

IEI DoorGard LS2/LS2P

Programming Manual

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Foreword

F.1 About this Manual

This manual is designed for installers of the International Electronics DoorGard LS2/LS2P system. All programming instructions and other relevant information is contained in this manual.

This manual describes all the features currently supported in the LS2/LS2P hardware only. It does not cover any of the features or functionality in the PDA or Hubmanager Pro 4.x software. Please refer to those respective manuals for those details.

F.2 Safety Warnings and Cautions

When handling the main printed circuit board, to guard against possible static discharges, touch a grounded object **BEFORE** touching the DoorGard LS2/LS2P system. Static shock can render the product unusable. Commands mentioned in the description paragraph are all listed in Table 1-4.

F.3 FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, 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 or relocate the receiving antenna

- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/television technician for help

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The term "IC:" before the radio certification number only signifies that Industry of Canada technical specifications were met.

F.4 Design Change Disclaimer

Due to design changes and product improvements, information in this manual is subject to change without notice.

IEI assumes no responsibility for any errors that may appear in this manual.

F.5 Reproduction Disclaimer

Neither this manual nor any part of it may be reproduced, photocopied, or electronically transmitted in any way without the written permission of IEI.

F.6 Technical Support

Should you experience any difficulty programming the DoorGard LS2/LS2P system, please contact your IEI representative, or IEI at the number listed on page ii.

To contact IEI Technical Support department, call 1-800-343-9502 between 8:00 a.m. - 7:00 p.m. (Eastern Standard Time), Monday through Friday. Questions can also be submitted through our website at www.ieib.com.

F.7 Warranty

International Electronics Incorporated (IEI) warrants its products to be free from defects in material and workmanship, when they have been installed in accordance with the manufacturer's instructions, and have not been modified or tampered with. **IEI does not** assume any responsibility for damage or injury to person or property due to improper care, storage handling, abuse, misuse, normal wear and tear, or an act of God.

IEI's sole responsibility is limited to the repair (at **IEI's** option) or the replacement of the defective product or part when sent to **IEI's** facility (freight and insurance charges prepaid), **after** obtaining **IEI's** Return Merchandise Authorization. **IEI** will not be liable to the purchaser or any one else for incidental or consequential damages arising from any defect in, or malfunction of, its products.

This warranty shall expire two years after shipping date for the DoorGard LS2/LS2P system. Except as stated above, **IEI** makes no warranties, either expressed or implied, as to any matter whatsoever, including, without limitation to, the condition of its products, their merchantability, or fitness for any particular application.

DoorGard LS2/LS2P System Programming Guide

This guide provides information about programming the DoorGard LS2/LS2P system. **You must program certain parameters, such as such as changing the default Master Code, upon initial installation.**

NOTE: All features and programming commands relating to proximity cards are available in the LS2P model only.

1.1 Features

The following is a list of features available in the LS2/LS2P system.

- 2000 Users
- 2000 Transaction Log Events*
- 32 Holidays*
- 8 Timezones*
- Auto-Unlock (default = 9:00 A.M. to 5:00 P.M.)
- Proximity Card Reader+
- PDA Communications*
- 8 User Types
- Propped and Forced Door Audio Alerts
- REX
- User Lockout

* Means a feature is only available with software.

+ Available in LS2P model only.

1.1.1 Specifications

Table 1-1. Specifications

Voltage	6 Volts (four 1.5-volt AA batteries)
Current Draw (sleep mode)	30 μ A
REX	Normally Open Dry Contact
Door Loop	Normally Open Dry Contact
Temperature	-35° C to +66° C (-31° F to +151° F)
Environment	Indoor/Outdoor* *The rear part of the system must be indoors; only the keypad can be outside.

1.1.2 Battery Powered The DoorGard LS2/LS2P system is battery powered; when the system is not in use, it consumes very little power, but the batteries normally discharge over an extended period. The DoorGard LS2/LS2P system powers itself down (sleep mode) after one of the following events:

- fifteen seconds after the last keypress that does not result in an unlock
- immediately after sending the lock pulse regardless of what triggered it (valid PIN, REX input, Toggle/Passage code, etc..)
- fifteen seconds after a Lockout code is entered
- immediately after a Toggle/Passage ON/OFF code is entered

1.1.2.A Low Voltage Operation

The LS2/LS2P has two low voltage indicators, the Low Voltage Warning and Low Voltage Inhibit. The system wakes up momentarily every 30 seconds and checks the battery voltage to determine if the voltage is low. When either of these situations arises the battery should be changed.

1.1.2.B Low Voltage Warning

When the battery voltage drops to 4.4 volts, the Low Voltage Warning is indicated by four long beeps after any code is entered and then the lock energizes. This action lets you know the batteries are getting low and should be charged, but does not prevent you from operating the door.

1.1.2.C Inhibit Operation Warning

When the battery pack voltage reaches below 4.0 volts and a user enters his/her code, the DoorGard LS2/LS2P sounder issues four (4) long beeps, pauses, then sound another four (4) long beeps.

This lets you user know the batteries are so low that sufficient power may not be present to perform a lock pulse after the unlock pulse. At this point, the door will not unlock.

To open the door now, either the Master code, Supervisor code, or an Emergency code **must** be used (for an explanation of user types, see Table 1-4). These three types of users (Master, Supervisor, or Emergency) override the Inhibit warning, allowing someone to open the door and then change the batteries.

