

LEGEND 100

OPERATIONS MANUAL



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LEGEND-100 INSTALLATION MANUAL

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1. INTRODUCTION

The Fire Burglary Instruments LEGEND 100 Control-Communicator is a fully programmable device with remote communication and control capabilities. The panel can handle up to sixteen fully programmable zones.

Each LEGEND-100 control panel can contain up to sixteen keypads. These four wire devices can consist either of a liquid crystal display (LCD) which provides a two line english language readout, or a light emitting diode (LED) keypad which contains indicator lights.

The LEGEND-100 system can also be setup in a partitioned configuration. Partitioning allows the panel to look like as many as eight different protected locations to the Central Station. Each partition will be assigned zones, users and keypads. The account numbers transmitted for each partition are definable. Partitions can be setup to protect different functional areas of the same location (example, office area vs. warehouse) or different premises within close proximity (example, shopping center or multi family complex).

Programming of the LEGEND-100 panel can be accomplished either through the LCD keypad, EZ-MATE PC Based Downloader, or EZ- MATE Programmer.

Remote control functions can be performed from a Central Station or other remote location using a dedicated EZ-MATE Programmer or the EZ-MATE PC Based Downloader. These commands include uploading, downloading, arming/disarming, system status, memory read/write requests, and device activations.

The LEGEND-100 maintains a record of significant events that occurred within the system. This System Activity Log can be viewed by an installer through an LCD keypad, read by an EZ-MATE Programmer or Downloader, or transferred automatically to a remote printer.

2. HOW TO USE THIS MANUAL

The LEGEND-100 Installation Instruction Manual has been organized into the following sections;

Chapter 1: INTRODUCTION

Describes the basic features and capabilities of the LEGEND 100 panel.

Chapter 2: HOW TO USE THE MANUAL

Explains the sections of the Installation Instructions.

Chapter 3: SYSTEM COMPONENTS

Specifies the components and accessories of the LEGEND-100.

Chapter 4: SYSTEM HOOKUP AND WIRING

Wiring diagram and installation instructions for the LEGEND-100.

Chapter 5: INSTALLER FUNCTIONS

Describes the functions available to the installer through the keypad for installation, testing and troubleshooting.

Chapter 6. LCD KEYPAD OPERATIONS

Describes the operational procedures as performed from a LEGEND LCD keypad.

Chapter 7. LED KEYPAD OPERATIONS

Describes the operational procedures as performed from a LEGEND LED keypad.

Chapter 8. KEYPAD SUMMARY

Summarizes the keypad commands.

Chapter 9. SYSTEM OVERVIEW

Describes how an LEGEND-100 panel interacts with the Central Station, and Programming devices.

Chapter 10. GLOSSARY

Defines the terminology used within the LEGEND-100 system.

RELATED DOCUMENTATION

USERS MANUAL

End user booklet describing the operational procedures of the LEGEND-100. Separate versions exist for the LCD and LED keypads. These manuals are packaged with each keypad.

LEGEND-100 LCD KEYPAD PROGRAMMING MANUAL

Detailed manual describing the complete programming of an LEGEND-100 panel from the LCD keypad. This manual describes and explains all of the programmable parameters of the LEGEND-100 and is available directly from Fire Burglary Instruments.

EZ-MATE PROGRAMMER MANUAL

Manual describing programming and remote control operations through the Fire Burglary Instruments EZ-MATE Programmer. The Programmer is a portable field for the LEGEND product line featuring English language prompts. This documentation is supplied with the EZ-MATE Programmer.

EZ-MATE PC BASED DOWNLOADER

Describes the operation of the FBI PC Based Downloading System which maintains database information for many LEGEND devices with extensive reporting, user help and remote control capabilities. This manual is supplied with the Downloader software.

3. SYSTEM COMPONENTS

The following accessories are available for use in conjunction with the LEGEND-100 system;

LEGEND ZONE EXPANDER Model 7105

Add on board which provides an additional eight zones to the existing eight zones available on-board the LEGEND-100. These additional zones are fully programmable.

LEGEND LED KEYPAD Model 7015

Full function keypad for LEGEND product line providing indicator lights for zone and system status indicators. The system can accommodate up to eight LED keypads.

LEGEND LCD KEYPAD Model 7005

Full function keypad for LEGEND product line incorporating an easy to read two line by sixteen character English language display for programming and system status information. The LEGEND-100 line can accommodate up to eight LCD keypads.

EZ-MATE PROGRAMMER Model 7501

The EZ-MATE Programmer is a portable field programming tool for LEGEND devices. The Programmer features user friendly English language prompts for performing uploads, downloads, and device commands from the panel site or remote location. The EZ-MATE Programmer uses plug in modules for programming various LEGEND products and plug in memory modules to store customer information.

PRODUCT MODULE LEGEND-100 MODEL 7160

Programming cartridge for the EZ-Mate Programmer for the Legend-100 system.

EZ-MATE PC BASED DOWNLOADER Model 7700

Complete computerized system for LEGEND product line incorporating IBM or compatible hardware with an industry standard modem. Provides secure error free communications with LEGEND panel. Maintains database for many LEGEND devices with extensive reporting, user help and remote command capabilities. The LEGEND PC Based Downloader software can be run on an existing personal computer within the Alarm Company.

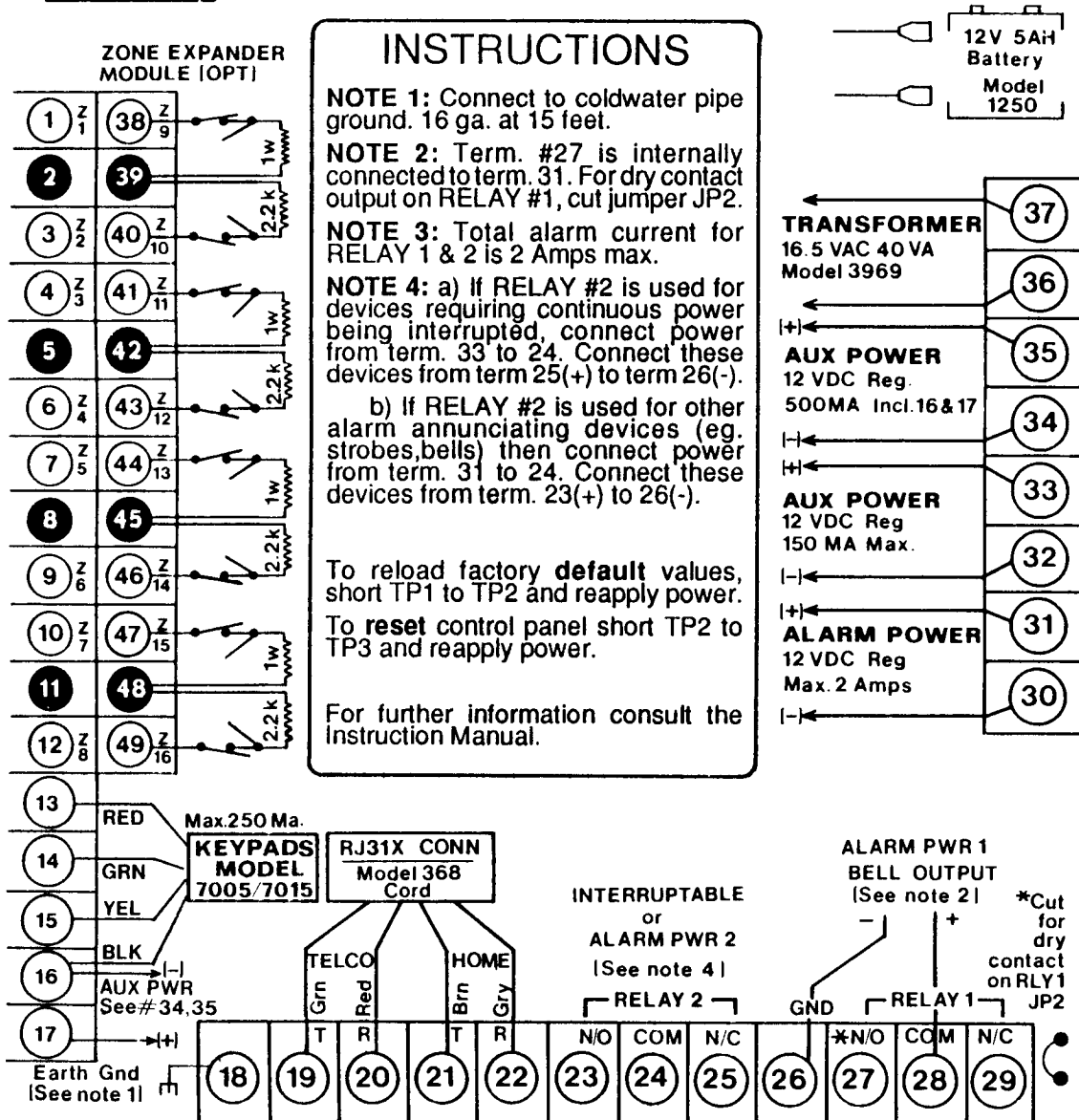
Further information on the LEGEND components can be found within the documentation that accompanies each device.

