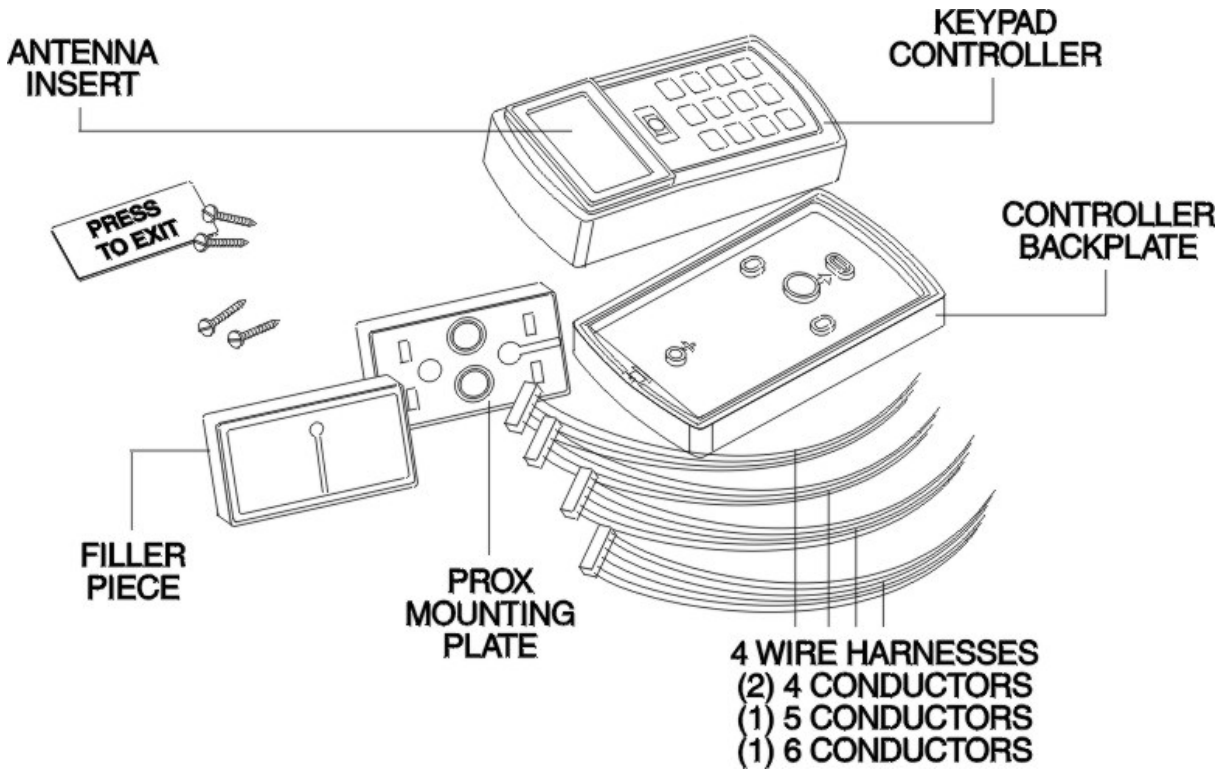
IEI prox.pad™
Proximity Reader/Keypad
Access Control



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Chapter 1: Introduction/Installation

1.1 About this Manual

This manual is designed for installers of the International Electronics prox.pad Standalone Proximity Reader/Keypad Access Control System. The device has three operating modes, Stand-Alone (see Chapter 2), Wiegand Front End (see Chapter 3), and Secured Series Front End (see Chapter 4). All wiring and programming instructions for a particular mode are grouped in a separate chapter along with related illustrations.

Installation instructions are common to all three modes, and are provided in this chapter.

1.2 Safety Warnings and Cautions

This system must be installed in accordance with the National Electrical code (NFPA70), local codes, and the authorities having jurisdiction.

When handling the main printed circuit board, to guard against possible static discharges, touch a grounded object before touching the prox.pad unit. Static shock can render the product unusable.

1.3 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.

1.4 Reproduction Disclaimer

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

1.5 FCC Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the users' authority to operate this equipment. The reader is intended to be powered from a limited power source output of a previously certified power supply.

1.6 Technical Support

Service Company: Before calling IEI for installation assistance, refer to Chapter 5, Troubleshooting. This chapter includes a list of common system problems, possible causes, and corrective actions plus easy-to-use diagnostic flow charts. To contact IEI's Technical Support department, call 1- 800-343-9502 Monday through Friday. Questions can also be submitted through our website at www.ieib.com. You can also download an electronic version of this manual from this site.

End User: Please contact your service company.

1.7 Warranty

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

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

This warranty shall expire two years after shipping date for prox.pad Keypads. 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.

1.8 Items Supplied from the Factory

The following items are supplied from the factory with the initial prox.pad shipment.

- prox.pad unit
- Request to Exit (REX) button (also called the “Filler Piece”)
- Request to Exit Label and Blank Label
- Antenna Housing and Backplate for mounting
- 2 Pin jumper (installed on connector)
- Lithium battery (installed in unit)
- Silicone Rubber “dogbone” for Request to Exit switch
- Self-Adhering Pads
- Hex Wrench
- Wire Harnesses
- Installation Hardware
- Quick Start Installer Guide
- CD with Installation/Programming Manuals

1.9 Items the Installer Must Supply

For each prox.pad unit installation, the installer must supply the following items:

- Proximity Cards or Keyfobs; The prox.pad unit works with these four types of cards:
  - Prox Card II
  - IsoProx II
  - Duo Prox II
  - Proxkey FOB
- an appropriately rated linear DC Power Supply (12-15 VDC) (filtered and regulated recommended)
- the appropriate installation electrical tools
- Remote Antenna Cable [ALPHA 1294C (22AWG) 4-wire, stranded and shielded] (this is required ONLY if you choose to remote the antenna 10 feet away from the keypad/controller)
- Wiegand Interface Cable [ALPHA 1295C] (22AWG) 5-conductor, stranded and shielded] (this is required ONLY if using a separate Wiegand control panel)
- Power Supply Cable (18AWG-22AWG) 2-wire stranded (depends on distance)
- Door Lock Cable (18AWG-22AWG) 2-wire stranded (depends on distance)
- Door Monitor Cable (18AWG-22AWG) 2-wire stranded (depends on distance)
- REX Cable (if using remote switch) [ALPHA 2421C 18 AWG or ALPHA 1292C 22 AWG, 2-conductor, stranded and shielded]
- Tamper Switch; Either Ademco 945T or PR-20451 magnet and reed switch or equivalent

1.10 General Description

The IEI prox.pad Proximity Reader/Keypad Door Access Control provides card and/or keypad access control for a single door. You can install the unit either in a one-stage configuration, or a higher security, two-stage (or "remote") configuration.

In the "secure" (or remote) configuration, you can detach the antenna and mount it up to a maximum of 10 feet away from the main prox.pad unit. For installation details, see section 1.16.3.

The prox.pad is compatible with all HID proximity cards, up to 40 bit format. You can program cards either by presentation (up to 40 bit) or through batch programming without presenting the cards (only for 26-bit HID cards). All programming is performed using the built-in keypad on the unit.

In standalone mode, the following four user types are available in the prox.pad unit:

- 0-Toggle/latch lock
- 1-Normal access
- 2-log Dump
- 3-Lockout

In standalone mode, the unit can store up to 2000 users and 1000 transaction events, which can both be transmitted via the IR LED for collection by the optional Data Collection Device for reporting purposes.

The unit is equipped with a lock release main relay and an auxiliary relay, which you can program for alarm shunt, forced door or propped door access control functions.

1.11 Operating Modes

During initial installation, the installer programs the prox.pad unit for one of three operating modes, "Standalone," "Wiegand Front End," or "Secured Series Front End." Only one operating mode can be selected at any one time. If you plan to use Standalone mode (the default, out-of-the-box, mode), no programming is required.

In "Standalone" mode (Chapter 2), all the access control decisions are made by the prox.pad unit. The unit operates entirely on its own. The unit contains a main relay for controlling the locking device and a programmable auxiliary relay for access control functions such as alarm shunt, forced door and propped door. The unit has an input for a door position switch and a request to exit (REX) device. The prox.pad stores all transactions the transactions locally in memory and has an IR LED for dumping the transaction event log to the Data Collection Device. You can use the device as a keypad, card reader or combination to gain access.

In "Wiegand Front End" mode (Chapter 3), the prox.pad is used as front end for a Wiegand access control panel. No access control decision are made in the prox.pad. The Wiegand data is just sent to the Wiegand control panel. The panel then makes all access control decisions and controls the prox.pad LEDs. You can use it as a keypad or a card reader. The keypad data is only sent as 26-Bit card data, but the card reader just passes the data from the card to the panel. You can use up to 40-Bit HID format cards.

In "Secured Series Front End" mode, the prox.pad unit is used as a front end with an IEI Secured Series Door Control Module. Either standard 26-bit or Corporate 1000 prox cards can be used during Secured Series mode. No other format cards can be used. The PIN data is extracted from these card types and sent to the Secured Series Door Control Module for verification (for details, see Chapter 4).

In all operating modes, the prox.pad unit maintains programmability so that prox.pad system parameters can be set. The default factory setting during programming is for the unit to "time out" after 45 seconds of inactivity.

1.12 prox.pad Specifications

Table 1: prox.pad Specifications

Electrical	
Power Supply/Current Requirements	10-15 VDC, linear filtered and regulated power supply; 100mA
Wiring	
Remote Antenna Cable (if installing in a secured configuration)	[ALPHA 1294C (22AWG) 4-conductor, stranded and shielded]
Wiegand Interface Cable	[ALPHA 1295C (22AWG) 5-conductor, stranded and shielded]
Secured Series Front End Cable	[ALPHA 1295C (22AWG) 4-conductor, stranded and shielded]
Power Supply Cable	18AWG - 22AWG 2-wire stranded (depends upon distance)
Door Lock Cable	18AWG - 22AWG 2-wire stranded (depends upon distance)
Door Monitor Cable	18AWG - 22AWG 2-wire stranded (depends upon distance)
REX Cable	[ALPHA 2421C 18 AWG or ALPHA 1292C 22 AWG, 2-conductor, stranded and shielded] (if using remote switch)
Mechanical	
Height	5.25 in (13.3 cm)
Width	2.75 in (7 cm)
Depth	1.625 in (4.13 cm)
Relay Outputs	
Main Relay	Form C (switches up to 2A)
	Program for either timed (1-99 sec) or toggle
Aux Relay	Form C (switches up to 1A)
	One of three functions can be programmed: Alarm Shunt Relay, Forced Door Relay, or Propped Door Relay
Monitor Inputs	
Door Position Switch	Normally Closed, Dry Contact
Other Outputs	
Infrared LED Output	Output to optional Data Collection Device PDA Software
Sounder	4000 Hz, defeatable
Bi-Color LED	Red/Green
Yellow LED	
Compatible Proximity Cards (All HID cards up to 40 bits, including the following)	
	Prox Card II, IsoProx II, DuoProx II, ProxKey FOB

Specifications continued on next page.

