2000 Series e/eM Style Keypad Quick Start Guide

This Quick Start Guide is a reference document for experienced installers only. **Please refer to the more comprehensive information supplied in the 2000 Series e/eM Keypad Installation and Programming Manual located on our website at www.ieib.com.** This product is designed to be installed and serviced by security and lock industry professionals.

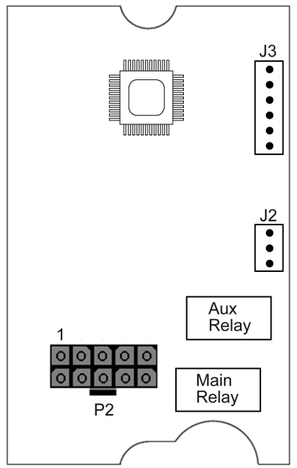
Specifications

Parameter	Specifications
Voltage Requirements	10-30 VDC; 12-24VAC
Current requirements (Max)	**VDC** / **VAC** 10V: 82mA / 12V: 110mA 30V: 115mA / 24V: 140mA **Note:** Does not include relay board.
Relay Contact Rating	2A @ 30VAC/DC (Main & Aux)
REX Input	Normally Open Dry Contact
Door Position Switch Input	Normally Closed Dry Contact
Mechanical Dimensions	4.5" H x 2.75" W x 0.60" D
Environment	Indoor or Outdoor
Temperature Tolerance	-31°F to 151°F (-35ºC to 66°C)
Front End Cable Type	Stranded and Shielded
Front End Distance and Wire Gauge	1000 Ft. – 18AWG; 500 Ft – 20 AWG; 250 Ft. – 22 AWG

LED/Sounder Indications

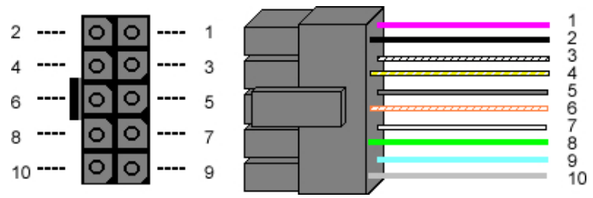
Indicator	Description
Steady Red	Door Locked
Steady Green	Door Unlocked (timed or latched)
Yellow Flashing Slowly	Program Mode
Solid Yellow	Program Error or Error Lockout
Alternating Red/Green	Awaiting 2nd PIN of Two-Part User
LED's Cycling Left to Right	Over Voltage Warning
LED's Cycling Right to Left	Under Voltage Warning
3 Rapid Beeps	Invalid Code
Pair of Double Beeps	User Lockout Activated
Single Double Beep	User Lockout Canceled
1 Long Beep, 1 Short Beep	Access Denied, User Disabled
1 Long Beep, 3 Short Beeps	Access Denied, User Lockout
1 Long Beep, 5 Short Beeps	Access Denied, Code Mismatch
6 Quick Beeps	Toggle Mode Activated
Sounder ¼ sec on, ¼ sec off	Audio Alert 1
Beep Every 2 seconds	Audio Alert 2

Circuit Board Diagram



Note: J3 is for the external relay board.

Main Wire Harness (P2)



Pin	Wire Color	Description
1	Red	V+ (Keypad Power)
2	Black	V- (Keypad Power)
3	White/Black	Wiegand Data 0/Secured Series Data
4	White/Yellow	Wiegand Data 1/Secured Series Data
5	Brown	Request to Exit (REX)/LED1
6	White/Orange	Loop Common
7	White	Door Position Switch Input
8	Green	Main Relay Normally Open
9	Blue	Main Relay Common
10	Gray	Main Relay Normally Closed

Auxiliary Relay Wire Harness (J2)

Pin	Wire Color	Description
1	Green	Aux Relay Normally Open
2	Blue	Aux Relay Common
3	Gray	Aux Relay Normally Closed

Mounting the Keypad

The keypad is designed to be flush mounted using a standard single-gang electrical box. Mounting height can vary depending on requirements. An appropriate range is typically between 48 and 52 inches on center off the floor.

For outdoor installations, use a weatherproof back box and seal the wire entry locations with silicone and provide a drain hole. In addition, use the anti-oxidant grease pack for the wire harness connectors.

Keypad Operating Modes

The 2000 Series e/eM Keypad has three operating modes: Standalone Mode, Secured Series Front End Mode and Wiegand Front End Mode. Below is a brief explanation of each mode. Refer to the programming section on the opposite side for selecting each mode.

