

# Installation/Owner's Manual

# Models 1504 / 1506

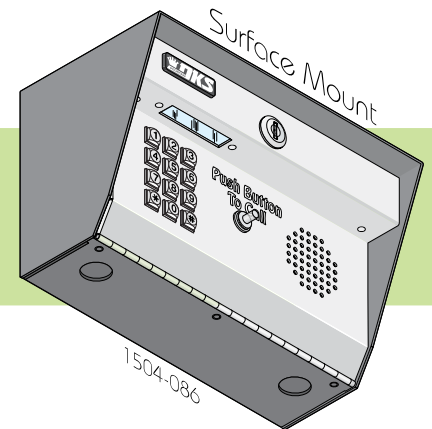
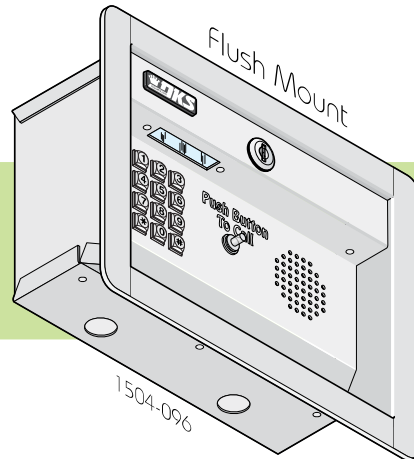
Programmable Stand Alone Digital Keypad Entry Devices

Use this manual for circuit board 1506-010 Revision G or higher.

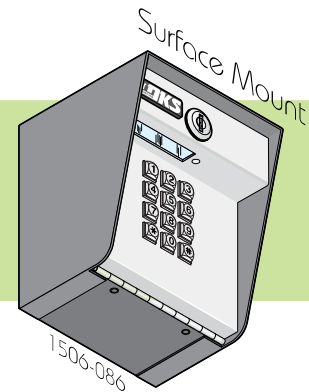
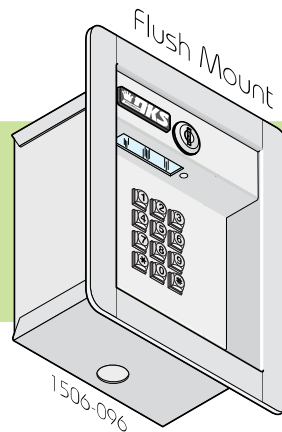
1506-065-L-2-18

Control a main entry point plus an additional entry point.

**1504**  
with Intercom



**1506**



Date Installed: \_\_\_\_\_

Installer/Company Name: \_\_\_\_\_

\_\_\_\_\_

Model Number \_\_\_\_\_

Phone Number: \_\_\_\_\_

Circuit Board  
Serial Number  
and Revision Letter: \_\_\_\_\_

**Leave Manual with Owner**

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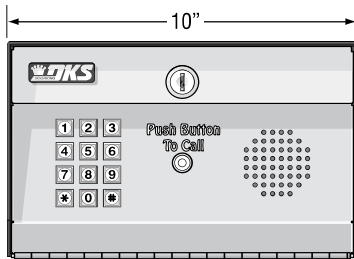
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# 1504 SPECIFICATIONS

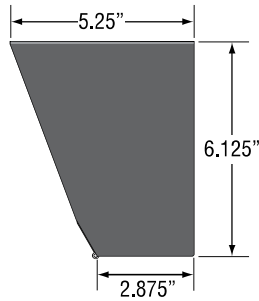
## 1504 Surface Mount Dimensions

P/N 1504-086

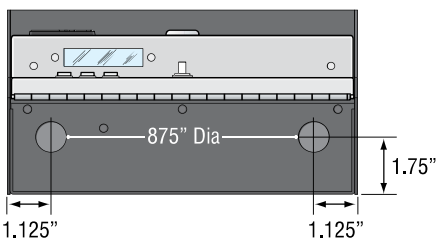
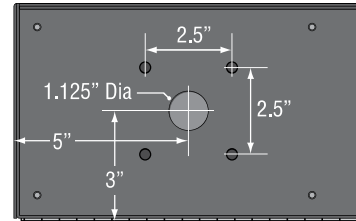
**Front View**



**Side View**

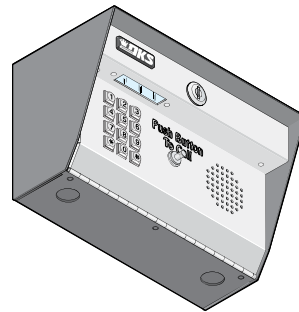


**Back View**



**Bottom View**

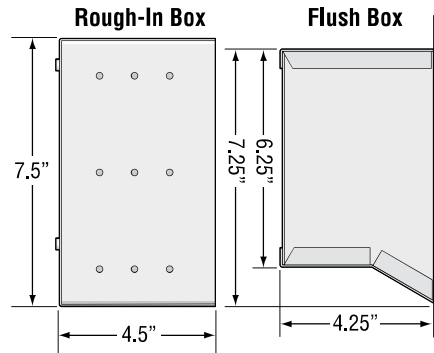
**Mounting Note:**  
Can be mounted on a DoorKing  
gooseneck mounting post.



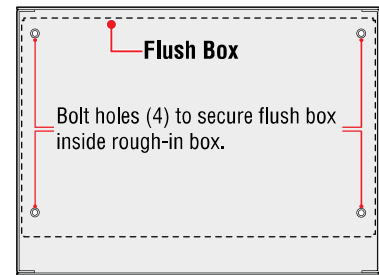
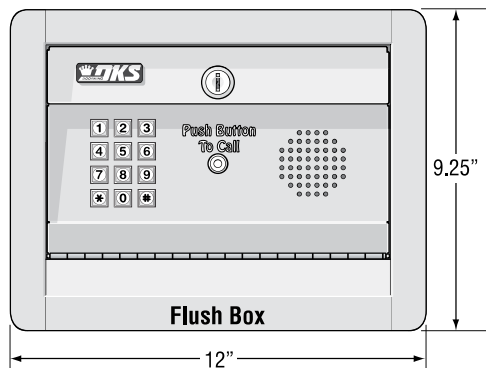
## 1504 Flush Mount Dimensions

P/N 1504-096

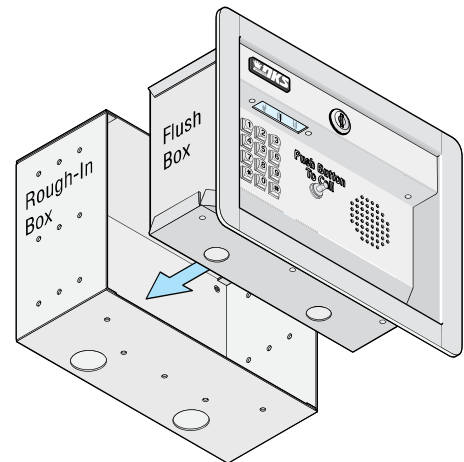
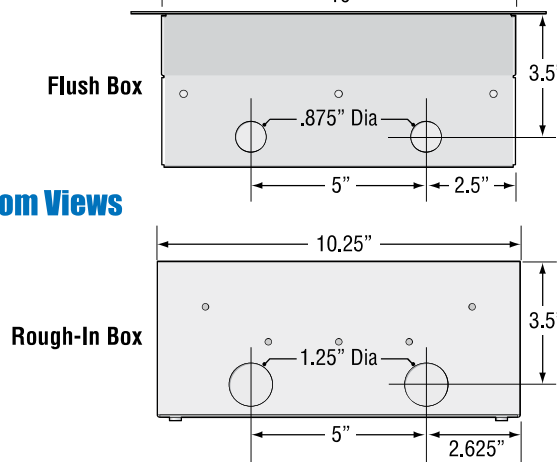
**Side Views**