Specifications Continued

Unit Capacity	
Users (standalone mode only)	2000 Maximum (each user can have a card, PIN or both)
Transactions (standalone mode only)	1000 Maximum (includes event number, time, date, and user number if applicable)
Environmental (Indoor or Outdoor)	
Operating Temperature	-31° to 150° F (-35° to 66° C)
Operating Humidity	5% to 95% relative humidity, non-condensing

1.13 Installation Configurations

NOTE: IEI recommends that first-time installers test the prox.pad unit before actually mounting and wiring the unit. This allows you to become familiar with its operation and save time on the job site (see section 2.6).

It is the installer's responsibility to determine the appropriate prox.pad installation configuration, which differs from installation to installation. These three installation configurations are possible:

- **Wall Mounted Installation** (exterior to the room to be accessed).

  In this configuration, a single gang electrical box can be used. Typically, the prox.pad unit is wall mounted (surface mounted) outside the access area on the unsecured side.

- **Glass Mounted Installation**

  In this configuration, the prox.pad unit is affixed with the four IEI supplied adhesive pads to the glass door or the window adjacent to the door being accessed, on the interior side of the glass. The side cut-out on the unit is used to bring the wires out of the side of the prox.pad case.

- **Secure Installation** (or "two-stage" configuration)

  In this configuration, the prox.pad antenna is located a maximum of 10 feet away from the keypad; the keypad is located on the secure side of the door.

1.14 Other Installation Considerations

Sections 1.15.1 - 1.15.4 describe important considerations the installer must decide upon before actually starting to install and wire the prox.pad.

1.14.1 Power Supply/Current Requirements

Power for the prox.pad unit must be from a minimum 10-15 volt DC linear, filtered and regulated access control power limited power supply. The prox.pad unit draws approximately 55mA of current. It is typical for the chosen power supply to power both the prox.pad unit and the locking device. When using one power supply for both the prox.pad unit and locking device, be sure to include both devices in your current requirements calculations.

NOTE: IEI recommends that you ground the power supply to earth ground.

1.14.2 Gang Box and Mounting

For the wall mounted installation configuration, a single gang electrical box can be used. Typically, the prox.pad unit is wall mounted outside the access area on the unsecured side of the door.

1.14.3 Mounting the Unit on Metal

The prox.pad unit uses radio frequency (RF) to transfer power to and communicate with the proximity card or key fob. If the antenna is mounted directly on a metal building or wall, some of the energy is absorbed by the metal, resulting in less power being transmitted to the card/key fob; this causes reduced read range. If you must mount the prox.pad unit on metal, test the unit in place before permanently installing it. If read range distance distance is not adequate, a non-metallic spacer can be fabricated and installed between the unit's antenna and the metal mounting surface.

1.14.4 RF Interference

The prox.pad unit should not cause interference to other equipment as it is designed to meet FCC guidelines. However, other devices can interfere with prox.pad operation. Avoid locating the prox.pad unit closer than 3 feet (1 meter) to a computer monitor or television or another prox.pad unit. If you believe you are experiencing reduced read range due to interference, try repositioning the prox.pad unit, remoting the antenna, or relocating other nearby electrical equipment.

1.15 Checking the Cables

Figure 1 below provides a detailed illustration of the prox.pad's wiring harness. Figure 2 illustrates the pin connectors on the main circuit board; Table 2 describes these four Pin connectors, P1, P2, P3, and P4.

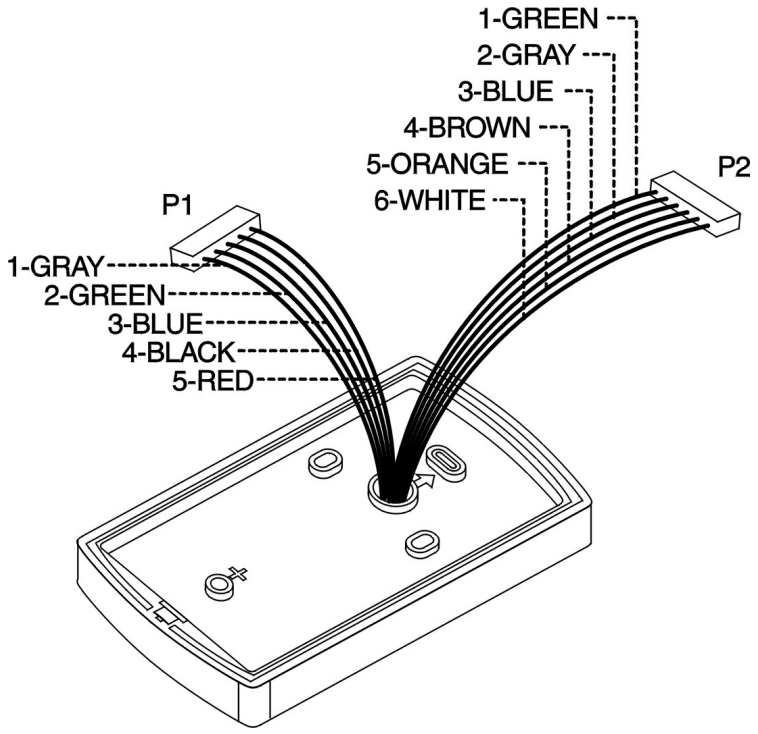


Figure 1: prox.pad Wiring Harness

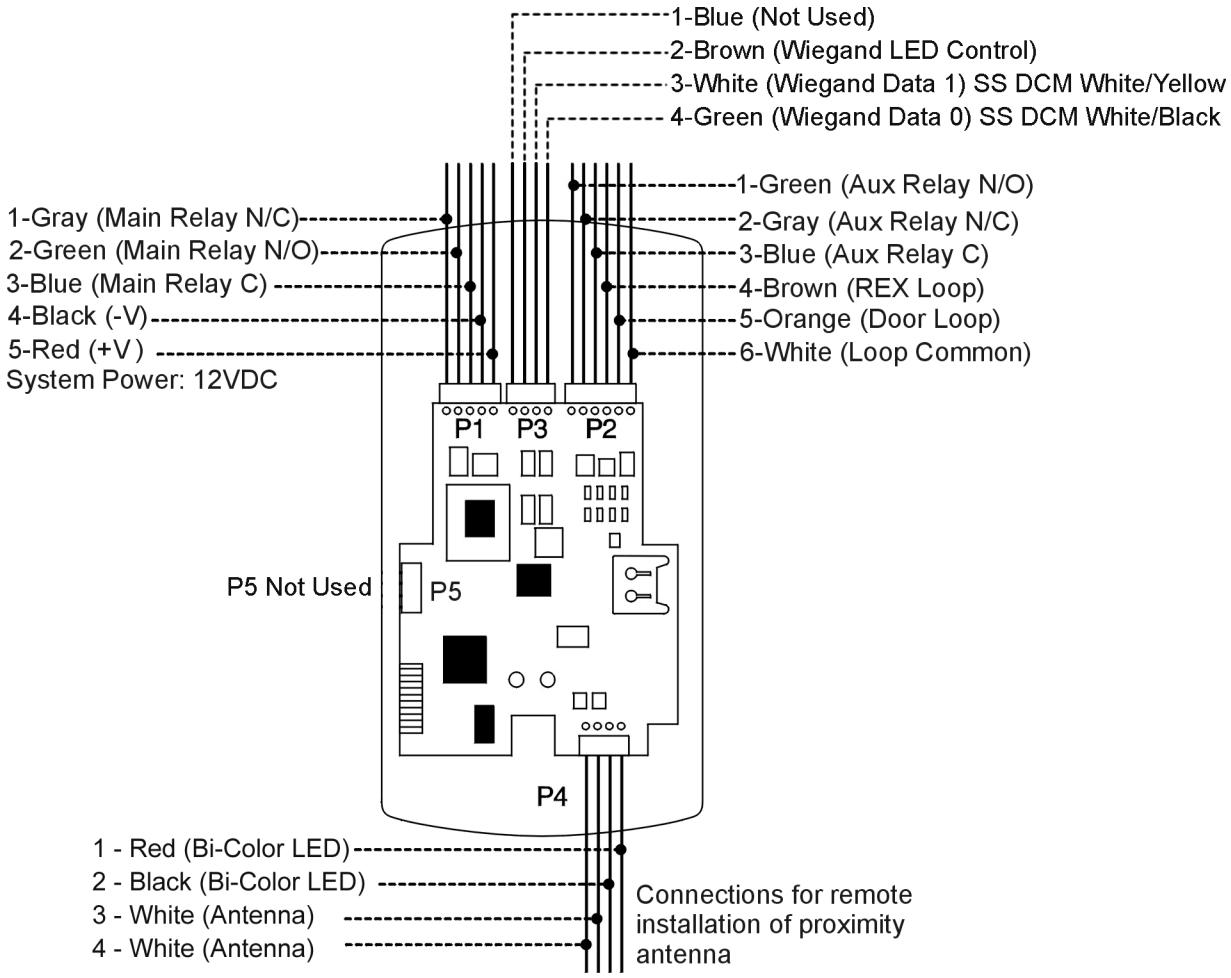


Figure 2: Identifying Pin Connectors

Table 2: prox.pad Pin Connectors

<table>
<tr><th>Pin Connector (on main circuit board)</th><th>Description/Use</th></tr>
<tr><td>P1 (5-pin connector, top left-most location)</td><td>
<table>
<tr><th>Pin</th><th>Wire Color</th><th>Use</th></tr>
<tr><td>1</td><td>Gray</td><td>Main Relay Normally Closed</td></tr>
<tr><td>2</td><td>Green</td><td>Main Relay Normally Open</td></tr>
<tr><td>3</td><td>Blue</td><td>Main Relay Common</td></tr>
<tr><td>4</td><td>Black</td><td>Ground (Power Supply)</td></tr>
<tr><td>5</td><td>Red</td><td>+12V Input (Power Supply)</td></tr>
</table>
</td></tr>
<tr><td>P3 (4-pin connector, top middle location)</td><td>
<table>
<tr><th>Pin</th><th>Wire Color</th><th>Use</th></tr>
<tr><td>1</td><td>Blue</td><td>Not Used</td></tr>
<tr><td>2</td><td>Brown</td><td>Wiegand LED Control</td></tr>
<tr><td>3</td><td>White</td><td>Wiegand Data 1 (SS White/Yellow)</td></tr>
<tr><td>4</td><td>Green</td><td>Wiegand Data 0 (SS White/Black)</td></tr>
</table>
</td></tr>
<tr><td>P2 (6-pin connector, top right-most location)</td><td>
<table>
<tr><th>Pin</th><th>Wire Color</th><th>Use</th></tr>
<tr><td>1</td><td>Green</td><td>Aux Relay Normally Open</td></tr>
<tr><td>2</td><td>Gray</td><td>Aux Relay Normally Closed</td></tr>
<tr><td>3</td><td>Blue</td><td>Aux Relay Common</td></tr>
<tr><td>4</td><td>Brown</td><td>REX Loop</td></tr>
<tr><td>5</td><td>Orange</td><td>Door Contact Loop</td></tr>
<tr><td>6</td><td>White</td><td>Loop Common</td></tr>
</table>
NOTE: Pins 1, 2, 3 can be wired at the installer’s option for one of the following alarm outputs, Alarm Shunt, Forced Door, or Propped Door. Mandatory: If you are not installing door contacts per Figure 12, twist the white and orange wires together. If not done, the REX input won't work.
</td></tr>
<tr><td>P4 (4-pin connector, bottom location)</td><td>
<table>
<tr><th>Pin</th><th>Wire Color</th><th>Use</th></tr>
<tr><td>1</td><td>Red</td><td>Bi-Color LED (Red +)</td></tr>
<tr><td>2</td><td>Black</td><td>Bi-Color LED (Green +)</td></tr>
<tr><td>3</td><td>White</td><td>Antenna (no polarity)</td></tr>
<tr><td>4</td><td>White</td><td>Antenna (no polarity)</td></tr>
</table>
</td></tr>
</table>

Table 3: IEI-Supplied Parts/Optional Items

Quantity	Description
1	Keypad/control unit assembly, with Prox Sensor, Backplate, hex socket screw
1	Filler Piece/REX Button
1	Press to Exit Label
4	Wall Anchors
4	Mounting Screws
1	Antenna Backplate for remote mounting
1	Silicone Rubber “dogbone”
4	Self-Adhering Pads (for glass mounting)
1	Installer Guide
1	CD-ROM containing instruction manuals
4	Cable Assemblies
1	Tamper Screw
Optional Items	
1	Data Collection Device (to capture user list and transaction event log)
1	prox.pad Replacement Battery: Panasonic BR1225, Renata CR1225 or Varta CR1225; **Refer to caution below.**
lots of 25 only	ProxKey Keytags (IEI part number 0297301)
lots of 25 only	ProxCard II Cards (IEI part number 0297401)

Caution: Replace battery with types listed above only. Use of another battery may present risk of fire or explosion. Battery may explode if mistreated. Do not recharge, disassemble or dispose of battery in fire.