Standalone Mode:

By default, the keypad is programmed for Standalone Mode. In this mode, all the users and other programming options are maintained within the keypad and no additional controller is required. The lock and all other inputs and outputs are connected directly to the keypad.

Secured Series Front End Mode:

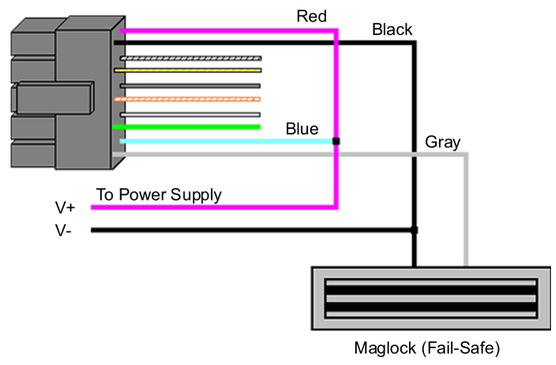
In Secured Series Front End, an IEI Secured Series Controller is required. The IEI Secured Series Controller maintains the users and programming options and makes all the access control decisions. The locking device and all inputs and outputs are connected to the controller.

Wiegand Front End Mode:

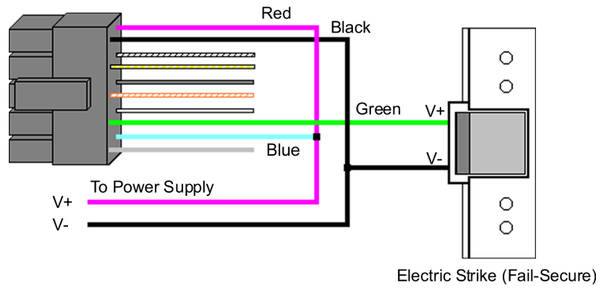
In Wiegand Front End, a separate Wiegand Access Control panel is required. When you enter a code on the keypad it is then sent to the control panel as Wiegand card data, depending on which format you've programmed it for. The control panel maintains the users and programming options and makes all the access control decisions. The locking device and all inputs and outputs are connected to the control panel.

Standalone Mode Wiring Diagrams

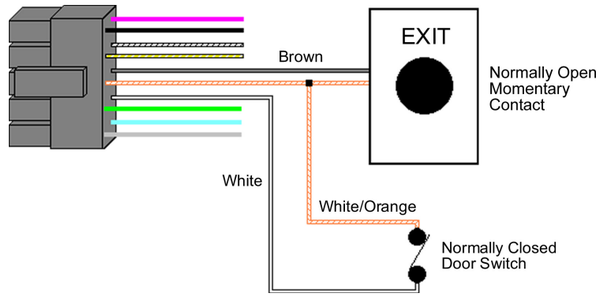
Wiring a Maglock (Fail-Safe)



Wiring an Electric Door Strike (Fail-Secure)

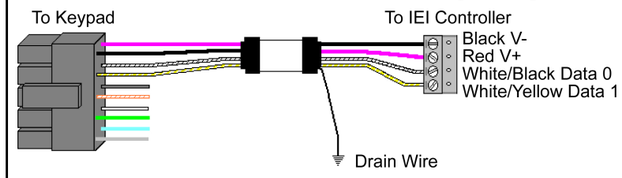


Wiring the REX and Door Position Switch

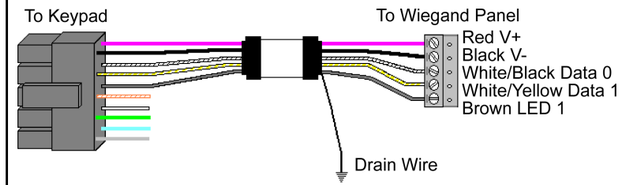


Note: By default, the forced door and propped door outputs are assigned to the audio alerts. When you power up the keypad for the first time and door contacts are not connected, you may hear audio alert #1 immediately followed by audio alert # 2 thirty seconds later. If you are not using door contacts you must either short the white and white/orange wires together or disable the audio alerts.

Secured Series Front End Wiring Diagram



Wiegand Front End Wiring Diagram



Changing the Master Code

The first step in setting up your keypad is to enter program mode and change the master code. The default master code is 1234.