4. SYSTEM WIRING AND HOOKUP

4.1. WIRING DIAGRAM



LEGEND-100 Model 7100



4.2. ZONE HOOKUP

The first eight zones are connected to T1 through T12 on the main circuit board as follows;

Zone 1	Terminal 1 & 2
Zone 2	Terminal 3 & 2
Zone 3	Terminal 4 & 5
Zone 4	Terminal 6 & 5
Zone 5	Terminal 7 & 8
Zone 6	Terminal 9 & 8
Zone 7	Terminal 10 & 11
Zone 8	Terminal 12 & 11

An additional eight zones are available through the zone expander module model 7105.

All LEGEND-100 zones require a 2.2K end of line resistor.

4.3. ZONE EXPANDER

The optional LEGEND Zone Expander Module model 7105 provides an additional eight zones to the LEGEND-100 control panel. The zone expander can be installed as follows;

- 1- Remove the screws that secure the cover plate to the control panel.
- 2- Attach the zone expander to the LEGEND-100 control board through the plug in connectors. Press down firmly on the expander board to insure that the board is secure in both connectors.
- 3- Reattach the LEGEND cover plate which will now cover part of the zone expander.

NOTE: In order to enable the zone expander module programming question number 32 within the keypad programming sequence must be answered YES.

The second eight zones are connected to T38 through T49 on the zone expander as follows;

Zone 9	Terminal 38 & 39
Zone 10	Terminal 39 & 40
Zone 11	Terminal 41 & 42
Zone 12	Terminal 42 & 43
Zone 13	Terminal 44 & 45
Zone 14	Terminal 45 & 46
Zone 15	Terminal 47 & 48
Zone 16	Terminal 48 & 49

All LEGEND-100 zones require a 2.2K end of line resistor.

4.4. KEYPAD CONNECTIONS

The LEGEND keypads are connected to the control panel with four conductor cable to terminals 13 through 16. Attach each keypad used within the system to the terminals as follows;

T13	Red (+ voltage)
T14	Green
T15	Yellow
T16	Black (- voltage)

The keypads **should** be connected in parallel at the control panel. Keypads can be daisy chained, however the maximum wire run should not exceed the maximum length of 1000 feet from the control panel.

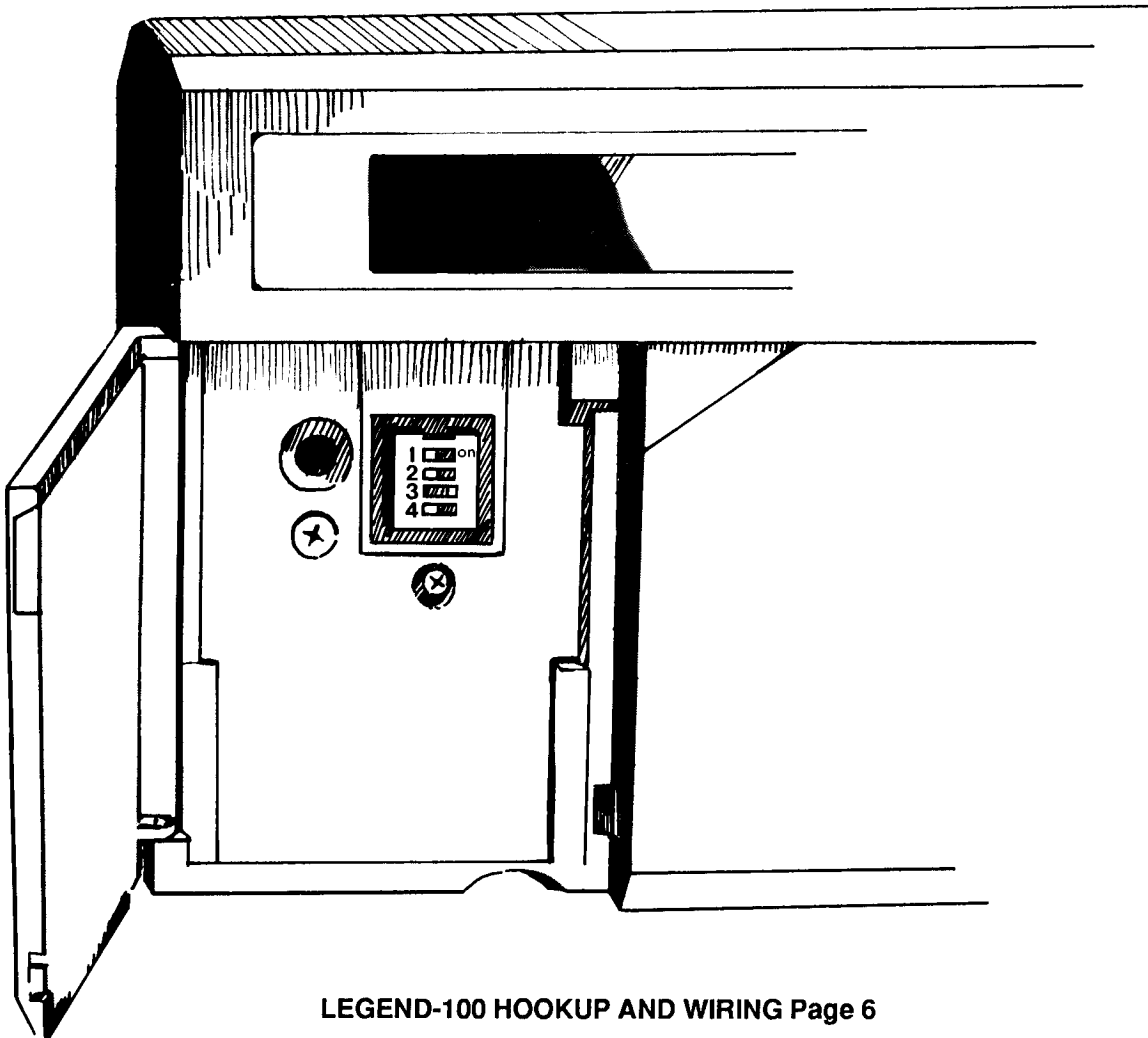
The available keypad power from connections 13 and 15 is restricted to 250 ma. Since each of the keypads draw approximately 60 ma a maximum of **4** keypads can obtain their power from these terminals. Additional keypads must obtain their power from the other auxiliary panel outputs (if sufficient capacity is available) or an external power supply. Note: All keypads must be connected to terminals 14 and 15 regardless of where they obtain power.

KEYPAD ADDRESSING

Both versions of LEGEND keypads (LED model 7105 and LCD model 7005) contain switches to set the address of the keypad. This address will identifies the keypad number to the control panel. In a partitioned system each keypad can be assigned to a partition.

Within the LEGEND-100 programming questions the LED keypads are known as keypads 1-8 and the LCD keypads are known as 9-16.

These switches are located behind the pull open door and zone card as shown below;



The first three switches should be set as follows;

KEYPAD NUMBER		<u>SW1</u>	<u>SW2</u>	<u>SW3</u>
<u>LED</u>	<u>LCD</u>			
1	9	ON	ON	ON
2	10	OFF	ON	ON
3	11	ON	OFF	ON
4	12	OFF	OFF	ON
5	13	ON	ON	OFF
6	14	OFF	ON	OFF
7	15	ON	OFF	OFF
8	16	OFF	OFF	OFF

NOTE: Keypads of the same type should **not** be set with the identical addresses.

The LEGEND-100 supports up to sixteen keypads consisting of eight LED and eight LCD keypads.

SWITCH 4

Enables or disables the keypad sounder. In the OFF position the keypad sounder will be active. In the ON position the keypad will only sound indicating the depression of keys.

4.5. AUXILIARY POWER

Auxiliary power (13.8VDC regulated) can be obtained from three different outputs of the LEGEND-100 panel. The total regulated output power from the LEGEND- 100 is 900 ma with the following current distribution;

TERMINALS	MAX. CURRENT	APPLICATION
13 (+) & 16(-)	250 Ma.	Keypads
17 (+) & 16(-)	500 Ma.	Misc.
33 (+) & 32(-)	150 Ma.	

NOTE: Terminals 34(+) and 35(-) are internally connected to 17(+) and 18(-). The maximum power available from these points is 500 Ma.

Power can be obtained from any of these connections provided that the total does not exceed the rated capacity of the terminals.

Consult the specifications for the devices being connected to determine the power requirements for your system.

4.6. PROGRAMMER CONNECTION

A modular connection is provided for connection of the EZ- MATE Programmer. This jack is used for direct connection with the EZ-MATE Downloader for downloading, uploading or device commands

DO NOT CONNECT A TELEPHONE LINE TO THIS CONNECTION.

4.7. JP1

Cutting jumper 1 (JP1) causes earth ground to become the system ground.

4.8. JP2

Jumper 2 is used in conjunction with the application of relay #1. JP2 should be cut if relay #1 is being used with dry contacts, or left connected if relay #1 is being used as a bell output.

4.9. DEFAULT RESET

Shorting TP1 to TP2 will cause the panel to revert to the original panel default values. This should only be performed if the programming status is unknown and the panel defaults are desired. The LEGEND-100 Default values can be viewed in the LCD Keypad Programming Manual.

4.10. PANEL RESET

Shorting connection TP3 to TP2 will cause a panel reset to occur. This will not alter any of the programming information within the system.

4.11. GROUND START

The ground start pin is used to activate an external ground start relay such as the 117 module for applications which require ground start capabilities.

4.12. LINE SEIZURE

This post is active when the line seizure has occurred.

4.13. GROUND

Connect terminal a cold water grounding pipe.

