixed extension digit when reporting. Fixed codes are listed below.
Program a 0 at this position to disable Unit Status Reporting.

Digit Position (4): Unit Status Receiver Select

0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Digit Position (5): Cancel Report Code

Valid entries are 0 - F.
The panel will add the User ID # as the second digit when reporting.
Program a 0 at this position to disable Cancel Reports.

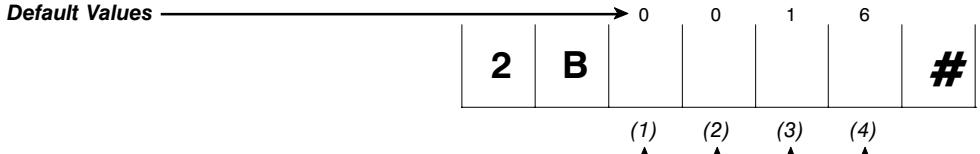
Digit Position (6): Cancel Report Receiver Select

0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

UNIT STATUS FIXED EXTENSION CODES

1 = Low battery	7 = AC restore
2 = AC fail	8 = Bell fuse restore
3 = Bell fuse fail	B = Watchdog reset
5 = Failed to communicate	C = Completed programming
6 = Battery restore	

Command Location 2B: Test Report



Digit Positions (1) and (2): Test Report Code

Valid entries are 0 - F.
Program 00 to disable Test Reports.

Digit Positions (3): Test Report Receiver Select

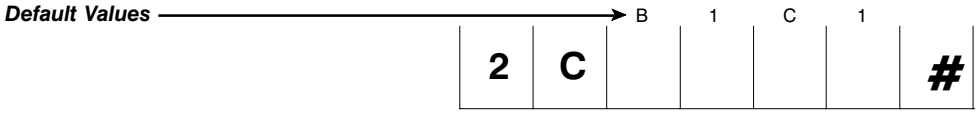
0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Digit Positions (4): Test Report Interval

1 = 1 hour	5 = 24 hours	✻0 = 1 hour if armed
2 = 2 hours	6 = 7 days	✻1 = 2 hours if armed
3 = 4 hours	7 = 14 days	✻2 = 4 hours if armed
4 = 12 hours	8 = 21 days	✻3 = 12 hours if armed
	9 = 30 days	✻4 = 24 hours if armed

NOTE: CL A0 **must** be programmed to correctly set time of test.

Command Location 2C: Opening and Closing Report Codes



Digit Position (1): Opening Report Code
Valid entries are 0 - F.
The User ID # is transmitted after the opening code.
Program 0 to disable Opening Reports.

Digit Position (2): Opening Report Receiver Select

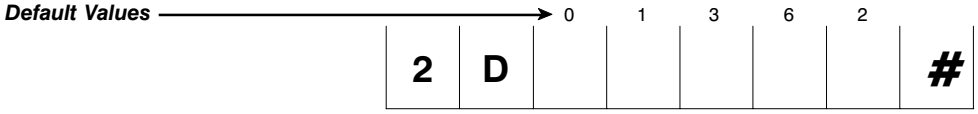
0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Digit Position (3): Closing Report Code
Valid entries are 0 - F.
The User ID # is transmitted after the opening code.
Program 0 to disable Closing Reports.

Digit Position (4): Closing Report Receiver Select

0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Command Location 2D: Duress Report and Delays



Digit Position (1): Duress Report Code
Valid entries are 0 - F.
The User ID # will be reported as the second digit when reporting.
Program 0 to disable Duress Reports.

Digit Position (2): Duress Receiver Select

0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Digit Position (3): Entry Delay Time

1 = 10 secs
2 = 20 secs
3 = 30 secs
4 = 40 secs
5 = 50 secs
6 = 60 secs
7 = 70 secs
8 = 80 secs
9 = 90 secs
✻0 = 100 secs
✻1 = 110 secs
✻2 = 120 secs
✻3 = 130 secs
✻4 = 140 secs
✻5 = 150 secs

NOTE: To program delay times greater than 150 secs, see CL 1F - 26 & 49 - 50 Digit Position (4)

Digit Position (4): Exit Delay Time

1 = 10 secs
2 = 20 secs
3 = 30 secs
4 = 40 secs
5 = 50 secs
6 = 60 secs
7 = 70 secs
8 = 80 secs
9 = 90 secs
✻0 = 100 secs
✻1 = 110 secs
✻2 = 120 secs
✻3 = 130 secs
✻4 = 140 secs
✻5 = 150 secs

NOTE: To program delay times greater than 150 secs, see CL 1F - 26 & 49 - 50 Digit Position (4)