1.1.2.D Lock Prior to Sleep

The Lock Prior to Sleep option (command 30 option 14) determines if the keypad sends the lock pulse before the system goes to sleep. The default is “only if necessary,” but you can set it to “always lock prior to sleep” if required. Example:

30 # 14 # set/clear # **

(default—0=only if necessary,

1=always lock

prior to sleep)

1.2 Programming the Keypad

The first step in programming the system is to place it into program mode. You can verify that the system is in program mode as the yellow LED blinks slowly; when the yellow LED stops blinking and is OFF completely, the system is no longer in program mode. If the desired programming is not understood by the system or is entered incorrectly, the yellow LED remains steadily lighted; this signals that you should press * to clear the error condition and then re-enter the code. The system remains in program mode for 45 seconds if no key is pressed.

1.2.1 Master Code

To place the system in program mode, you must first enter **99 #** followed by the "master code," which is the code that is stored in user location 1.

To place the system in program mode, press:

99 # Master Code *

NOTE: 1234 is the default master code, which IEI recommends you change right away.

If you forget the master code, remove the battery cover, take out the battery pack and control board (leave all wires connected), and press the SW1 switch. (SW1 is located next to pin 25 on J2, through a hole in the bracket.)

A slow blinking yellow LED indicates that the system is in program mode. (A steady yellow LED, in contrast, means that errors were detected during programming. Error states can be cleared by pressing the asterisk * key.)

NOTE: For details about the master code, see the Users section.

1.2 Programming the Keypad

1.2.2 User #2, Supervisor

Any code assigned to user # 2 is designated as a “Supervisor” user. This code can also enter programming mode as well as unlock the door.

Upon entering programming mode, the supervisor gains access to limited programming commands, including:

- Adding/Deleting users (command #50, #51, #52, #53, #57, and #58)
- Enabling/Disabling Users (command #56)
- Changing Relay Time (command #11)
- Changing Keypad Platform Parameters 5 and 6 only (command #32)

NOTE: For details about the supervisor, see the Users section.

1.3 Programming Keypad Options and Parameters

1.3.1 Set Lock Time

The Set Lock Time feature is enabled by using this command:

11 # tt # 0 # * *

where tt = number of seconds to operate lock on access (1 through 99)

The default is 5 seconds.

1.3.2 Propped and Forced Door Audio Alerts

The LS2/LS2P system support both Propped Door and Forced Door Audio Alerts. By default both audio alerts are disabled, but can be activated using command 32 parameter 2. Please note this parameter only controls the audio alerts. These features cannot be disabled by setting the parameter to 0, meaning the door loop is always active and continues to record these transactions, when door contacts are used, even though there is no audio alert.

The door loop is Normally Open, meaning you **must** close the loop to activate either function.

Action	Press	Details				
Change keypad parameters	32 # parameter # value # **	See below				
	<table border="0"> <tr> <td>Parameter</td> <td>Value</td> </tr> <tr> <td>2, door loop audio output select</td> <td>0-3 (def=0) 0=no door loop audio outputs 1=forced door audio output on 2=propped door audio output on 3=both forced & propped door audio outputs on</td> </tr> </table>	Parameter	Value	2, door loop audio output select	0-3 (def=0) 0=no door loop audio outputs 1=forced door audio output on 2=propped door audio output on 3=both forced & propped door audio outputs on	
Parameter	Value					
2, door loop audio output select	0-3 (def=0) 0=no door loop audio outputs 1=forced door audio output on 2=propped door audio output on 3=both forced & propped door audio outputs on					

1.3 Programming Keypad Options and Parameters

1.3.2.A Forced Door Audio Alert

When enabled, the Forced Door Audio Alert comes on for a period of time (it is set using command **45 # ttt # 0 # ****), when the door is in a locked state and a valid code was not entered before the door was opened; an example would be someone forcing the door open. (ttt can be a value from 00 to 990, in 10-second intervals. The default is 10 seconds.)

This option requires the use of a Normally Open door position switch. (The door contact is attached to the white and yellow wires located in the battery compartment on the wire harness that plugs into J4).

If you hear the Audio alert, entering a valid code turns OFF the Forced Door Audio Alert.

To ensure that you do not get a Forced Door Audio Alert when the door is opened from the secure side of the door (the side without keypad), the Normally Open Request-To-Exit (REX) input of the DoorGard LS2/LS2P system **must** be closed prior to using the handle to open the door.

Failure to trigger the REX input before opening the door results in the Forced Door Audio Alert coming on for the preset time.

1.3.3 Propped Door Audio Alert

When enabled, the Propped Door Audio Alert comes on when the door is held open for a period of time (it is set using command **44 # ttt # 0 # ****), after the door is opened using a valid code. (ttt can be a value from 00 to 990, in 10-second intervals. The default is 30 seconds. Setting the propped door time to 00 disables the feature.)

This requires the use of a door position switch. (The door contact is attached to the white and yellow wires located in the battery compartment on the wire harness that plugs onto J4). If you hear the Audio alert,

1.3 Programming Keypad Options and Parameters

entering a valid code or closing the door turns OFF the Propped Door Audio Alert.

1.3.4 Request-To-Exit (REX) Input

The Request-To-Exit (REX) input can be used to wire in a remote Normally Open switch, such as a button at a receptionist's desk. The switch is wired to the brown and orange wires located in the battery compartment on the wire harness that plugs into J4.