1.16 Mounting the prox.pad Unit

Select one of these three installation configurations, wall mount, glass mount, or secure as appropriate for this installation. Then refer to the following sections.

1.16.1 Performing a Wall Mounted Installation

This section provides general considerations when performing a wall mounted installation. Typically, the prox.pad unit is mounted on a flat, level surface (drywall, masonry, wood, etc.) exterior to the room to be accessed. A single-gang electrical box (or back box) can be used. Typically, the prox.pad unit is wall mounted outside the access area on the unsecured side of the door.

Figure 3 below illustrates the components on the prox.pad unit used for wall mounting. Two single-gang box holes align with two corresponding holes in the single-gang box. A wire exit knockout is supplied through which the prox.pad wiring is pulled. A typical wall mounted installation proceeds as follows:

1. Install a single-gang box in the desired location.
2. Punch out the two single-gang box knockouts on the controller backplate of the prox.pad unit.
3. Disconnect the controller backplate of the prox.pad unit from the front keypad/controller. Align the two single-gang box holes on the controller backplate over the two corresponding holes on the single-gang box, previously secured at step 1.
4. Secure the backplate to the single-gang box by inserting/tightening two screws into the two single-gang box holes.
5. Connect the front keypad/controller to the back housing.
6. Pull the prox.pad wiring through the wiring exit as appropriate.
7. Install the tamper screw into the hole at the bottom front of the enclosure using a #6 spanner bit (not included, but available from IEI).

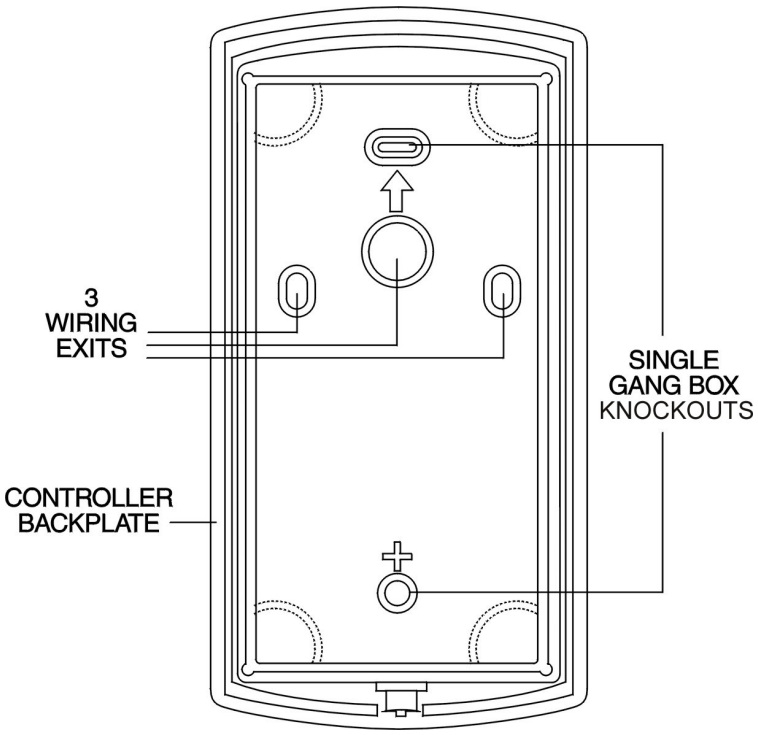


Figure 3: Performing a Wall Mounted Installation

1.16.2 Performing a Glass Mounted Installation

Figure 4 below shows the four IEI-supplied pressure-sensitive adhesive pads and the two side cut-outs used for this installation. In this configuration, the prox.pad unit is affixed with the four self-adhesive pads to the glass or the glass window adjacent to the door being accessed, on the interior side of the glass. One of the two side cut-outs is used to bring the wires out of the side of the prox.pad case.

A typical glass mounted installation proceeds as follows:

1. Disconnect the back housing from the front keypad/ controller. Remove the tape from the four self-adhesive pads on the back housing and apply the pads to the four corners of the backplate.
2. Affix the back housing to the glass door or the glass window adjacent to the door being accessed, on the interior side of the glass.
3. Determine which of the two side cut-outs on the back housing to use for the wiring and remove that cut-out using the appropriate cutting tool.
4. Pull the wiring through the selected side cut-out as required.
5. Connect the front keypad/controller to the back housing.
6. Install the tamper screw into the hole at the bottom front of the enclosure using a #6 spanner bit (not included, but available from IEI).

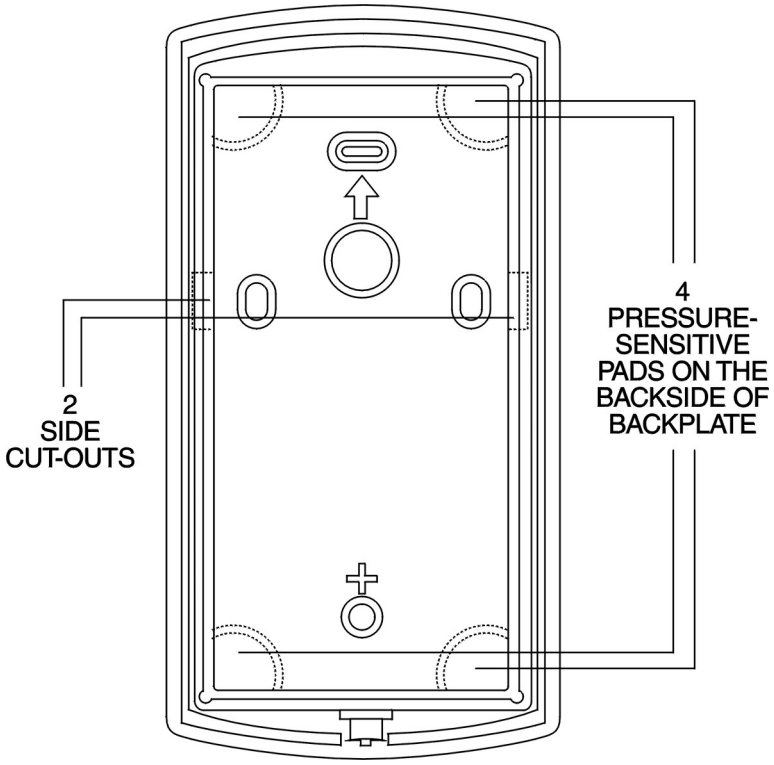


Figure 4: Performing a Glass Mounted Installation

1.16.3 Performing a Secure Installation

In this configuration, the prox.pad prox antenna housing is removed from the keypad/controller and located a maximum of 10 feet away. The controller/keypad is located inside the secure area.

1. Remove the antenna housing from the prox.pad keypad/controller as described below:
   - Disconnect the backplate of the prox.pad unit from the front keypad/controller.
   - When handling the main printed circuit board, to guard against possible static discharges, touch a grounded object before touching the prox.pad unit. Remove the main printed circuit board by pressing the two spring tabs in the direction of the arrows as shown in Figure 5 on the next page. Be careful with the wires.
   - Pull on the main circuit board and remove the wire harness from P4 from the bottom of the main board. A ribbon cable now holds the main board to the keypad board. Do not pull this ribbon cable out of its connector! Once the main board is removed, you can access the interior of the antenna.
   - Remove the antenna housing from the keypad/controller by pressing the labeled four secure tabs inward (see Figure 5) until the antenna housing pops out.
2. Prepare the wiring and extension wiring as follows:
   - Cut off the plastic end of the prox.pad antenna housing harness.
   - Splice the recommended remote antenna cable Alpha 1294C (22AWG, stranded and shielded), 10-foot maximum length, to the properly cut antenna cable using standard electrical techniques.
3. Mount the antenna backplate in a vertical orientation and secure it to the wall through the two screw holes using two IEI-provided screws. Ensure that the two weep holes, provided to remove possible moisture, are positioned on the bottom. The wiring exits in the antenna backplate. (Four external cut-outs on the antenna backplate match the four spring-loaded tabs on the antenna.)

   NOTE: Two side cut-outs are furnished on the antenna backplate for the wiring, if the installation does not permit the wiring to run through the wall. These must be cut out to be used.
   - Once the antenna backplate is mounted properly, align the antenna to the backplate and connect the antenna to the antenna backplate. The large tab in the center of the antenna assembly must be broken off before being attached to the antenna backplate.
4. Run the antenna wiring back to the secure keypad/controller and connect it to the main circuit board, using the 10-inch 4-wire harness (red, black, white, and white) that you plug into connector P4 on the controller board. Connect the red wire of the antenna to the red wire of the P4 harness, etc. Seal the wire holes with silicone.
5. Select Filler or Request to Exit (REX) operation as follows:
   - If you elect to use the filler piece as a REX switch, return to the keypad/controller and break off two tabs on the filler piece as illustrated in Figure 5. The filler piece replaces the antenna on the front of the keypad/controller for secure installations. Refer to section 2.7.5d for programming the internal REX.
   - If the filler piece is not to be used as a REX switch, do not remove the two tabs.
   - Select “Filler or “REX” operation and affix the appropriate IEI-provided label to the filler piece. For Filler operation, no tabs are broken off the filler piece, which merely sits in place of the remotely located antenna, once the main circuit board and cabling are replaced. For REX operation, break off the labeled tabs, which allows a spring-loaded tab to engage the REX switch on the main circuit board and open the door.
   - Replace the main circuit board into the keypad/controller and pin connector P4 to the main circuit board.
   - Connect the front keypad/controller of the unit to the back housing.
   - Secure with a hex socket screw using the supplied hex wrench, or secure with a tamper screw (optional tool required).