Digit Position (5): Audible Time

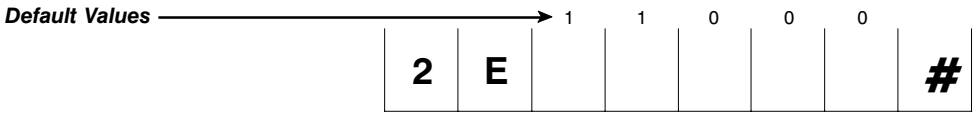
1 = 2 min
2 = 5 min
3 = 10 min
4 = 15 min
5 = 30 min

PROGRAMMING CONVERSIONS

Hexadecimal Value	Key Strokes
A	✻ 0
B	✻ 1
C	✻ 2
D	✻ 3
E	✻ 4
F	✻ 5

CL 2E and 2F

Command Location 2E: Audible/Visual Switches



Digit Position (1): Entry Pre-alarm Enable — *(1) (2) (3) (4) (5)*

0 = No
1 = Yes: sounds keypad buzzers during entry delay

Digit Position (2): Exit Pre-alarm Enable

0 = No
1 = Yes: sounds keypad buzzers during exit delay

Digit Position (3): Bell Reverse Operation

0 = No
1 = Yes: supplies bell voltage in non-alarm state; Bell requires external power supply

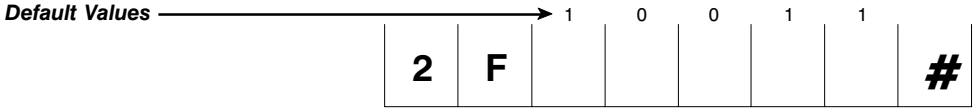
Digit Position (4): Ring Back Enable

0 = No
1 = Yes: Automatic Bell test after arming (and Exit Delay has expired) for local or non-supervised accounts; follows closing report for supervised accounts; sounds bells for 2 seconds.

Digit Position (5): Disable Loop LEDs

0 = No
1 = Yes: turns off keypad zone LEDs after 5 minutes

Command Location 2F: Unit Control



Digit Position (1): Local System Only — *(1) (2) (3) (4) (5)*

0 = No
1 = Yes: disables all communications except RPS

Digit Position (2): Daily Dynamic Battery Test Enable

0 = No
1 = Yes: performs a 2-minute battery test (under load conditions) once every 4 hours

Digit Position (3): Four Minute Power-Up Delay Enable

0 = No
1 = Yes: all alarms suppressed for 4 minutes on power-up

Digit Position (4): Soft Zone Operation Enable

0 = No
1 = Yes: allow use of Emergency (E), Fire (F), and Police (P) keys (See also CL 27 - 29)

Digit Position (5): AC Power Line Frequency

0 = 50 Hz
1 = 60 Hz

PROGRAMMING CONVERSIONS

Hexadecimal Value	Key Strokes
A	✻ 0
B	✻ 1
C	✻ 2
D	✻ 3
E	✻ 4
F	✻ 5

CL 30 - 3F & 48

Command Locations 30 - 3F: Loop Switches

Default Values → 0 1 0 0

Loop 1 shown

30 = Loop 1	34 = Loop 5	38 = Loop 9	3C = Loop 13
31 = Loop 2	35 = Loop 6	39 = Loop 10	3D = Loop 14
32 = Loop 3	36 = Loop 7	3A = Loop 11	3E = Loop 15
33 = Loop 4	37 = Loop 8	3B = Loop 12	3F = Loop 16

3	0					#
		(1)	*(2)*	*(3)*	*(4)*	

Digit Position (1): Door Chime Enable

0 = No
1 = Yes: keypads beep 2 seconds when faulted (disarmed condition)

Digit Position (2): Allow Shunting of This Loop

0 = No: makes it a priority zone (not shuntable)
1 = Yes: authorized users can shunt or force arm

Refer to CL 01 - 08 & 51 - 58 Digit Position (1) for Arming Types (Authorization Levels)

Digit Position (3): Allow Group Shunting for This Loop

0 = No
1 = Yes: include as part of group when performing Home Arming or Instant/Home Arming feature (See CL 09 Digit Position (5) and pages 25 & 29)

Digit Position (4): Delay Before Dial

0 = No
1 = Yes: this loop will delay dialing on alarm for time programmed in 0B (1)

Command Location 48: Trouble Reports

Default Values → F 1 E 1

4	8					#
		(1)	*(2)*	*(3)*	*(4)*	

Digit Position (1): Trouble Report Code

This is a one-digit reporting code.
Program 0 to disable Trouble Report.

Digit Position (2): Trouble Report Receiver Select

0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

Digit Position (3): Trouble Restoral Report Code

This is a one-digit reporting code.
Program 0 to disable Trouble Restoral Report.