Either an external REX button can be used or you can order your DoorGard LS2/LS2P system with the -REX option installed; the installed system has a contact switch built into the internal workings of the secure side door handle and has two flying leads that must then be tied to the brown and orange wires in the battery compartment. This input is always enabled (ON). Each time the REX input closes, the system DoorGard LS2/LS2P system unlocks for the preset unlock time set with command 11.

1.3.5 User Lockout Option

The LS2/LS2P system supports two types of user lockouts: "Lockout By Location" and "Lockout By Group." The two lockouts share the following features: (1) entering program mode always clears an active lockout (2) and neither the "master," the "supervisor," nor an "emergency" user can be locked out. The user lockout function, which is enabled by default, can be disabled through Command 30 option #5. The lockout type is selected through Command 30 option #8 and defaults to "Lockout By Location."

1.3.5.A Lockout By Location

In the Lockout By Location mode the location of the Lockout Code in the user table determines which users are locked out. Entering a Lockout Code (when no lockouts are active) excludes all users programmed in locations greater than the location of that Lockout Code. For example if user #20 is programmed as a Lockout Code and that user's PIN is entered, then users #21 and above are locked out.

1.3 Programming Keypad Options and Parameters

Entering the same Lockout Code cancels the current lockout. If a different Lockout Code (programmed in a location less than the current lockout) is entered during an active lockout, the lockout is “lowered” to the location of that PIN. This means that to cancel a lockout initiated by another user, the “new” user **must enter his PIN twice**. The first entry lowers the lockout and the second cancels the lowered lockout.

1.3.5.B Lockout By Group

Lockout By Group is an enhanced version of the lockout function. In this mode, each user is assigned to a lockout “group.” The user lockout group is set with Command 32 parameter 6 and defaults to 4. The group set in parameter 6 is applied to all newly added users, and can be changed prior to adding each user if required.

Lockout groups can be from 0 to 15. User lockout group 0 is special because it allows users programmed with that group to be processed regardless of the current user lockout state (meaning group 0 users cannot be locked out). A good example of group 0 usage might be a Relock Code, which would allow a group 0 user to re-lock a door even if a user lockout is active. Exercise care (restraint) when creating group 0 users; if there are too many, the usefulness of user lockout diminishes.

Entering a Lockout Code (when no lockouts are active) sets the current lockout group to that user’s lockout group. Subsequently, whenever a valid PIN is entered, that user’s lockout group is compared to the currently active lockout group. It is the result of this test that determines whether the user is locked out.

Entering any lockout code while a lockout is active always cancels the current lockout. To activate another lockout, you must enter the lockout code again.

The LS2/LS2P firmware can select one of four different lockout operations. The selection is made by setting

1.3 Programming Keypad Options and Parameters

the Lockout By Group “operand” in Command 32 parameter 7 to one of the following values:

- 0 = lockout all other groups
- 1 = lockout just this group
- 2 = lockout higher numbered groups
- 3 = lockout lower numbered groups

When a “lockout just this group” is activated, all users in that group are locked out with the exception of those users programmed as Lockout Codes. This allows the user who initiated the lockout to cancel the lockout.

1.3.6 Error Lockout Option

The LS2/LS2P system supports error lockout, which is always enabled and cannot be disabled. When the lockout threshold (set with command 32 parameter 0, defaults to 3) is reached, the keypad locks up and the yellow LED turns on (it does not process codes) until the lockout duration expires (lockout duration is set with command 32 parameter 1, defaults to 10 seconds). Example:

32 # parameter # value # **

[0, error lockout threshold1-50 (default=3)

1, error lockout duration1-255 (default=10)]

When the lockout duration is activated, the yellow LED on turns on for 5 seconds and shuts off. When the keypad wakes up and error lockout is still active, the LED turns back on for an additional 5 seconds. This is to preserve battery life.

The count is cleared after a correct code is entered or if the DoorGard LS2/LS2P system goes to sleep.

1.3.7 Turning Audio Keypress Feedback ON/OFF

The Audio Keypress Feedback command enables the sounder to beep once for each key press. This feature provides an audio acknowledgment that a particular key was pressed hard enough for the system to understand. The factory-shipped default setting is ON, but it can be toggled ON and OFF as desired using

1.3 Programming Keypad Options and Parameters

command 30. **NOTE:** A common reason to turn this feature OFF is to prevent an unauthorized user from hearing the audio feedback emitted when an authorized user enters his/her code.

1. Place the DoorGard LS2/LS2P system in program mode. Press:

99 # Master Code * (default is 1234)

A slow blinking yellow LED indicates that the system is in program mode.

2. To enable this feature, press:

30 # 0 # 1 # **

The yellow LED continues to blink slowly. (A steady yellow LED, in contrast, means that errors were detected during programming. Error states can be cleared by pressing the asterisk * key.)

3. To disable this feature, press:

30 # 0 # 0 # **

The yellow LED continues to blink slowly.

4. Press * to exit program mode.

1.3.8 Turning Visual LED/Keypress Indicator ON/OFF

This visual LED/keypress indicator lights the visual LED once for each key press. This feature provides a visual acknowledgment that a particular key was pressed hard enough for the system to understand. The factory-shipped default setting is ON, but it can be toggled ON and OFF as desired. **NOTE:** A common reason to turn this feature OFF is to prevent an unauthorized user from viewing visual feedback produced when an authorized user enters his/her code.