4.14. TELEPHONE LINE

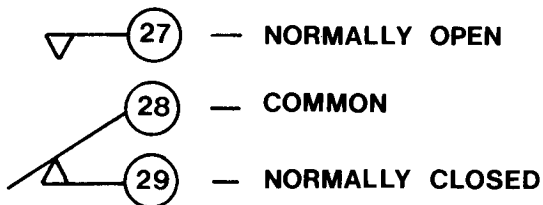
Telephone line connection is performed through terminals 19- 22 to a standard RJ31X jack.

4.15. RELAY #1

Relay #1 can be used as a bell output or as dry contacts as shown below;

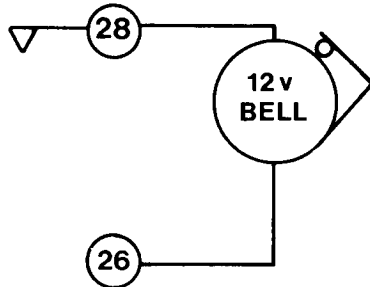
DRY CONTACTS

SET UP AS DRY CONTACTS JP2 CUT

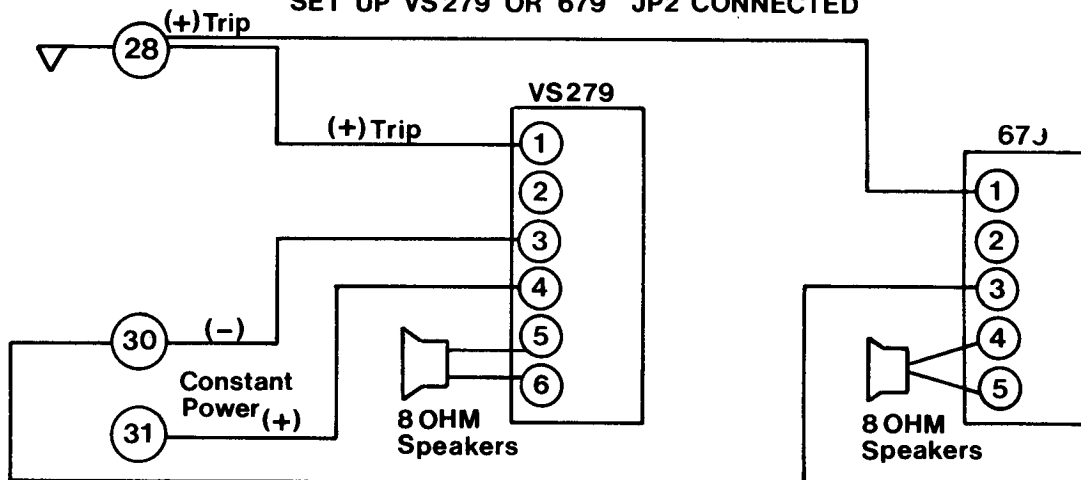


BELL OUTPUT

SET UP AS BELL OUTPUT JP2 CONNECTED



SET UP VS279 OR 679 JP2 CONNECTED



NOTE: For VS279 Use

Burglary message requires Relay1 programmed for latched operation.

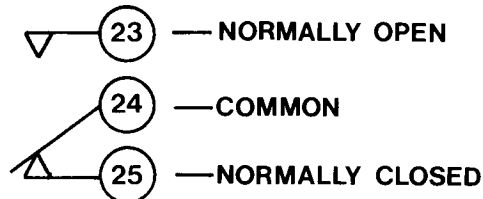
Fire message requires Relay1 for pulsed operation.

4.16. RELAY #2

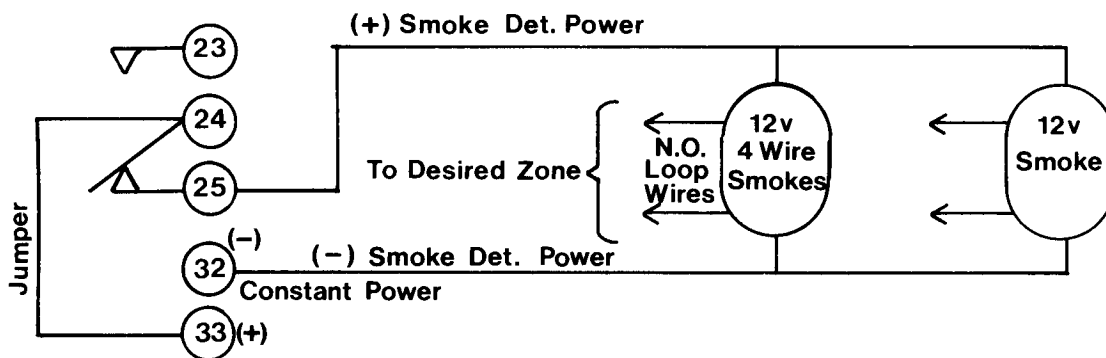
Relay #2 can be used as a smoke detector reset or as dry contacts as shown below:

RELAY 2

SET UP AS DRY CONTACTS. NO FIRE ON SYSTEM.



SET UP TO POWER AND RESET SMOKE DETECTORS



4.17. TRIGGERS

The LEGEND-100 contains eight voltage level triggers which are provided through connector P3. The connections for the trigger outputs are displayed below.

7	8
6	ARM
5	SPARE
4	SPARE
3	SPARE
2	GND
1	GND

4.18. FIRE MODULE CONNECTION

Future.

4.19. TRANSFORMER

Connect the 16.5VAC 40VA transformer to terminals 36 and 37.

4.20. BATTERY BACKUP

The backup battery should be connected to the leads provided. Observe the proper polarity.

5. INSTALLER FUNCTIONS

The LEGEND-100 contains a mode which contains functions reserved for the installer for testing during the initial installation and subsequent troubleshooting. Entry into the installer mode is protected by a six digit installer code which can be programmed for each installing company. The default value for the installer code is 123456.

Entry into the installer mode requires the following sequence;

CODE * [INSTALLER CODE] x

where:

CODE	is the CODE key on the keypad
*	is the asterisk key
[INSTALLER CODE]	is the six digit installer code
x	is the desired function as follows;
1	Programming*
2	Time/Day Setup
3	Walk Test
4	Walk Test with Bell Output
5	Default Reset

* LCD Keypad Only

Note: The system must be in a disarmed state in order to perform any of the installer functions.

5.1. KEYPAD PROGRAMMING

Keypad programming can only be performed through an LCD keypad. If the installed system does not include any LCD keypads then an LCD keypad can be connected temporarily for programming purposes. Alternately programming can be performed through the EZ-Mate Programmer or EZ-MATE Downloader.

A special overlay is provided with each LCD keypad for programming the LEGEND-100.

For information regarding keypad programming consult the LCD Keypad Programming Manual.

5.2. TIME DATE SETUP

The LEGEND-100 contains a real time clock which is used for system operation such as time stamping the system activity log. The current system time can be set as follows;

CODE [INSTALLER CODE] 2 0 YY MM DD HH MM *

where:

YY = Current year (Example 1988 = 88)

MM = Current month (Example January = 01)

DD = Current date (01 - 31)

HH = Hour in military time (00 = midnight, 23 = 11PM)

MM = Minute (00 - 59)

* = Asterisk key which terminates the time set command.

EXAMPLE: Current time = 5:52 PM on July 31, 1988

CODE [Installer Code] 2 0 88 07 31 17 52 *

NOTE: The time can be entered through either an LCD or LED keypad. The LCD keypad will display text requesting each of the values.

On an LCD keypad only depression of the # key will display the current system time. This should be performed after entering the 2 which selects the time set mode.

After entry of the time and date the system will return to the previous panel state.

5.3. WALK TEST

The walk test facility allows entry into a mode where all the zones can be tested and keypad will display the zone(s) that have been activated.

WALK TEST THROUGH LCD KEYPAD

PROCEDURE:

CODE * [INSTALLER CODE] 3

Depress the CODE key followed by the * key, and your six digit installer code. A display will appear indicating that you have entered the installer mode and an entry of 3 will begin a walk test. Optionally, an entry of 4 will start a walk test with bell output.

The walk test mode has been entered after the keypad emits a two second buzzer. The system will transmit a TEST report to Central Station if a test signal has been programmed.

At this point the individual zones can be tripped to test their operation. As each zone is tested the keypad will indicate the zone number activated. A buzzer will sound for one second every time a zone has been violated and/or restored.

The display area will contain the zone number of each zone as it is violated and the zone number will blink on and off when the zone is restored. The LCD display will show the first 8 zones on the first line and the second 8 zones on the second.

If the Walk Test is not terminated within 30 minutes the system will automatically reset and return to the previous system status.

Upon completion of the walk test enter the following sequence to exit;

3 + 1 Press the 3 and 1 keys together.

This will terminate the walk test mode and return to the previous state of the panel prior to the Walk Test.

WALK TEST THROUGH LED KEYPAD

The walk test facility through the LED keypad is similar to the LCD version except the indicator lights on the keypad will reflect the zones violated.

PROCEDURE:

CODE * [INSTALLER CODE] 3

The walk test mode is entered after the keypad emits a two second buzzer output. The system will transmit a TEST report to Central Station if a test signal has been programmed. If kiss-off is not received then the COMMUNICATIONS FAILURE indicator light will be lit.

At this point the individual zones can be tripped to test their operation. As each zone is activated the zone indicator light for that zone will become solidly ON when violated and fast blinking when the zone is restored. The keypad buzzer will sound indicating every time a zone has been violated and/or restored.