Digit Position (4): Trouble Restoral Report Receiver Select

0 = Receiver 1 with Receiver 2 as backup
1 = Receiver 1 only
2 = Receiver 2 only
3 = Receiver 1 and Receiver 2 (Dual Reporting)

PROGRAMMING CONVERSIONS

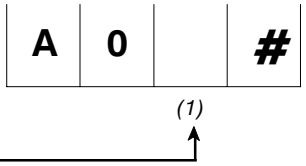
Hexadecimal Value	Key Strokes
A	✻ 0
B	✻ 1
C	✻ 2
D	✻ 3
E	✻ 4
F	✻ 5

CL A0, B3 and B4

Command Location A0: Test Report Countdown Timer

This command will set the time when the first Test Report is transmitted to the central station. The panel will use this transmission time each time it's powered up or the CPU is reset (unless Command Location A0 is reprogrammed).

Previously stored data is not displayed during programming.



Digit Position (1): Set Test Report Countdown Timer

0 = 1/4 hour	4 = 3 hours	8 = 10 hours	✻2 = 18 hours
1 = 1/2 hour	5 = 4 hours	9 = 12 hours	✻3 = 20 hours
2 = 1 hour	6 = 6 hours	✻0 = 14 hours	✻4 = 22 hours
3 = 2 hours	7 = 8 hours	✻1 = 16 hours	✻5 = 24 hours

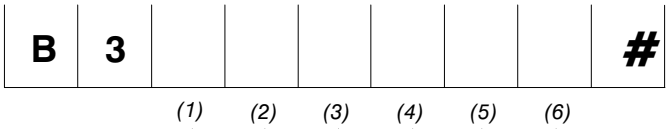
NOTE: Refer to CL 2B for setting the time interval between Reports.

Example: The time is 1500 hours (3:00 pm). You want the first Test Report to transmit at 0100 hours (1:00 am). 3:00 pm + 10 hours = 1:00 am. Program the value "8" in Memory Location A0.

Command Location B3: Set Real-Time Clock (Year, Month, Day)

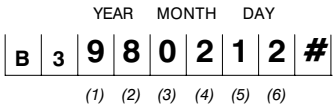
This command will set the day, month, and year in the panel, and will not take effect until Command B4 is programmed.

Previously stored data is not displayed during programming.



Digit Position (1): Year - 10s
Digit Position (2): Year - 1s.
Digit Position (3): Month - 10s
Digit Position (4): Month - 1s.
Digit Position (5): Day - 10s
Digit Position (6): Day - 1s.

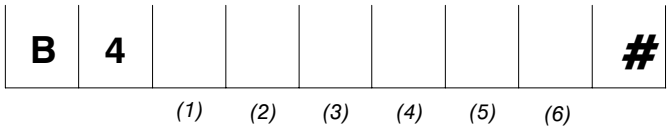
Example: If the date were February 12, 1998, B3 would be programmed



Command Location B4: Set Real-Time Clock (Hour, Minute, Second)

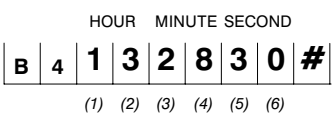
This command will set the hour, minute, and second in the panel. The time is set in BCD (military time).

Previously stored data is not displayed during programming.



Digit Position (1): Hour - 10s
Digit Position (2): Hour - 1s.
Digit Position (3): Minutes - 10s
Digit Position (4): Minutes - 1s.
Digit Position (5): Seconds - 10s
Digit Position (6): Seconds - 1s.

Example: If the time were 28 and one-half minutes past 1 in the afternoon, B4 would be programmed



END-USER INFORMATION

Testing

Once the installation is complete, connect AC and DC power. Complete programming, if required. **Test all panel operations**.

To the Installer

Regular maintenance and inspection (at least monthly) by the installer and frequent testing by the user are vital to the continuous and satisfying operation of any alarm system. The installer should assume the responsibility for developing and offering a regular maintenance program to the user, as well as acquainting the user with the proper operation and limitations of the alarm system and its component parts. **Recommendations must include a specific program of regular testing (at least weekly) to insure that the system is operating properly at all times**.

Telephone Line Problems

In the event of telephone line problems, disconnect the SYSTEM 2316E/2316EC by removing the modular connector plug from the Telco interface jack. **Do not disconnect the connection inside the SYSTEM 2316E/2316EC cabinet**. Doing so will prevent the premise phones from operating. If your phone works correctly after the control panel has been disconnected from the phone line, the control panel has a problem and should be returned for repair.

If the phone does not work after you have disconnected the control panel from the phone line, notify the telephone company and request prompt repair. **The user may not under any circumstance (in or out of warranty) attempt any service or repairs on the SYSTEM 2316E/2316EC**. The control panel must be returned to C&K SYSTEMS or an authorized service agency for repairs.

Watchdog Indicator

The SYSTEM 2316E/2316EC is protected by an advanced circuit, called a Watch Dog circuit, that constantly monitors the microprocessor.

As long as the panel has power and is operating normally, the Watch Dog LED (DS1) on the circuit board will flash. If the Watch Dog circuit detects a failure, it will attempt to reset the panel.