1. Place the DoorGard LS2/LS2P system in program mode. Press:

99 # Master Code * (default is 1234)

A slow blinking yellow LED indicates that the system is in program mode.

1.3 Programming Keypad Options and Parameters

2. To enable this feature, press:

30 # 1 # 1 # **

The yellow LED continues to blink slowly. (A steady yellow LED, in contrast, means that errors were detected during programming. Error states can be cleared by pressing the asterisk * key.)

3. To disable this feature, press:

30 # 1 # 0 # **

The yellow LED continues to blink slowly.

4. Press * to exit program mode.

1.3.9 Auto Entry

Auto Entry, which is disabled by default, can be enabled by entering the following Set/Clear Platform command (see Table 1-5 for details). To disable, enter:

30 # 2 # 0 # **

When Auto Entry is enabled, you are not required to enter the asterisk (*) after your code. To enable, enter:

30 # 2 # 1 # *

This only applies to codes the same length as the master.

If, for some reason, you need a code longer than the master code, press # before the desired code followed by * (asterisk). This is called "auto-entry suspend." Example: if the master code is 4 digits and your code is 23456, press #23456*

1.3.10 TimeZone/Holiday Features

The LS2/LS2P system currently supports up to eight (8) timezones. Timezones are disabled by default and can be enabled with Command 30 option 9. To disable, enter:

30 # 9 # 0 # **

Auto-Unlock is also disabled by default and can be enabled with Command 30 option 11. The default auto-unlock timezone is in location 8 and is 9:00 A.M. to 5:00 P.M. Monday through Friday. To make this

1.3 Programming Keypad Options and Parameters

timezone active as an auto-unlock, you **must** enable both options, 9 and 11. To enable, enter:

30 # 9 # 1 # **

It is also important to note that auto-unlock is always “first-in auto-unlock.” This is because the keypad goes to sleep and is unaware of the time so it cannot perform an auto-unlock function by itself.

Additionally, you cannot add timezones through the keypad directly (software is required); however, you can assign users to timezones and set a timezone as auto-unlock, after the timezone is added via software.

To program users to a certain timezone, you **must** first set the user timezone mask in Command 32 parameter 5. Each user added after this parameter is set is assigned to that timezone. If you want to assign users to several different timezones, you **must** change parameter 5 prior to adding each user.

Take care using parameter 5 since it is an 8-bit number, and each timezone equals a certain bit value as follows:

- TZ1 = 1
- TZ2 = 2
- TZ3 = 4
- TZ4 = 8
- TZ5 = 16
- TZ6 = 32
- TZ7 = 64
- TZ8 = 128

To program a user to multiple timezones, add up the number of each timezone. For example: To add a user to timezones 1, 2, and 8, enter 131 (1 + 2 + 128 = 131) in parameter 5. Entering a value of 255 sets the user to 24 hours, which means you cannot assign a user to all eight (8) timezones. To set a timezone as auto-unlock, you **must** set the auto-unlock timezone mask using Command 38. Example:

38 # autz # 1 # **

(autz=auto-unlock timezone (1-8). Entering 1 sets the timezone as auto-unlock and a 0 clears it.)

1.3 Programming Keypad Options and Parameters

1.3.10.A Midnight Crossing TimeZones

The LS2/LS2P system supports “midnight crossing timezones,” which is enabled by default. This means a timezone can cross the midnight boundary. For example: A timezone can start at 11:00 P.M. and end at 7:00 A.M. This option can be disabled using Command 30 option 10. To disable, enter:

30 # 10 # 0 # **

Entering 1 instead of 0 enables the option.

1.3.10.B Holidays

The LS2/LS2P system supports up to thirty-two (32) holidays. Holidays can be single days or block holidays (one block holiday counts as only one holiday; you can have up to thirty-two block holidays).

A block holiday is a group of days with a beginning and end date. This is useful if you want a whole week to be considered a holiday. A block holiday can be up to one year long.

1.3.10.C Daylight Savings Time

Daylight savings time is also supported and is enabled by default. This can be changed using command 30 option 13. To disable, enter:

30 # 13 # 0 # **

Entering 1 instead of 0 enables the option.

The LS2/LS2P system currently supports U.S. and European daylight savings formats, and this can be changed using command 30 option 15. U.S. is the default value. To specify U.S.A., enter 0, European 1:

30 # 15 # 0 # **

When set to U.S. format, daylight savings begins on the first Sunday in April at 2:00 A.M. (turn back one hour) and ends on the last Sunday in October at 2:00

1.3 Programming Keypad Options and Parameters

A.M. (turn back one hour). When set to European format, daylight savings begins on the last Sunday in March at 2:00 A.M. (turn back one hour) and ends on the last Sunday in October at 2:00 A.M. (turn back one hour).

1.3.10.D Leap Year

The LS2/LS2P system supports leap year; on the appropriate leap years February 29th is a valid date.

1.3.10.E Time/Date Set

The time is set using command 41 and is in 24-hour format. The date is set using command 42. NOTE: The Time/Date is not reset with the default command. To set the Time, enter:

41 # hhmm # 0 # **
[hhmm=hour and minute (24-hour format)]

To set the Date, enter:

42 # mmddy # dow # **
[mmddy=month, day, year
dow=day of week (1=Sunday,
2=Monday, etc.)]