If the Walk Test is not terminated within 30 minutes the system will automatically reset and return to the previous panel status.

Upon completion of the walk test enter the following sequence to exit;

3 + 1 Press the 3 and 1 keys together.

This will terminate the walk test and return to the previous panel status.

5.4. WALK TEST WITH BELL OUTPUT

This function is identical to the normal bell test function except the bell will be tested upon entering the walk test mode. For further information refer to the bell test section.

PROCEDURE:

CODE * [INSTALLER CODE] 4

5.5. DEFAULT RESET

The LEGEND-100 panel is shipped with factory default values which reflect a common LEGEND installation. These values can be modified through keypad programming or the EZ-Mate Downloader or Programmer. These default values are shown in the System Default section of this manual.

The DEFAULT RESET function will return the system to the default values. This will replace any of the values that have already been modified within the programming sequence.

PROCEDURE:

CODE * [INSTALLER CODE] 5

This procedure may take as long as 30 seconds as the default values are being read into the panel. After completion the panel will reset and return to the current panel status.

WARNING: The default value reset should only be performed as a last resort if the programming state of the panel is unknown. After performing the default reset the programming options should be reviewed to reflect the characteristics of the installation.

This function can also be performed by shorting the DEFAULT RESET (TP1 TP2) pins directly on the control board.

5.6. SYSTEM LOG VIEW

The LEGEND-100 contains a feature which retains the last 128 events. This system event log can be read directly through an LCD keypad or retrieved externally through one of the EZ-Mate devices.

NOTE: The system log can only be read through an LCD keypad.

Entry into the system log view can be performed as follows:

CODE * [INSTALLER CODE] 6

This will obtain the most recent entry into the system log. Depression of the STAY key will advance backwards through the events until the oldest event is obtained. Depression of the BYPASS key will scan through the list in reverse order.

Upon completion of the system log view enter the following sequence to exit;

+ 1 Press the 3 and 1 keys together.

This will terminate the system log view and return to the previous panel status.

EXAMPLES OF SYSTEM LOG DISPLAYS:

JUL-12 12:18
TROUBLE 02 1

Trouble in zone 2 within partition 1 at 12:18 on July 12. Note: All times are displayed in military (24 hour) time.

AUG-01 16:15
BYPASS 11 02 1

Bypass performed by user 11 on zone 2 within partition 1 at 16:16 (4:15PM) on August 1.

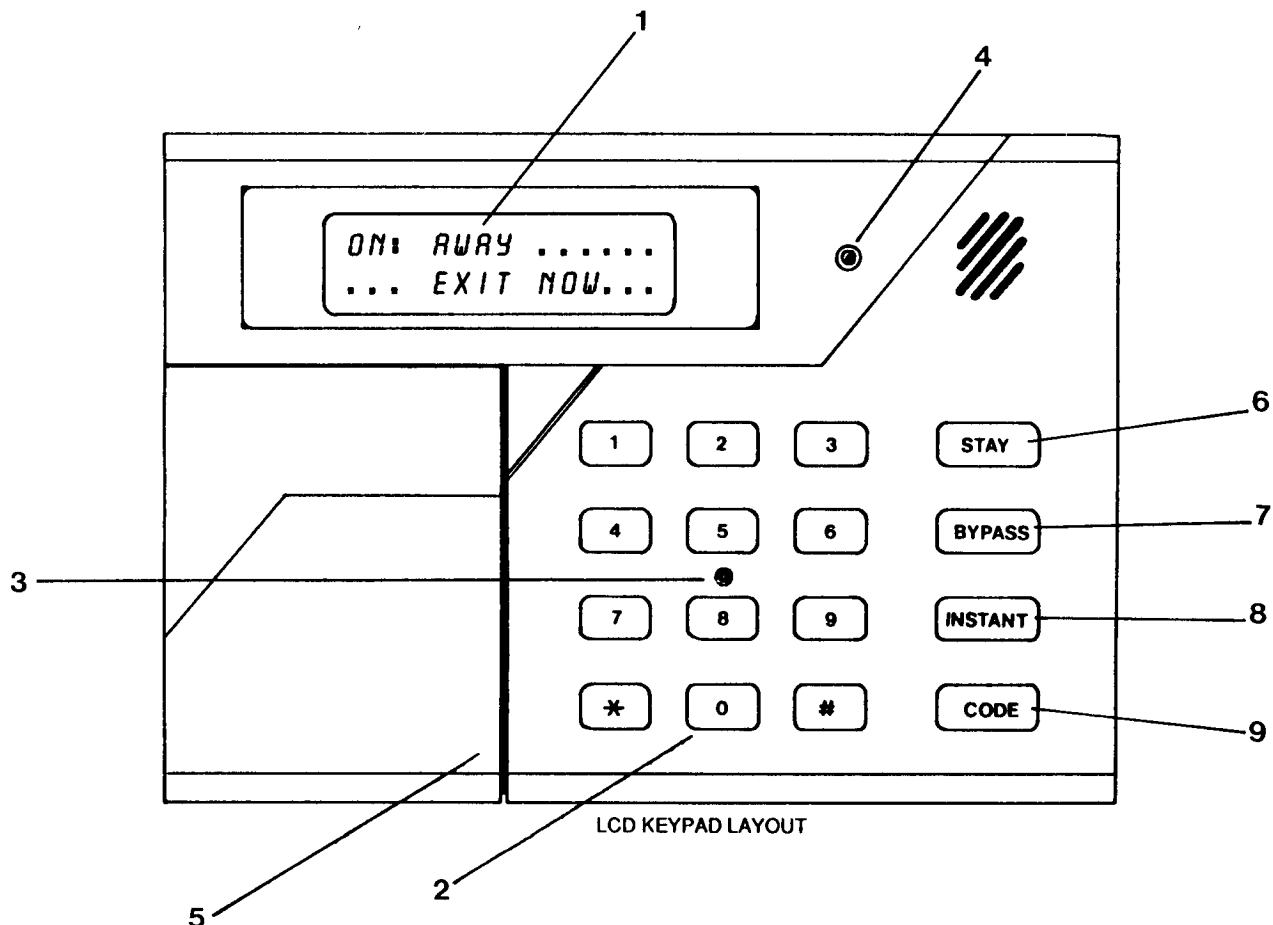
6. LCD KEYPAD OPERATIONS

The purpose of this section of the manual is to describe how to perform routine functions from the Liquid Crystal Display (LCD) keypad of the LEGEND-100 panel.

6.1. LCD KEYPAD LAYOUT

The LCD keypad contains a two line by sixteen character display which contains plain english language descriptions of the current status of the system. In addition the keypad contains indicator lights to reflect the power and arming status of the system.

The LCD keypad has the following appearance;



1) DISPLAY AREA

The display area consists of a two line by sixteen character read-out which continuously shows the current system status. The information displayed will be custom tailored for each installation based on the programming values. For example, if a zone has been violated the display will contain the zone number and a description of the zone location. The display area is backlit providing

readability in a variety of lighting conditions. The LCD keypad can also be used for programming and the display area will contain the programming questions.

2) NUMERICAL KEYPAD

The numerical section of the keypad operates in a similar manner to a calculator or touch tone telephone. The digits 0 - 9 are clearly marked and used to enter numerical values. In addition to the numerical keys there are * and # keys which are used to perform certain functions that require multiple keystrokes.

3) AC INDICATOR

The indicator light located in the middle of the keypad section shows that AC power is connected to the LEGEND-100. In the event of power failure the AC indicator will slowly pulsate while the system operates on battery backup.

4) ARM/DISARM INDICATOR

This light indicates whether the system is currently armed (activated) or disarmed (deactivated). In addition to this constant visual indication, the display area will provide additional information concerning the current arming status. If the system is partitioned then this indicator reflects the arming status of the partition assigned to the keypad.

5) PULL OPEN DOOR

The front of the keypad contains a door which pulls open. Behind this door is zone description card and enduser instructions.

6) STAY

The STAY mode ARMS the system with the exception of interior protection. This will provide perimeter protection of the location while allowing access through the interior of premise.

7) BYPASS

The BYPASS key is used to temporarily turn off protection to a portion of the premise. Zones can be bypassed by authorized users for burglary zones that have been defined as bypassable.

8) INSTANT

The INSTANT mode when activated arms the system and eliminates the entry delay.

9) CODE

Function key used to perform various system functions through the keypad including Programming, Walk Test, User Code Modification, and System Activity Log View.

6.2. SAMPLE LCD DISPLAY

The LCD keypad consists of a two line by sixteen character display as shown in the sample below;

BURGLARY	ZN01
MASTER BEDROOM	

This sample display indicates that a burglary has taken place in zone 01, which corresponds to the master bedroom.

Throughout this section of the manual the following conventions will be used to describe the keystroke actions performed from the LCD keypad.

BYPASS

Function key labeled BYPASS

INSTANT

Function key labeled INSTANT

STAY

Function key labeled STAY

CODE

Function key labeled CODE

Key labeled * within numerical section of keypad.

#

Key labeled # within numerical section of keypad.

[USER]

Four digit user code. These codes must already be programmed into the LEGEND-100 system and represent the valid users of the panel. User codes can be entered into the system through an external programming device, through an installer keypad programming session, or by an authorized user through the keypad. Indicates the simultaneous entry of two keys. For example, * + 3 means that the * and 3 keys should be pressed at the same time.