If the panel does not operate properly and the Watch Dog LED no longer flashes, call the **C&K Technical Support Hotline at 1-800-227-8065** in the U. S. or your local C&K representative.

Limitations of Your Alarm System

While the SYSTEM 2316E/2316EC is an advanced design security system, it does not offer guaranteed protection against burglary, fire, or other losses. Any alarm system, whether commercial or residential, is subject to compromise or failure-to-warn for a variety of reasons. These include:

- Intruders may gain access through unprotected openings or have the technical sophistication to bypass an alarm sensor or disconnect an alarm warning device.
- Intrusion detectors, smoke detectors, and many sensing devices will not operate without power. Devices powered by AC will not work if their AC power supply is off for any reason and their backup batteries are missing, dead, or improperly installed.
- Alarm warning devices such as sirens, bells, and horns may not alert people or wake up sleepers if they are located on the other side of closed or partly closed doors. If warning devices are on a different level of the residence from the bedrooms, they are less likely to waken or alert people inside the bedrooms.
- Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily out of service. Telephone lines are subject to compromise by sophisticated methods of attack.
- Smoke detectors used in conjunction with the alarm system may not sense fires that start where smoke cannot reach the detectors, such as chimneys, walls, or roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level of the 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 you 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, arson, etc.
- The most common cause of an alarm system not functioning properly when an intrusion or fire occurs is inadequate maintenance. **Your** alarm **system should be tested weekly to make sure all sensors are operating properly**. **The SYSTEM 2316E/2316EC panel and keypads should also be tested**.
- Installing an alarm system may make you eligible for lower insurance rates, but an alarm system is not a substitute for insurance. Homeowners, property owners, and renters should continue to insure their lives and property.

KEYPAD OPERATION COMMAND SUMMARY

The majority of the keypad commands apply to both the LED and Alpha Plus keypads. Some keypad commands, however, apply to the Alpha Plus (LCD) keypad only.

The following keypad commands apply to both the LED and Alpha Plus keypads:

Function	Comments	Keystroke Sequence
Arm/Disarm	Delays active	[Combination] [#]
Arm Tones Toggle On/Off		[*] [5] [4] [#]
Audible Feedback Toggle		[*] [5] [1] [#]
Bypass Zone (n)	[n] is zone # 1 - 16; Combo may be required	[Combination] [Bypass] [n] [#]
Chime On/Off	Turns system Chime on/off (Combo may be required)	[Combination] [*] [5] [#]
Chime Toggle	Toggles Chime feature on keypad only	[*] [5] [3] [#]
Change Combo using Master Combo	Must be done from User #1	[Master Combo] [*] [0] [#] [User Number] [New Combo] [#] [New Combo] [#]
Clear Alarm Memory		[*] [1] [#]
Exit Programming		[*] [#]
Fire Alarm	Keypad activated	[F] (Hold for 3 seconds)
Group Shunt and Arm	Arms the system and all zones programmed for group bypass, CL 30 - 3F, Digit Position (3), are shunted simultaneously; Combo may be required **(This is also called Home-Arming)**	[Combination] [*] [4] [#]
Group Shunt and Instant Arm	Same as Group Bypass (above) except system is Instant Armed (Exit Delay operates normally, upon expiration of Exit Delay, all delayed zones are converted to Instant - No Entry Delay). Combo may be required **(Also called Instant Home-Arming)**	[Combination] [*] [4] [7] [#] or [Combination] [*] [7] [4] [#]
Instant Arm	Arms system and converts delayed zones to Instant (Exit Delay active, No Entry Delay), Combo may be required	[Combination] [*] [7] [#]
Keypad Activated RPS	If enabled, CL 0B(3); Combo may be required	[Combination] [*] [0] [2] [#]
Medical Alarm	Keypad activated	[E] (Hold for 3 seconds)
Police/Panic Alarm	Keypad activated	[P] (Hold for 3 seconds)
Pre-warn Toggle On/Off		[*] [5] [2] [#]
Reset Aux Power	If resettable devices are connected to Terminals 5 and 6	[*] [6] [2] [#]
Reset Panel		[Master Combination] [*] [6] [8] [#]
Test - Battery	Use after correcting Low Battery problem	[*] [6] [4] [#]
Test - Bells	Combo may be required	[Combination] [*] [6] [3] [#]
Test - Central Station	Combo may be required	[Combination] [*] [6] [1] [#]
Test - Local Walk-Test		[*] [6] [0] [#]

NOTE: For additional information about Combination Command requirements, see page 27 and CL 09 (2).