1.3.11 Transaction Event Log

Up to 2000 transaction log events can be stored in the LS2/LS2P system. See command 73 in the command list (Table 1-5) for the list of transactions. To delete the transaction log, use command 76. Transactions can only be viewed if you are using the PDA software and Hubmanager Pro 4.x.

1.3.12 Communications

The LS2/LS2P system supports IRDA communications. The IRDA transceiver is located on the right-hand side of the keypad faceplate, and is used to communicate with a PDA device with IEI PDA software for use in Hubmanager Pro 4.x.

1.3 Programming Keypad Options and Parameters

To communicate with the LS2/LS2P system, communications **must** first be unlocked either by entering a Comm. Enable code (user type 8), the master code, or supervisor code.

1.3.13 DoorGard LS2/LS2P Default Settings

Table 1-2 lists the default settings for the DoorGard LS2/LS2P system as shipped from the factory. Subsequent sections in this chapter explain how to change these default settings or program additional functions.

Table 1-2. DoorGard LS2/LS2P Default Settings

Parameter	Default Setting	Cross-Reference
Master Code (user location 1)	1234	See section 1.2.1
Main Relay energizes for	Five (5) seconds	See section 1.3.1
Audible Keypress Feedback	ON	See section 1.3.7
Visual Keypress Feedback	ON	See section 1.3.8
Auto Entry (no * required)	DISABLED	See section 1.3.9
Error Lockout	ENABLED (cannot be disabled)	See section 1.3.6
Error Lockout Duration	10 seconds	See Table 1-5, command 32, parameter 1
Error Lockout Threshold	3 attempts	See Table 1-5, command 32, parameter 0
User Lockout Codes	ENABLED	See section 1.3.5
Forced Door Alert	DISABLED	See sections 1.3.2-1.3.3
Propped Door Alert	DISABLED	See sections 1.3.2-1.3.3
Event Logging	All ENABLED	See Table 1-5, command 73

1.3 Programming Keypad Options and Parameters

Table 1-3. DoorGard LS2/LS2P LED Indicators/Sounder Operations

LED or Sounder	Visual/Audible Condition	Description
Bi-color	Steady green	Door unlocked (timed or latched)
	Green drop out	Auto-Unlock active (unlocked) green LED drops out for 100 ms every second
	Alternating red/green	Awaiting second PIN of “card and code” user
	1/2 second green flash	Following a 5#PIN* sequence indicates programmed “Single Use” PIN
	Single red flash	Prox card detected
	Double green flash	Valid prox card read
	Double red flash	Invalid prox card read
	Yellow LED	Slow blink
Rapid blink		Verify mode is active (checking that the last two values in sequence match)
Steady		Program error; to clear, press *
Steady (5 seconds)		Error lockout (no keypress feedback)
Very rapid blink		EEPROM erase in progress (cmd 40, cmd 46, full board reset)
Pulsing rapid blink		Block delete of user in progress (cmd 58)
Sounder After PIN Entered		3 very rapid beeps
	Double beep	User lockout is canceled
	Pair of double beeps	User lockout is activated
	1 long beep followed by 1 short beep	Access is denied, “user disabled”

1.3 Programming Keypad Options and Parameters

Sounder After PIN Entered	Visual/Audible Condition	Description
	1 long beep followed by 2 short beeps	Access denied, "bad time zone"
	1 long beep followed by 3 short beeps	Access denied, "user locked out"
	1 long beep followed by 4 short beeps	Access denied, "dead bolt thrown"
	4 quick beeps	Auto-unlock timezone activated with first IN
	4 long beeps	Low voltage indication (low voltage warning)
	4 long beeps, pause, 4 more long beeps	Voltage too low to operate (low voltage inhibit)
	6 quick beeps	Toggle mode is active
Sounder Miscellaneous		
	Short beep (100 ms) every 2 seconds	Propped door audio alert
	1/2 second on, 1/2 second off	Forced door audio alert

1.3 Programming Keypad Options and Parameters

1.3.14 Restoring System Defaults

Entering command 40 erases everything from the DoorGard LS2/LS2P memory **except** the user codes and restores the system default settings. This is useful if the system has experienced programming problems, or you wish to delete earlier programming of settings but not the user codes.

1. Place the DoorGard LS2/LS2P system in program mode. Press:

99 # Master Code * (default is 1234)

A slow blinking yellow LED indicates that the system is in program mode.

2. Press:

40 # 00000 # 00000 # **

The yellow LED continues to blink slowly. (A steady yellow LED, in contrast, means that errors were detected during programming. Error states can be cleared by pressing the asterisk * key.)

3. Press * to exit program mode.

1.3.15 Erasing User Table/Restore System Defaults

Entering command 46 deletes everything from the DoorGard LS2/LS2P memory **including** the user codes and restores the system default settings. The system is brought back to the “out of box” state.

1. Place the DoorGard LS2/LS2P system in program mode. Press:

99 # Master Code * (default is 1234)

A slow blinking yellow LED indicates that the system is in program mode.

2. Press:

46 # 00000 # 00000 # **

The yellow LED continues to blink slowly. (A steady yellow LED, in contrast, means that errors were detected during programming. Error states can be cleared by pressing the asterisk * key.)