1. Enter Program Mode.

   Press: **99 # master code ***

   Yellow LED Flashes Slowly

2. Change Master Code.

   Press: **1 # new master code * repeat code ***

   Yellow LED Flashes Slowly

3. Exit Program Mode

   Press: ***

   The Yellow LED Stops Flashing

Note: If you don't know the master code, perform the program mode loopback to enter program mode: short the white/yellow, brown and white wires together on power up.

Programming a Supervisor Code

Use the following command sequence to program a supervisor code, which is stored user location 2. The supervisor is only allowed to add, delete and disable users (all the commands in the Programming Users section in the next column).

1. Enter Program Mode.

   Press: **99 # master code ***

   Yellow LED Flashes Slowly

2. Change Master Code.

   Press: **2 # supervisor code * repeat code ***

   Yellow LED Flashes Slowly

3. Exit Program Mode

   Press: ***

   The Yellow LED Stops Flashing

Selecting Secured Series Front End Mode

Perform the following command sequence to select Secured Series Front End Mode.

1. Enter Program Mode.

   Press: **99 # master code ***

   Yellow LED Flashes Slowly

2. Select Secured Series Front End Mode

   Press: **1032 # 0 # 2 # ****

   Yellow LED Flashes Slowly

3. Exit Program Mode

   Press ***

   The Yellow LED Stops Flashing

Selecting Wiegand Front End Mode

Perform the following command sequence to select Wiegand Front End Mode.

1. Enter Program Mode.

   Press: **99 # master code ***

   Yellow LED Flashes Slowly

2. Select Wiegand Front End Mode

   Press: **1032 # 0 # 1 # ****

   Yellow LED Flashes Slowly

3. Exit Program Mode

   Press ***

   The Yellow LED Stops Flashing

Note: To change the keypad back to Standalone Mode enter: **1032 # 0 # 0 # ****** while in programming mode.

Programming Users

(Standalone Mode Only)

The unit can hold up to 500 users. Codes are 1 to 10 digits in length.

Command/Action	Keys to Enter/Details
Add Standard User (short)	**user location # code * code ***
Add Standard User with Specific Unlock Time	**unlock time # user location # code * code ***
Add Enhanced User	**60 # user type # user location # code * code ***
Add User to Trigger Specific Outputs (Lock, OUT2-10)	**59 # outputs # user location # code * code *** (1 = Lock, 2 = OUT2, 3 = OUT 3, Etc)
Disable User	**56 # 0/1 # user location # **** (0 = enabled; 1 = disabled)
Delete User	**user location # ****

User Types (Enhanced Users)

(Standalone Mode Only)

When programming enhanced users enter the number in the user type field (ie. 0 for toggle user).

User Types	Description
Toggle User (0)	Latches the Lock Output
Standard User (1)	Standard Timed User
Lockout User (3)	Locks Out other Users
Single Use Code (5)	Can only be Used Once
Emergency User (7)	Can't be Locked Out
Duress User (8)	Activates Lock and Duress Outputs
Two-Part User Type A (9)	One half of two-part user combination
Two-Part User Type B (10)	One half of two-part user combination

Configuring Outputs

(Standalone Mode Only)

Command/Action	Keys to Enter/Details
Change Lock Output Time	**11 # time # 0 # **** (1-255 sec)
Assign Outputs	**10 # virtual output # physical output # ****

Virtual Outputs	Physical Outputs
1 – Lock Output	1 – Main Relay
2 – Alarm Shunt	2 – Aux Relay
3 – Propped Door	3 – External Relay 1
4 – Forced Door	4 – External Relay 2
5 – OUT2	5 – External Relay 3
6 – OUT3	6 – External Relay 4
7 – OUT4	7 – External Relay 5
8 – OUT5	8 – External Relay 6
9 – OUT6	9 – External Relay 7
10 – OUT7	10 – External Relay 8
11 – OUT8	11 – Audio Alert 1
12 – OUT9	12 – Audio Alert 2
13 – OUT10	
14 – Duress Output	
15 – Panic Output	**Note:** The keypad is equipped with only two relays. The Output Expansion Module (2000-8EX) is required to use additional outputs.
16 – Keypad Active Output	
17 – Door Bell Output*	
18 – REX Input Active	
19 – Door Loop Input Active	