The following Keypad Commands apply to the Alpha Plus keypad only:

Function	Comments	Keystroke Sequence
Backlight Toggle On/Off		[*] [8] [#]
Display Keypad Model & Revision Number		[*] [9] [#]

The following keypad commands are Installer Only Commands:

Function	Comments	Keystroke Sequence
Alpha Keypad Programming	Start Programming the Keypad	[Installer Combination] [*] [0] [1] [#]
Alpha Keypad Test		[*] [6] [7] [#]
Kill/Revive Panel		[Installer Combination] [*] [6] [9] [#]
Panel Programming	Start Programming the Panel	[Installer Combination] [*] [0] [#]

SURVEY OF MOST COMMON QUESTIONS

The following is a summary of the questions most frequently asked of our Technical Support Department.

Question: *How do I program the panel with the LED keypad?*
Answer: To program with the LED keypad, enter the Command Location to be programmed, the Data to be programmed and the press the [#] key. (See also pages 6 - 7.)

For Example: To program User #2 with the ability to Arm only, No Reports and No Shunting; and a PIN of 6543, enter the following keystrokes:

CL	Arm Type	PIN (w/EON)	Write Data
[0][2]	[1]	[6][5][4][3][*][4]	[#]

Question: *How do I access Alpha Plus Keypad Programming to enter Zone Labels?*
Answer: To begin Alpha Plus Keypad Programming (you cannot program the LED keypad), enter [Installer Combination] [*] [0] [1] [#]. Then scroll to the desired message location. (See also pages 7 - 8.)

Question: *How do I interpret a Trouble on the LED keypad? How do I clear a Trouble on the LED keypad?*
Answer: A number of conditions may cause the Trouble LED to light. See the chart below for additional information.

Trouble LED	Power LED	Zone LED's	Cause
Flash Slow	On	Off	Watchdog
On	On	Flash Slow	Zone Trouble
On	Off	Off	AC Failure
On	Flash Slow	Off	Low Battery
On	On	Off	System Trouble (Bell Fuse or Comm Fail.)

Question: *How do I enter hexadecimal numbers when using keypad programming?*
Answer: Hexadecimal values are entered through the use of the [*] key and one of the digits [0] - [5]. For additional help with entering hexadecimal numbers, refer to page 10. The hexadecimal conversion chart is also found at various locations throughout the programming section of the manual.

Question: *What is an "Interface error 1" and how do I correct the error?*
Answer: This error is caused by a problem with the Data line (Green wire) between the panel and the keypad. Check the connection to ensure that the wire is not pinched or loose. Also try disconnecting all keypads from the panel (one at a time), resetting the panel after each keypad is removed. Remember, to reset the panel press [Master Combination] [*] [6] [8] [#].

Question: *How do I reset Alarm Memory?*
Answer: To Clear Alarm Memory, press [*] [1] [#].

Question: *How do I address an Alpha Plus Keypad for the first time?*
Answer: If you have an Alpha Plus keypad that has never been addressed, when power is initially applied, the display will read **KEYPAD ADDRESS?**. To enter the address, simply press a number between 0 and 7. Remove panel power for 3 seconds and then reapply power to reset the system. For additional information about keypad addressing, see page 7.

NOTE: If operating at or near the limit of AUX Power and Keypad Power, you may need to remove power for up to 30 seconds in order for the system to reset properly.

Question: *How do I interpret the Unit Status Reports? Can the codes be changed?*
Answer: The Reporting Codes for the Unit Status Report is a two-digit code. The first digit is programmed into CL 2A Digit Position (3) and may be any value from 0 - F. The second digit is fixed by the firmware and cannot be changed. Please note that programming a 0 into 2A (3) will disable the report and no Unit Status information will be sent. Additional information about Unit Status Reporting Codes can be found on page 18 in the programming section.

Question: *How do I enter Receiver and RPS Phone Numbers? Why do I have to enter the E at the end of the number?*
Answer: The System 2316E/2316EC is designed to handle phone numbers up to 18 digits long, but the firmware can only handle 6 digits per Command Location. This means that 3 Command Locations are required to store a phone number. With variations in number length and special characters which may need to be included, the software needs some method of determining the end of the number. The E (entered by pressing [*][4]) tells the software that it has reached the end of the phone number and to ignore any additional digits.

For Example: To program the panel for Receiver #1 with a phone number of 555-1212 and disable the call waiting feature using *70, enter the following sequence:

Command Location 0D						Command Location 0E						Command Location 0F					
C	7	0	5	5	5	1	2	1	2	E	0	0	0	0	0	0	0
(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)

NOTE: Entering [*] [2] in CL 0D (1) will display the value "C" and entering [*] [4] in CL 0E (5) will display the value "E".