[Installer Code]

Six digit code required to gain access to the installer mode functions. This value can be modified through keypad programming or the external programming devices. The default value for the installer code is 123456.

6.3. ARMING THE SYSTEM

System arming can be performed only if the system is ready.

A) SYSTEM READY

Under normal disarmed conditions the following message will appear in the display area of the LCD keypad;

System READY ...

Note: The second line can contain additional system information such as zone bypasses.

This message indicates that all the zones are ready and that there are currently no conditions that could prevent arming.

ARMING PROCEDURE

[USER]

Enter the four digit user code. In order to arm the system the user must be defined as a valid user within the partition and have an authorization level sufficient to perform arming. The system has been successfully armed when the following display appears;

**ON:AWAY
... Exit Now ...**

The ARMED indicator will now be lit and the user may exit through an exit/entry zone for the time period established as the exit delay. The EXIT NOW message on the second line of the display will appear for the duration of the exit delay.

B) SYSTEM NOT READY

If the LEGEND-100 is not ready to be armed the display will scroll through the zones which are currently not ready. For example;

**NOT READY: Zn 13
NOT RDY: Zone 13**

This display indicates that zone number 13 is not ready. Depression of any key from the keypad will obtain the expanded form of the display which contains the english language description of the zone. When the problem with zone 13 has been corrected the SYSTEM READY display will appear.

Note: If more than one zone is not ready then the zones not ready will scroll on the display approximately every two seconds.

The system can not be armed if there are zones in TROUBLE condition. For example;

**TROUBLE Zn03
REAR FOIL**

In order to clear a trouble display a valid user code must be entered. When the trouble has been cleared the SYSTEM READY indication should reappear. Alternately, the reset function (depression of the 3 + 1 keys) can be enabled to clear troubles if the reset option has been enabled within the programming sequence.

In order to arm the system when not ready one of the following actions are necessary;

- Make the zone(s) ready. Determine which zones are not ready and perform the action necessary to ready the zone(s) (example, close the door or window, etc.)

or

- Bypass the zones(s) not ready. Bypassing should only be performed if the zone cannot be made ready or intentionally will remain not ready.

or

- Force arm the system, bypassing all zones which are not ready.

6.4. STAY

The STAY mode will ARM the system and deactivate any interior protection zones that exist within the system.

In order to perform the STAY function the system must be ready. See description of READY state within ARMING sequence.

STAY PROCEDURE

STAY [USER]

Depress the STAY key followed by the user code.

Following a successful STAY arming the following display will appear;

ON:STAY

The EXIT NOW message will appear on the second line of the display for the duration of the exit delay. In addition the ARMED indicator will be lit. The second line of the display may scroll through zones that have been bypassed.

6.5. INSTANT

The INSTANT mode ARMS the system and eliminates the entry time period. This mode should be used when the violation of any protected zone should cause an instant alarm.

The system must be READY to perform the INSTANT function.

INSTANT PROCEDURE

INSTANT [USER]

Upon successful INSTANT arming of the system the ARMED indicator will be lit and the following display appears;

ON:AWAY INSTANT

The INSTANT option will automatically be reset after the system is disarmed. The second line of this display can scroll between various system conditions such as zones that are currently bypassed.

6.6. INSTANT-STAY

The INSTANT STAY mode will arm the system with the characteristics of both the INSTANT and STAY modes. The system will be armed with the interior portions bypassed and the entry delay will be suspended.

The system must be READY in order to perform this function.

PROCEDURE:

INSTANT STAY [USER]

or

STAY INSTANT [USER]

After a successful INSTANT STAY arming the armed indicator will be lit and the following display appears;

ON:STAY INSTANT

6.7. BYPASS

Bypasses are performed to exclude burglary zones which are faulty or not ready from activating the system. In order to bypass a zone, the zone definition must specify that the zone can be bypassed. In addition, the user performing the bypass must be authorized for bypass (levels 1, or 2).

Bypassing is only permitted if there are no alarms or latched troubles present in the system. In addition a zone cannot be unbypassed if its current state would put the zone into an alarm state.

PROCEDURE

BYPASS [USER] ZN

where;

ZN Two digit zone number.

For example to bypass zone 2 enter;

BYPASS [USER] 02

Multiple zones may be bypassed by repeating the sequence for the desired zones within a fifteen second interval as shown in the following example;

BYPASS [USER] 02 BYPASS 04 BYPASS 12 Bypass zones 2,4, and 12

If a zone entered is already bypassed, the sequence will unbypass the zone except if the system is armed and the bypassed zone is still not ready.

After a bypass or unbypass command has been accepted the unit will emit a continuous beep and display;

**BYPASS ZONE 02
UPSTAIRS BEDROOM**

or

**UNBYPASS ZN 02
REAR DOOR**

Note: Bypassing can be performed either while the system is armed or disarmed.

A bypass signal will be transmitted to the Central Station if a bypass code has been programmed and the zone has been enabled for bypass. If the system is disarmed an option exists to save the bypass signals until an arming is performed.

To immediately ARM the system enter [USER] after the last zone bypass.

NOTE: If a zone is already bypassed, the bypass command will unbypass the zone.

6.8. FORCED ARMING

Forced Arming is a method that will automatically bypass all faulted zones and ARM the system.

PROCEDURE:

BYPASS [USER] BYPASS

If any of the zones currently faulted are not bypassable, then the command will not succeed, and a long beep will follow.

Following a successful FORCED ARMING the ARMED indicator will be lit and the ARMING message will appear on the display.

6.9. UNBYPASS

The UNBYPASS function removes an existing bypass from a currently bypassed zone.

The procedure is similar to a bypass.

PROCEDURE

BYPASS [USER] ZN

See bypass description.

6.10. USER PROGRAMMING

Users can be programmed through the keypad in addition to the external programming devices. Keypad programming allows authorized users to change user access codes and authorization levels.

Note: The initial user authorization levels and partition assignments must be setup by one of the programming devices or obtained through the default values.

Users within the LEGEND-100 control panel have the following characteristics;

USER NUMBER

The LEGEND-100 system accommodates up to sixteen different users. The user number determines which user is being defined or modified. User #1 is considered a master user that always has the highest authorization level.

USER ID

Actual four digit code (0000 - 9999) entered at the keypad to perform the keypad operations described in this section. This value is displayed throughout this chapter as **[USER]**. USER ID's cannot be duplicated within the same panel, nor can a user code conflict with the ambush code of another existing user.

AUTHORIZATION LEVEL

The LEGEND-100 panel has levels of authority which determine the user level required to perform various system functions. The levels and their capabilities are shown below;

LEVEL 1- ARM, DISARM, BYPASS, PROGRAM

LEVEL 2- ARM, DISARM, BYPASS

LEVEL 3- ARM

LEVEL 4- DISARM (temporary user)

User #1 is automatically assigned an authorization level of 1 and therefore can add, delete or modify other users and levels. Multiple users can be assigned the same authorization level and perform the identical functions.

USER PROGRAMMING PROCEDURE

CODE [USER]

Depress the CODE key followed by the user access code. The user code entered must be a level 1 user that has this partition entered as its master partition.

Assuming that the user is a valid level 1 user within this partition the following displays will appear;

ENTER USER #
01-16,* to ABORT

Enter the user number to be entered or modified. The user number must be entered as a two digit value, for example user #3 will be entered as 03. If the system has been partitioned then the user number entered must have been defined for that partition.

AGAIN USER #
01-16,* to ABORT

Re-enter the user number for validation.

Next, the system will request the user access code to be defined. The four digit code entered must be unique to the entire panel and not conflict with an existing users ambush code (user code plus or minus 1). If an invalid code is entered, the keypad will beep four times and the keypad will repeat the question.

Enter User Code
* abort, # clear

After entering the code the system requires validation as follows;

Again User Code
* abort, # clear

The last question within user definition is the authorization level. Enter the desired value from 1 to 4.

Enter AUTHORITY
1-4,* to Abort

After entry of the authorization level, enter the value a second time for validation;

Again AUTHORITY
1-4,* to Abort

Keypad user programming can be performed by the installer or the end user.

6.11. USER DELETION

Removal of users from the panel can be performed as follows;

PROCEDURE

CODE [USER] [User #] [User #] #

Where:

[User #] Represents the user number being deleted. This value (02 - 16) is entered twice for validation purposes.

User deletion can only be performed by a level 1 authorization user.

Example: Delete user number 4.

CODE [USER] 04 04 #

The deletion procedure should be used only when the user being removed is not being replaced with another user. Users can be deleted using this procedure if;

- [USER] is authorized to program other users (level1)
- [USER] and user number being deleted are assigned to the partition where the request was made.

6.12. DISARMING

To disarm the LEGEND-100 from an armed state:

PROCEDURE:

[USER]

The keypad display that appears depends whether or not alarms have taken place while the system was armed.

A) IF NO ALARMS HAVE TAKEN PLACE

The system disarming will optionally remove all bypasses and the ARMING indicator will go off.

The system display will reflect the current status.

