IEI DoorGard LS1

Programming Manual

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Table of Contents

Foreword

DoorGard LS1 System

Programming Guide

Appendix A: Users Chart

Foreword

F.1 About this Manual

This manual is designed for installers of the International Electronics DoorGard LS1 system. All programming instructions and other relevant information is contained in this manual.

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 LS1 system. Static shock can render the product unusable. Commands mentioned in the description paragraph are all listed in Table 1-4.

F.3 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.

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F.5 Technical Support

Should you experience any difficulty programming the DoorGard LS1 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.6 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.

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This warranty shall expire two years after shipping date for the DoorGard LS1 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 LS1 System Programming Guide

This guide provides information about programming the DoorGard LS1 system. **Certain parameters must be programmed upon initial installation, such as changing the default Master Code.**

1.1 Features

The DoorGard LS1 system user capacity is 120, the master code location is 1, and the supervisor location is 2.

1.1.1 Battery Powered

The DoorGard LS1 system is battery powered; when not in use, it consumes no power at all, but the batteries normally discharge over an extended period. The DoorGard LS1 system powers itself down (sleep mode) 15 seconds after one of the following events:

- 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..)
- immediately after a Lockout code is entered
- immediately after a Toggle/Passage ON/OFF code is entered

1.1.2 User Lockout Option

The User Lockout option allows user codes to be assigned as "Lockout" user types. When this type of code is entered, only codes in lower locations function; codes in higher locations do not function.

For example, if user 30 enters his/her lockout code, users 31 -120 will not function. If user 10 then enters his/her Lockout code, user 11-120 will not function, including the original lockout code that was entered.

To turn OFF the User Lockout option, you must either enter the same lockout code that was entered, or enter a lockout code (twice) that is in a lower user position: once to override the first code and set the User Lockout option and once again to clear the User Lockout option.

1.1.3 Error Lockout Option

With the Error Lockout option, after a certain number of incorrect access attempts (as is set in the **32 # 0 # value # **** command) or incorrect programming mode attempts, the DoorGard LS1 system displays a solid yellow for a specified period of time (as is set in the **32 # 1 # value #** command). The count is cleared after a correct code is entered or if the DoorGard LS1 system goes to sleep.

1.1.4 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)
- Setting/Clearing User Hold bit (command #56)

Commands excluded from Supervisor access include:

- Changing Relay Time (command #11)
- Setting/Clearing Platform options (command #30)
- Changing 8-bit Platform Parameters (command #32)
- Restoring System Defaults (command #40)
- Setting Propped Door Time (command #44)
- Changing Forced Door Time (command #45)
- Erasing User Table and Restoring Default Settings (which also deletes the Supervisor code, command #46)

1.1.5 Disabling User Locations 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.

- For example, setting the Set/Clear flag to a "1" means that Disable is turned ON for that user.
- **The master code can never be disabled.**
- The master code can disable the Supervisor user (user # 2).
- The Supervisor can disable users 3-120.
- Setting the Set/Clear flag to "O" enables that user.

1.1.5.A Low Voltage Warning

When the battery pack voltage reaches between 4.4 volts and 4.0 volts and a user enter his/her code, before the door unlocks the DoorGard LS1 sounder beeps 4 times quickly. This lets the user know the batteries need changing soon. Normal operating voltage is 9V.

1.1.5.B Inhibit Operation Warning

When the battery pack voltage reaches below 4.0 volts and a user enters his/her code, the DoorGard LS1 sounder issues 4 beeps twice.

This lets the 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 or an Emergency code **must** be used (for an explanation of user types, see Table 1-3). These 2 types of users (Master or Emergency) override the Inhibit warning, allowing someone to open the door and then change the batteries.

1.1.5.C Set/Clear Temporary User Disable Feature

Setting the temporary user disable bit disables the specific user while clearing the bit enables the user.

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).

1.1.6 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. This option requires the use of a door position switch (Normally door contact attached to the white and yellow wires located in the battery compartment).

If you hear the Audio alert, entering a valid code turns OFF the Forced Door Audio Alert. It can be enabled using command

32 # 2 # 1 # **

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 LS1 system **must** be closed prior to using the handle to open the door.