For the remote antenna wire, use ALPHA 1294C (22AWG) 4-wire, stranded and shielded cable. The cable shield drain wire must be grounded at the reader end to P1, pin 4 connection (DC Power Supply Ground).

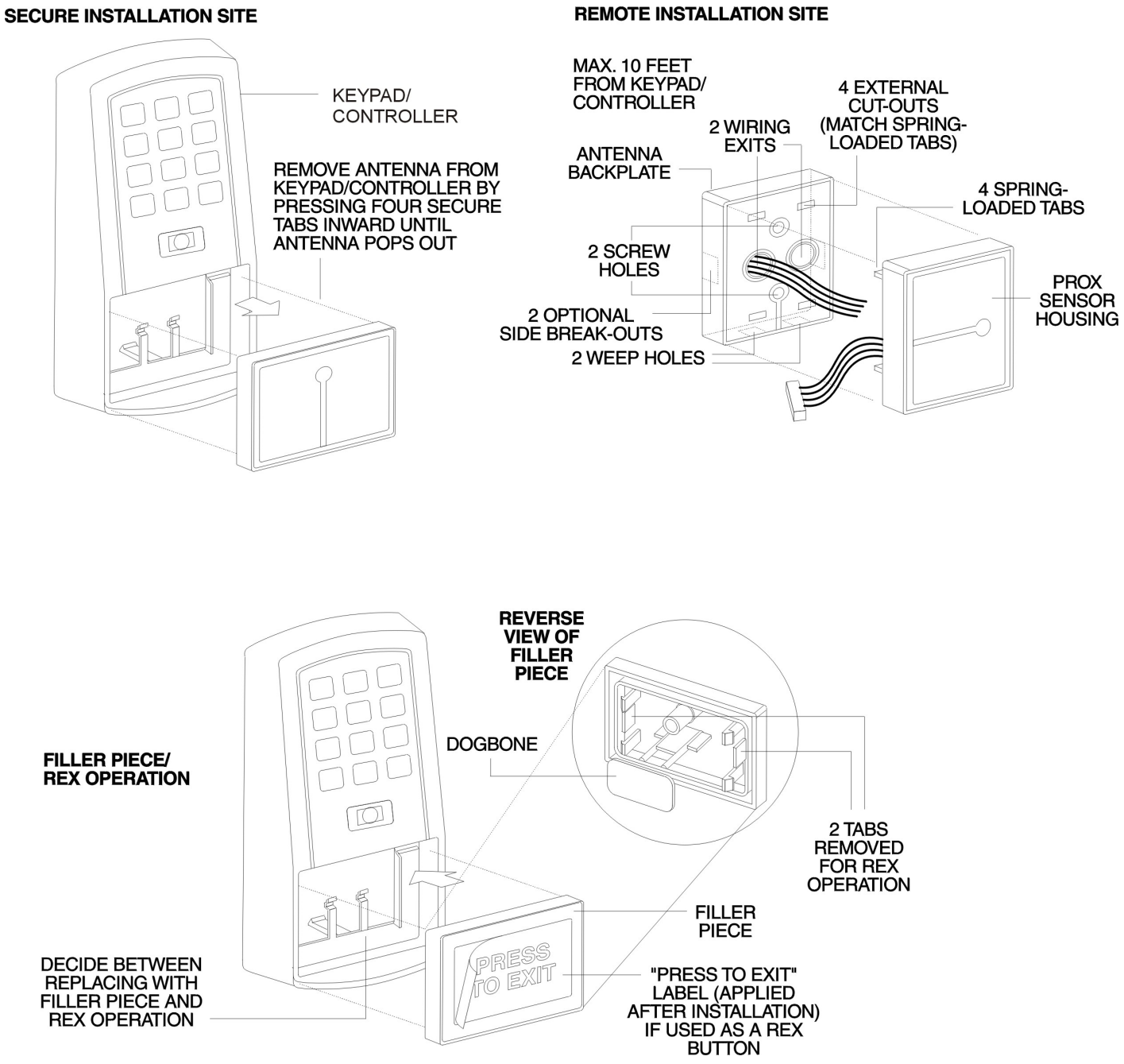


Figure 5: Performing a Secure Installation

1.16.4 Installing a Tamper Switch

A tamper switch must be installed in one of the configurations described below and connected to an intrusion alarm system.

1.16.4.a Mounting over a metal or plastic single gang J-Box

1. Use an Ademco 945T magnet and reed switch (or equivalent) with foam-backed adhesive tape.
2. Clip the screw mounting tabs from both the magnet and reed switch using pliers or a wire cutter.
3. With the prox.pad base removed, stick the magnet to the Keypad board in location A, using the adhesive tape.
4. Stick the reed switch on the inside of the long side of the J-box in the upper right-hand corner, using the adhesive tape. The switch should be flush with the edge of the J-box.

1.16.4.b Wall mounting

1. Use an Ademco PR-20451 magnet and reed switch (or equivalent).
2. Mount the magnet at location B, using one of the adhesive pads provided.
3. Drill a 3/8 inch hole in the wall behind the magnet location, feed the switch wire through the wall and press the switch into place.

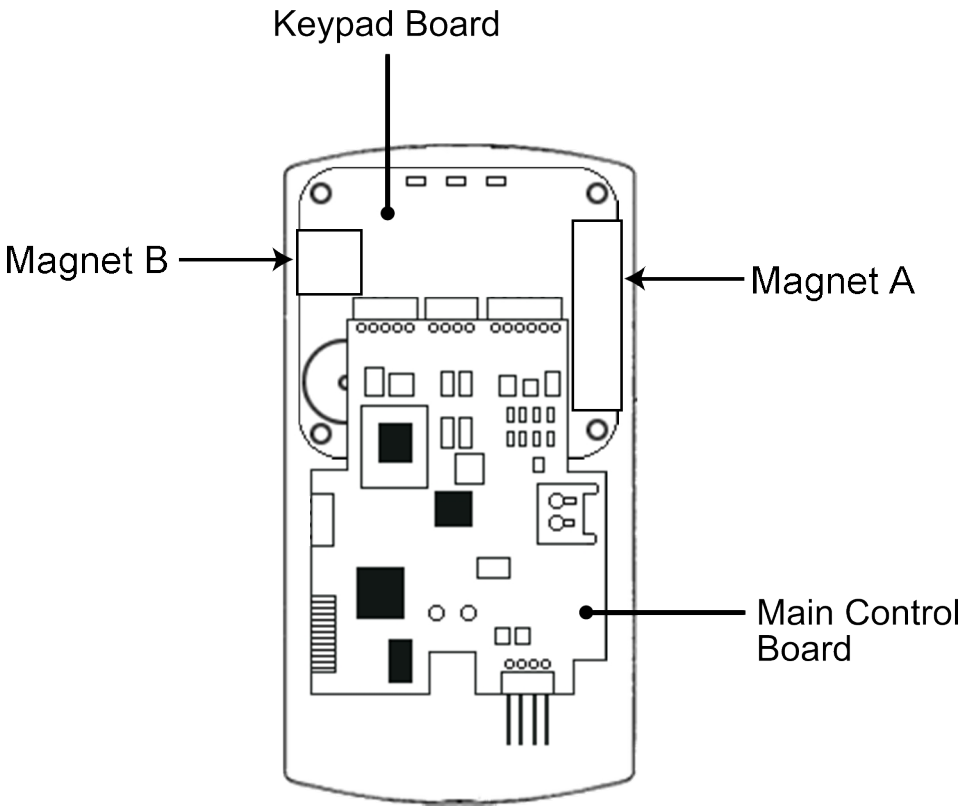


Figure 6: Tamper Switch Locations

1.17 Removing/Inserting Circuit Boards

If you must remove or insert the main circuit board from/into the prox.pad controller/keypad, follow the steps below.

1. Disconnect the back housing of the prox.pad unit from the front keypad/controller.
2. **(When handling the main printed circuit board, to guard against possible static discharges, hold the board by its edges with one hand and then touch a grounded object before touching the prox.pad unit.)** Remove the main printed circuit board by pressing the two spring tabs in the direction of the arrows as shown in Figure 7. Be careful with the wires.
3. Fold up the main circuit board and remove the P4 connector (a 4-conductor harness) from the bottom of the board.
4. To re-insert, replace the main circuit board into the keypad/controller and the P4 connector to the main circuit board.
5. Connect the keypad/controller to the back housing.

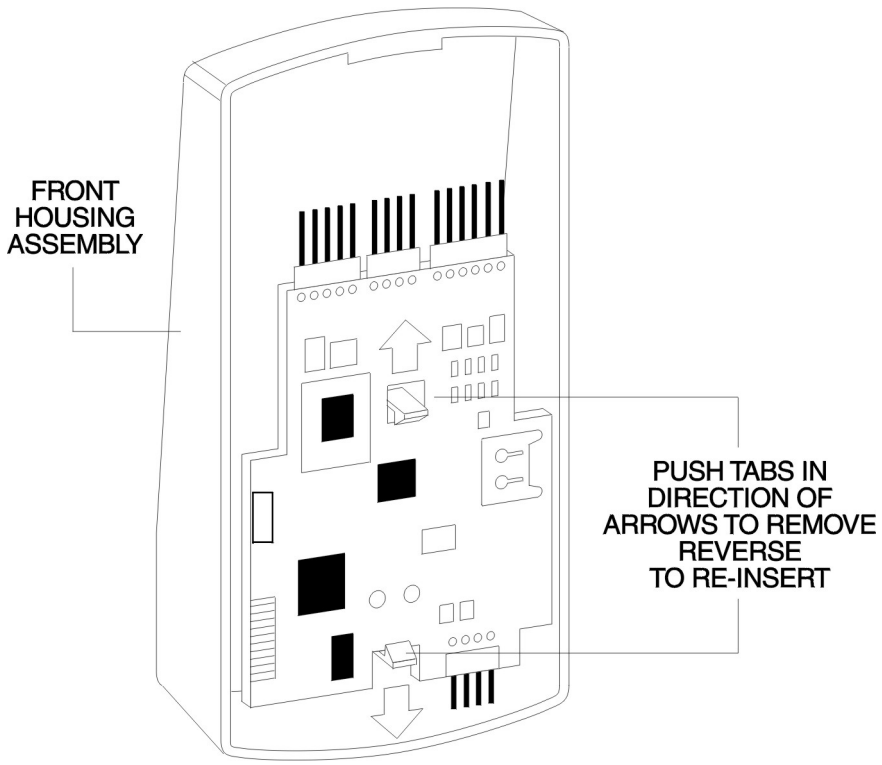


Figure 7: Removing/Inserting Printed Circuit Board

1.18 Defaulting prox.pad Memory

If necessary, the prox.pad main memory can be defaulted (erased). This procedure explains how to do this; see Figure 8 below. You would default the memory, if, for instance, static discharges have corrupted the prox.pad unit, during shipping or installation. You can also do this if you have simply forgotten the Master Code and you need to enter program mode.

With the power on, remove the case from the prox.pad front controller/keypad to access the main circuit board. (For a visual reference of the main printed circuit board and the related pin connectors, see Figure 2. Table 2 describes these pins in detail.) (When handling the main printed circuit board, to guard against possible static discharges, touch a grounded object before touching the prox.pad unit.)