3. Press * to exit program mode.

1.4 Programming Users

1.4.1 User Features

The LS2/LS2P system can store up to 2000 users with codes being from one to six digits in length. The first user (user location 1) is designated as the “master code” and the second user (user location 2), when added, is designated as the “supervisor.” The master code has access to all the programming commands. The supervisor only has access to adding/deleting users with the various commands (50, 51, 52, 53, 56, 57, and 58) and the lock duration command (11).

This also means the supervisor has access to command 32 options 5 and 6. Please note that the Master Code (user #1) and Supervisor Code (user #2) can only be programmed as standard users.

- Both the Master and Supervisor users can be programmed as “card AND code” or “card OR code.”
- When either are programmed as “card AND code,” both are also required to enter program mode.
- When they are “card OR code” only, the code is required to enter program mode.
- There is a feature to allow “card OR code” master and supervisor to require both to enter program mode. (This feature is enabled/disabled in command 30 option 3 and is disabled by default.
- The master or supervisor cannot be set to “card only.”

The LS2/LS2P supports eight different user types, which are identified and described in Table 1-4.

1.4 Programming Users

Table 1-4. User Types

User Type	Numeric ID	Description
Toggle	0	Toggle users latch the lock in the unlock position. Toggle mode is indicated by 6 quick beeps and a solid green LED.
Standard	1	Standard users use the lock duration programmed in command 11.
Lockout	3	Lockout users "lock out" other users - see User Lockout (section 1.3.5). These codes do not unlock the door.
Extended Unlock	4	Extended Unlock Users are like standard users except they use the unlock duration programmed in command 32 option 3.
Single Use Code	5	Single Use Codes are codes that can only be used once. To verify a Single Use is programmed, enter the sequence [5# PIN *] and this looks up the PIN and generates a 1/2 second green flash if the PIN is programmed as a single use code. If the PIN is not found, the system generates 3 quick beeps and increments the invalid PIN counter. If PIN is found but is not programmed as a single use code, the system does not respond at all.
Relock	6	Relock codes are used to relock the door when a toggle or auto-unlock is active.
Emergency	7	Emergency users are special users that cannot be locked out and operate below the Low Voltage Inhibit Threshold. The user also uses the unlock duration programmed in command 32 option 3.
Comm. Enable	8	Comm Enable User (Communications) is used to enable communications, which allows transfer of data to/from the PDA to the LS2/LS2P system. This code does not unlock the door.

There are several different ways to add users, depending on what you are trying to accomplish. See the command list for a complete list of commands. To add a “code only,” “card only,” or a “card AND code” user, employ command 50, although the 50 can be left off the command. The same command is used to delete users.

To add a “card only” user without presenting a card, use command 51. When this command is used, you enter the PIN number on the 26-bit Wiegand card.

To build the complete card number, the keypad used the site ID set in command 32 parameter 4, which is defaulted to 11. This number is not used to verify site ID when cards are presented, but just to identify that specific card. This means you can have cards with several different site ID’s programmed into an LS2/LS2P system. You can program a number of consecutive cards in this fashion using command 57.

If you want to add consecutive cards by presentation, use command 53.

If you want to delete a block of users, use command 58.

You can also disable users by using command 56.

1.4.2 User Codes

DoorGard LS2/LS2P user codes consist of a minimum of one digit and a maximum of six digits. A complete list of program commands is supplied in Table 1-4. Attempting to program a user code into memory that had been entered previously into a different location, causes the yellow LED to stop blinking and remain steadily lighted. If this occurs, try entering a different user code. Repeating digits in the same code is acceptable. The same code cannot be programmed more than once.

1.4 Programming Users

1.4.3 Enabling/Disabling Users Command

The **56 # set/clear # user Location #** command allows the master code or supervisor code to disable a certain user location **without** deleting that user.

To disable a user, enter:

56 # 1 # user location # **

To enable a user, enter:

56 # 0 # user location # **

- **The master code can NEVER be disabled.**
- The master code can disable the Supervisor user (user # 2).
- The Supervisor can disable users 3-2000.

The Master Code user cannot be disabled, and the supervisor user cannot disable his/her self. A disabled supervisor cannot access program mode; a non-programmed user cannot be enabled or disabled (generates a program error).

1.4.4 Adding New or Changing Existing Codes

The most basic DoorGard LS2/LS2P programming is adding new codes (users), or modifying existing codes (users). Each user entry consists of three parameters: a user type, a location and a keypad-PIN and/or Card. These eight specific types of users can be programmed with the DoorGard LS2/LS2P system:

- 0= toggle
- 1= standard access
- 3=lockout
- 4=extended unlock
- 5= single use
- 6=relock code
- 7= emergency
- 8=communications enable

The following procedure adds a new code, or lets you change an existing code.

1. Place the DoorGard LS2/LS2P system in program mode. Press:

99 # Master Code * (default is 1234 or 99# Supervisor code)

A slow blinking yellow LED indicates that the system is in program mode.

2. Enter the user type to be applied to the user being added followed by #. For example, a single use code is entered as 5#, or a toggle code as 0#. Table 1-3 describes user types.
3. **LOCATION:** Press the user location number that represents the user to be added or changed followed by a pound symbol #. For example, user location ten would be entered as **10 #**
4. **CODE:** Enter the one- to six-digit code and an asterisk *, for example, **532346***. (The complete sequence is **5 # 10 # 532346 * 532346 ***.) The yellow LED blinks rapidly, indicating that you should verify the new code by entering it again (along with an asterisk). If the system accepts the code, the yellow LED begins blinking slowly. (A steady yellow LED, in contrast, means that errors were detected during programming. Error states can be cleared by pressing the asterisk * key.)
5. To add more codes, return to step 2.
6. Press * to exit program mode.

