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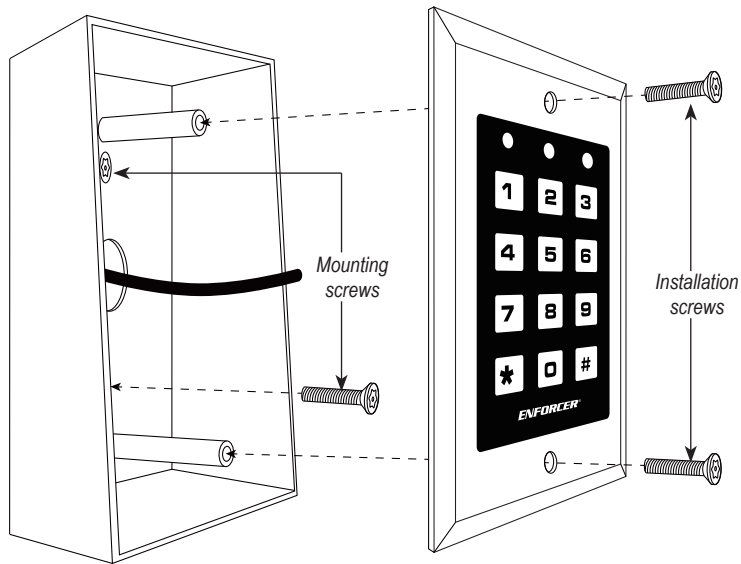
INDOOR USE



Quick Installation Guide:

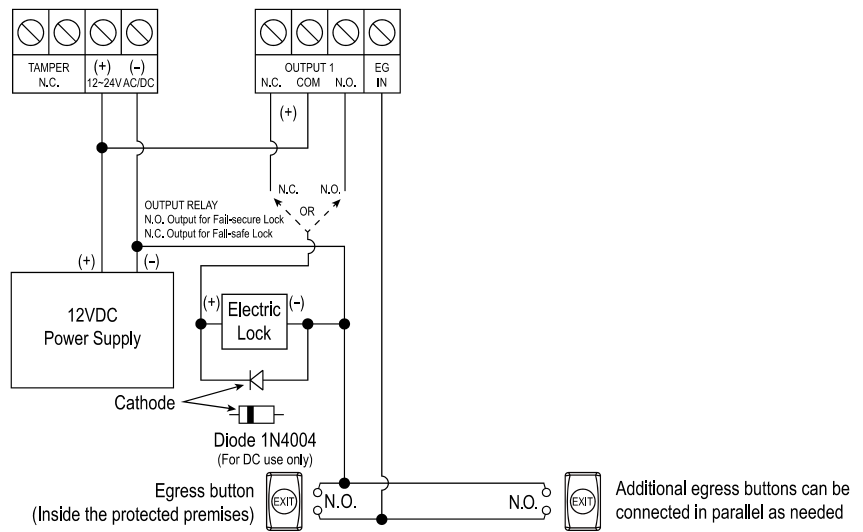
This page is for installers looking to do a basic installation and programming of the keypad. For more in-depth installation and programming instructions, see the Table of Contents on page 4.

Mounting Diagram:



Quick Wiring Diagram:

210



Quick Programming Guide:

This page is for installers looking to do a basic installation and programming of the keypad. For more in-depth installation and programming instructions, see the Table of Contents on page 4.

Programming Tips:

- **The master, super user, visitor, and user codes cannot be the same.**
- A flashing amber LED indicates the keypad is in standby mode. A solid amber LED indicates the keypad is in programming mode.
- If the keypad is set for **Auto Code Entry Mode**, all codes will need to be the same number of digits as the master code (see pages 19~20).

Programming Instructions:

Follow the instructions below if the following covers your needs:

- A new master code.
- A single 4-digit user code for all users.
- One output to unlock a door.
- A 3-second delay time in opening the door after the output is activated.