1. With the power on, press and hold the Program button (located on the rear side of the main printed circuit board) for two seconds and release. The yellow LED flashes slowly.
2. Enter the following on the keypad:

   46 # 00000 # 00000 # **

   The yellow LED flickers rapidly for several seconds and then blinks slowly.
3. Once the memory reset is complete press ***** to exit program mode then re-assemble the unit.

NOTE: CONNECTING DOOR LOOP INPUT - Before powering up the prox.pad unit, connect the Door Loops input to the "Loop Common." This prevents "Forced Door" or "Propped Door" conditions from developing upon power-up.

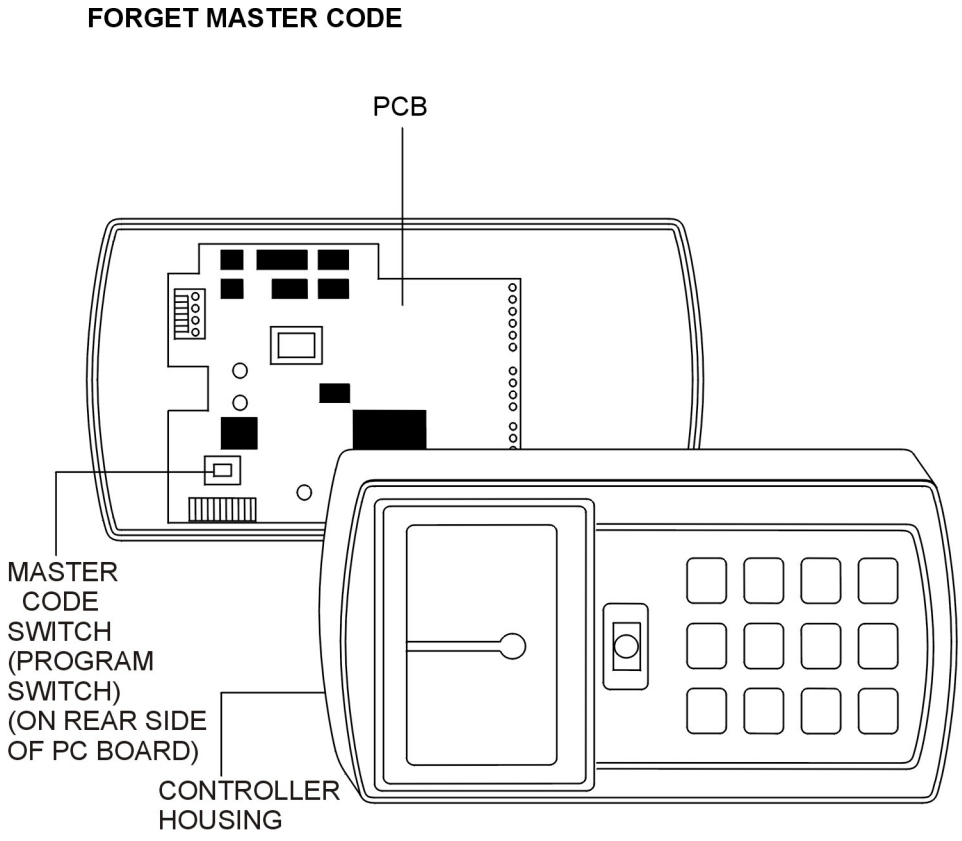


Figure 8: Program Button Location on Main Circuit Board

Chapter 2: Standalone Mode

Chapter 2 describes Standalone mode and supplies wiring diagrams, general programming information, and a programming chart specific to Standalone mode.

2.1 Standalone Mode Description

Standalone mode is the default, out-of-the-box mode of the prox.pad unit as shipped. No programming is required to place the unit in Standalone mode. In this mode, all decisions to open the door remain with the prox.pad unit, and Wiegand Front End and Secured Series Front End outputs are disabled.

Once installed and programmed, in Stand-alone mode, the prox.pad controller stores all transactions and controls all outputs. All access control decisions are made by the prox.pad unit.

2.1.1 Standalone Features

The following is a list of Standalone mode features, each of which is discussed in detail later in this chapter.

- Batch Load by Presentation (26 bit to 40 bit) in Stand-Alone mode
- Delete a block of users in Stand-Alone mode
- Timed Anti-Passback in Stand-Alone mode
- Set the duration for Anti-Passback between 1/2 sec to 60 sec in ¼ sec increments
- Invalid PIN Lockout (IPL) in Stand Alone mode
    - Set threshold between 1 and 50 invalid attempts before the IPL event is triggered.
    - Triggers Forced Door (local sounder or AUX relay for silent alert)

      OR
    - Triggers Timed Lockout
    - (Set the timed lockout between 5 sec and 21 min in 5 sec increments)
- The Access By Facility feature has been extended to include both 26 bit and Corporate 1000 cards. The type of card being used, and the Facility code **must** be set prior to operation.

NOTE: IEI prox.pad Proximity Reader/Keypad Door Access Control can be installed either indoors or outdoors; for installation details, see section 1.15.

2.2 Inputs/Outputs

The prox.pad is equipped with two relay outputs. The Main Relay is a Form-C, 2A relay used to control the locking device. The Aux Relay is a Form-C, 1A relay and its function is programmable. You can program the Aux Relay to operate as either an Alarm Shunt, Forced Door or Propped Door output used shunt out an existing alarm system or signal an alarm if the door is forced or propped open.

The Forced Door and Propped Door functions can also operate a local audible alert. You can program the local sounder on the keypad to operate as the Forced Door or Propped Door output in addition to or instead of the Aux Relay.

The prox.pad also has two inputs used to monitor a door position switch or a request to exit (REX) device. The door position switch input requires a normally closed dry contact to operate and the REX input requires a normally open dry contact.

2.3 Unit Capacity

The prox.pad unit can accommodate up to 2,000 users. Each user can have a card/tag, a PIN code, or a card/tag plus a PIN code.

A maximum of 1,000 time-stamped transactions can be stored in the prox.pad unit. Each transaction includes these parameters: Time, Date, User "slot number," and event. A complete Transaction Log can be printed to the optional Data Collection Device via the built-in IR LED. For printing details, see section 2.8. The type of Transaction Log is "First In, First Out." The oldest transaction gets deleted when the new one is added.

2.4 Alarm Output Selection

During initial installation, the prox.pad unit's AUX relay output is wired to trigger ONE of three events. Consequently, the installer must know which of these events is appropriate for each installation.

- Alarm Shunt Relay
- Forced Door Relay
- Propped Door Relay

Separate instructions and wiring diagrams for each of the above applications are provided later in this chapter.

NOTE: The capability provided by the internal local sounder (an audible alarm) is separate from the 1A AUX relay. The sounder can trigger regardless of how the AUX relay is programmed.

2.5 Wiring the prox.pad Unit

The following sections describe how to wire the Aux Relay for either Alarm Shunt, Forced Door, or Propped Door, depending on how the prox.pad's alarm output is to be used for this installation. Wiring the door contacts, Request to Exti (REX) and main relay are also discussed.

2.5.1 Wiring the AUX Relay for Use as Alarm Shunt

The Alarm Shunt Relay function may be necessary when a separate existing security system is in place. The Alarm Shunt Relay keeps an alarm panel zone from going into alarm when the door is opened, after a valid code is entered. No programming is required for a new unit out-of-box, or if the unit is ever defaulted using programming commands 40 or 46. The prox.pad controller assigns the AUX relay to the Alarm Shunt Relay automatically upon any valid access or egress. To incorporate this feature, follow the steps below; see Figure 9.

1. Turn off power to the prox.pad unit, and then unlatch the keypad from the plastic housing.
2. Locate connector P2 (the 6-pin connector) on the main circuit board and plug on the 6-pin harness. (The 2-pin jumper on pins 5 and 6 of connector P2 must be removed first.)
3. Connect the 6-conductor harness to connector P2 as shown in Figure 9.
4. Connect the green wire to the "Common" side of the door contact.
5. Connect the blue wire to the "Normally Open" side of the door contact.
6. Make a parallel connection to the green and blue wires and run the leads to the alarm panel.

NOTE: This feature requires that you use the "Door Contact" input as shown in Figure 9.

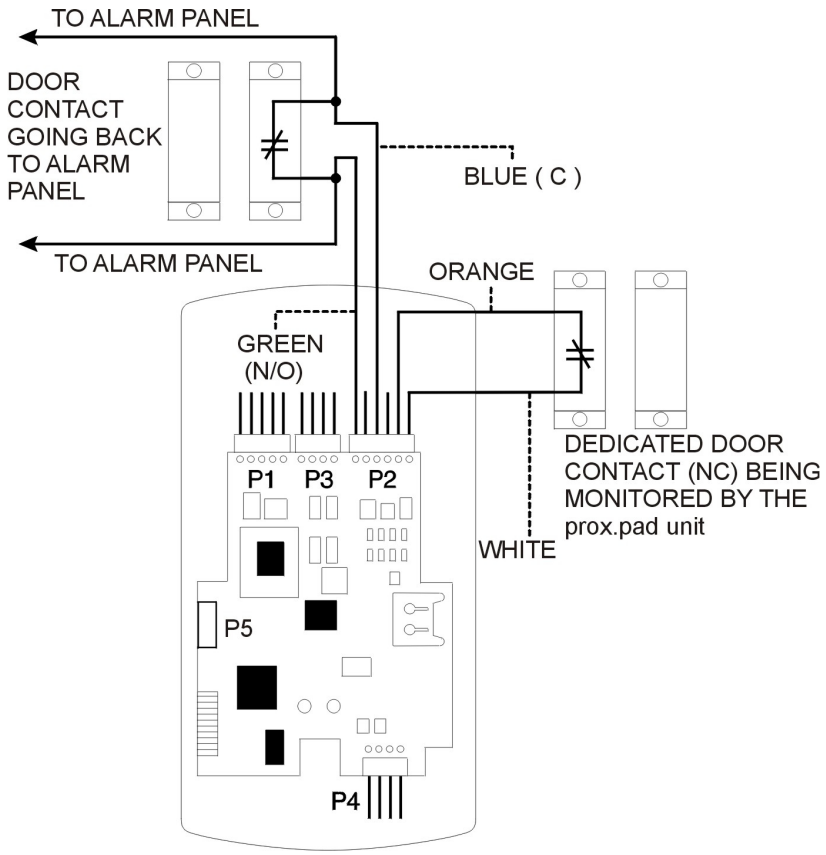


Figure 9: Wiring the Aux Relay for Alarm Shunt Operation

2.5.2 Wiring the AUX Relay for Use as Forced Door

The Forced Door output function informs personnel that the door has been opened without authorization. The Aux relay is rated to handle 1 Amp of current at 12 VDC, and can turn ON or OFF one leg of the power to a warning device. (Warning device not included with the IEI unit.) To incorporate this feature, follow the steps below; see Figure 10.

1. Turn OFF power to the prox.pad unit, and then unlatch the keypad from the plastic housing.
2. Locate connector P2 (the 6-pin connector) on the main circuit board.
3. Connect the 6-conductor harness to connector P2. (The 2-pin jumper on pins 5 and 6 of connector P2 must be removed first.)
4. Connect the green wire to V+ on the warning device.
5. Connect the blue wire to V+on the power supply.
6. Connect V- from the power supply to V- on the sounder. The gray wire is not used.