1.4.4.A Examples

To add/delete a user, enter on of the following options:

**50 # type # location # key pin *
key pin * - “code only” user**

**50 # type # location # **
<present card> - “card only” user by presentation**

**50 # type # location # key pin *
key pin * <present card> - “card AND code” user**

50 # 0 # location # ** - delete user

1.4 Programming Users

To program a 26-bit “card only” user without presenting a card, enter:

**51 # type # location # card pin *
card pin ***

NOTE: Location **must** be greater than 2; master/supervisor cannot be set as “card only.”

To program a “card OR code” user, enter:

**52 # type # location # key pin *
key pin * <present card>**

To program a consecutive “card only” user by presentation, enter:

**53 # type # start user # **
<present card> <present card>...**

NOTE: Start user **must** be greater than 2; master/supervisor cannot be set as “card only.”

To program a block of 26-bit “card only” users without presenting cards, enter:

**57 # number of users # start user # card
pin * card pin ***

NOTE: Start user **must** be greater than 2; master/supervisor cannot be set as “card only.”

Uses site ID set in command 32, parameter 4.

1.5 Programming Commands

If you need to change any of the program default values or wish to add functions, first enter program mode and then enter the desired program command. Defaults are in bold.

Table 1-5. Program Commands

Action Desired	Press	Details
To enter program mode	99 # (Master Code) *	Yellow LED blinks slowly
1. Set lock time	11 # tt # 0 # **	where <i>tt</i> is the number of seconds to operate lock on access (1-99 maximum); defaults to 5 seconds

1.5 Programming Commands

Action Desired	Press	Details																										
2. Set/clear platform options (bit values)	30 # option # set/clear # **	See parameters 0-15 below (defaults shown in bold)																										
	<table border="0"> <thead> <tr> <th data-bbox="607 638 878 663">Option</th> <th data-bbox="899 638 1084 663">Set/Clear</th> </tr> </thead> <tbody> <tr> <td data-bbox="607 667 878 693">0, audio keypress</td> <td data-bbox="899 667 1084 693">0=OFF, 1=ON</td> </tr> <tr> <td data-bbox="607 697 878 722">1, visual keypress</td> <td data-bbox="899 697 1084 722">0=OFF, 1=ON</td> </tr> <tr> <td data-bbox="607 726 878 751">2, auto entry enable</td> <td data-bbox="899 726 1084 751">0=OFF, 1=ON</td> </tr> <tr> <td data-bbox="607 756 878 781">3, card and PIN required for program mode</td> <td data-bbox="899 756 1084 781">0=OFF, 1=ON</td> </tr> <tr> <td data-bbox="607 848 878 873">5, user lockout enable</td> <td data-bbox="899 848 1084 873">0=OFF, 1=ON</td> </tr> <tr> <td data-bbox="607 877 878 903">8, user lockout select</td> <td data-bbox="899 877 1084 903">0=by location, 1=by group</td> </tr> <tr> <td data-bbox="607 940 878 966">9, time zones select</td> <td data-bbox="899 940 1084 966">0=OFF, 1=ON</td> </tr> <tr> <td data-bbox="607 970 878 1029">10, holiday TZ midnight crossing</td> <td data-bbox="899 970 1084 995">0=OFF, 1=ON</td> </tr> <tr> <td data-bbox="607 1033 878 1058">11, auto-unlock select</td> <td data-bbox="899 1033 1084 1058">0=OFF, 1=ON</td> </tr> <tr> <td data-bbox="607 1062 878 1121">13, daylight savings time select</td> <td data-bbox="899 1062 1084 1087">0=OFF, 1=ON</td> </tr> <tr> <td data-bbox="607 1125 878 1150">14, lock prior to sleep</td> <td data-bbox="899 1125 1084 1243">0=only if necessary, 1=always lock prior to sleep</td> </tr> <tr> <td data-bbox="607 1247 878 1306">15, daylight savings time</td> <td data-bbox="899 1247 1084 1306">0=USA, 1=European</td> </tr> </tbody> </table>	Option	Set/Clear	0, audio keypress	0=OFF, 1= ON	1, visual keypress	0=OFF, 1= ON	2, auto entry enable	0=OFF , 1=ON	3, card and PIN required for program mode	0=OFF , 1=ON	5, user lockout enable	0=OFF, 1= ON	8, user lockout select	0=by location , 1=by group	9, time zones select	0=OFF , 1=ON	10, holiday TZ midnight crossing	0=OFF, 1= ON	11, auto-unlock select	0=OFF , 1=ON	13, daylight savings time select	0=OFF, 1= ON	14, lock prior to sleep	0=only if necessary , 1=always lock prior to sleep	15, daylight savings time	0=USA , 1=European	
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1.5 Programming Commands