The REX wires (brown and orange) are located in the battery compartment. Either an external REX button can be used or you can order your DoorGard LS1 system with the –REX option installed; the installed unit 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. Failure to trigger the REX input before opening the door results in the Forced Door Audio Alert coming on for the preset time.

1.1.7 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.

This requires the use of a door position switch (Normally door contact attached to the white and yellow wires located in the battery compartment). If you hear the Audio alert, entering a valid code turns OFF the Propped Door Audio Alert. It can be enabled using command

32 # 3 # 1 # **

Both the Propped Door Audio Alert and the Forced Door Audio Alert can be enabled using

32 # 3 # 1 # **

or both can be disabled using

32 # 0 # 1 # **

1.1.8 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. This input is always enabled (ON). Each time the REX input closes, the unit DoorGard LS1 system unlocks for the preset unlock time.

1.1.8.A Single Use User

Single use codes can be verified by entering

5 # PIN *

This code can only be used to unlock the door once. To determine if a single user's PIN is still programmed but not used, press **5 # PIN*** outside of programming. If the code is still in use, the green LED comes on for about 1 second, showing that the code is still operable; 3 quick beeps means that it has been used or was never programmed.

1.1.8.B Auto Entry

Auto Entry, which is disabled by default, can be enabled by entering the following Set/Clear Platform command (see Table 1-4 for details):

30 # 2 # 0 # **

1.2 Programming from 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 unit 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, disconnect the battery pack, connect the orange wire to the white wire, and then reconnect the battery pack. The unit is now in program mode.

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.)

1.2.2 User Codes

DoorGard LS1 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.

1.2.3 DoorGard LS1 Default Settings

Table 1-1 lists the default settings for the DoorGard LS1 system as shipped from the factory. Subsequent sections in this chapter explain how to change these default settings or program additional functions.

Table 1-1. DoorGard LS1 Default Settings

Parameter	Default Setting
Master Code (user location 1)	1234
Main Relay energizes for	Five (5) seconds
Audible Keypress Feedback	ON
Visual Keypress Feedback	ON
Auto Entry (no * required)	DISABLED
Invalid PIN Lockout	ENABLED
Invalid PIN Lockout Duration	10 seconds, DISABLED
Invalid PIN Lockout Threshold	3 attempts
User Lockout Codes	ENABLED
Door Contact Input	DISABLED
Forced Door Alert	DISABLED
Propped Door Alert	DISABLED
Request to Exit (REX)	DISABLED

Table 1-2. DoorGard LS1 LED Indicators/Sounder Operations

LED or Sounder	Visual/Audible Condition	Description
Bi-color	Steady green	Lock is energized (timed or latched), green LED lights only for 1 second, regardless of the unlock time
	1/2 second green flash	Following a 5#PIN* sequence indicates programmed "Single Use" PIN has not been used yet
Yellow LED	Slow blink	System is in program mode
	Rapid blink	Verify mode is active (checking that the last two values in sequence match)
	Steady	Program error; to clear, press * - error lockout (no keypress feedback)
Bi-color and Yellow	Rapid red/yellow/green sequencing	Power on condition
Sounder After PIN Entered	3 very rapid beeps	PIN is not found
	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 and user disabled temporarily
	1 long beep followed by 3 short beeps	Access is denied and user is locked out

Sounder After PIN Entered	Visual/Audible Condition	Description
	4 long beeps	Low voltage warning
	4 long beeps, pause, 4 more long beeps	Low voltage inhibit
	6 quick beeps	Passage mode is active
	Short beeps (100 ms) every 2 seconds	Propped door is active
	Sounder 1/2 second ON, 1/2 second OFF	Forced door is active
	3 slow beeps (250 ms)	Indicates self-test is complete

1.3 Restoring System Defaults

Entering command 40 erases everything from the DoorGard LS1 memory **except** the user codes and restores the system default settings. This is useful if the system has experienced programming problems, or wish to delete earlier programming of settings but not the user codes.

1. Place the DoorGard LS1 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.

1.4 Erasing User Table/Restore System Defaults

Entering command 46 deletes everything from the DoorGard LS1 memory **including** the user codes and restores the system default settings. The unit is brought back to the "out of box" state.