**Front Views**



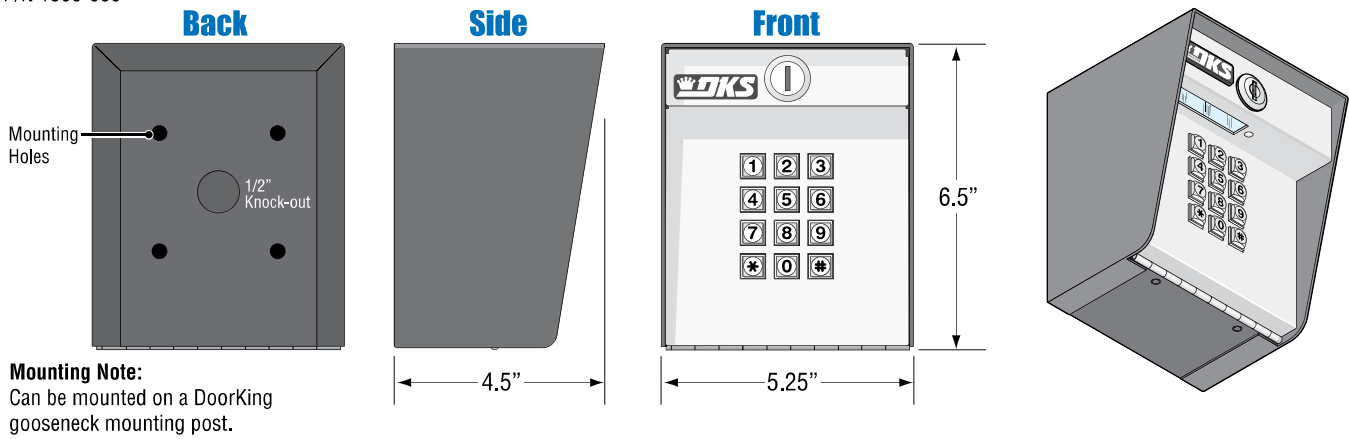
**Bottom Views**



# 1506 SPECIFICATIONS

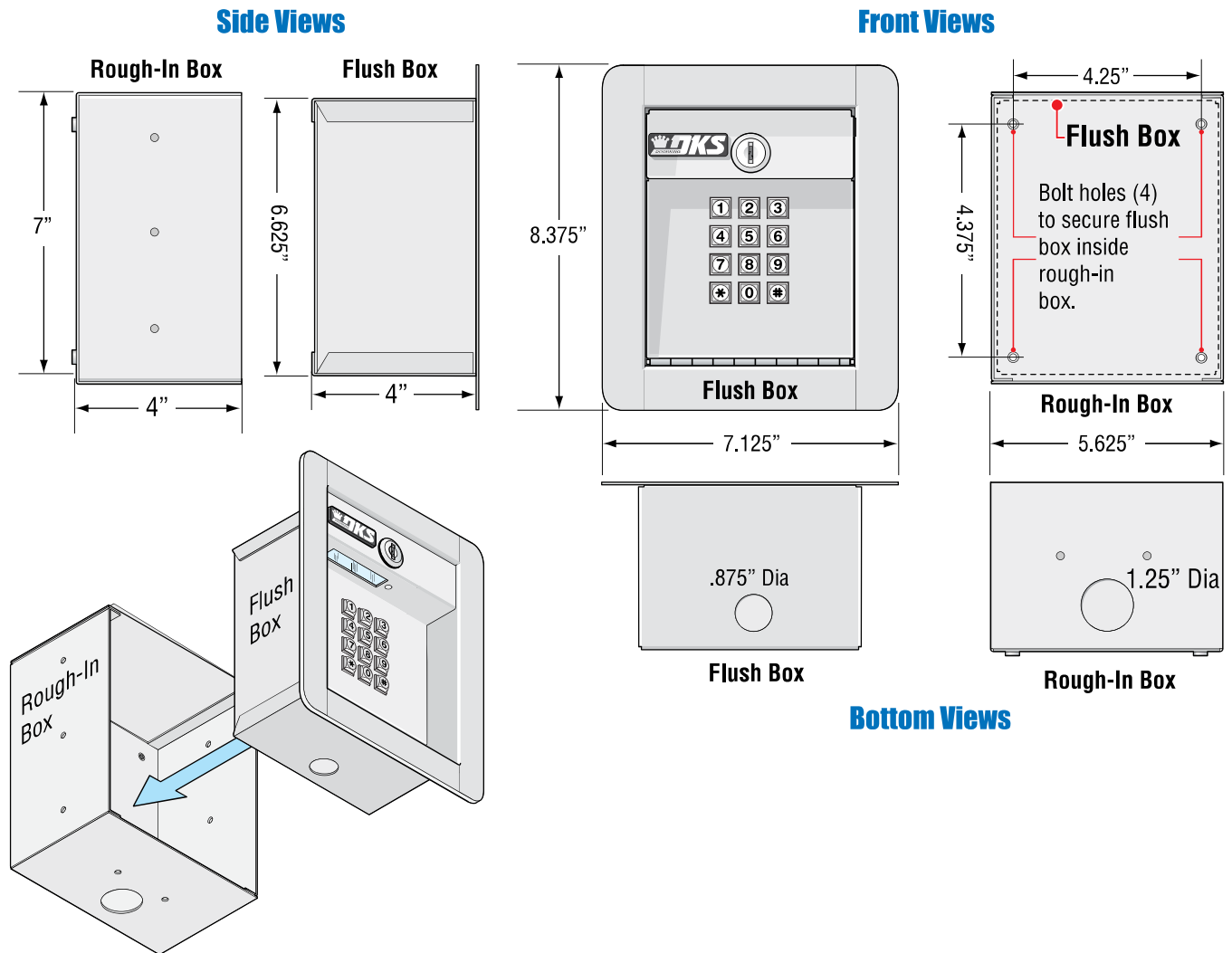
## 1506 Surface Mount Dimensions

P/N 1506-086



## 1506 Flush Mount Dimensions

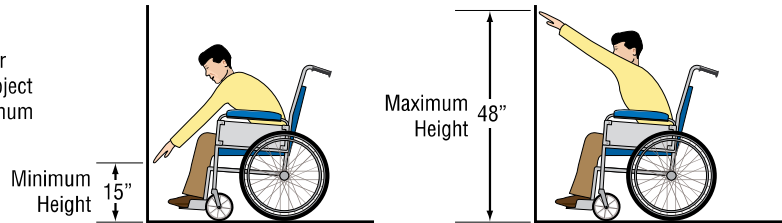
P/N 1506-096



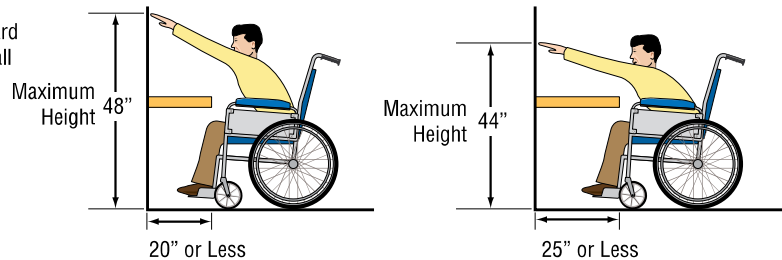
# General Information

- Prior to beginning the installation of the entry device, we suggest that you become familiar with the instructions, illustrations, and wiring guidelines in this manual. This will help insure that you installation is performed in an efficient and professional manner.
- The proper installation of the entry device is extremely important. Check all local building ordinances and building codes prior to installing this device. Be sure your installation is in compliance with local codes.
- When used to control a door or pedestrian gate, try to locate the entry device as near as possible to the entry point. The unit should be mounted on a rigid wall to prevent excessive shock and vibration from closing doors or gates. Continuous vibration and shock from slamming doors or spring-loaded pedestrian gates will damage the circuit board. **Under no circumstances should the unit be mounted directly to a moving door or gate.**
- **ADA mounting requirements for door control (Ref: ICC/ANSI A117.1-2009).** The requirements below apply **ONLY** when the entry device is being used to control entry through **A PUBLIC DOOR ONLY**. If this system is used to control entry through a **vehicular gate or private entrance**, the dimensions noted below **do not apply**.

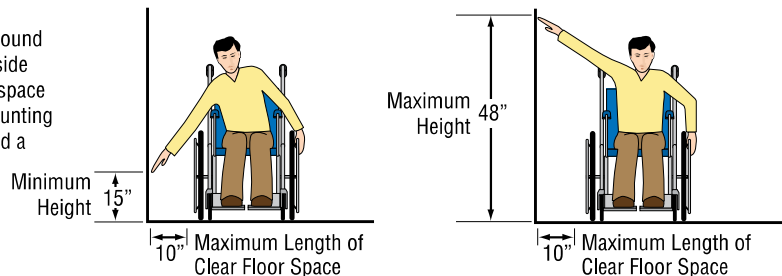
**1. Unobstructed Forward Reach.** Where a clear floor or ground space allows only a forward approach to an object and is **unobstructed**, mounting height shall be a minimum of **15 inches** (381 mm), and a maximum of **48 inches** (1.22 m), above the floor or ground to the operable controls.



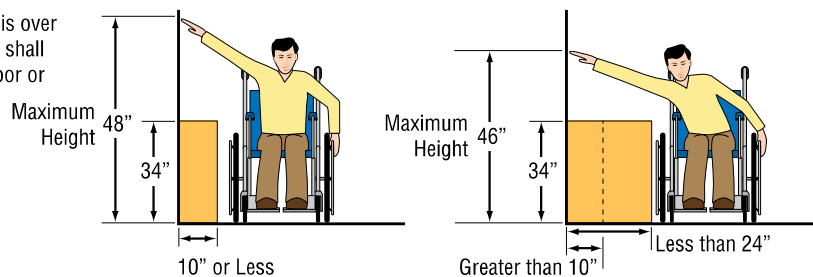
**2. OBSTRUCTED HIGH Forward Reach.** If the high forward reach is over an obstruction, reach and clearances shall be as shown. **NOTE: If the height of a control is 48" maximum, then the length of the obstruction must be 20" or less. If the height of a control is 44" maximum, then the length of the obstruction may be increased to 25" or less.**



**3. Unobstructed Side Reach.** Where a clear floor or ground space allows a parallel approach to an object and the side reach is **unobstructed**, and the edge of the clear floor space is **10 inches** (255 mm) maximum from the object, mounting height shall be a minimum of **15 inches** (380 mm), and a maximum of **48 inches** (1.22 m), above the floor or ground to the operable controls.



**4. OBSTRUCTED HIGH Side Reach.** If the side reach is over an obstruction **10 inches or less**, mounting height shall be a maximum of **48 inches** (1.21 m) above the floor or ground to the operable controls. If the side reach is over an obstruction **greater than 10 inches, but less than 24 inches**, mounting height shall be a maximum of **46 inches** (1.17 m) above the floor or ground to the operable controls.