Action Desired	Press	Details																		
3. Change keypad parameters	32 # parameter # value # **	See parameters 0-7 below																		
	<table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Parameter</th> <th style="text-align: left;">Value</th> </tr> </thead> <tbody> <tr> <td>0, error lockout threshold</td> <td>1-50 (def=3)</td> </tr> <tr> <td>1, error lockout duration</td> <td>1-255 (def=10)</td> </tr> <tr> <td>2, door loop audio output select</td> <td>0=no door loop audio outputs 1=forced door audio output on 2=propped door audio output on 3=both forced & propped door audio outputs on</td> </tr> <tr> <td>3, extended unlock</td> <td>1-255 (def=10)</td> </tr> <tr> <td>4, site ID (for cmds 51 and 57)</td> <td>0-255 (def=11)</td> </tr> <tr> <td>5, user timezone mask (for programming users through faceplate)</td> <td>0-255 (def=255)</td> </tr> <tr> <td>6, user lockout group (for programming users through faceplate)</td> <td>0-15 (def=4)</td> </tr> <tr> <td>7, lockout by group operand</td> <td>0-3 (def=0) 0=lockout users in all other groups 1=lockout users in this group (except lockout users) 2=lockout users in higher numbered groups 3=lockout users in lower numbered groups</td> </tr> </tbody> </table>	Parameter	Value	0, error lockout threshold	1-50 (def=3)	1, error lockout duration	1-255 (def=10)	2, door loop audio output select	0=no door loop audio outputs 1=forced door audio output on 2=propped door audio output on 3=both forced & propped door audio outputs on	3, extended unlock	1-255 (def=10)	4, site ID (for cmds 51 and 57)	0-255 (def=11)	5, user timezone mask (for programming users through faceplate)	0-255 (def=255)	6, user lockout group (for programming users through faceplate)	0-15 (def=4)	7, lockout by group operand	0-3 (def=0) 0=lockout users in all other groups 1=lockout users in this group (except lockout users) 2=lockout users in higher numbered groups 3=lockout users in lower numbered groups	
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0, error lockout threshold	1-50 (def=3)																			
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1.5 Programming Commands

Action Desired	Press	Detailed
4. Set/clear auto-unlock mask	38 # autz # set/clear # **	autz=auto-unlock timezone (1-8). Entering 1 sets the timezone as auto-unlock and a 0 clears it
5. Restore system defaults (master user and system options/parameters)	40 # 00000 # 00000 # **	
6. Set system time	41 # hhmm # 0 # **	hhmm=hour and minute (24-hour format)
7. Set system date	42 # mmddy # dow # **	mmddy=month, day, year dow=day of week (1=Sunday, 2=Monday, etc.)
8. Set propped door time (see section 1.3.4)	44 # ttt # 0 # **	ttt=propped door time (to nearest 10th second) entered as 10-990; entering 00 disables propped door (default=30 second)
9. Set forced door time (see section 1.3.4)	45 # ttt # 0 # **	ttt=propped door time (to nearest 10th second) entered as 00-990 (default=10 second)

1.5 Programming Commands

Action	Press	Details
10. Clear eeprom memory and restore default settings	46 # 00000 # 00000 # **	
	User Types 0 = toggle code 1 = standard access 3 = lockout 4 = extended unlock 5 = single use 6 = relock code 7 = emergency 8 = communications enable	
11. Program “code only” user	50 # type # location # key pin * key pin *	See user types above
12. Program “card only” user by presentation	50 # type # location # ** <present card>	See user types above
13. Program “card AND code” user	50 # type # location # key pin * key pin * <present card>	See user types above
14. Delete user	50 # 0 # location # **	See user types above
15. Program 26-bit “card only” user without presenting card	51 # type # location # card pin * card pin *	Location must be greater than 2; master/supervisor cannot be set as “card only”
16. Program “card OR code” user	52 # type # location # key pin * key pin * <present card>	

1.5 Programming Commands

Action	Press	Details
17. Program consecutive “card only” users by presentation	53 # type # start user # ** <present card> <present card>...	Start user must be greater than 2; master/supervisor cannot be set as “card only”
18. Enable/disable user	56 # s/c # user # **	1=disables the specified user 0=enables that user The master user cannot be disabled. A non-programmed user cannot be enabled or disabled (generates program error)
19. Program block of 26-bit “card only” users without presenting cards	57 # number of users # start user # card pin * card pin *	Start user must be greater than 2; master/supervisor cannot be set as “card only” Uses site ID set in command 32, parameter 4
20. Delete block of consecutive users	58 # start user # start user # number of users * number of users*	

1.5 Programming Commands

Action	Press	Details
21. Set/clear event log mask	73 # event # set/clear # **	All events are logged by default
	Event 0=unknown event 1=access denied, invalid PIN 2=program denied 4=REX 5=Propped Door 6=Dood Closed 7=Forced Door 17=access granted to user #N 18=access denied to user #N, user group lockout 19=access denied to user #N, bad time zone 20=passage mode activated by user #N (latch set) 21=passage mode deactivated by user #N (latch clear) 22=1st in auto-unlock triggered by user #N 23=door relocked by user #N 24=user lockout enabled by user #N 25=user lockout disabled by user #N 26=access denied to user #N, user is disabled 27=card/code mismatch 29=program mode started by user #N 30=log erased by user #N 31=comm enabled by user #N	
22. Reset (erase) transaction log	76 # 00000 # 00000 # **	

Appendix A: Users Chart

User Location	Type	Code	Last Name	First Name	Other
Example: 25	Standard	5678	Smith	John	Warehouse