Question: *How can I correct the problem of two Alpha Plus keypads with the same address?*
Answer: When two keypads have been given the same address, a conflict occurs on the data bus since two keypads are trying to communicate at the same time. The only way to correct the problem is to disconnect one of the keypads and then readdress the remaining one, ensuring that the new address is not in use by any other keypad. To readdress the keypad, enter Alpha Plus Keypad Programming ([Installer Combination] [*] [0] [1] [#]) and scroll backward one step ([*] [BYPASS]). Then enter the new address. Don't forget to reset the panel ([Master Combination] [*] [6] [8] [#]) after changing the address, so the panel knows how to properly address the keypad. For additional information about keypad addressing, see page 7.

Question: *Why can't my panel communicate with the Central Station?*
Answer: There are several reasons for the panel not communicating. The first place to look is CL 2F (1). This is the Unit Control, if Digit Position (1) is programmed with a 1, all communication except RPS is disabled. If 2F (1) is programmed with a 0, check to ensure that all of the following parameters are properly set:

Account Number 1 is programmed into CL 0C
Receiver #1 Phone Number is correctly programmed into CL 0D - 0F
Receiver Format and Message Format agree (CL 0A)
Communication Control (CL 0B) is correctly programmed
The RJ-31X jack is correctly wired (terminals 4 & 5 are not switched with 1 & 8)

Question: *How do I disarm my panel if I accidently locked myself out by programming my user code as Arm Only?*
Answer: The only way to correct this problem is to access the panel through Remote Programming (RPS) or Direct Connect (also RPS) and disarm the panel. Then use the remote programming to reprogram the panel. For additional information about RPS, see the COMMANDER II/MONITOR II Operating Manual.

Question: *Why doesn't my keypad respond? The Power LED is lit, but nothing happens.*
Answer: The panel may be in the KILL mode. On the LED keypad, only the Power LED will be lit. On the Alpha Plus keypad, the Power LED will be lit and the Service Message, if programmed, will be displayed. To restore the panel, press [Installer Combination] [*] [6] [9] [#].

Question: *Why do my loops fail to respond after changing the programming?*
Answer: In order for the panel to recognize the programming changes for the loops, either the loops have to be tripped and restored or the panel must be reset ([Master Combination] [*] [6] [8] [#]).

RECOMMENDATIONS FOR REDUCING FALSE ALARMS

The recommendations contained in this section are designed to assist you in reducing false alarms. The first column contains the Command Locations and Digit Positions in parentheses ( ). The second column is the recommended program option followed by a brief explanation.

Program Option	CL	Program Function	Comments
Arming/Combination Options	09 (2)	Combination Command	This feature is enabled to prevent unauthorized users from activating certain keypad functions. When activated, this command will require a valid User Combination to perform such functions as Bypassing a Zone, Group Bypassing, Keypad Activated RPS, Central Station and Bell Testing, and Instant Arming. For additional assistance with commands requiring User Combinations, see page 24 (Command Summary).
Arming/Combination Options	09 (4)	Chirp Alert	This option minimizes the possibility of leaving the system unarmed (faulted) when exiting. The system is armed in the normal manner and the user exits through the delayed exit door. If the door does not close properly, returning the loop to the normal state, the system will transition from the Exit Delay to the Entrance Delay at the completion of the Exit Delay time and chirp the Bell, alerting the user to the error in arming the system.
Loop Control	1F - 26 & 49 - 50 (2)	Loop Response Time	This option determines the response time of the loop itself. It acts as a buffer on the loop to minimize the possibility of fast acting sensors, such as swingers or window foil, producing false alarms.
Loop Control	1F - 26 & 49 - 50 (3)	Loop Restore Type	This option is used in conjunction with CL 17 - 1E & 40 - 47 Digit Positions (3 & 4), Restore Reporting Code, and CL 2A (2), Restore Receiver Select. The panel can be programmed to send a Restoral Report only when the loop is normal and the system is disarmed. With this arrangement, any loop which is triggered multiple times while armed will only send one alarm report until the system is disarmed. This prevents the system from tying up the phone line with continuous alarm and restoral reports.
Loop Control	1F - 26 & 49 - 50 (4)	Loop Arming Type	There may be occasions where it is desirable to program all doors and interior points as delayed. Or you may need to program interior zones to be delayed only during the Entry/Exit Delay Time. This Command Location allows a variety of Arming Types to help minimize false alarms.
Event Reporting	2A (5 & 6)	Cancel Report Code/Cancel Report Receiver Select	This feature should always be enabled on reporting systems, especially if the system does not send Opening and Closing Reports. A Cancel Report is sent to the monitoring station in the event that an Authorized User clears the alarm while the bell is still active. The Cancel Report Code (Digit Position 5) is actually a two-digit code with the first digit being programmed by the installer and the second digit being the User ID # when the report is sent. Digit Position (6) determines which receiver gets the Cancel Report.