NOTE: To use the default 10-second Forced Door Relay time, no programming is necessary. To change this default (from 10 to 990 seconds), enter the appropriate programming after the unit is installed successfully; for details, see section 2.7.4c.

NOTE: PROGRAMMING FOR FORCED DOOR - To program for Forced Door, enter the following on the keypad: **15 # 2 # 0 # **** white in programming mode.

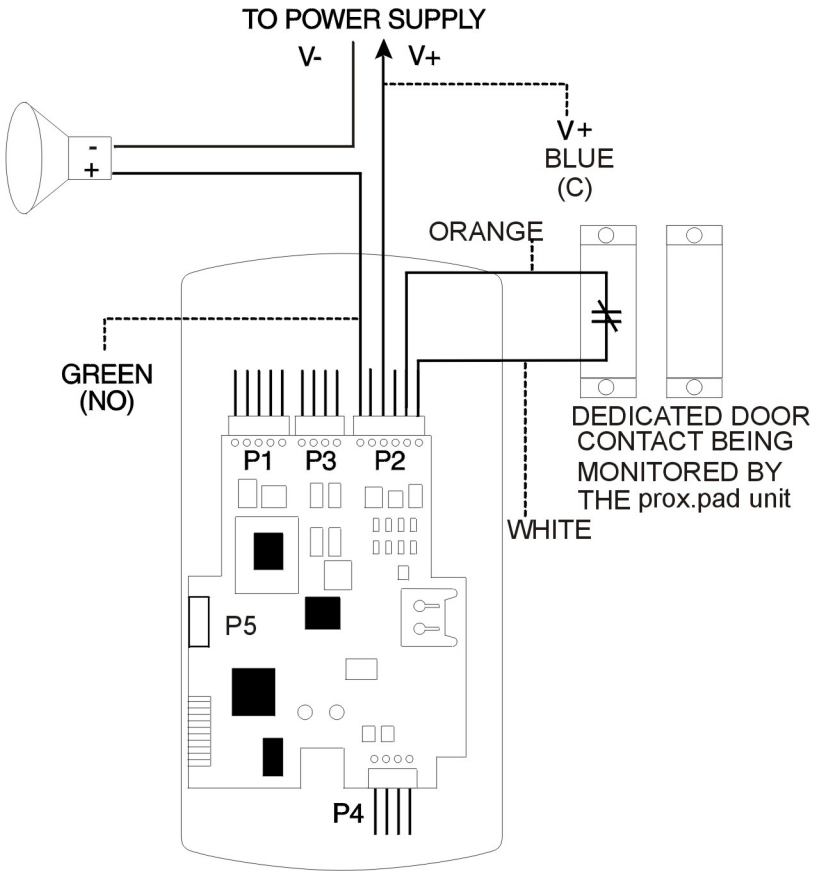


Figure 10: Wiring the Aux Relay for Forced Door Alarm

2.5.3 Wiring the AUX Relay for Use as Propped Door

The Propped Door Relay output function informs personnel that the door is being held open, or "propped" open, after a valid entry. The Aux relay is rated to handle one amp of current at 12 VDC, and turns ON or OFF one leg of the power to a warning device. (Warning device not included with the IEI unit.) To incorporate this feature, follow the steps below; see Figure 11.

1. Turn OFF power to the prox.pad unit, and then unlatch the keypad from the plastic housing.
2. Locate connector P2 (the 6-pin connector) on the main circuit board.
3. Connect the 6-conductor harness to connector P2. (The 2-pin jumper on pins 5 and 6 of connector P2 must be removed first.)
4. Connect the green wire to V+ on the sounder.
5. Connect the blue wire to V+on the power supply.
6. Connect V- from the power supply to V- on the sounder. The gray wire is not used.

NOTE: To use the default 30-second Propped Door Relay time, no programming is necessary. To change this default (from 30 to 990 seconds), enter the appropriate programming after the unit is installed successfully; for details, see section 2.7.4b.

NOTE: PROGRAMMING FOR PROPPED DOOR - To program for Propped Door, enter the following on the keypad: **15 # 3 # 0 # ****

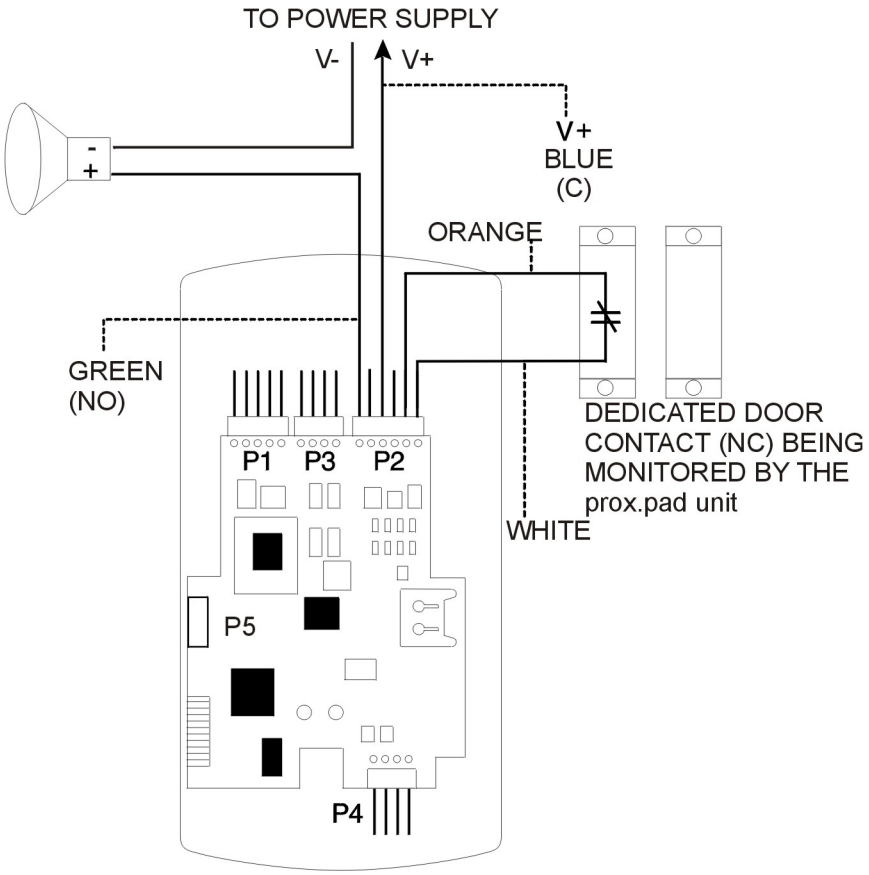


Figure 11: Wiring the Aux Relay for Propped Door Alarm

2.5.4 Wiring the Door Contact Input

To solve the problem of people “tailgating” in behind personnel using valid access protocol, the Auto Re-Lock feature is provided. With Auto Re-Lock, a long door open time can be programmed. Auto Re-Lock overrides the main relay timer, resetting the door open time as soon as the prox.pad unit senses that the door is open. A long door open time allows people sufficient time to carry packages from the proximity reader/keypad to the door and open it before the timer runs out.

No programming is required to implement this feature.

After a valid access or egress, the prox.pad unit senses that the door switch is open and drops the main relay immediately. This disengages the lock, which locks behind the person regardless of how long it takes that person to get through the door.

The door contact input is also used for the propped door and forced door features.

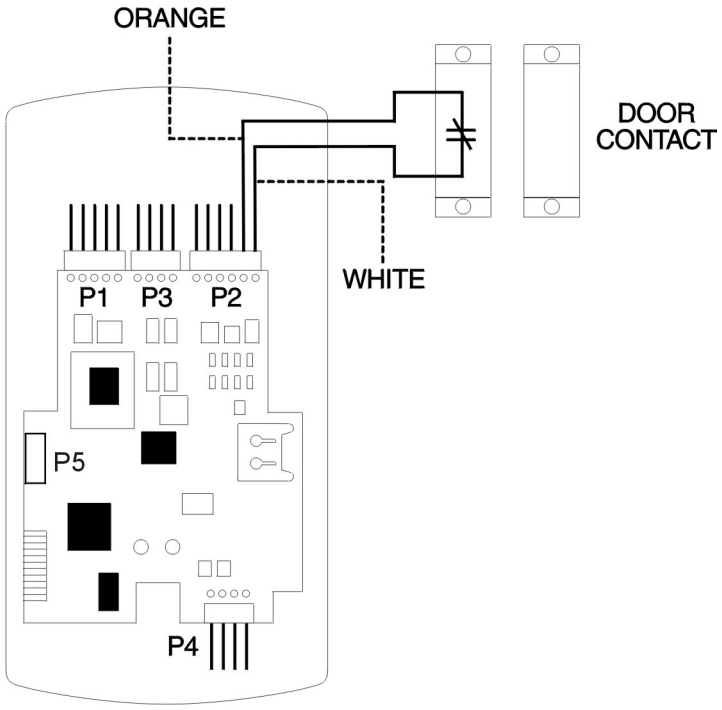


Figure 12: Wiring the Door Contact Input

2.5.5 Wiring an External REX Switch (Request to Exit)

The prox.pad unit can be wired to monitor a remote switching device, which is intended to be installed on the secure side of a door. The Request to Exit (REX) switch is a momentary input closure that engages the main relay for the same length of time for which the main relay is programmed. This feature can be stored in the Transaction Log for viewing.

If you elect to perform a secure installation where the controller is mounted on the secure side of the door, you can use the filler piece as a REX switch. For other installations, a separate REX switch must be purchased.

Other REX devices can be used to include a remote button placed at a receptionist's desk, a press-to-exit switch on the inside of a door, or a passive infrared detector, allowing free and convenient egress. The REX feature requires no programming; simply wire the unit as illustrated in Figure 13. To incorporate this feature, follow the steps below:

1. Turn OFF power to the prox.pad unit, and then unlatch the keypad from the plastic housing.
2. Locate connector P2 on the main circuit board.
3. Plug the 6-conductor harness into connector P2. (The 2-pin jumper on pins 5 and 6 of connector P2 must be removed first.)
4. **If you do not wish to install the door contacts per** figure 13, twist the white wire and the orange wires together; this is mandatory. If this is not done, the REX input will not function.

NOTE: The door contact **MUST** be closed for the REX feature to work properly.