- **When used to control a vehicular gate with an automatic gate operator, the entry device must be mounted a minimum of six (6) feet away from the gate and gate operator, or in such a way that a person cannot operate the entry device and/or touch the gate or gate operator at the same time.**
- Be sure that the device is installed so that it is not directly in the traffic lane. Goose neck mounting post and kiosks work well for these type devices. When planning where to locate the device, take into consideration traffic lane layouts, turn around lanes for rejected access, conduit runs, power availability, etc.
- Environmental factors must also be taken into account. Surface mount units are designed for direct outdoor installations, however it is preferable to protect them from direct exposure to driven rain or snow whenever possible. Flush mount units must be protected from direct exposure to the elements.
- This entry device contains a number of static sensitive components that can be damaged or destroyed by static discharges during installation or use. Discharge any static prior to removing the circuit board from the lobby panel by touching a proper ground device.
- **Instruct the end user to read and follow these instructions. Instruct the end user to never let children play with or operate any access control device. This Owner's Manual is the property of the end user and must be left with them when installation is complete.**

# Important Notices

- Prior to starting the installation, become familiar with the instructions, illustrations and wiring diagrams in this manual.
- Never mount this device to a moving gate or gate panel, or next to a gate that causes vibration to the fence, such as a spring-loaded pedestrian gate. Continuous vibration from moving or slamming gates can cause damage to the unit in time.
- **If this system is used to activate an automatic vehicular gate operator, it must be mounted in such a way that the user cannot come into contact with the gate or the gate operator when the device is used. We recommend that the unit be installed a minimum of 6 feet away from the gate and gate operator.**
- Always disconnect power when performing service on the system.
- If the unit is mounted outdoors, be sure that the wiring to the unit is designed for direct underground burial, even if the wire is run inside a conduit.
- Surge suppression is recommended on the low voltage input power line.
- Instruct the end user on the safe and proper operation of this device.
- **Instruct the end user to read and follow these instructions. Instruct the end user to never let children play with or operate any access control device. This Owner's Manual is the property of the end user and must be left with them when installation is complete.**

## SECTION 1 - INSTALLATION

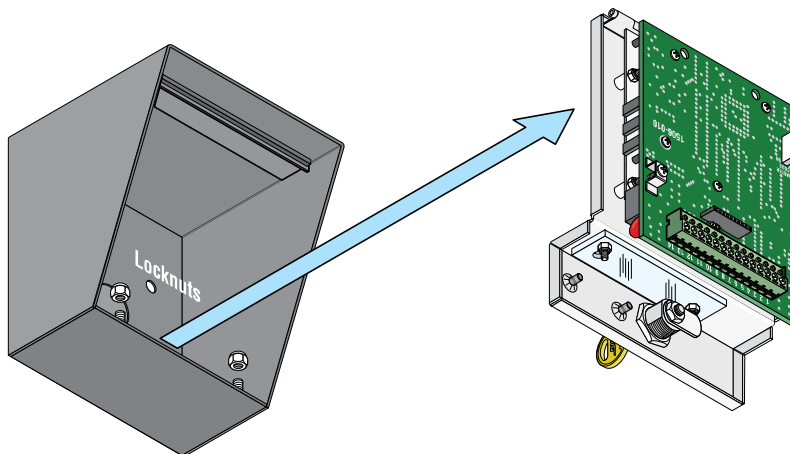
Destructive Attack:	Level I
Line Security:	Level I
Endurance:	Level IV
Standby Power:	Level I

Do not mount the 1504/1506 keypad to a moving gate, or immediately next to a gate panel or pedestrian gate. Continuous vibration from slamming gates and vibration can cause damage to the system over time.

**WARNING!** If the keypad is used to activate a vehicular gate operator, it must be mounted a minimum of 6 feet away from the gate and gate operator, or in such a way that the user cannot come into contact with the gate or gate operator while using the device.

### 1.1 Remove Faceplate from Cabinet

1. Open housing with key (surface or flush mount).
2. Remove locknuts from hinge on faceplate to remove faceplate.



**Discharge any static BEFORE removing the faceplate by touching a proper ground device.**

Store faceplate in a safe place during installation.

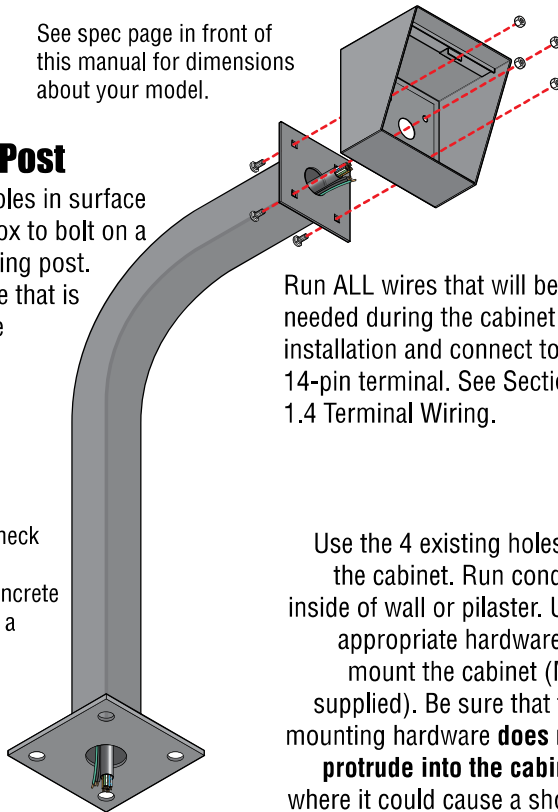
## 1.2 Surface Mount

See spec page in front of this manual for dimensions about your model.

### Mount on a Post

Use existing 4 holes in surface mount cabinet box to bolt on a DoorKing mounting post. Use the hardware that is supplied with the mounting post.

**Note:** A gooseneck mounting post anchored in concrete does not make a good ground.



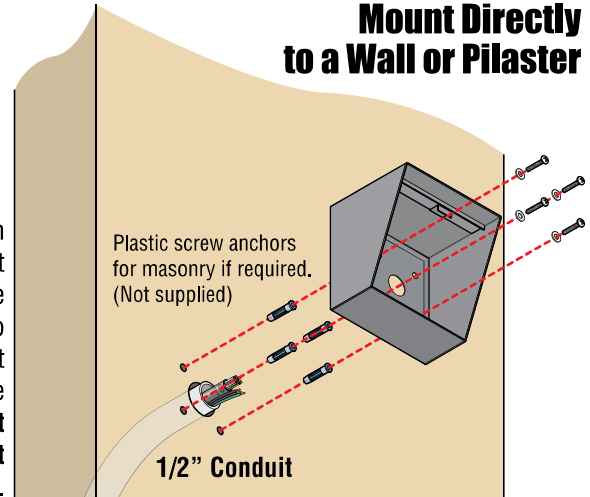
Run ALL wires that will be needed during the cabinet installation and connect to 14-pin terminal. See Section 1.4 Terminal Wiring.

Use the 4 existing holes in the cabinet. Run conduit inside of wall or pilaster. Use appropriate hardware to mount the cabinet (Not supplied). Be sure that the mounting hardware **does not protrude into the cabinet** where it could cause a short.

**IMPORTANT:** Be sure to clean out the cabinet of any debris that can cause a short. All necessary wiring should be connected to the 14-pin terminal. See Section 1.4 Terminal Wiring.

Surface mount cabinet can be mounted directly to a wall or pilaster. They can be post mounted using a DoorKing mounting post (there are several different styles available). Be sure keypad is securely mounted and is not subject to continuous vibration from closing doors or gates.

### Mount Directly to a Wall or Pilaster

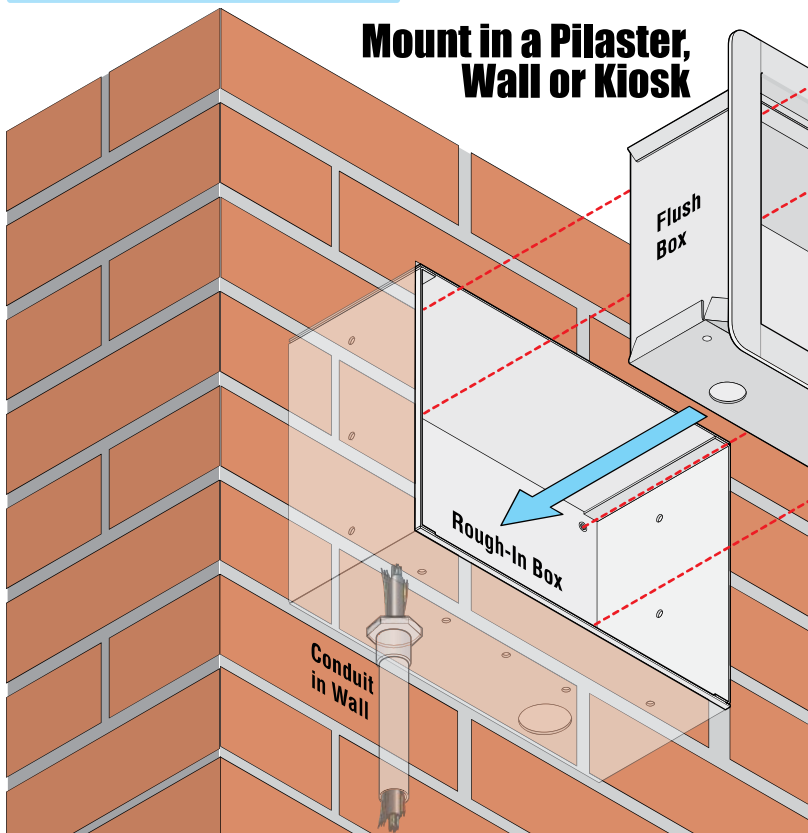


Plastic screw anchors for masonry if required. (Not supplied)

1/2" Conduit

## 1.3 Flush Mount

### Mount in a Pilaster, Wall or Kiosk



Bolt flush box into the rough-in box with 4 supplied bolts.