1. Turn off the beeping before the 1-minute power-up period ends:

2. Enter Programming Mode:

NOTE: is the default master code

3. Change the master code:

NOTE: is the new master code.

4. Set the user code to operate the output (unlock the door):

NOTE: chooses user ID #000 of 1,000 possible users (000~999).

is the new user code for user ID #000.

5. Set the output delay time (skip this step if the default value of 5 seconds is acceptable):

NOTE: sets the output delay time for 3 seconds.

6. Exit Programming Mode:

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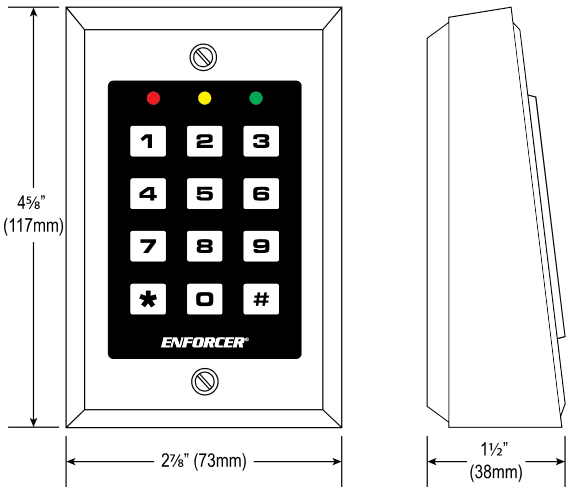
Features:

- 12~24 VAC/VDC Auto-adjusting operation
- Up to 1,000 possible user codes (000~999)
- Up to 50 (01~50) possible temporary visitor codes, which can be programmed for one-time or limited-time use (1~99 hours)
- Output: Form C relay, 1A@30VDC max.
- Output can be programmed to activate for up to 99,999 seconds (nearly 28 hours)
- Tamper output: N.C. Dry contact, 50mA@24VDC max.
- Mounts to a standard single-gang back box (surface-mount back box included)
- All features are programmed directly from the keypad: No need for an external programmer
- EEPROM Memory protects programmed information in case of power loss
- Egress input lets users exit the premises without keying in the code

Specifications:

Operating voltage		12~24 VAC/VDC
Current draw (at 12VDC)	Standby	15mA
	Keypress	30mA
	Output 1 active	55mA
	Total max current draw	90mA
Outputs	Form C	1A@30VDC
	Tamper	50mA@24VDC
Egress input		N.O. Ground
Operating temperature		-4°~158° F (-20°~70° C)
Operating humidity		5~95% Non-condensing
Dimensions (including back box)		4⅝"x2⅞"x1½" (117x73x38 mm)
Weight		6-oz (170g)

Overview:



Parts List:

- 1x Keypad
- 1x Back box
- 2x Installation screws
- 2x Mounting screws
- 1x Diode
- 1x Manual

LED Indicators and Keypad Sounds:

LED Indicators

	Red LED (Left)	Amber LED (Center)	Green LED (Right)
Steady	Output inhibited	Programming mode	Output activated
Flashing	Output inhibit paused	Standby mode	–

Keypad Sounds and Amber LED

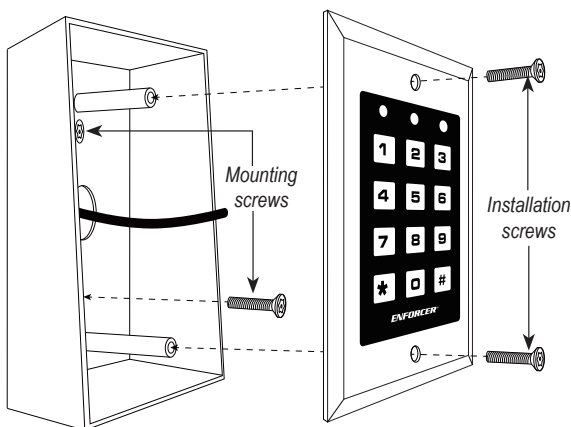
Status	Sounds ⁽¹⁾	Amber LED (Center)
In programming mode	–	Steady ON
Successful key entry	1 Beep	1 Flash
Successful code entry	2 Beeps	2 Flashes
Unsuccessful code entry	5 Beeps	5 Flashes
Power up delay	Continuous beeping	Continuous flashing
Output relay activation ⁽²⁾	1-Sec long beep	–
In standby mode ⁽³⁾	–	1 Flash/sec
System restore mode	2 Beeps	Fast flashing for 2.5 min
Code already stored	1 Long beep	–
Real-time clock stopped after power loss	Continuous 3 fast beeps every 5 seconds	–