***Note:** The Door Bell Output also works in both Front End Modes.

Disable Virtual Output	**10 # virtual output # 0 # ****
Disable Physical Output	**10 # 0 # physical output # ****
Programming the REX/Door Loop Outputs (Lock, OUT2-10)	**49 # outputs # input # **** (Lock =1, OUT2 = 2, OUT3 = 3)
Set OUT2 Time Duration	**12 # ttt # mmm # ****
Set OUT3 Time Duration	**13 # ttt # mmm # ****
Set OUT4 Time Duration	**14 # ttt # mmm # ****
Set OUT5 Time Duration	**15 # ttt # mmm # ****
Set OUT6 Time Duration	**16 # ttt # mmm # ****
Set OUT7 Time Duration	**17 # ttt # mmm # ****
Set OUT8 Time Duration	**18 # ttt # mmm # ****
Set OUT9 Time Duration	**19 # ttt # mmm # ****
Set OUT10 Time Duration	**110 # ttt # mmm # ****
Set Propped Door Time	**44 # time # 0 # **** (10-990 sec)
Set Forced Door Time	**45 # time # 0 # **** (10-990 sec)

Notes: The default output settings are: Lock Output = Main Relay; Alarm Shunt = Aux Relay; Forced Door = Audio Alert 1; Propped Door = Audio Alert 2.

OUT2-10: ttt = time units; mmm = multiplier. Ex: “12 # 2 # 5 # **” = 10 seconds (2 time units multiplied by 5 seconds = 10 seconds). The maximum value of ttt and mmm is 255 (255 x 255). The default output times (Lock Output, OUT2-10) are 5 seconds. To toggle the output enter 0 for both ttt and mmm; Ex: 12 # 0 # 0 # **.

Command 49 Input Number: 0 = REX; 1 = Door Loop.

Programming Keypad Settings

(Default settings are in **bold**)

Command/Action	Keys to Enter/Details	
Change Keypad Options	**30 # option # setting # ****	
Option	**Setting**	
0 – Audio Keypress Feedback	0 = Disabled	**1 = Enabled**
1 – Visual Keypress Feedback	0 = Disabled	**1 = Enabled**
2 – Auto Entry	**0 = Disabled**	1 = Enabled
3 – Error Lockout	0 = Disabled	**1 = Enabled**
4 – User Lockout	0 = Disabled	**1 = Enabled**
5 – Two-Part Users	0 = Disabled	**1 = Enabled**
6 – Keypad Backlighting	0 = Disabled	**1 = Enabled**
7 – Keypad Backlight Dimming	0 = Disabled	**1 = Enabled**
8 – REX Processing Select	0 = Only when door closed	**1 = Always**
9 – Red LED Dimming	0 = Off when backlighting dim	**1 = Always On**
10 – Door Loop Output Processing	0 = Not when lock latched	**1 = Always**
16 – Secured Series In/Out	**0 = Records IN**	1 = Records Out
18 – 8-Bit Burst Output	**0 = Disabled**	1 = Enabled
19 – WFE Red LED Select	0 = Disabled	**1 = Enabled**
20 – WFE Red LED Active State	**0 = Low**	1 = High
21 – WFE Green LED Select	0 = Disabled	**1 = Enabled**
22 – WFE Green LED Active State	0 = Low	**1 = High**

Note: WFE means Wiegand Front End

Change Keypad Parameters	32 # parameter # value # **
Parameter	**Value**
0 – Duress Output Duration	1 – 255 Seconds (**default = 5**)
1 – Panic Output Duration	1 – 255 Seconds (**default = 5**)
2 – Error Lockout Threshold	1 – 50 Attempts (**default = 3**)
3 – Error Lockout Duration	1 – 255 Seconds (**default = 10**)
4 – Auto-Entry Count	2 – 10 Digits (**default = 4**)
10 – Wiegand Format	1 – 8 (**default = 1, 26-Bit**)
11 – Wiegand Pulse Width	1 – 255 (**default = 8, 160µS**)
12 – Wiegand Interpulse Spacing	1 – 255 (**default = 32, 640µS**)

Note: See Wiegand Format Chart located in the manual on website.

Change Wiegand Parameters	34 # parameter # value # **
Parameter	**Value**
0 – Wiegand Site ID	Refer to Wiegand Format Chart
1 – Wiegand Group ID	Refer to Wiegand Format Chart

Note: The default setting for both settings is 0.

Resetting the Keypad

Command/Action	Keys to Enter/Details
Reset Defaults Only	**40 # 00000 # 00000 # ****
Reset Entire Keypad	**46 # 00000 # 00000 # ****

Note: This does not reset the keypad operating mode.