Program Option	CL	Program Function	Comments
Audible/Visual Switches	2E (1 & 2)	Entry/Exit Pre-Alarm	If Digit Position (1) is programmed for Entry Pre-Alarm, the keypad will sound continuously for all but the last 10 seconds of the amount of time programmed for the Entry Delay Time (CL 2D (3)). The keypad will beep for the last 10 seconds of the Entry Delay. If Digit Position (2) is programmed for Exit Pre-Alarm, the keypad will beep for the time programmed into CL 2D (4), Exit Delay Time. The speed at which the keypad beeps will increase during the last 10 seconds of the Delay time. Alpha Plus keypads will display a bar graph in addition to the audible tone.
Unit Control	2F (3)	Enable 4-minute Power-Up Delay	Suppresses all trouble and alarm reports for a period of four minutes after power is initially applied to the panel. This allows the sensors, such as PIRs time to stabilize when initializing or prevents powered devices, such as smoke detectors, from sending alarms when first starting panel with a dead battery or no battery connected.
Loop Switches	30 - 3F (3)	Allow Group Shunting	This allows multiple loops to be shunted simultaneously with a single keypad command. This is typically done on all interior loops in a system. The command also Arms or Instant Arms the system. (See page 24 for Group Bypassing and Instant Arm.)
Loop Switches	30 - 3F (4)	Delay Before Dial	This option programs the loops to have a delay after they are triggered to allow the User time to shut down the system in the event of an accidental triggering of the zone. The amount of time is determined by the value programmed into CL 0B Digit Position (1). The time delay may be between 10 and 150 seconds, in 10 second intervals.

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2316E/2316EC Programming Worksheet

Client: _____ **SYSTEM 2316E/2316EC Phone Number:** _____

Address: _____

Installer: _____ **Date:** _____ **Control Location:** _____

VOLTS
AC volts (term 1 and 2): _____

AUX POWER VOLTS
(term 5 and 6): _____

BATTERY VOLTS
Under load - AC off: _____

CURRENT
Keypads (term 6 and 8): _____

AUX POWER
(term 5 and 6): + _____

TOTAL
(500 mA allowed): = _____

CONTROL LOCATION:

_____

_____

_____

BREAKER # AND LOCATION:

_____

_____

_____

KEYPADS

Address	Location
0	
1	
2	
3	
4	
5	
6	
7	

0	0	0	1	2	3	4	5	#	**Installer Combination**
0	1	9	1	2	3	4	E	#	**User #1 - Master** Name: _____
0	2	9	E	0	0	0	0	#	**User #2** Name: _____
0	3	9	E	0	0	0	0	#	**User #3** Name: _____
0	4	9	E	0	0	0	0	#	**User #4** Name: _____
0	5	9	E	0	0	0	0	#	**User #5** Name: _____
0	6	9	E	0	0	0	0	#	**User #6** Name: _____
0	7	9	E	0	0	0	0	#	**User #7** Name: _____
0	8	9	E	0	0	0	0	#	**User #8 -Guest** Name: _____
5	1	9	E	0	0	0	0	#	**User #9** Name: _____
5	2	9	E	0	0	0	0	#	**User #10** Name: _____
5	3	9	E	0	0	0	0	#	**User #11** Name: _____
5	4	9	E	0	0	0	0	#	**User #12** Name: _____
5	5	9	E	0	0	0	0	#	**User #13** Name: _____
5	6	9	E	0	0	0	0	#	**User #14** Name: _____
5	7	9	E	0	0	0	0	#	**User #15** Name: _____
5	8	9	E	0	0	0	0	#	**User #16** Name: _____

Address	Default		Description
5 9	9 E 0 0 0 0	#	**User #17** Name: ________
5 A	9 E 0 0 0 0	#	**User #18** Name: ________
5 B	9 E 0 0 0 0	#	**User #19** Name: ________
5 C	9 E 0 0 0 0	#	**User #20** Name: ________
5 D	9 E 0 0 0 0	#	**User #21** Name: ________
5 E	9 E 0 0 0 0	#	**User #22** Name: ________
5 F	9 E 0 0 0 0	#	**User #23** Name: ________
6 0	9 E 0 0 0 0	#	**User #24** Name: ________
6 1	9 E 0 0 0 0	#	**User #25** Name: ________
6 2	9 E 0 0 0 0	#	**User #26** Name: ________
6 3	9 E 0 0 0 0	#	**User #27** Name: ________
6 4	9 E 0 0 0 0	#	**User #28** Name: ________
6 5	9 E 0 0 0 0	#	**User #29** Name: ________
6 6	9 E 0 0 0 0	#	**User #30** Name: ________
6 7	9 E 0 0 0 0	#	**User #31** Name: ________
6 8	9 E 0 0 0 0	#	**User #32** Name: ________

Address	Default		Description
0 9	0 0 1 1 0	#	**Arm/Combination Option**
0 A	1 2 1 2	#	**Communications Formats**
0 B	0 3 1 1 0 8	#	**Communications Control**