B) IF ALARMS HAVE TAKEN PLACE

If alarms or other conditions have taken place since the initial system arming, they will appear on the display. The alarm(s) that have occurred will scroll approximately every two seconds in time sequence as shown in the sample displays below;

BURGLARY zn 12
MASTER BEDROOM

BURGLARY zn 02
LIVING ROOM

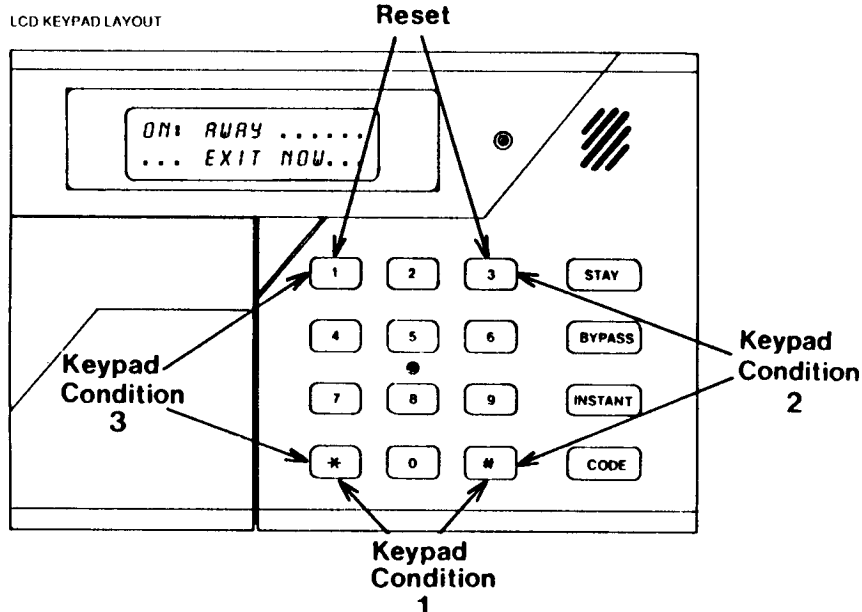
FIRE zn 04
MAIN HALLWAY

After scrolling through the alarms, the display will return to the first condition and repeat the sequence of alarms until the system is cleared.

To acknowledge the conditions and clear the display of the alarm signals enter [USER] again, or simultaneously depress the 1 and 3 keys if the RESET function has been enabled.

6.13. KEYPAD EMERGENCY CONDITIONS

In addition to individual zone alarms the LEGEND-100 panel contains three programmable keypad emergency conditions. These conditions are initiated through the depression of two keys as shown below;



The keypad emergency conditions are programmable and can be used for conditions such as PANIC, FIRE, MEDICAL, AUX, etc. These special zones can duplicate existing hardwired zones.

The keypad emergency conditions are active 24 hours a day.

The three keypad conditions can be initiated as follows;

CONDITION	KEYSTROKES
1	* + #
2	3 + #
3	1 + *
RESET	3 + 1

Note: + indicates the simultaneous depression of the two keys shown. For example, 3 + # indicates pressing the 3 and # keys at the same time.

The RESET function (3+1) can be programmed to reset or clear conditions from the display in place of the user code. This option must be selected within the programming sequence.

The characteristics of each keypad function can be programmed to suit the installation.

6.14. DURESS

The LEGEND-100 system has duress capability through entry of a valid user code with the last digit altered by one. For example, if a valid user code is 1786, then the duress codes for that user would be 1785 and 1787. If either of these codes are entered the system will respond as if the valid user code was entered. In addition the system will transmit a signal to the Central Station based on the parameters defined as keypad condition number 4.

6.15. LCD KEYPAD PROGRAMMER MODE

Programming mode is used by the installer to view or modify the programmable characteristics of the LEGEND-100 system. Entry into this mode will obtain numbered displays corresponding to the programming questions. Within the programming mode the installer can scroll through the questions sequentially or directly access any question.

Keypad programming can only be performed using an LCD keypad. If the system configuration includes only LED keypads then an LCD keypad can be temporarily attached during the installation or servicing process if keypad programming is desired.

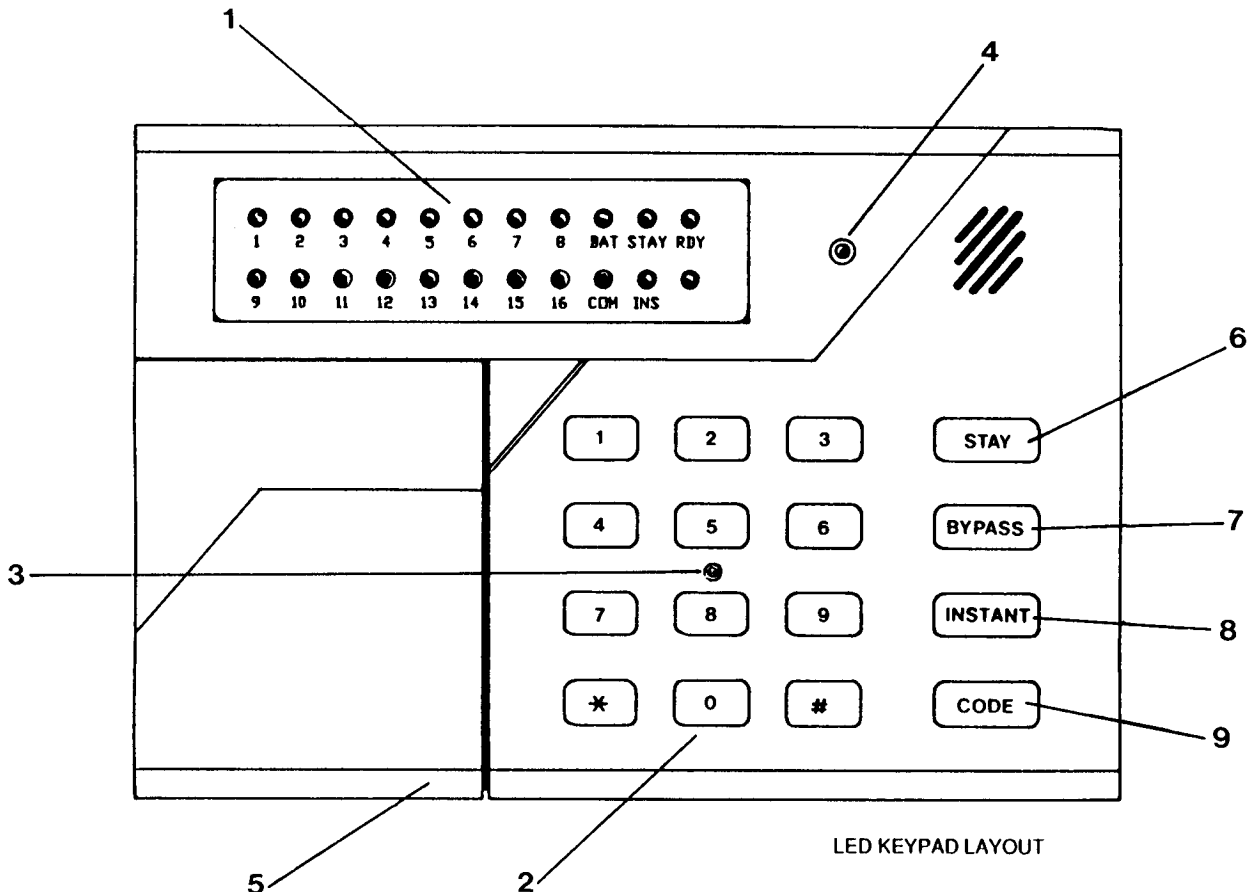
Full details on keypad programming can be found in the LEGEND- 100 LCD Keypad Programming manual.

7. LED KEYPAD OPERATION

The purpose of this section of the manual is to describe how to perform routine functions from the Light Emitting Diode (LED) keypad of the LEGEND-100 panel.

7.1. LED KEYPAD LAYOUT

The LED keypad contains indicator lights to display the current system status and for keypad programming purposes.



1) ZONE STATUS INDICATORS

Indicator lights display the current zone status including alarms, bypasses, troubles and faults. Each condition will cause the zone indicator lights to operate differently. If multiple conditions occur within the system at the same time then the highest priority condition will appear. For example if an alarm condition currently exists then the display will only show the zones in alarm. After the alarm condition has been cleared then the display will reflect any other lower priority conditions that exist.

The zone indicator lights work as follows:

ALARMS Fast Blink (approx. 150msec ON - 150 msec. OFF). As alarms are being displayed, the other indications (bypass, trouble and faulted zone) are suppressed.

TROUBLES Slow Pulse (approx. 600msec ON - 600 msec OFF). As troubles are being displayed, all bypass and faulted zone indications are suppressed.

BYPASSES Slow Blink (600 msec. ON - 600 msec. OFF). Zone bypasses are displayed as a very slow blink of the zone indicator light.

FAULTED ZONES Solid ON. Faulted zones are the lowest priority indication. Daytime controlled zone faults are displayed with the LED solidly ON.

2) AC INDICATOR

This light indicates that AC power is connected to the LEGEND- 100. In the event of power failure the AC indicator will slowly pulsate while the system operates on battery backup.

3) ARM/DISARM INDICATOR

This light indicates whether the system is currently armed (activated) or disarmed (deactivated). If the system is setup in a partitioned configuration then this indicator will reflect the arming status of the partition assigned to the keypad.

4) READY

Indicator light displays whether the system is ready for arming. The READY light is common to all controlled zones. If the light is ON then the partition can be armed.

5) INSTANT

Indicator light displays whether the partition has been armed in the INSTANT mode. When the INSTANT light is ON the partition has been armed with the entry delay time suspended.