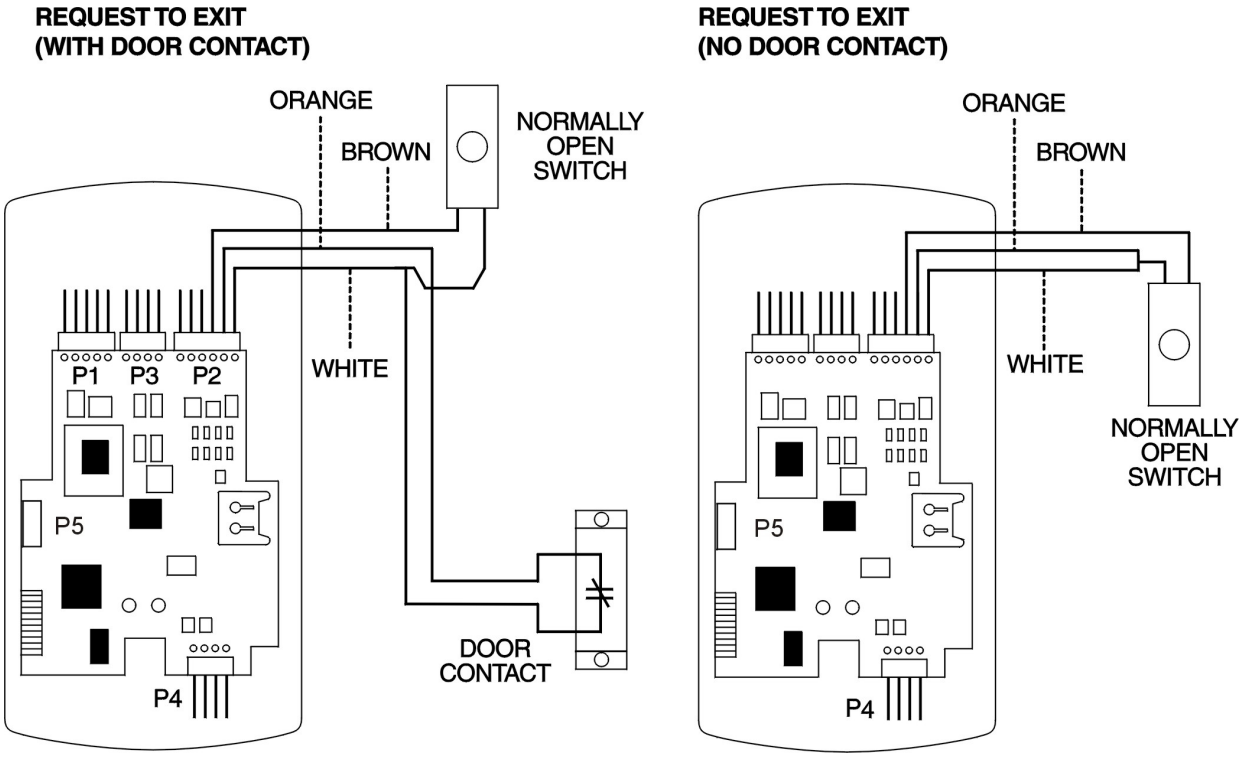


Figure 13: Wiring the REX Switch

Use ALPHA 2421C 18 AWG or ALPHA 1292C 22 AWG, 2-conductor, stranded and shielded cable. The cable shield drain wire must be grounded at the reader end to P1, pin 4 connection (DC Power Supply Ground).

2.5.6 Wiring the Main Relay

The door lock is wired to connector P1 on the prox.pad main circuit board. Wiring for this 5-pin connector is described in Table 2, Figure 14 provides an Electric Strike (Fail Secure) wiring diagram, Figure 15 a MagLock (Fail Safe) wiring diagram. Refer to the power supply recommendations in section 1.13.1 if necessary.

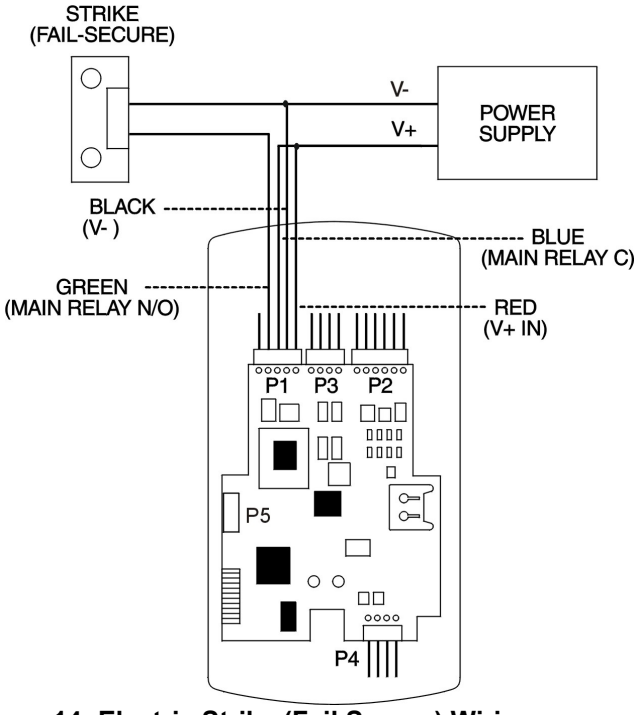


Figure 14: Electric Strike (Fail Secure) Wiring

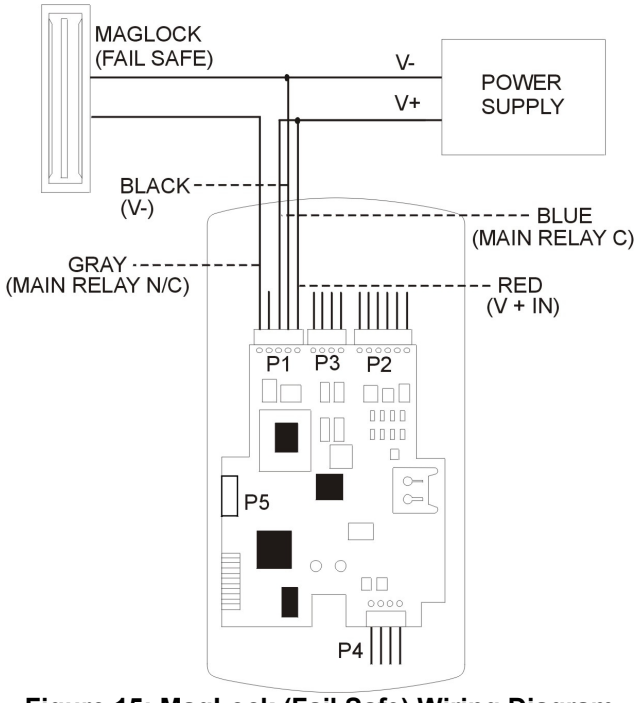


Figure 15: MagLock (Fail Safe) Wiring Diagram

2.6 Testing the prox.pad

At this point in a typical installation, it is assumed that the prox.pad unit has been mounted and wired successfully as described earlier and that testing can begin. IEI recommends, however, that first-time installers test the prox.pad unit BEFORE actually mounting and wiring the unit to become familiar with its operation.

2.6.1 Testing the Controller/Keypad

1. Connect the positive (+) lead of the power supply to the V+ input on the prox.pad controller/keypad.
2. Connect the negative (-) lead of the power supply to the V- input on the prox.pad controller/keypad.
3. Turn ON the power supply.
4. Ensure that the bi-color LED (red and green) on the prox.pad unit lights red.
5. Perform the keypad self-test described in section 5.2.
6. Enter the master code on the keypad by pressing: **99 # Master Code *** (default is 1234)

   The red LED turns OFF and the green LED turns ON for five seconds while the main relay energizes. To program the unit, see section 2.7.

2.7 Programming in Standalone Mode

Section 2.7 provides information about programming the IEI prox.pad unit. Certain parameters must be programmed upon initial installation, such as changing **the default Master Code (section 2.7.1a)** Section 1.17 describes how to default the memory.

2.7.1 General Programming Features

The first step in programming the prox.pad unit is to place it into program mode by using the master code, which is defaulted to 1234.

To place the prox.pad unit in program mode, press: **99 # Master Code ***

When the prox.pad is in program mode the yellow LED flashes slowly.

When you are done programming, to exit program mode press the * key.

If at any point you make a programming error (either press a wrong key or perform a command the unit does not recognize), the unit produces a program error by turning on the yellow LED solid. To clear a program error, simply press the * key.

Note: If you don't know the master code, refer to section 1.17 to press the program button (SW1) on the main circuit board. Momentarily pushing this button forces the unit into program mode. Also refer to Table 13 for further details on troubleshooting issues with the master code.

2.7.1.a Changing the Master Code

The default **master code** of 1234 **must be changed** prior to performing any programming on the prox.pad unit. Attempting to perform any programming commands produces a program error (solid yellow LED). To clear this error simply press the * key. The only exception to this rule is the 46 command, used to default the unit. All other programming is not allowed.

To change the master code use the following programming sequence:

1. Enter Program Mode

   Press: **99 # master code ***

   The yellow LED flashes slowly.

2. Program the new master code.

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

3. Exit Program Mode

   Press: *

   The yellow LED stops flashing.

Note: Throughout the programming section the last step is to exit program mode. If you are going to program multiple users or keypad options, you are not required to exit program mode after each command sequence. You may continue to the next programming option without exiting program mode. When all your programming is complete, you can then exit program mode by pressing the * key.

2.7.1.b prox.pad Default Settings

Table 4 lists the default settings for the prox.pad unit as shipped from the factory. Subsequent sections in this chapter explain how to change these default settings or program additional functions.

Table 4: prox.pad Default Settings – Standalone Mode

Option	Default Setting	Option	Default Setting
Master Code	1234	Main Relay Time	5 Seconds
Audio Keypress Feedback	Enabled	Visual Keypress Feedback	Enabled
Auxiliary Relay	Alarm Shunt	Auto-Entry	Disabled
Facility Code Access	Disabled	Forced Door Audio Alert	Enabled
Propped Door Audio Alert	Enabled	Internal REX Switch	Disabled
DST Time/Date Format	US	Daylight Savings Time	Enabled
Anti-Passback	Enabled	Invalid PIN Lockout	Disabled
Invalid PIN Lockout Action	Timed Lockout	26-Bit Facility Code	1
Anti-Passback Timer	1 second	Invalid PIN Lockout Count	5 Attempts
Invalid PIN Lockout Time	5 Minutes	Propped Door Audio Alert	30 Seconds
Forced Door Audio Alert	10 Seconds		

2.7.1.c prox.pad LED Indicators/Sounder Operations – Standalone Mode

The table below describes the various LED and Sounder indications used in the prox.pad while operating in standalone mode.

Table 5: prox.pad LED Indicators/Sounder Operations – Standalone Mode

LED/Sounder	Visual/Audible Condition	Description
Yellow LED	Slow blink	Unit is in Program mode
	Rapid blink	Verify mode is active (checking that the last two values in sequence match)
	Steady	Program error; entry error lockout (no keypress feedback)
	Very rapid blink	Memory (eeprom) erase is in progress (command 46)
	“Pulsing” rapid blink	Batch program of cards in progress (command 56); block delete of users (command 58)
Bi-color LED	Steady red	Lock is locked
	Steady green	Lock is energized (timed or latched)
	Red drop out	Lock locked, user lockout is active; red LED drops out for 100 ms every second; a latched lock will override lockout indicator
	Green with red blink	Lock latched and user lockout is active
	Fast green flash	IR dump in progress (user/log)
	Quick double red/green flash	Prox card read correctly
	Alternating red/green	Waiting for second PIN or “card and code” user
	Solid green with red flicker	Lock toggle is unlocked and user lockout active
	Red blink	User lockout is active and lock locked; red LED drops out for 100 ms every second; normal users cannot change the state of the relay
All LED's	Rapid red, yellow, green sequencing	Power on/reset
Sounder (system)	Very quick beep (10 ms) with yellow LED blink every second	EEPROM read error during get system parameters; can be turned off by running self-test
	Short beep (100 ms) every 2 seconds	Propped door is active
	Sounder 1/2 sec on, 1/2 sec off	Forced door is active
Sounder (after PIN)	3 rapid beeps after	PIN not found
Sounder (after card)	3 very rapid beeps	PIN not found, facility code/company ID mismatch and access by facility mode enabled; incorrect card type (option #20)
	1 short beep	Valid card access

2.7.2 Programming Users

The following section describes in detail how to program users. The prox.pad can store up to 2000 users. Each user is stored in a separate location in the unit's memory. This is referred to as the user location. Codes can be from 1 to 6 digit in length in any combination. If at any point while programming a code or a card you get a programming error (solid yellow LED), and you know you are entering the command correctly, make sure that the code or card is not already programmed. If you are unsure try entering that code or presenting that card outside of program mode and see if you are granted access. If so, you must use a different code or card for that user.