NOTE:

1. Keypad sounds can be programmed ON or OFF (see page 20).
2. Output relay activation sounds can be programmed for 1-sec long beep, 2 short beeps, or OFF (see page 20).
3. Amber LED flashing during standby mode can be programmed ON or OFF (see page 21).

Installation:

1. Find a suitable location to mount the keypad. Install it at the height at which most users will be able to easily operate the keypad.
2. Install one mounting screw on the wall. After the screw has been installed, hang the back box by the top mounting hole.
3. Install the second mounting screw through the bottom hole.
4. Run the wire through the wall or conduit to the back box location, then run the wire through the back box.
5. Connect the wires to the keypad according to the wiring diagram on page 8.
6. Finish assembly by attaching the keypad to the back box with the included installation screws.



IMPORTANT NOTES:



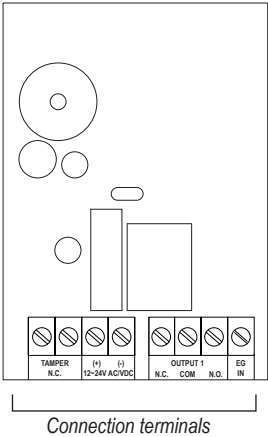
IF USING THE KEYPAD WITH A MECHANICALLY OPERATED DOOR OR GATE, MOUNT THE KEYPAD AT LEAST 15' (5m) FROM THE DOOR OR GATE TO PREVENT USERS FROM BEING CRUSHED OR PINNED. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.



1. Always disconnect power before servicing the keypad. Do not apply power until all connection wiring is completed.
2. The keypad must be properly grounded. Use a minimum of 22AWG wire connected to the ground terminal. Failure to do so may damage the keypad.
3. All wiring and programming should be done by a professional installer to reduce the risk of improper installation.
4. The user's guide for this keypad is located on page 24 of this manual. Be sure to store this manual in a safe place for future reference.

Wiring Diagram:

Connection Terminals	
Terminal	Description
Tamper N.C.	Tamper switch output, N.C. contact, max. 50mA@24VDC. Connect to the N.C. 24-hour protection zone of an alarm if needed.
12~24 VAC/DC	Connect to a 12~24 VAC/DC power supply. Observe polarity.
Output 1 N.C.	NO/NC/COM, relay output, max. 1A@30VDC
Output 1 COM	
Output 1 N.O.	
Egress Input	N.O. Pushbutton contact to ground. Press button to initiate door unlock output