1. Place the DoorGard LS1 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.

1.5 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 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 LS1 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.

1.6 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 un-authorized user from viewing visual feedback produced when an authorized user enters his/her code.

1. Place the DoorGard LS1 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 # 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.

1.7 Adding New or Changing Existing Codes

The most basic DoorGard LS1 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.

These five specific types of users can be programmed with the DoorGard LS1 system:

- Toggle/Passage code (0)
- Standard access (1)
- Lockout (3)
- Single use (5)
- Emergency (7)

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

1. Place the DoorGard LS1 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. 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/passage 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.

1.8 Programming User Types

Table 1-3 identifies and describes the five user types supported by the DoorGard LS1 system.

Table 1-3. DoorGard LS1 System User Assignable Types

User Type	User-Type	Description
Toggle/Passage code	0	Unlocks the door until another toggle/passage code is entered.
Standard access	1	Unlocks the door for a set amount of time (5 seconds is the default).
Lockout	3	-Lockout users programmed in user locations above this one (example: user 50 locks out users 51-120) -Entering the same lockout PIN cancels the lockout -Entering another lockout PIN in a "lower" location lowers the lockout position.
Single use	5	Single use codes can be verified by entering 5 # PIN * This code can only be used to unlock the door once. To determine if a single user's PIN is still programmed but not used, press **5 # PIN*** outside of programming. If the code is still in use, the green LED comes on for about 1 second, showing that the code is still operable; 3 quick beeps means that it has been used or was never programmed.
Emergency	7	Note that this firmware supports multiple emergency users who are not tied to specific user table locations. Emergency codes are used to unlock the door regardless of the Lockout state; it also unlocks even when the batteries go below the Inhibit Operation low voltage threshold (4.0 volts). This lets you gain access to change the batteries.

1.9 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 1-4. Program Commands

Action Desired	Press	Details
To enter program mode	**99 # (Master Code) ***	Yellow LED blinks slowly
1. Set lock time	**11 # ttt # 0 # ****	where *ttt* is the number of seconds to operate lock on access (1-255 maximum); defaults to 5 seconds
2. Set/clear platform options (bit values)	**30 # option # set/clear # ****	See options 0-5 below (defaults shown in bold)
	Option **Set/Clear** 0, audio keypress feature 0=OFF, **1=ON** 1, visual keypress feature 0=OFF, **1=ON** 2, auto entry enable **0=OFF**, 1-ON 3, error lockout 0=OFF, **1=ON** 5, user lockout 0=OFF, **1=ON**	

Action Desired	Press	Details
3. Change 8-bit platform parameters	32 # parameter # value # **	See options 0-2 below
	Parameter　　　　　　**Value** 0, error lockout threshold　　1-50 (def=3) 1, error lockout duration　　1-255 (def=10 seconds) 2, door/sensing operation　　0-3 (def=0) select (see below for values 0-3 relating to parameter #2) **Values for Parameter 2** 　0=　　all operations disabled 　1=　　forced door operation with audio alert (see section 1.1.6) 　2=　　propped door operation with audio alert (see section 1.1.7) 　3=　　both forced/propped door operations with audio alert	
4. Restore system defaults (master user and system options/parameters)	**40 # 00000 # 00000 # ****	
5. Set propped door time (see section 1.1.10)	**44 # ttt # 0 # ****	*ttt*=propped door time (to nearest 10th second) entered as 10-990 (default=30 second)
6. Set forced door time (see section 1.1.9)	**45 # ttt # 0 # ****	*ttt*=propped door time (to nearest 10th second) entered as 00-990 (default=10 second)
7. Erase user table and restore default settings	**46 # 00000 # 00000 # ****	

Action Desired	Press	Details
8. Add users	**type # location # PIN * PIN ***	Accessible only to Master Code user location 1 or supervisor user location 2
	User Types 0= toggle/passage code 1= standard access 3= lockout 5= single use 7= emergency	
9. Delete users	**location # ****	Delete user
10. Set/clear temporary user disable	**56 # set/clear # user # ****	Accessible only to Master Code user location 1 or supervisor user location 2

Appendix A: Users Chart

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