6) STAY

Indicator light displays whether the system has been armed in the STAY mode. When the STAY light is ON , the partition has been armed with the interior portions bypassed.

7) COMMUNICATION FAILURE

Indicates a communications failure with the Central Station.

8) LOW BATTERY

Indicates that a low battery condition exists.

9) STAY

The STAY mode activates (arms) the system with the exception of interior protection. This will provide exterior protection of the location while allowing full access through the interior of premise.

10) BYPASS

The BYPASS key is used to temporarily disable protection to a portion of the premise. Zones can be bypassed by users authorized to perform this function to burglary zones that have been defined as bypassable.

11) INSTANT

The INSTANT mode activates (arms) the system and eliminates the entry/exit delay.

12) CODE

Function key used to perform system functions through the keypad including Walk Test, and modification of the Installer Code.

13) NUMERICAL KEYPAD

The numerical section of the keypad operates in a similar manner to a calculator or typewriter. The digits 0 - 9 are clearly marked and are used to enter numerical values. In addition to the numerical keys there are * and CLEAR key which are used to perform other keypad functions.

14) PULL OPEN DOOR

The front of the keypad contains a door which pulls open. Behind this door is a card which can be filled out to describe the zones protected by the LEGEND-100. This would be filled out by the installer to reflect the zoning at the location.

Throughout this section the following conventions will be used to display the keystrokes required to perform the functions.

BYPASS
INSTANT
STAY

Key labeled BYPASS on keypad
Key labeled INSTANT on keypad
Key labeled STAY on keypad

CODE
[USER]

+

[Installer Code]

Key labeled CODE on keypad

Four digit user code.

Indicates the simultaneous entry of two keys. For example * + 3 indicates that the * and 3 keys should be pressed at the same time.

Six digit code required to gain access to keypad functions. This value can be changed from the keypad or altered through any of the external programming devices.

7.2. ARMING THE SYSTEM

System arming can be performed only if the system is ready.

A) SYSTEM READY

The system can be armed if the READY LED is lit which indicates that all zones are ready and that there are no conditions that prevent arming.

ARMING PROCEDURE

[USER]

After a successful arming the ARMED indicator will now be lit and the user may exit through an exit/entry zone for the time period established as the exit delay.

B) SYSTEM NOT READY

If the READY indicator is not lit then the LEGEND-100 is not ready to be armed. The unit cannot be armed zones that are in a faulted or troubled state. An attempt to arm the system in this situation will cause an interrupted tone for approximately one second.

In order to arm the system in this situation one of the following actions are necessary;

Make the zone(s) ready. Determine which zones are not ready and perform the action necessary to ready the zone(s) (example, close the door or window, etc.)

or

Bypass the zones(s) not ready. Bypassing should only be performed if the zone cannot be made ready or intentionally will remain not ready.

or

Force arm the system to bypass the zones not ready.

7.3. STAY

The STAY mode will ARM the system and deactivate any interior protection zones that exist within the system.

In order to perform the STAY function the system must be ready. See description of READY state within ARMING sequence.

STAY PROCEDURE:

STAY [USER]

Following a successful STAY procedure the STAY and ARMED indicators will be lit.

7.4. INSTANT

The INSTANT mode ARMS the system and eliminates the entry time period. This mode should be used when the violation of any protected zone should cause an instant alarm.

The system must be READY to perform the INSTANT function.

INSTANT PROCEDURE

INSTANT [USER]

Upon successful INSTANT arming of the system the INSTANT and ARMED indicators will be lit.

The INSTANT option will automatically be reset after the system is disarmed.

7.5. INSTANT-STAY

The INSTANT STAY mode will arm the system with the characteristics of both the INSTANT and STAY modes. The system will be armed with the interior portions bypassed and the entry delay will be suspended.

The system must be READY in order to perform this function.

PROCEDURE:

INSTANT STAY [USER]

or

STAY INSTANT [USER]

After a successful INSTANT STAY arming the INSTANT, STAY and ARMED indicators will be lit.

The INSTANT-STAY option will automatically be reset after the system is disarmed.

7.6. BYPASS

Bypasses are performed to eliminate burglary zones which are faulty or not ready from activating the system. In order to bypass a zone, the zone definition must specify that the zone can be bypassed. In addition the user performing the bypass must be authorized for bypass (levels 1, or 2).

PROCEDURE

BYPASS [USER] ZN

where;

ZN Two digit zone number. For example to bypass zone 2 enter;

BYPASS [USER] 02

Multiple zones may be bypassed by repeating the sequence for the desired zones within a fifteen second interval as shown in the following example;

BYPASS [USER] 02 BYPASS 04 BYPASS 12 Bypass zones 2,4,12

The individual zones of the sequence will be bypassed immediately after the zone number has been entered. This will be acknowledged by the beep that is heard. Each bypassed zone will be followed by the beeping sound for approximately half a second.

If the zone entered is already bypassed, the command will unbypass the zone except if the system is armed and the unbypassed zone is still not ready.

After a bypass or unbypass command has been accepted the unit will emit a continuous beep.

Bypassed zones will be displayed on the LED keypad with a very low intensity blinking.

A bypass signal will be transmitted to the Central Station if a bypass code has been specified and the zone has been enabled for bypass.

Note: Bypassing can be performed either while the system is armed or disarmed.

To immediately ARM the system enter [USER] after the last zone bypass.

7.7. FORCED ARMING

Forced Arming is a method that will automatically bypass all faulted zones and ARM the system.

PROCEDURE:

BYPASS [USER] BYPASS

If any of the zones currently faulted are not bypassable, then the command will not succeed, and a long beep will follow.

Following a successful FORCED ARMING the ARMED indicator will be lit. In addition the zones that have been bypassed will blink in the zone status section of the LED keypad.

7.8. UNBYPASS

The UNBYPASS function removes an existing bypass from a currently bypassed zone.

The procedure is similar to a bypass.

BYPASS [USER] ZN

After a zone has been unbypassed, the zone indicator light will stop the low intensity blinking.

7.9. USER PROGRAMMING

Users codes can be entered or modified directly through the keypad.

Users within the LEGEND-100 system have the following features;

USER NUMBER

The LEGEND-100 system accommodates up to sixteen users and this value will determine which user is being defined or modified. User #1 is considered a master user that always has the highest authorization level.

USER ID

Actual four digit code (0000 - 9999) entered at the keypad to perform the operations described in this chapter. The code has been displayed in this chapter as [USER].

AUTHORIZATION LEVEL

The LEGEND-100 panel has been programmed with predefined levels of authority which determine the user level required to perform various system functions. The levels are shown below;

LEVEL 1- ARM, DISARM, BYPASS, PROGRAM

LEVEL 2- ARM, DISARM, BYPASS

LEVEL 3- ARM

LEVEL 4- DISARM (temporary user)

User #1 is automatically assigned an authorization level of 1 and therefore can add, delete or modify other users and levels. Multiple users can be assigned the same authority level and perform the identical functions.

USER DEFINITION PROCEDURE

CODE [USER] [USER#] [USER#] [USERID] [USERID][LEV][LEV]

Note: For validation reasons, each of the values are entered twice to insure that the entries are correct.

Example:

Define operator #3 with an ID of 7493 with an authorization level of 2.

CODE [USER] 03 03 7493 7493 2 2

Note: The user performing this operation must be level 1.

Keypad user programming can be performed by the installer or end user.

7.10. USER DELETION

Removal of users from the panel can be performed as follows;

USER DELETION PROCEDURE

CODE [USER] [User #] [User #] #

Where:

[User #] Represents the user number being deleted. This value (02 - 16) is entered twice for validation purposes.

is the # key from the keypad.

User deletion can only be performed by a level 1 authorization user. Users can be deleted from the system if;

- [USER] is authorized to program other users (level 1)
- [USER] and user number being deleted are assigned to the partition where the request was made.

7.11. DISARMING

To disarm the LEGEND-100 from an armed state:

PROCEDURE

[USER]

The LED indicators will display any alarms that have taken place while the system was armed.

A) IF NO ALARMS HAVE TAKEN PLACE

The system disarming will optionally remove all bypasses and the ARMING indicator will go off.

The system indicators will reflect the current zone and system status.

B) IF ALARMS HAVE TAKEN PLACE

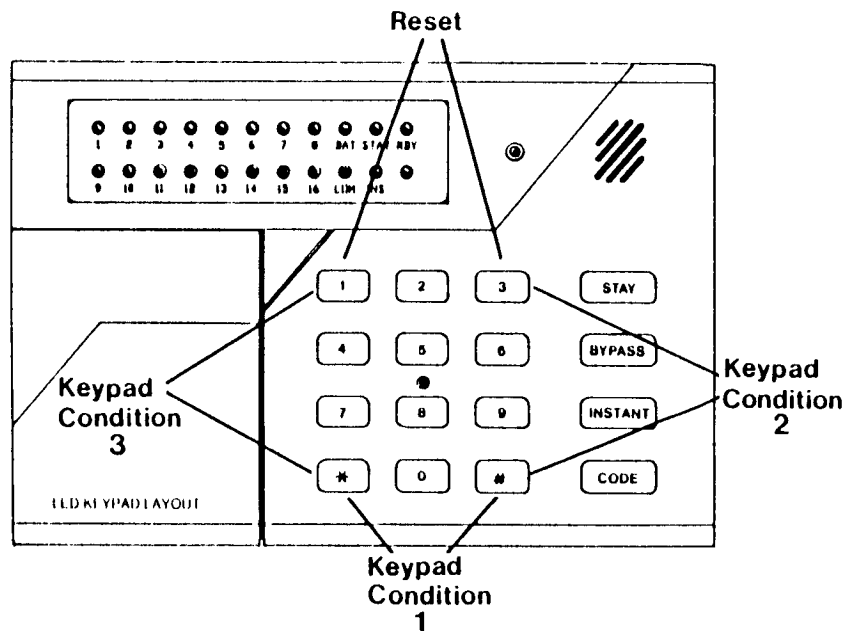
If alarms or other conditions such as troubles have taken place since the initial system arming, they will appear on the indicator lights.