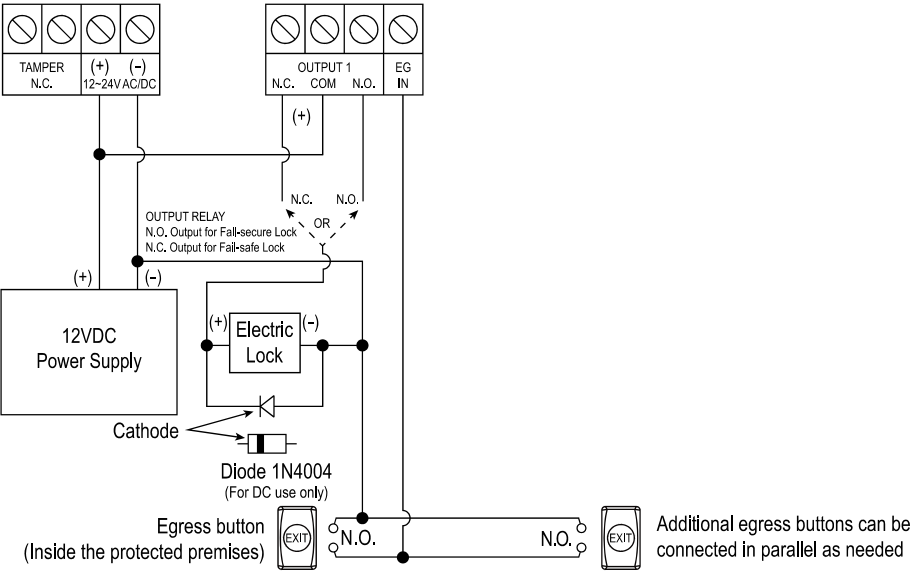


Sample Applications:

Stand-Alone Door Lock:

In this application, the keypad is connected to a single door lock and an egress pushbutton.

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Getting Ready to Program:

Keypad Codes:

There are four types of keypad codes:

- Master code – Used only for entering programming mode; there can be only one master code per keypad.
- Super user code – Can be used to activate the output, or to disable (inhibit) or enable the operation of the output.
- User codes – Unique codes for each user to activate the output.
- Visitor codes – Temporary user codes that can be assigned to visitors or temporary workers to activate the output; the visitor codes can be programmed for one-time use or to expire after a set number of hours has passed.

Power Up the Keypad:

When the keypad is first powered up, it will beep continuously for about 1 minute. During this power-up time, if needed, use Direct Access to Programming (DAP) to reset the master code (see “Direct Access to Programming (DAP)” on page 23).

1. Turn off the beeping before the 1-minute power-up period ends:



This will immediately stop the beeping.

When the beeping has ended, the keypad is ready for normal operation or for programming.

Enter and Exit Programming Mode:

All programming of the keypad is done in programming mode.

1. Enter programming mode:



NOTE:  is the master code.  is the default master code (see “Programming the Master Code” on page 11 to program a new master code). The amber LED will turn to a steady ON to indicate that the keypad is in programming mode.

2. Exit programming mode:



The  entry can be used to exit programming mode at any time while programming. The amber LED will return to flashing, indicating standby mode, upon exiting programming mode.

NOTE: **DO NOT DISCONNECT THE KEYPAD FROM POWER WHILE IN PROGRAMMING MODE.** Disconnecting the keypad while in programming mode could cause a keypad memory error.

Programming Format and Default Programming Values:

In this manual, the format used for programming the keypad is as follows:

- A 2-digit ( ) FUNCTION identifier to tell the keypad what is being programmed.
- A varying number of digits () to represent the parameters of that FUNCTION.
- The  key to confirm programming of the FUNCTION.

The following is a list of the different programming functions:

Function	Parameters	Default functions and values	Page #
01	Master code	Default 0000, code length from 4~8 digits	11
02	Super user code	No default, must be programmed	12~13
10	User codes	No default, must be programmed	14
40	Visitor codes	No default, must be programmed	15
51	Output mode and output timing	5-Second output, momentary	16
55	System real-time clock	No default, must be programmed	17
56	Auto-disable time	No default, must be programmed	18~19
60	Wrong-code system lock-up	Locks keypad after 10 false code/card tries	19
70	User code entry mode	Manual entry of “#” after each code	19~20
71	Keypad sounds	Programming and operation beeps enabled	20
72	Output relay activation sounds	1-Second beep when output is activated	20
73	Amber LED standby flashing	Center LED flashes on standby	21
90	Egress delay/warning	Egress output happens immediately	21~22

NOTE: The Direct Access to Programming (DAP) code 2828 (page 23) and the system restore code 9999 (page 11) are fixed and cannot be changed, even via programming.