See spec page in front of this manual for dimensions about your model.

Mount rough-in box into the pilaster, wall or kiosk. Run conduit inside wall into bottom of rough-in box if desired. Use appropriate hardware (Not supplied) to secure the rough-in box in place.

**IMPORTANT:** Be sure to clean out the cabinet of any debris that can cause a short. All necessary wiring should be connected to the 14-pin terminal. See Section 1.4 Terminal Wiring.



# 1.4 Terminal Wiring

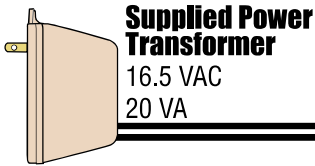
Attach a separate 12 AWG wire to GND (earth ground). Attach the other end of this wire to a good earth ground. This can be a properly grounded metal conduit, a cold water pipe, or a grounding rod driven at least 10 feet into the soil. A gooseneck post anchored or mounted on concrete does not make a good ground. Avoid any splices in wiring. If a splice is made, it must be soldered and sealed in a watertight junction box.

**Keypad MUST be Properly Grounded!**

**Earth Ground**



Note: A low voltage power surge suppressor (P/N 1878-010) is recommended.



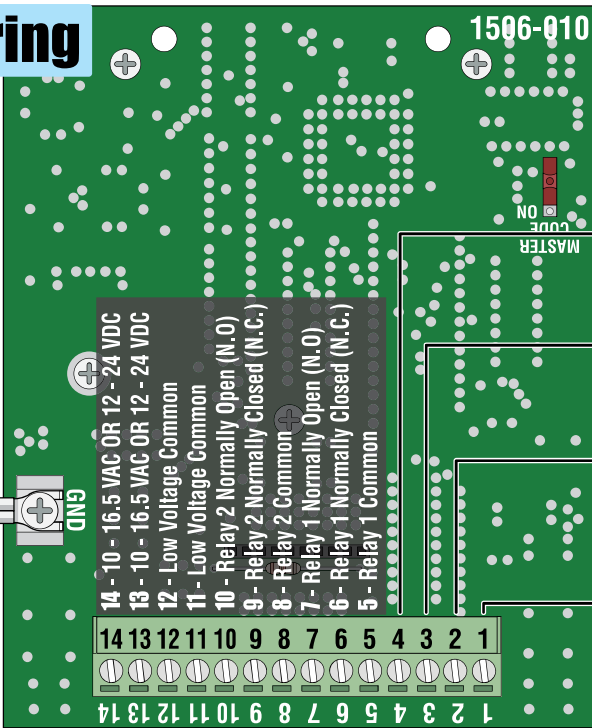
### Power Input

Wire Size	MAX Distance
18 AWG	100 Ft.
16 AWG	200 Ft.

Keep power wiring as short as possible.

Note: 12-24 VDC may also be used to power the 1504/1506.

- Current Draw with 16 Volt AC Input: 100mA at rest; 275mA with relay activated.
- Current Draw with 12 Volt DC Input: 30mA at rest; 145mA with relay activated.
- Current Draw with 24 Volt DC Input: 50mA at rest; 165mA with relay activated.

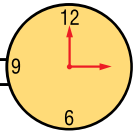


- 4** - A switch closure to **TERMINAL 11** will lock out all entry codes within the **TIME ZONE 1** lower and upper boundary.
- 3** - A switch closure to **TERMINAL 11** will lock out all entry codes within the **TIME ZONE 2** lower and upper boundary.
- 2** - **DOOR OPEN** – A switch closure to **TERMINAL 12** will cause the relay that is activated to deactivate **1 second** after this input is activated. Can also be used for alarm bypass.
- 1** - **REQUEST TO EXIT** – A switch closure to **TERMINAL 12** will activate **RELAY 1** for its programmed strike time.

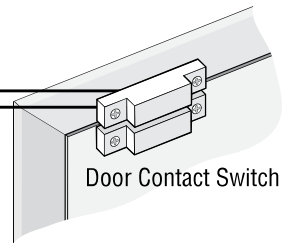
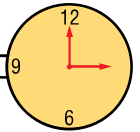
**Relay 2 Input for Door or Gate**

**Relay 1 Input for Door or Gate**

External Time Clock **Time ZONE 2**

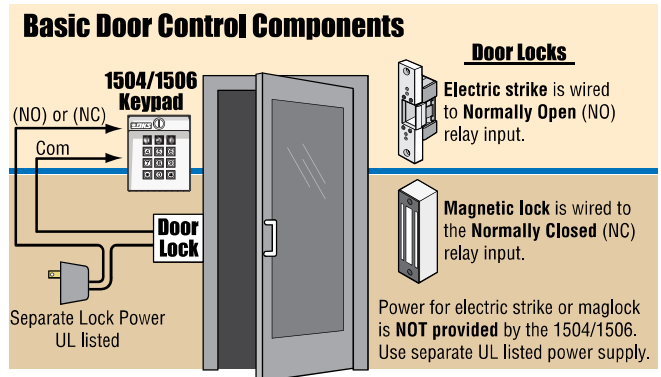
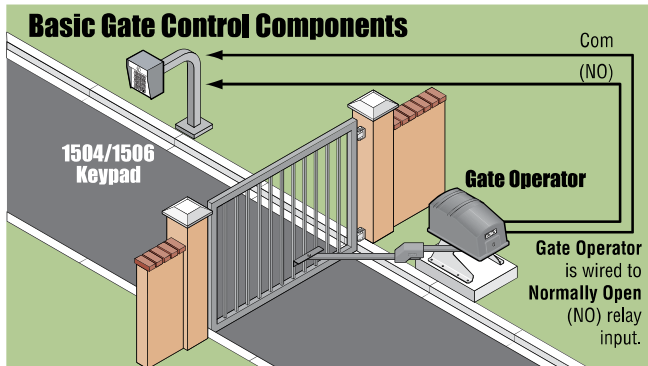


External Time Clock **Time ZONE 1**



## Relay 1 and Relay 2 Input Options

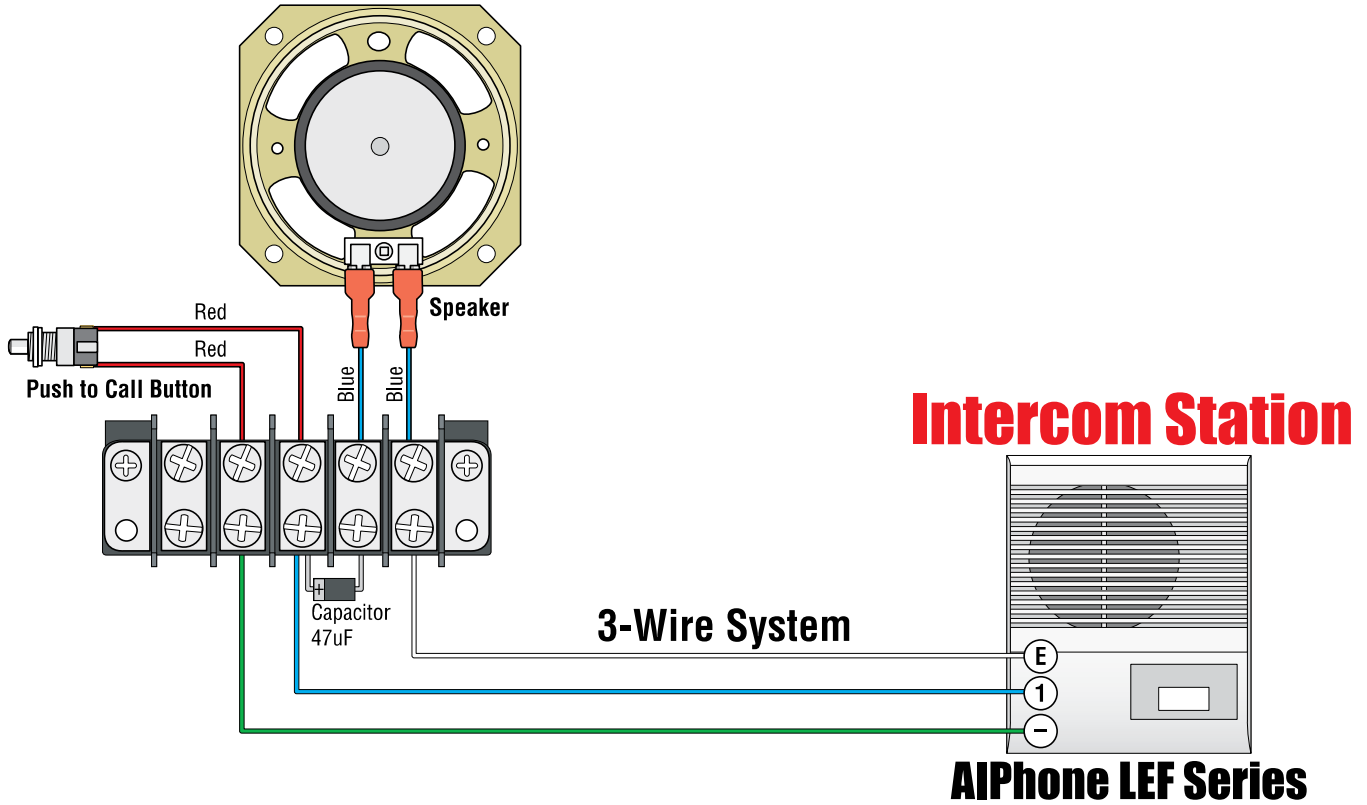
Relay contacts are rated for 30 Volt, 1 amp maximum power.