Address	Default		Description
0 C	0 0 0 0 0 0	#	**Account #1**

	Phone #1 (1st 6 digits)		**(Middle 6 digits)**		**(Last 6 digits)**
0 D	E 0 0 0 0 0 #	0 E	0 0 0 0 0 0 #	0 F	0 0 0 0 0 0 #

Address	Default		Description
1 0	0 0 0 0 0 0	#	**Account #2**

	Phone #2 (1st 6 digits)		**(Middle 6 digits)**		**(Last 6 digits)**
1 1	E 0 0 0 0 0 #	1 2	0 0 0 0 0 0 #	1 3	0 0 0 0 0 0 #

	RPS Phone (1st 6 digits)		**(Middle 6 digits)**		**(Last 6 digits)**
1 4	E 0 0 0 0 0 #	1 5	0 0 0 0 0 0 #	1 6	0 0 0 0 0 0 #

Address	Default		Function
1 7	0 1 E 1 0 0	#	Loop 1 Codes
1 8	0 2 E 2 0 0	#	Loop 2 Codes
1 9	0 3 E 3 0 0	#	Loop 3 Codes
1 A	0 4 E 4 0 0	#	Loop 4 Codes
1 B	0 5 E 5 0 0	#	Loop 5 Codes
1 C	0 6 E 6 0 0	#	Loop 6 Codes
1 D	0 7 E 7 0 0	#	Loop 7 Codes
1 E	0 8 E 8 0 0	#	Loop 8 Codes
4 0	0 9 E 9 0 0	#	Loop 9 Codes
4 1	1 0 E A 0 0	#	Loop 10 Codes
4 2	1 1 E B 0 0	#	Loop 11 Codes
4 3	1 2 E C 0 0	#	Loop 12 Codes
4 4	1 3 E D 0 0	#	Loop 13 Codes
4 5	1 4 E E 0 0	#	Loop 14 Codes
4 6	1 5 E F 0 0	#	Loop 15 Codes
4 7	1 6 E 0 0 0	#	Loop 16 Codes

Address	Default		Function	Description	Volts	Ohms
1 F	1 2 1 3 3 3	#	Loop 1 Control			
2 0	1 2 1 2 3 3	#	Loop 2 Control			
2 1	1 2 1 2 3 3	#	Loop 3 Control			
2 2	1 2 1 2 3 3	#	Loop 4 Control			
2 3	1 2 1 2 3 3	#	Loop 5 Control			
2 4	1 2 1 2 3 3	#	Loop 6 Control			
2 5	1 2 1 2 3 3	#	Loop 7 Control			
2 6	1 2 1 9 1 5	#	Loop 8 Control			
4 9	1 2 1 1 3 3	#	Loop 9 Control			
4 A	1 2 1 1 3 3	#	Loop 10 Control			
4 B	1 2 1 1 3 3	#	Loop 11 Control			

	Description	Volts	Ohms
4 C 1 2 1 1 3 3 # **Loop 12 Control**			
4 D 1 2 1 1 3 3 # **Loop 13 Control**			
4 E 1 2 1 1 3 3 # **Loop 14 Control**			
4 F 1 2 1 1 3 3 # **Loop 15 Control**			
5 0 1 2 1 1 3 3 # **Loop 16 Control**			

2 7 0 0 1 4 # **Emergency Zone**

2 8 0 0 1 1 # **Fire Zone**

2 9 0 0 1 3 # **Police Zone**

2 A 1 1 A 1 D 1 # **Event Reports**

2 B 0 0 1 6 # **Test Report**

2 C B 1 C 1 # **Opening/Closing Reports**

2 D 0 1 3 6 2 # **Duress/ Delays**

2 E 1 1 0 0 0 # **Audible/Visual Switches**

2 F 1 0 0 1 1 # **Unit Control**

4 8 F 1 E 1 # **Trouble Reports**

3 0 0 1 0 0 # **Loop 1 Switches**

3 1 0 1 0 0 # **Loop 2 Switches**

3 2 0 1 0 0 # **Loop 3 Switches**

3 3 0 1 0 0 # **Loop 4 Switches**

3 4 0 1 0 0 # **Loop 5 Switches**

3 5 0 1 0 0 # **Loop 6 Switches**

3 6 0 1 0 0 # **Loop 7 Switches**

3 7 0 1 0 0 # **Loop 8 Switches**

3 8 0 1 0 0 # **Loop 9 Switches**

3 9 0 1 0 0 # **Loop 10 Switches**

3 A 0 1 0 0 # **Loop 11 Switches**

3 B 0 1 0 0 # **Loop 12 Switches**

3 C 0 1 0 0 # **Loop 13 Switches**

3 D 0 1 0 0 # **Loop 14 Switches**

3 E 0 1 0 0 # **Loop 15 Switches**

3 F 0 1 0 0 # **Loop 16 Switches**