System Restore:

System restore will reset all programming values except the master code back to the default values shown on page 10.

1. Make sure the keypad is in programming mode (see “Enter and Exit Programming Mode” on page 9).
2. Initiate system restore:



NOTE:

- System restore will reset ALL programming except the master code back to default values. Be careful to use system restore only when absolutely necessary.
- System restore may take several minutes. The amber LED will flash rapidly during this time.
- Once system restore has been completed, the keypad will beep twice to show that all programming values have been reset to their default values and are ready to be re-programmed.
- At this point, the keypad is still in programming mode.

Programming the Master Code:

The master code is used to enter programming mode. The master code **does not** serve as a user code for activating the output.

1. Make sure the keypad is in programming mode (see “Enter and Exit Programming Mode” on page 9).
2. Enter new master code:



NOTE:

-  represents the new master code, which can be 4 to 8 digits long.
- There can be **only one master code** for the keypad.
- Programming a new master code will overwrite the previous master code.
- If the master code is forgotten, use Direct Access to Programming (DAP) to reset the master code (see page 23).
- The **master, super user, visitor, and user codes cannot be the same.**
- If the keypad is set for **Auto Code Entry Mode**, all codes will need to be **the same number of digits** as the **master code** (see “Programming the User Code Entry Mode” on pages 19~20).

Programming the Super User Code:

The super user code has multiple functions:

- The super user code can activate or deactivate the output at any time.
- The super user code can toggle operation of the output on or off.
- The super user code can pause or restart the timed output auto-disable period.
- The super user code can enable or disable the output.
- The super user code is exempt from any system inhibition or lockup functions. It is valid at any time.

Programming the Super User Code:

1. Make sure the keypad is in programming mode (see “Enter and Exit Programming Mode” on page 9).
2. Enter the new super user code:



NOTE:

-  represents the new super user code, which can be 4 to 8 digits long.
- There can be **only one super user code** for the keypad.
- Programming a new super user code will overwrite the previous super user code.
- The **master**, **super user**, **visitor**, and **user codes** **cannot** be the same.

Deleting the Super User Code:

This function is useful for protecting the premises in case the super user code is forgotten.

To delete a super user code:

1. Make sure the keypad is in programming mode (see page 9).
2. Enter:



Using the Super User Code:

In these examples, assume the super user code is .

1. Activate or deactivate the output (timed or toggle, depending on programming):



Programming the Super User Code (continued):

2. Toggle operation of the output ON or OFF:

NOTE:

- This function is used to leave the output active for extended periods of time.
- While the output remains active, the green LED remains lit.
- Do not forget to deactivate this function after its use is no longer required.
- It is recommended to only use this function with fail-safe locks.

3. Temporarily pause or restart the timed output auto-disable period:

NOTE:

- This function is used to enable the operation of the output if it was disabled using the auto-disable function (see pages 18~19).
- When the output auto-disable function is inactive, the red LED will flash steadily. This indicates that the output may now be used.

4. Disable or enable the output (toggle, regardless of programming):

NOTE:

- This is used to prevent users from accessing the protected premises.
- For more information on programming timed or toggle mode, see "Programming the Output Mode and Output Timing" on page 16.
- The red LED will remain steady on while the output is disabled.
- For safety reasons, the egress button works regardless of whether the output is enabled or disabled via the super user code.
- The super user code continues to operate the output even while that output is disabled.

Programming User Codes:

When programming user codes, use this general formula:

– Program User Codes

– Add or delete a user code

– User ID

– User Code

Output:

- – Output, up to 1,000 possible user codes.

Code Addition / Deletion:

- – Add a user code.
- – Delete a programmed user code.
- – Delete all programmed user codes.

User IDs:

- to – 1,000 unique user IDs for user codes for the output.