# 1.5 1504 Aiphone Intercom Station Connections

These wire diagrams are provided for convenience only. For detailed wiring information on Aiphone products, visit their website at [www.aiphone.com](http://www.aiphone.com).

## 1504



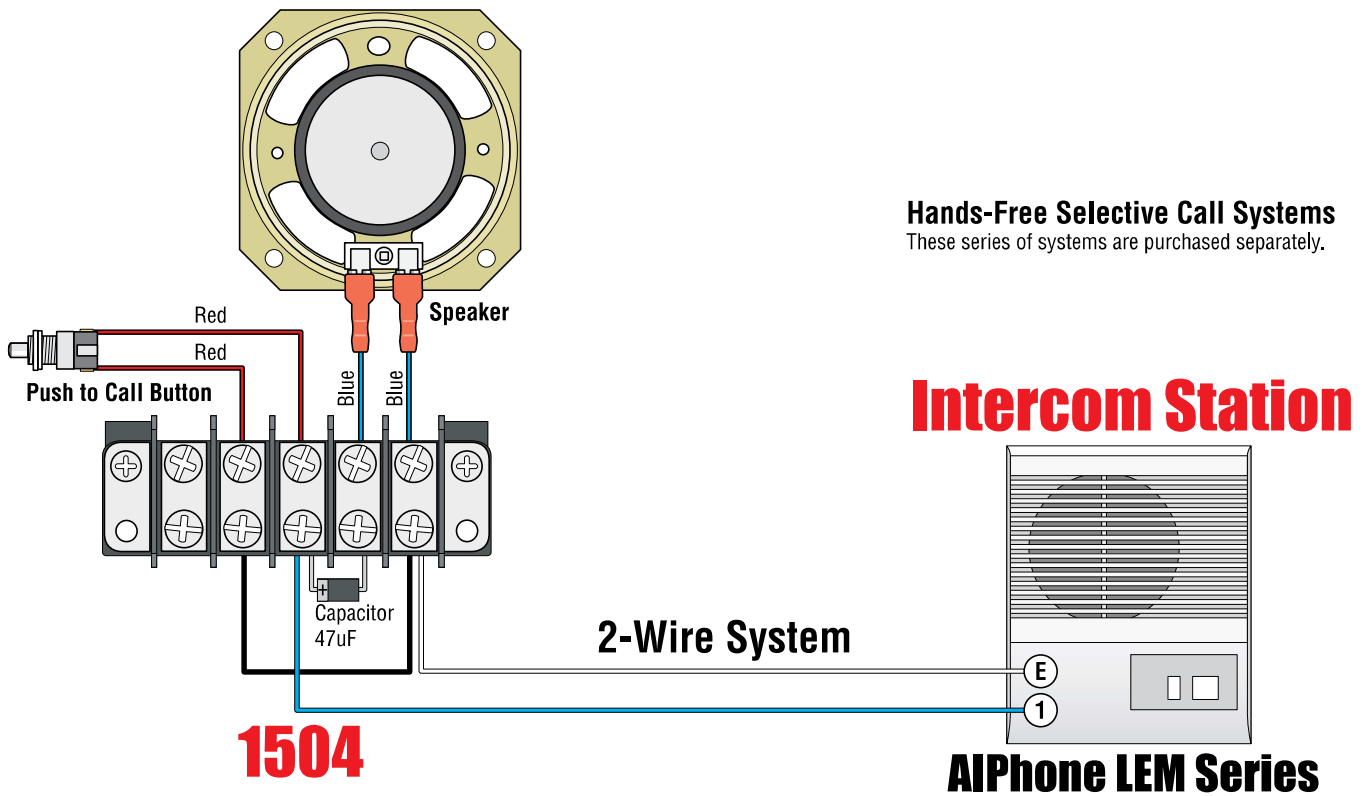
## Intercom Station

### AIPhone LEF Series

**Hands-Free Selective Call Systems**

These series of systems are purchased separately.

## Intercom Station



## 1504

### AIPhone LEM Series

# 1.6 Secondary Keypad Wiring

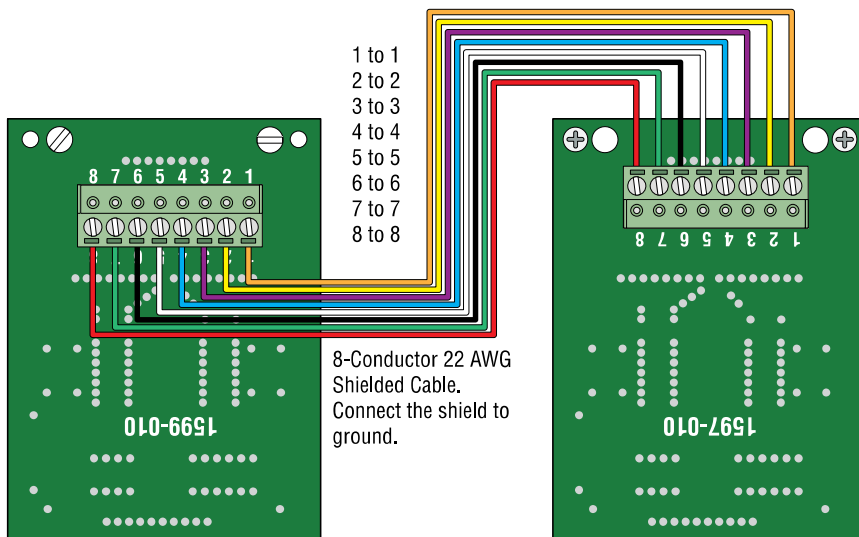
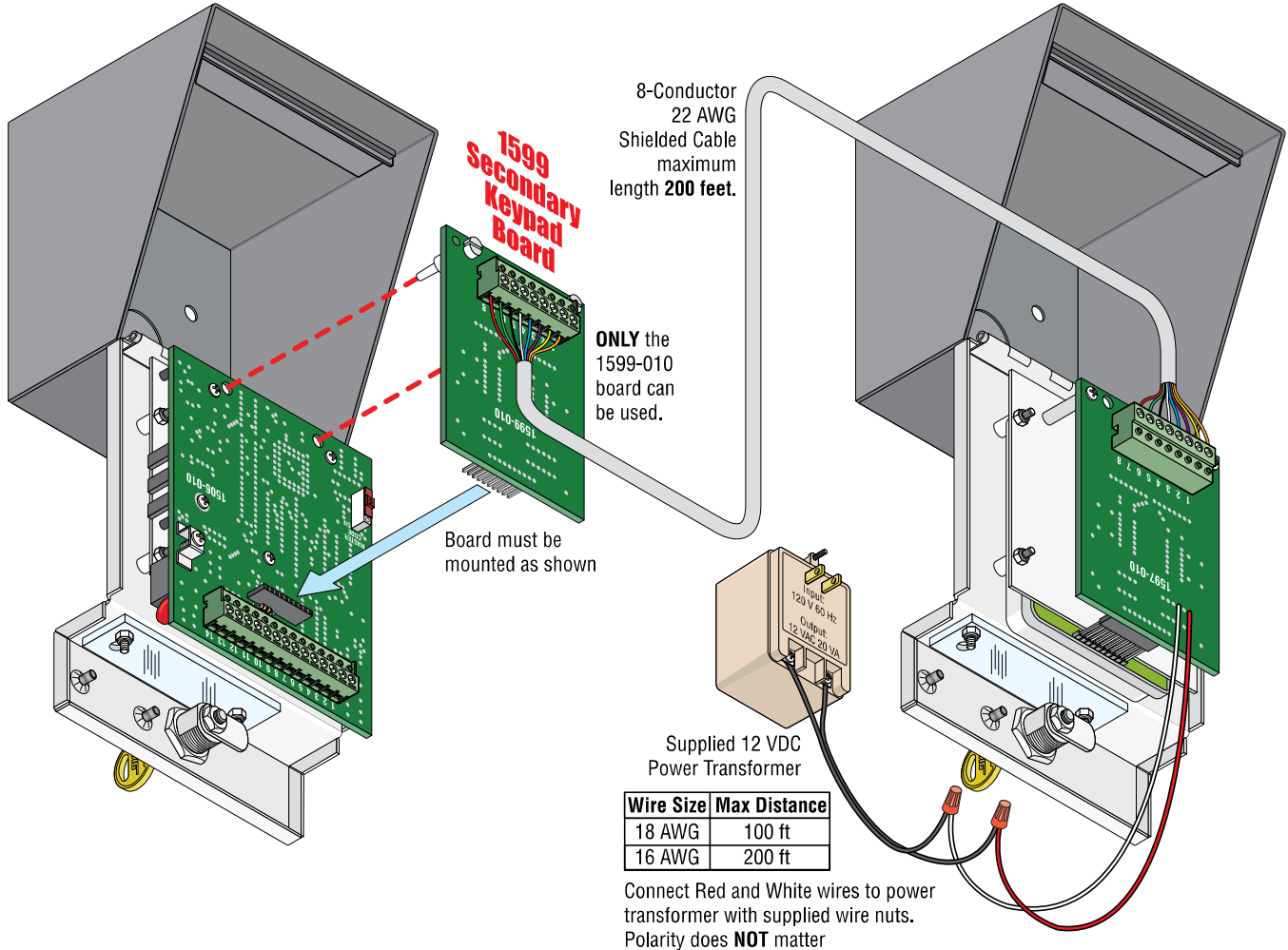
## 1504/1506 Keypad Entry Device

## Secondary Lighted Keypad

P/N 1506-081 Surface Mount (Sold Separately)

P/N 1506-091 Flush Mount (Sold Separately)

**Note:** The secondary keypad has **NO** relays! Valid entry codes entered on the secondary keypad will activate the relays in the 1504/1506 keypad.