To acknowledge the conditions and clear the alarm or trouble indicators enter [USER] again.

7.12. KEYPAD EMERGENCY CONDITIONS

In addition to individual zone alarms the LEGEND-100 panel contains three programmable keypad emergency conditions. These conditions are initiated through the depression of two keys, as described below, from any keypad.

The keypad emergency conditions are programmable and can be used for conditions such as PANIC, FIRE, MEDICAL, AUX, etc. These special zones can duplicate existing hardwired zones. The keypad emergency conditions are shown below;



The keypad emergency conditions are active 24 hours a day.

The three keypad conditions and a typical application are shown below;

CONDITION	KEYSTROKES
RESET	3 + 1
1	3 + #
2	1 + *
3	1 + *

Note: + indicates the simultaneous depression of the two keys shown. For example 3 + # means that the 3 and # keys should be pressed at the same time.

The RESET (3+1) command can be used to acknowledge conditions such as alarms and troubles at the keypad if the reset function has been enabled within the programming sequence.

The characteristics of each keypad function can be programmed to suit the installation.

7.13. DURESS

The LEGEND-100 system has duress capability through entry of a valid user code with the last digit altered by one. For example, if a valid user code is 1786, then the duress codes for that user would be 1785 and 1787. If either of these codes are entered the system will respond as if a valid user code was entered. In addition the system can transmit a signal to the Central Station based on the parameters defined as keypad condition number 4.

7.14. KEYPAD PROGRAMMING

Keypad programming is not permitted through the LCD keypad of the LEGEND-100. In order to program the unit through a keypad, an LCD keypad must be temporarily connected.

8. KEYPAD SUMMARY

The following table summarizes the functions most often performed from the keypads of the LEGEND-100 control panel.

END USER FUNCTIONS

PROCEDURE	KEY SEQUENCE
ARM SYSTEM	[USER]
STAY	STAY [USER]
INSTANT	INSTANT [USER]
INSTANT-STAY	INSTANT STAY[USER] or STAY INSTANT [USER]
BYPASS	BYPASS [USER] [ZN]
BYPASS multiple	BYPASS [USER] [ZN] BYPASS [ZN] BYPASS [ZN]
UNBYPASS	BYPASS [USER] [ZN]
UNBYPASS multiple	BYPASS [USER] [ZN] BYPASS [ZN] BYPASS [ZN]
FORCED ARMING	BYPASS [USER] BYPASS
DISARM	[USER]
USER DEFINITION	CODE[USER][US#][US#][USID][USID][LEV][LEV]

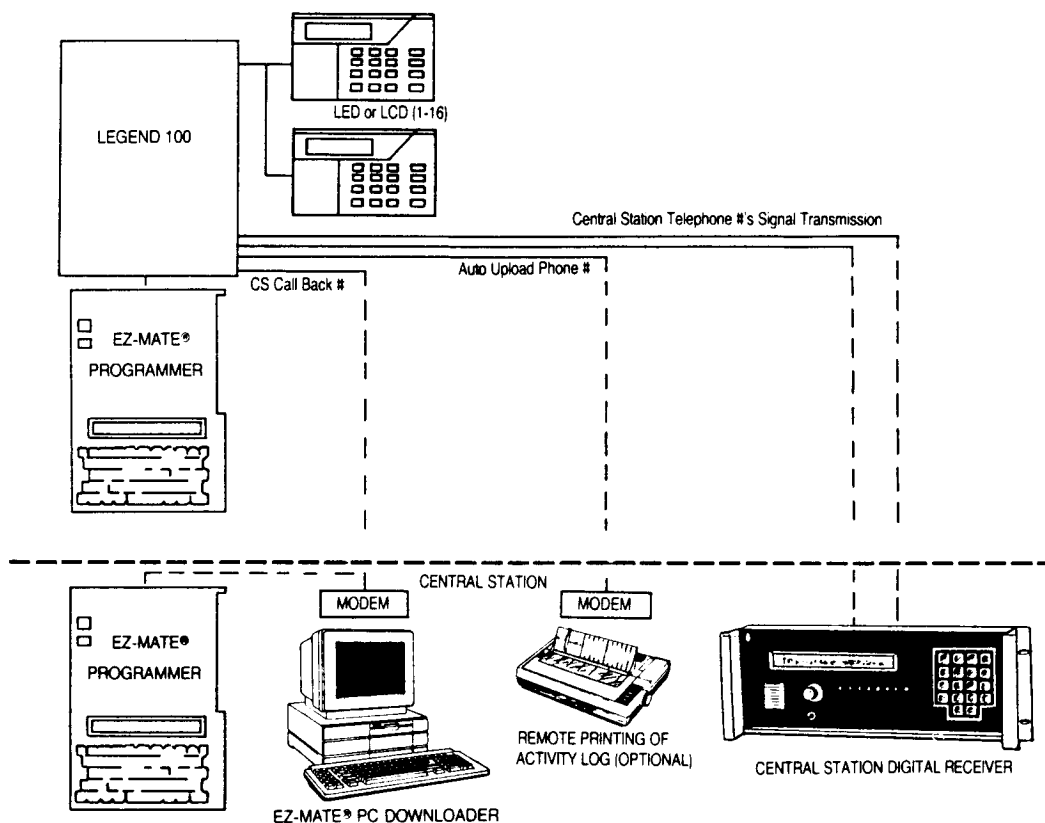
INSTALLER FUNCTIONS

PROCEDURE	KEY SEQUENCE
KEYPAD PROGRAMMING*	CODE * [INSTALLER CODE] 1
EXIT PROG.MODE	SHIFT + ABORT (* + #)
TIME/DATE SETUP	CODE * [INSTALLER CODE] 2
WALK TEST w/o BELL	CODE * [INSTALLER CODE] 3
WALK TEST with BELL	CODE * [INSTALLER CODE] 4
DEFAULT RESET	CODE * [INSTALLER CODE] 5
SYSTEM LOG VIEW*	CODE * [INSTALLER CODE] 6
RESET	3 + 1

** LCD Keypad Only*

9. SYSTEM OVERVIEW

The following diagram displays a typical configuration of a LEGEND-100 panel and the Alarm Company or Central Station;



CENTRAL STATION PHONE NUMBERS

The LEGEND-100 transmits alarm signals to a Central Station Receiver similar to other digital communicators. The telephone numbers of the CS receivers and reporting codes and formats are completely programmable within the LEGEND-100. The LEGEND-100 has capability to transmit signals to two separate central station telephone numbers.

CS CALLBACK NUMBER

Two way remote communications can take place between the LEGEND-100 and the alarm company. The available commands include uploading, downloading, and various device commands. Remote communications can take place with either the EZ-MATE Programmer or EZ-MATE Downloader. Whenever one of these devices attempts to communicate with a LEGEND-100 there are security features to insure that only the installing company is communicating with the device.

Communications between the LEGEND-100 and the remote programming devices is secure from unauthorized access. When establishing connection the panel requires a proper security code. If the code matches, then the device will hang up and immediately dial the the alarm company at the Callback number.

The callback feature is optional and provides an additional layer of security.

The Central Station Callback Number is a dedicated telephone line which is located either in the Central Station or Alarm Installing Company office. This phone line will be connected to the EZ-MATE PC Based Downloader or EZ-MATE Programmer. This phone line must be capable of directly dialing the Programmer or Downloader without intervention of an operator or switchboard.

AUTO UPLOAD PHONE NUMBER

The LEGEND panel contains a feature which maintains a system activity log. This includes alarms, troubles bypasses etc. This event log can be viewed by an installer through an LCD keypad, read by one of the EZ-MATE programming devices or automatically transmitted to a remote printing device. The printer would normally be located within the Central Station but could be located elsewhere such as a guard shack or corporate security office. The Upload Telephone number is optional and programmable per account.

EZ-MATE PROGRAMMER

The EZ-MATE Programmer is a portable device that can communicate with LEGEND device locally at the panel site or from a remote location such as the Central Station or Alarm Company office. The Programmer is capable of performing uploads, downloads and device commands(ARMS, DISARMS, BYPASS, etc.).

The EZ-Mate Programmer contains two plug in modules. The product module contains the necessary information to program different devices, while the memory module retains information from various customer panels.

EZ-MATE PC BASED DOWNLOADER

Complete software package for with LEGEND-100 panel. The package requires an IBM or compatible personal computer and a Hayes modem. Provides error free communications with LEGEND panels. The EZ-MATE Downloader maintains database information for many LEGEND devices with extensive reporting, user help and remote command capabilities.

KEYPADS

Each LEGEND-100 system can accommodate up to sixteen keypads. The keypads can consist of either a an LCD keypad with a two line english language display, or an LED keypad with indicator lights.