User Codes:

- A user code can be 4 to 8 digits long, and must have the same length as all other codes if the keypad is used in auto code entry mode (see “Programming the User Code Entry Mode” on pages 19~20).
- The **master**, **super user**, **visitor**, and **user codes cannot** be the same.

Examples:

1. Program user code for user ID #010 for the output:

2. Delete code for user ID #002 for the output:

3. Delete all users for the output:

Programming Visitor Codes:

Visitor codes are temporary codes that expire after use or after a specified amount of time has elapsed. While active, they operate the output as normal user codes.

NOTE: If the keypad is powered down, any programmed visitor codes will be deleted.

When programming visitor codes, use this general formula:

  – Program Visitor Codes

 – Visitor ID

 – Valid Duration (hours)

 – Visitor Code

Visitor IDs:

-    to   – 50 unique visitor IDs for visitor codes for the output.
-      – Delete all currently programmed visitor codes.

Valid Duration:

-   – Set a one-time code. This code can only be used once by a visitor, after which it is automatically deleted.
-    to   – Set the duration the visitor code will be valid, from 1 to 99 hours.

Visitor Codes:

- A visitor code can be 4 to 8 digits long, and must have the same length as all other codes if the keypad is used in auto code entry mode (see “Programming the User Code Entry Mode” on pages 19~20).

Examples:

1. Set the visitor ID #01 code to 1268, and make it a one-time code:

2. Set the visitor ID #02 code to 1378, and make it valid for three hours:

3. Delete the visitor ID #02 code from memory:

Programming the Output Mode and Output Timing:

The relay for the output can be programmed to trigger ON and OFF with a user code (toggle mode), or to trigger for a programmed length of time of up to nearly 28 hours before automatically turning OFF. The toggle or timed outputs can be used for locking or unlocking a door or for a variety of functions that can be controlled with the keypad.

When programming the output mode and time, use this general formula:

5 1 A A A A A #

5 1 – Program Output Mode and Time

A – Output Mode and Time

Output Mode and Time:

- 0** – Start/stop (toggle) mode. In this case, the output starts when a user code is entered, and stops when a user code is entered.
- 1** to **99999** – The output triggered by a user code lasts 1 to 99,999 seconds (nearly 28 hours) before automatically turning off (default 5 seconds).

NOTE: While the keypad is in momentary timed output mode, the output can be reset any time by entering the super user code.

Examples:

In these examples, assume that the super user code is **2580**.

1. In programming mode, set the output to toggle:

5 1 0 #

2. In programming mode, set the output to 60 seconds:

5 1 6 0 #

3. Reset the output timer:

2 5 8 0 # 1

Programming the Real-Time Clock:

A 24-hour real-time clock provides the baseline time needed to start and stop the output auto-disable time (see "Programming the Auto-Disable Time" on pages 18~19).

If the auto-disable time is not programmed, it is not necessary to set the real-time clock.

To set the clock, use this general formula:

– Program Real-Time Clock

– Hours

– Minutes

Setting Hours and Minutes:

- represents hours and represents minutes in the military (24-hour) time format, from 00:00 to 23:59.

Examples:

1. Set the real-time clock to 11:30 AM:

2. Set the real-time clock to 7:15 PM:

NOTE:

- If the auto-disable time is programmed, losing power will cause the keypad to beep 3 times every 5 seconds. To deactivate this alert, either reset the real-time clock or clear the auto-disable time.
- If the auto-disable time is not programmed, losing power will not cause the keypad to beep.
- To ensure accurate time, it is advised to re-program the real-time clock every three to six months and when Daylight Savings Time begins and ends (if applicable).

Programming the Auto-Disable Time:

The keypad can be programmed so that the output is disabled for a certain period of time every day. The output will be disabled at the start time, and will be re-enabled at the end time. This ensures that users are not allowed into the protected premises, such as during lunch hour or at night.