**1599 Secondary Keypad Board**

**Secondary Lighted Keypad**

**Secondary Keypad Installation Note:** **DO NOT** mount the secondary keypad to a moving gate, or immediately next to a gate panel or pedestrian gate. Continuous vibration from slamming gates and vibration can cause damage to the system over time.

**WARNING!** If the secondary keypad is used to activate a vehicular gate operator, it must be mounted a minimum of 6 feet away from the gate and gate operator, or in such a way that the user cannot come into contact with the gate or gate operator while using the device.

## SECTION 2 - PROGRAMMING

**Before You Start Programming: IMPORTANT!** Make sure the 1504/1506 has power and we suggest that you become familiar with programming instructions before beginning any programming.

Keep a record of the programmed codes by completing the tables on pages 18 and 19.

### 2.1 Re-Programming the Master Code

The Master Code has been pre-programmed at the factory to **9999**. This programming sequence re-programs the **MASTER CODE** if desired. The master code is the four-digit number required to gain access to the system memory. You **MUST** know the master code before programming **ANY** features.



**Important Note:** After re-programming the master code, write it down and keep it in a safe place. **There is no way of retrieving the master code after it has been programmed in.** If you forget it, you will have to program in a new one but all other previously programmed information will remain intact.

**Step 1.** Open the cabinet and locate the Master Code switch on the circuit board. Turn switch **ON**.



**Note:** After you turn ON the master code switch, the system will sound a short tone after 30 seconds if the master code is not entered. This tone will continue every 30 seconds until a new master code is entered, or until the switch is turned off.

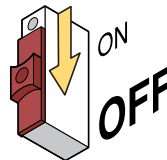
**Step 2.** Enter a four-digit master code using the keypad, then press “\*” (A short beep will be heard).

Actual keystrokes used on keypad:  Then press  “BEEP”

Same keystrokes as written in this manual: [ \_ \_ \_ \_ \* (beep)]

**Step 3.** Turn **OFF** the Master Code switch and close cabinet.

**Write down master code and keep it in a secure place.**



### 2.2 Relay Strike Time

The relay strike time sets the amount of time that the relay(s) will be activated when a valid entry code is entered on the keypad. The unit has two relays, both of which can be programmed with individual strike times. Setting the strike time to “00” will activate the relay for ½ second. It can be set to a max of 99 seconds. Two digits **MUST** be entered in the fields.

**Factory setting is 01 (1 Second).**

1. Press \* 0 3 and enter the MASTER CODE. [**\* 0 3** \_ \_ \_ \_ (beep)]
2. Enter the two-digit strike time for Relay 1 (00-99), then press \*. [ \_ \_ **\***(beep)]
3. Enter the two-digit strike time for Relay 2 (00-99), then press \*. [ \_ \_ **\***(beep)]
4. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

### 2.3 X Strikes for Invalid Entry Code Attempts

This keypad has a **3-minute lockout feature** that is activated when “X” number of **INVALID** entry codes are entered on the keypad. The “X” strikes can be programmed from **1** to **9** invalid attempts before the lockout feature is activated.

**Factory setting is 3 (3 Attempts).**

1. Press \* 0 4 and enter the MASTER CODE. [**\* 0 4** \_ \_ \_ \_ (beep)]
2. Enter the single-digit invalid attempts before the lockout feature is activated (1-9), then press \*. [ \_ **\***(beep)]
3. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

## 2.4 Programming Four-digit Entry Codes

Four-digit entry codes are entered on the **Keypad** preceded by “#” to allow the **RESIDENT ACCESS**. **DO NOT** confuse a **FOUR-digit ENTRY code** with a **FIVE-digit ENTRY code** (see section 2.8).

1. Press \* 0 2 and enter the MASTER CODE. [**\* 0 2** \_\_\_\_ (beep)]
2. Choose and enter a four-digit entry code, then press \*. [ \_\_\_\_ \*(beep)]
3. Repeat step 2 to enter additional four-digit entry codes one at a time.
4. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

## 2.5 Erase a Four-digit Entry Code

**CAUTION:** This programming sequence will delete an **INDIVIDUAL** four-digit entry code that has been **previously** programmed in. This cannot be **UNDONE**.

1. Press \* 0 8 and enter the MASTER CODE. [**\* 0 8** \_\_\_\_ (beep)]
2. Enter an existing four-digit entry code to be erased, then press \*. [ \_\_\_\_ \*(beep)]
3. Repeat step 2 to erase additional existing four-digit entry codes one at a time.
4. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

## 2.6 Erase ALL Four-digit Entry Codes

**CAUTION:** This programming sequence will delete **ALL** four-digit entry codes that have been **previously** programmed in. This cannot be **UNDONE**.

1. Press \* 0 0 and enter the MASTER CODE. [**\* 0 0** \_\_\_\_ (beep)]
2. Enter **9 9 9 9**, then press \*. [**9 9 9 9** \*(beep)]
3. A long beep after approximately 10 seconds indicates that all four-digit entry codes are deleted and programming ends.

## 2.7 Four-digit Entry Code Divide Number

The **four-digit entry codes** can be made to activate either **Relay 1** or **Relay 2** by programming a four-digit “divide” number. Four-digit entry codes **EQUAL TO** or **LESS THAN** the divide number will activate **Relay 1**, while four-digit entry codes **GREATER THAN** the divide number will activate **Relay 2**. If **NO** divide number is programmed (enter # # # # in step 2), then **Relay 2** acts as an alarm by-pass relay, activating .1 second **PRIOR** to **Relay 1**, and deactivating .1 second **AFTER** **Relay 1**.

**Important:** Both four-digit and five-digit entry codes must be programmed to operate in the **same mode**. If a divide number is programmed for the four-digit codes, then a divide number **MUST** also be programmed for the five-digit entry codes (see section 2.11).

**Factory setting is NO divide numbers programmed (# # # #).**

1. Press \* 1 2 and enter the MASTER CODE. [**\* 1 2** \_\_\_\_ (beep)]
2. Choose and enter a four-digit divide number, then press \*. [ \_\_\_\_ \*(beep)]
3. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

**Note:** To delete an existing four-digit entry code divide number, enter # # # # in step 2. This will cause relay 2 to act as an alarm by-pass relay provided that the existing five-digit divide number has also been deleted (see section 2.11).

## 2.8 Programming Five-digit Entry Codes

Five-digit entry codes are entered on the Keypad. **DO NOT** press # first when using five-digit entry codes. When the door input is activated by the five-digit entry code, the relay will deactivate **one second** after this input is activated, regardless of the programmed **strike time**. Five-digit entry codes are **NOT** affected by the **time zone** inputs or **hold boundaries**. **ONLY SIX (6) five-digit entry codes can be programmed.**

1. Press \* 0 9 and enter the MASTER CODE. [**\* 0 9** \_\_\_\_ (beep)]
2. Choose and enter a five-digit entry code, then press \*. [ \_\_\_\_ **\***(beep)]
3. Repeat step 2 to enter up to 5 additional five-digit entry codes one at a time.
4. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

## 2.9 Erase a Five-digit Entry Code

**CAUTION:** This programming sequence will delete an **INDIVIDUAL** five-digit entry code that has been **previously** programmed in. This cannot be **UNDONE**.

1. Press \* 1 0 and enter the MASTER CODE. [**\* 1 0** \_\_\_\_ (beep)]
2. Enter an existing five-digit entry code to be erased, then press \*. [ \_\_\_\_ **\***(beep)]
3. Repeat step 2 to erase additional existing five-digit entry codes one at a time.
4. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

## 2.10 Erase ALL Five-digit Entry Codes

**CAUTION:** This programming sequence will delete **ALL** five-digit entry codes that have been **previously** programmed in. This cannot be **UNDONE**.

1. Press \* 1 1 and enter the MASTER CODE. [**\* 1 1** \_\_\_\_ (beep)]
2. Enter 9 9 9 9, then press \*. [**9 9 9 9** \*(beep)]
3. A long beep after approximately 10 seconds indicates that all five-digit entry codes are deleted and programming ends.

## 2.11 Five-digit Entry Code Divide Number

The **five-digit entry codes** can be made to activate either **Relay 1** or **Relay 2** by programming a five-digit “divide” number. Five-digit entry codes **EQUAL TO** or **LESS THAN** the divide number will activate **Relay 1**, while five-digit entry codes **GREATER THAN** the divide number will activate **Relay 2**. If **NO** divide number is programmed (enter # # # # in step 2), then **Relay 2** acts as an alarm by-pass relay, activating .1 second **PRIOR** to **Relay 1**, and deactivating .1 second **AFTER** **Relay 1**.

**Important:** Both five-digit and four-digit entry codes must be programmed to operate in the **same mode**. If a divide number is programmed for the five-digit codes, then a divide number **MUST** also be programmed for the four-digit entry codes (see section 2.7).

**Factory setting is NO divide numbers programmed (# # # #).**

1. Press \* 1 3 and enter the MASTER CODE. [**\* 1 3** \_\_\_\_ (beep)]
2. Choose and enter a five-digit divide number, then press \*. [ \_\_\_\_ **\***(beep)]
3. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

**Note:** To delete an existing five-digit entry code divide number, enter # # # # in step 2. This will cause relay 2 to act as an alarm by-pass relay provided that the existing four-digit divide number has also been deleted (see section 2.7).

## 2.12 Hold Boundary Programming

The entry system hold boundaries establish a set of **four-digit entry codes** that will latch **Relay 1 ON, Relay 2 ON, or BOTH Relay 1 and Relay 2 ON** (depending on the divide number programmed and the hold boundaries that have been programmed) indefinitely. To un-latch the relay(s), a four-digit entry code within the hold boundary is entered on the keypad.

**Factory setting is NO hold boundary programmed (# # # #).**

**Note:** Hold boundaries can only be established for the **four-digit entry codes**. Five-digit entry codes have no hold boundaries.

1. Press \* 0 7 and enter the MASTER CODE. [**\* 0 7** \_ \_ \_ \_ (beep)]
2. Choose and enter a four-digit code for the **LOWER** hold boundary, then press \*. [ \_ \_ \_ \_ \*(beep)]
3. Choose and enter a four-digit code for the **UPPER** hold boundary, then press \*. [ \_ \_ \_ \_ \*(beep)]
4. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

**Note:** To delete existing hold boundaries, enter # # # # in steps 2 and 3.

**Note:** See section 3.5 for examples.

## 2.13 Time ZONE 1 Boundary Programming

Programming the **LOWER** and **UPPER** boundaries for time **ZONE 1** establishes a set of four-digit entry codes that will be denied access if the time zone 1 input (terminal 4) is activated. **Note:** This time zone does not affect the **five-digit entry codes**.

**Factory setting is NO zone 1 boundary programmed (# # # #).**

1. Press \* 0 5 and enter the MASTER CODE. [**\* 0 5** \_ \_ \_ \_ (beep)]
2. Choose and enter a four-digit code for the **LOWER** boundary, then press \*. [ \_ \_ \_ \_ \*(beep)]
3. Choose and enter a four-digit code for the **UPPER** boundary, then press \*. [ \_ \_ \_ \_ \*(beep)]
4. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

**Note:** To delete existing time zone 1 boundaries, enter # # # # in steps 2 and 3.

**Note:** See section 3.6 for examples.

## 2.14 Time ZONE 2 Boundary Programming

Programming the **LOWER** and **UPPER** boundaries for time **ZONE 2** establishes a set of four-digit entry codes that will be denied access if the time zone 2 input (terminal 3) is activated. **Note:** This time zone does not affect the **five-digit entry codes**.

**Factory setting is NO zone 2 boundary programmed (# # # #).**

1. Press \* 0 6 and enter the MASTER CODE. [**\* 0 6** \_ \_ \_ \_ (beep)]
2. Choose and enter a four-digit code for the **LOWER** boundary, then press \*. [ \_ \_ \_ \_ \*(beep)]
3. Choose and enter a four-digit code for the **UPPER** boundary, then press \*. [ \_ \_ \_ \_ \*(beep)]
4. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

**Note:** To delete existing time zone 2 boundaries, enter # # # # in steps 2 and 3.

**Note:** See section 3.6 for examples.



## SECTION 3 - OPERATING INSTRUCTIONS

### 3.1 Four-digit Entry Codes

To use a **four-digit entry code**, the # key **MUST** first be pressed then the four-digit code entered on the keypad. Four-digit entry codes can be programmed to operate either Relay 1 or Relay 2. When a four-digit code is entered on the keypad (preceded by #), the system checks its memory to see if the code is stored. If the four-digit entry code is not stored in the system memory, the relay(s) will not activate. If the four-digit code is stored, the system will then check to see if any of the time zone inputs are activated, and if the four-digit code is within the boundaries of the time zone that is activated. If the four-digit code falls within one or both of the time zone boundaries, the relay will not activate. If the time zones are not activated, or if the four-digit code is outside of the activated time zone(s), then the system will check the four-digit divide number. If the entered code is equal to or less than the divide number, relay 1 will activate for its programmed strike time. If the entered code is greater than the divide number, relay 2 will activate for its programmed strike time. If the door input is activated, the relay will deactivate one second after this input is activated, regardless of the programmed strike time. If no divide number is programmed, relay 2 will activate .1 second prior to relay 1 activation. Relay 1 will then activate for its programmed strike time. Relay 2 will deactivate .1 second after relay 1 deactivates. If the door input (terminal 2) is activated, relay 1 will deactivate one second after this input is activated, regardless of the relay strike time remaining. Relay 2 will stay activated for the duration of the relay 1 strike time program.

### 3.2 Five-digit Entry Codes

To use a **five-digit entry code**, enter the five-digit code on the system keypad. **DO NOT** press # first when using five-digit entry codes. Five-digit entry codes can be programmed to operate either Relay 1 or Relay 2. When a five-digit code is entered on the keypad, the system checks its memory to see if the code is stored. If the five-digit entry code is not stored in the system memory, the relay(s) will not activate. If the five-digit code is stored, then the system will check the five-digit divide number. If the entered code is equal to or less than the divide number, relay 1 will activate for its programmed strike time. If the entered code is greater than the divide number, relay 2 will activate for its programmed strike time. If the door input is activated, the relay will deactivate one second after this input is activated, regardless of the programmed strike time. Five-digit entry codes are not affected by the time zone inputs or hold boundaries.

### 3.3 Request to Exit Input (Terminals 1 and 12)

A switch closure across terminals **1** and **12** will cause relay 1 to activate for its programmed strike time. This input is not affected by the time zone inputs.

### 3.4 Door Open Input (Terminals 2 and 12)

A switch closure across terminals **2** and **12** will cause the relay that is activated to deactivate one second after this input is activated. A useful application of this input would be to wire it to a normally closed door-switch that is held open when the door is closed. When the door is opened, the switch will close, cutting off the door strike one second later. This will stop a door strike from buzzing for prolonged periods of time if the relay strike time is set high. For example, if the relay strike time was set for 10 seconds and the door was opened after 2 seconds, the door switch input will stop the strike from buzzing after three seconds, even though the strike time was set to 10 seconds. If no entry code divide number is programmed, and the second relay is being used as an alarm bypass relay, the door input switch does not prematurely deactivate the second relay. For example, if the strike time for relay 1 is set to 10 seconds, relay 2 will activate .1 seconds prior to relay 1. If the door input deactivates relay 1 after three seconds, relay 2 will remain activated for the full strike time.



## 3.5 Hold Feature Operation

The relay hold feature allows a set of **four-digit entry codes** to latch (or hold) a relay indefinitely. Any **four-digit entry code** that falls numerically within the hold boundaries will cause relay 1 to activate indefinitely if no four-digit divide number is programmed.

If a four-digit divide number is programmed, and the divide number is **less than** the lower hold boundary, then the four-digit codes within the hold boundary will activate relay 2.

If a four-digit divide number is programmed, and the divide number is **greater than** the upper hold boundary, then the four-digit codes within the hold boundary will activate relay 1.

If a four-digit divide number is programmed, and it falls between the hold boundaries, then four-digit entry codes **equal to or less than** the divide number, but **greater than** the lower hold boundary, will activate relay 1 indefinitely.

Four-digit entry codes that are **greater than** the divide number, but **less than** the upper hold boundary, will activate relay 2 indefinitely. To **deactivate** a relay that is **latched**, simply re-enter the number that was used to activate the relay. See sample charts below.

**Five-digit entry codes** are **NOT** affected by hold boundaries.

### Example 1

Relay 1		Divide Number 2000	Relay 2			
Relay 1 momentarily activates with entry code 2000 or lower.			Relay 2 momentarily activates with entry codes 2001 thru 2009.	Lower Hold Boundary 2010	Relay 2 latches when entry codes 2010 thru 2015 are entered on the keypad.	Upper Hold Boundary 2015

### Example 2

Relay 1				Divide Number 2025	Relay 2	
Relay 1 momentarily activates with entry code 2009 or lower.	Lower Hold Boundary 2010	Relay 1 latches when entry codes 2010 thru 2015 are entered on the keypad.	Upper Hold Boundary 2015		Relay 1 momentarily activates with entry codes 2016 thru 2025.	

### Example 3

Relay 1			Divide Number 2012	Relay 2		
Relay 1 momentarily activates with entry code 2009 or lower.	Lower Hold Boundary 2010	Relay 1 latches when entry codes 2010 thru 2012 are entered on the keypad.		Relay 2 latches when entry codes 2013 thru 2015 are entered on keypad.	Upper Hold Boundary 2015	

# 3.6 Time Zone Operation

The entry system has **two** time zone inputs. By using an **external timer or switch**, access can be denied to a group of **four-digit entry codes** during desired lockout times.