NOTE:

- The real-time clock must be operating in order to set the output auto-disable time (see “Programming the Real-Time Clock” on page 17).
- For safety purposes, the egress button still works while the output is auto-disabled.
- The time is set using the military (24-hour) time format (00:00 to 23:59).
- If the programmed start time is before the end time, the output is auto-disabled within a single day. If the programmed start time is after the end time, the end time will be on the following day.
- The start time and end time cannot be the same.
- The auto-disable time can be temporarily paused and restarted using the super user code (see “Programming the Super User Code” on pages 12–13).
- During the auto-disable time, the super user code can be used to operate the output.
- The red LED will remain lit during the auto-disable time.

When programming the auto-disable time, use this general formula:

[5][6] [H][H][M][M] [H][H][M][M] [#]

[5][6] – Program Auto-Disable Time

[H][H][M][M] – Start Time

[H][H][M][M] – End Time

Start Time:

- Start time for the auto-disable time. [H][H] represents hours and [M][M] represents minutes in the military (24-hour) time format, from 00:00 to 23:59.

End Time:

- End time for the auto-disable time. [H][H] represents hours and [M][M] represents minutes in the military (24-hour) time format, from 00:00 to 23:59.

Examples (in these examples, assume that the super user code is [2][5][8][0]):

1. In programming mode, set the auto-disable time from 12:00 PM to 1:00 PM:

[5][6] [1][2][0][0] [1][3][0][0] [#]

2. In programming mode, set the auto-disable time from 6:30 PM to 7:30 AM the following day:

[5][6] [1][8][3][0] [0][7][3][0] [#]

Programming the Auto-Disable Time (continued):

3. In programming mode, clear the auto-disable time:

5 **6** **#**

4. Temporarily pause or resume the auto-disable time:

2 **5** **8** **0** **#** **8**

5. Activate the output during the auto-disable time (i.e. open the protected door):

2 **5** **8** **0** **#** **1**

Programming the Wrong-Code System Lock-Up:

The keypad can be programmed to lock up in order to secure the premises against unauthorized entry if multiple wrong codes are entered.

When programming the wrong-code system lock-up, use this general formula:

6 **0** **A** **A** **#**

6 **0** – Program Wrong-Code System Lock-Up

A **A** – Lock Options

Lock Options:

Choose from several different options for the wrong-code system lock-up security level:

- **1** – After 10 successive false attempts using incorrect user codes, the keypad will lock for 60 seconds (default).
- **5** to **10** – After 5 to 10 successive false attempts using incorrect user codes, the keypad will lock for 15 minutes or until the super user code is used as follows:

SUPER USER CODE **#** **9**

- **00** – No system lock-up will happen.

NOTE: The keypad's red LED will remain lit to show that the keypad is locked.

Programming the User Code Entry Mode:

The keypad can be programmed for auto or manual user code entry modes:

- Auto entry mode – Pressing the **#** key is not required after typing in a user code. In auto entry mode, all user codes must have the same number of digits as the master code.
- Manual entry mode – The **#** key must be pressed after the user code to indicate the code has been entered completely. In this case, the user codes can have a different number of digits, from 4 to 8 digits.

Programming the User Code Entry Mode (continued):

To Program:

- For auto entry mode:

- For manual entry mode (default):

NOTE: If the keypad was previously programmed for manual code entry mode and then is reprogrammed for auto entry mode, any codes whose length exceeds the number of digits of the master code will no longer operate the keypad. However, if the keypad is reprogrammed for manual entry mode, the longer codes will again operate the keypad.

Programming the Keypad Sounds:

Some of the keypad sounds can be programmed off:

- Keypad audible mode – All the keypad's status beeps are enabled.
- Keypad silent mode – The successful key entry beep (1 beep) and the unsuccessful user code entry beeps (5 beeps) are disabled. However, the warning and power-up delay beeps remain active. This provides for a quieter work environment.