Four-digit entry codes that fall numerically within a time zone boundary will cause a check of the time zone input when the code is entered.

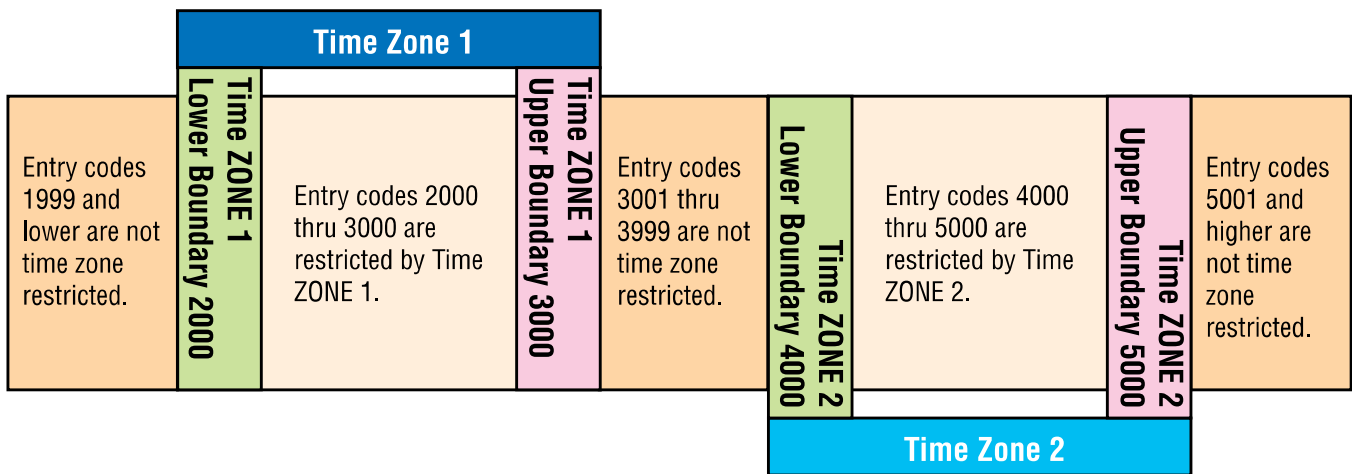
If time zone 1 is activated (switch closure across terminals 3 and 11), four-digit entry codes that are within the time zone 1 boundaries will be denied access.

If time zone 2 is activated (switch closure across terminals 4 and 11), four-digit entry codes that are within time zone 2 boundaries will be denied access.

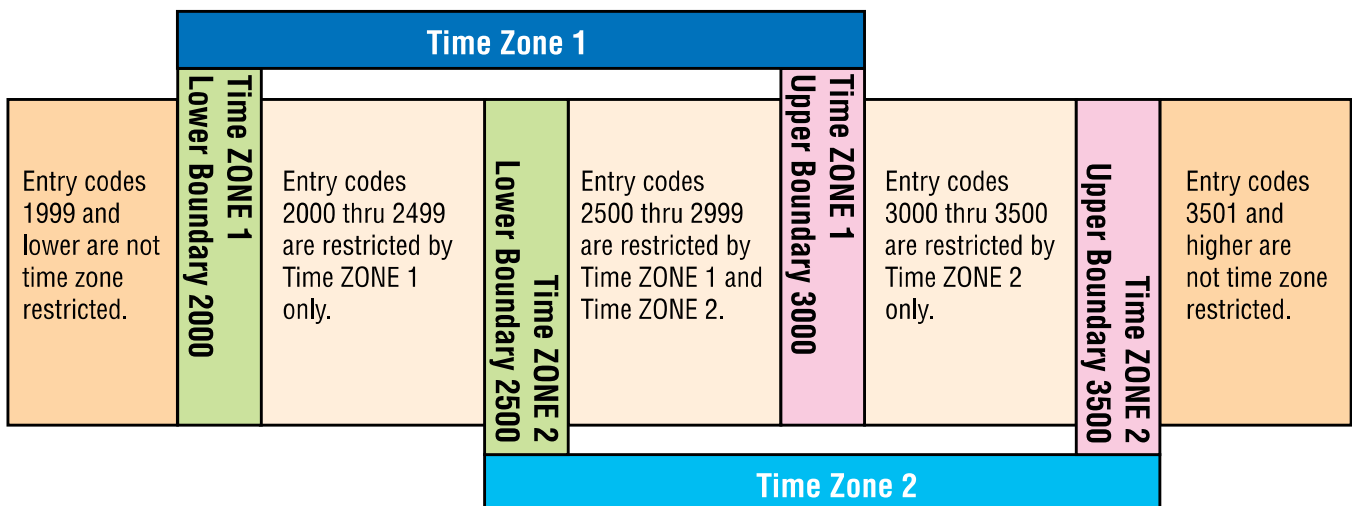
Time zone boundaries may overlap each other.

**Five-digit entry codes are NOT time zone restricted.**

## Example 1



## Example 2



# SECTION 4 - MAINTENANCE

## 4.1 Troubleshooting

- Have a good VOM meter to use when checking voltages and continuity.
- Check power wiring wire size and distance. Improper wire size and too long wire run distances can cause problems.
- Check the power transformer.

Symptom	Possible Solution(s)
Cannot get into programming mode.	<ul style="list-style-type: none"> <li>• Wrong master code entered. Start over.</li> <li>• Waiting too long between pushing buttons. Enter information quicker.</li> <li>• Keypad may not be plugged in correctly. Unplug and reconnect.</li> </ul>
Keypad emits a long tone and cancels programming.	<ul style="list-style-type: none"> <li>• Waiting too long between pushing buttons while programming.</li> <li>• Forgetting to press * first when programming.</li> <li>• Memory is filled. Delete some entry codes or erase entire memory.</li> </ul>
System is dead.	<ul style="list-style-type: none"> <li>• Check for power at terminals 13 and 14.</li> <li>• Keypad may not be plugged in correctly. Unplug and reconnect.</li> <li>• X strikes feature may be activated. Wait 3 minutes and try again. (Section 2.3)</li> </ul>
Four-digit entry codes will not activate <b>relay 1</b> .	<ul style="list-style-type: none"> <li>• Be sure entry code is programmed into the keypad.</li> <li>• Press # first, then enter four-digit number.</li> <li>• Code may be time zone restricted. Reprogram time zone or disable time zone input. (Sec 2.13/2.14)</li> <li>• Be sure entry code is less than divide number or reprogram divide number. (Section 2.7)</li> </ul>
Four-digit entry codes will not activate <b>relay 2</b> .	<ul style="list-style-type: none"> <li>• Be sure entry code is programmed into the keypad.</li> <li>• Press # first, then enter four-digit number.</li> <li>• Code may be time zone restricted. Reprogram time zone or disable time zone input. (Sec 2.13/2.14)</li> <li>• Be sure entry code is greater than divide number or reprogram divide number. (Section 2.7)</li> </ul>
Five-digit entry codes will not activate <b>relay 1</b> .	<ul style="list-style-type: none"> <li>• Be sure entry code is programmed into the keypad.</li> <li>• Enter five-digit code directly on keypad. <b>DO NOT</b> press # first.</li> <li>• Be sure entry code is less than divide number or reprogram divide number. (Section 2.11)</li> </ul>
Five-digit entry codes will not activate <b>relay 2</b> .	<ul style="list-style-type: none"> <li>• Be sure entry code is programmed into the keypad.</li> <li>• Enter five-digit code directly on keypad. <b>DO NOT</b> press # first.</li> <li>• Be sure entry code is less than divide number or reprogram divide number. (Section 2.11)</li> </ul>
Relay(s) lock on for long periods of time.	<ul style="list-style-type: none"> <li>• Excessive voltage-drop on power wires. Check transformer and wire size.</li> <li>• Transformer has <b>too low</b> VA rating.</li> <li>• Relay hold feature may be activated. Reprogram hold boundaries. (Section 2.12)</li> <li>• Relay strike time may be programmed too long. Reprogram. (Section 2.2)</li> </ul>
Request to exit input will not operate relay.	<ul style="list-style-type: none"> <li>• Check wiring connected to terminals 1 and 12.</li> </ul>

# 4.2 Log Tables

Use the tables below to record data entered into the keypad system.

<b>Master Code</b> (section 2.1)		<b>Factory - 9999</b>	
1st Digit	2nd Digit	3rd Digit	4th Digit

<b>Relay Strike Time</b> (section 2.2)	
<b>Relay 1</b>	<b>Relay 2</b>
Factory - 1 sec.	Factory - 1 sec.

<b>Four-digit Hold Boundaries</b> (section 2.12)				
Lower				
Upper				

<b>Four-digit Entry Code Divide Number</b> (section 2.7)			

<b>Five-digit Entry Code Divide Number</b> (section 2.11)				

<b>Time ZONE 1 Boundaries</b> (section 2.13)				
Lower				
Upper				

<b>Time ZONE 2 Boundaries</b> (section 2.14)				
Lower				
Upper				

<b>Five-digit Entry Codes</b> (section 2.8)					
1					
2					
3					
4					
5					
6					



# Installation/Owner's Manual

# Models 1504 / 1506

Programmable Stand Alone Digital Keypad Entry Devices

Use this manual for circuit board 1506-010 Revision G or higher.

1506-065-L-2-18

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