To Program:

- To enable keypad audible mode (default):

- To enable keypad silent mode:

NOTE: This programming function only impacts the keypad sounds. It does not impact the output relay activation sounds (see "Programming the Output Relay Activation Sounds" below).

Programming the Output Relay Activation Sounds:

The keypad output sounds can be programmed for one of three modes:

- No beeps – The keypad will not beep when the output is activated:

- 1-second beep (default) – The keypad will beep for 1 second when the output is activated:

- 2 short beeps – The keypad will beep twice when the output is activated:

NOTE: This programming function only impacts the output relay activation sounds. It does not impact the keypad sounds (see "Programming the Keypad Sounds" above).

Programming the Amber LED Flashing during Standby Mode:

The keypad's amber LED typically flashes while the keypad is in standby mode, but can be programmed off if needed.

- Enable amber LED flashing during standby mode (default):

7 3 1 #

- Disable amber LED flashing during standby mode:

7 3 0 #

Programming the Egress Delay/Warning:

With most keypads, the egress button provides a simple way for someone inside a protected premises to exit through a locked door by pressing a button instead of using a keypad. However, in some situations, delaying the egress operation and/or providing some warning when the egress button is used is desirable.

For example, in hospitals or schools, it may be desirable to delay the egress operation and provide a warning to prevent patients or young children from easily leaving the protected area.

For simple egress with no delay or warning, do not change this setting. It is disabled by default.

When programming the egress delay/warning, use this general formula:

9 0 A B B #

9 0 – Program Egress Delay/Warning

A – Egress Mode

B B – Delay Time

Egress Modes:

There are four possible egress operation configurations for the 210

- **1** Momentary contact with no warning (default) – Press the egress button momentarily. The door opens instantly (default) or after the programmed delay time with no audible warning.
- **2** Momentary contact with warning beep – Press the egress button momentarily. The keypad will beep for the programmed delay time before letting the door open, to warn that someone is preparing to exit the protected area.
- **4** Hold contact with no warning – Press and hold the egress button for the programmed delay time until the door is open. This prevents accidental opening of the door.
- **5** Hold contact with warning beep – Press and hold the egress button for the programmed delay time until the door is open. The keypad will beep during the delay time before letting the door open, to warn that someone is preparing to exit the protected area.

Programming the Egress Delay/Warning (continued):

NOTE: When the egress button is programmed to hold for a delay time before the door is released, it is important to put a sign near the egress button to notify users of the delay time.

Delay Time:

- **0** – No delay time (default): The output operates immediately when the egress button is pressed.
- **1** to **99** – Egress button delay time: The delay time can be set from 1 to 99 seconds. This tells the keypad how long to wait after the egress button is pressed before activating the output.

Examples:

1. Momentary mode – Press the egress button, and the keypad will beep for 5 seconds before the output activates:

9 0 2 5 #

2. Hold button to activate – Press and hold the egress button for 10 seconds, and the keypad will beep for those 10 seconds before the output activates:

9 0 5 1 0 #

3. Return to default setting – Press the egress button to activate the output with no beeping or delay:

9 0 1 0 #

NOTE: For safety and to avoid confusion, when a delay or a press-and-hold delay is programmed, please post a notice near the egress button, such as: "Press and hold the button for 5 seconds or until the door is unlocked."

User's Guide to Operating the 210:

See "Programming the Master Code" and "Programming the Super User Code" on pages 11~13 for functions specific to those authorized to use those codes.

Opening the Door:

In these examples, assume that the **user code** is **2 2 7 5**.

2 2 7 5 **#***

- 1 Long beep indicates that the door can be opened.

Operating the Egress Button:

Press the egress button from inside the protected premises to unlock the door and exit without using the keypad.

NOTE: For more information on programming the Egress button, please see "Programming the Egress Delay/Warning" on pages 21~22.

* The **#** key is not needed if the keypad is programmed for auto entry mode. See pages 19~20.

Also Available:



Electromagnetic Locks



Push-to-Exit Plates