Note: IEI recommends that you keep a list of all the users you have programmed in the device, in case you need to modify or delete a particular user.

Note: A minimum of three user codes must be programmed into the keypad for controlling access.

2.7.2.a User Types

The table below identifies and describes the four user types supported by the prox.pad unit. The user type number is used in programming commands in the subsequent sections where it indicates "user type."

Table 6: prox.pad User Types

User Type Name	User Type Number	Description
Toggle User	0	Toggle users are used to latch the main relay in the unlocked position for an indefinite period of time. Entering the same (or another) toggle code, re-locks the unit.
Normal Access	1	Normal access users are the default user type. This user type unlocks the door for the duration of the Main Relay time set in command 11.
Log Dump	2	Log Dump users are used to dump the transaction event log via the IR LED. When this user type is used the log begins transmitting immediately. The log is only dumped and is not erased. This user type does not gain access through the door.
Lockout	3	This user type, locks the keypad disallowing all other codes plus the door remains in the current state. During a lockout state, card access does not continue to work. If it is locked, it remains locked. If it is unlocked, it remains unlocked until another Lockout code (or the same one) is entered, releasing it from Lockout mode.

2.7.2.b Programming a "Code Only" User

To program a "Code Only" use command 50. This user gains access by entering their code on the keypad. Refer to table 6 for details on user types. Codes can be from 1 to 6 digit in length in any combination. The program sequence is as follows:

1. Enter Program Mode

   Press: **99 # master code ***

   The yellow LED flashes slowly.

2. Program the "Code Only" User.

   Press: **50 # user type # user location # code * repeat code ***

3. Exit Program Mode

   Press: ***

   The yellow LED stops flashing.

2.7.2.c Programming "Card Only" Users by Presentation

To program a "Card Only" user by presentation (by presenting the card to the reader) use command 50. This user type gains access by presenting their card to the reader. Refer to table 6 for details on user types. The program sequence is as follows:

1. Enter Program Mode

   Press: **99 # master code ***

   The yellow LED flashes slowly.

2. Program the "Card Only" User.

   Press: **50 # user type # user location # ** <present card>**

3. Exit Program Mode

   Press: ***

   The yellow LED stops flashing.

2.7.2.d Programming 26-Bit "Card Only" Users without Presentation

To program a 26-bit "Card Only" user without presentation (without presenting the card to the reader) use command 51. Refer to table 6 for details on user types. This command is useful, if you want to program a card, but you don't have the physical card with you. **When programming cards with this command, you must program the facility code, using command 32, parameter 2, prior to programming users.** The program sequence to program cards is as follows:

1. Enter Program Mode

   Press: **99 # master code ***

   The yellow LED flashes slowly.

2. Program the "Card Only" User.

   Press: **51 # user type # user location # card number * card number ***

3. Exit Program Mode

   Press: ***

   The yellow LED stops flashing.

> **Note:** If you want to program users with a different facility code, simply change the facility code with command 32, parameter 2 before each series of users.

2.7.2.e Programming "Code AND Card" Users

When you are a combination "code and card" user you can present either your proximity card first at the proximity reader or enter the code first on the prox.pad keypad. Codes can be from 1 to 6 digit in length in any combination. After you either present your card or enter your code, the red and green LEDs alternate. This indicates that the unit is awaiting the second part of the combination before granting access. Once access is granted, the bi-color LED turns solid green and the door unlocks. The program sequence is as follows:

1. Enter Program Mode

   Press: **99 # master code ***

   The yellow LED flashes slowly.

2. Program the "Code AND Card" User.

   Press: **50 # user type # user location # code * repeat code * <present card>**

3. Exit Program Mode

   Press: ***

   The yellow LED stops flashing.

2.7.2.f Programming "Code OR Card" Users

To program a "Code OR Card" user use command 52. This type of user can use either their code or card to gain access. Codes can be from 1 to 6 digit in length in any combination. Refer to table 6 for details on user types. The program sequence is as follows:

1. Enter Program Mode

   Press: **99 # master code ***

   The yellow LED flashes slowly.

2. Program the "Code OR Card" User.

   Press: **52 # user type # user location # code * repeat code * <present card>**

3. Exit Program Mode

   Press: ***

   The yellow LED stops flashing.

2.7.2.g Programming 26-Bit "Card Only" Users via Batch Entry without Presentation

To program a 26-bit "Card Only" user via batch entry without presentation (without presenting the card to the reader) use command 56. "Batch entry" allows you to enter multiple, sequential 26-bit HID format cards into the prox.pad unit's memory at one time. (Keeping IEI proximity cards in order is easy as the code is printed on the front of each card.) Up to 1,999 users can be added this way at one time. (User 1 is reserved for the Master code.)

NOTE: When programming cards with this command, you must program the facility code, using command 32, parameter 2, prior to programming users.

To add several users, follow this procedure:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter command to batch program users.

   Press: **56 # (total number of cards to be added) # (starting user location) # card number * repeat card number ***

   NOTE: Never enter one (1) as the starting user location since it is reserved for the master code.

3. Exit program mode.

   Press: ***

2.7.2.h Programming Consecutive "Card Only" Users via Batch Entry by Presentation

To program consecutive "Card Only" user via batch entry by presentation (by presenting cards to the reader) use command 53. This command provides a simple method of programming a group of consecutive users by presenting the appropriate prox cards. This method of programming cards does not require any knowledge of the card format as long as it contains 40 bits or less of data. Up to 1,999 users can be added this way at one time. Entering the master user as the first card in the sequence generates an error because the master code cannot be programmed as a "Card Only" user. The card loading stops automatically once the current user location exceeds 2000. Pressing any key on the faceplate aborts the loading process.

To add several users from the proximity reader, follow this procedure:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter command to batch program users.

   Press: **53 # user type # start location # * * present cards one after another**

   NOTE: Never enter one (1) as the starting user location since it is reserved for the master code.

3. Exit program mode.

   Press: ***

2.7.2.i Command 50 Quick Program Feature - "Code Only" or "Card Only"

The prox.pad contains a quick method for programming normal access user type users that are usually programmed using command 50. When using this method the 50 is not required in the command sequence.

1. Enter Program Mode.

   Press: **99 # master code ***

   The yellow LED flashes slowly.

2. Program the "Code Only" User.

   Press: **user location # code * repeat code ***

   Program the "Card Only" User.

   Press: **user location # ** <present card>**

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.7.3 Deleting Users

There are two methods for deleting users from the prox.pad unit. You can either delete a single user or you can delete a block of consecutive users. You must know the user locations for user(s) you wish to delete in order to do this. If you do not know the user locations you can dump a user list via the IR LED to the optional Data Collection Device. Refer to the printing section for details.

2.7.3.a Deleting a Single User

To delete a single user, follow the steps below.

1. Enter Program Mode.

   Press **: 99 # Master Code ***

   The yellow LED flashes slowly.

2. Delete the User

   Press: **User location # ****

   To delete user 100, for example, press: 100 # **

   The yellow LED blinks slowly.

3. Exit Program Mode.

   Press *

   The yellow LED stops flashing.

2.7.3.b Deleting a Block of Users

You can delete a block of consecutive users using command 58. This command requires you enter the starting user location you want the deletion to begin and how many users from that point you want to delete. You must enter each value twice to ensure that you've entered the correct number. Every user from the starting location to the ending user location is deleted. For example if you want to delete user 10 to user 25, enter 10 in the start user value and 15 in the number of users value.

To delete a block of users, follow the steps below.

1. Enter Program Mode.

   Press **: 99 # Master Code ***

   The yellow LED flashes slowly.

2. Delete the Block of Users.

   Press: **58 # start user # start user # number of users * number of users ***

   The yellow LED blinks rapidly for several seconds until all the users are deleted.

3. Exit Program Mode.

   Press *

   The yellow LED stops flashing.

2.7.4 Programming Output Relays and Audio Alerts

2.7.4.a Changing the Main Relay Time

Setting the main relay time using command 11 simultaneously sets the time for all normal access users (user type 1). The factory default main relay time is five (5) seconds. You can set the main relay time in one-second increments from one (1) second to ninety-nine (99) seconds using the following command sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the new main relay time (1 to 99 seconds).

   Press: **11 # relay time # 0 # ****

   For example, to enter 10 seconds, press: **11 # 10 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

2.7.4.b Programming the Aux Relay Output Function

You can program the Aux Relay output to operate as either alarm shunt, propped door or forced door. You can also disable the relay. In the command sequence enter the output number in output field. You can only assign a single output to the Aux Relay. Alarm shunt is the default value so no programming is required if that's the function you want to use. The output values are listed in step 2 below. The command sequence is as follows:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Program the Aux Relay Output Function

   Press: **15 # output # 0 # ****

   0 = Disabled

   1 = Alarm Shunt (Default)

   2 = Forced Door

   3 = Propped Door

3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

2.7.4.c Programming the Propped Door Audio Alert

You can program the local sounder on the keypad to operate as the Propped Door output in addition to or instead of the Aux Relay. This feature is enabled by default. Use the following command sequence to enable or disable this feature:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable the propped door audio alert, press: **30 # 6 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable the propped door audio alert, press: **30 # 6 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: *

2.7.4.d Programming the Forced Door Audio Alert

You can program the local sounder on the keypad to operate as the Forced Door output in addition to or instead of the Aux Relay. This feature is enabled by default. Use the following command sequence to enable or disable this feature:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable this feature, press: **30 # 5 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 5 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: *

2.7.4.e Programming the Propped Door Time

To program the Propped Door output time use command 44. This time applies to both the audio alert and to the Aux relay, when this feature is assigned to it. You can program it from 10 to 990 seconds in 10 second increments. The default value is 30 seconds, which means the output triggers if the door position switch is held open for 30 seconds. The command sequence is as follows:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the propped door time (ttt = 10 to 990 seconds).

   Press: **44 # ttt # 0 # ****

   For example, to enter 60 seconds, press: **44 # 60 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

2.7.4.f Programming the Forced Door Time

To program the Forced Door output time use command 45. This time applies to both the audio alert and to the Aux relay, when this feature is assigned to it. You can program it from 10 to 990 seconds in 10 second increments. The default value is 10 seconds, which means the output triggers immediately after 10 seconds. The command sequence is as follows:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the forced door time (ttt = 10 to 990 seconds).

   Press: **45 # ttt # 0 # ****

   For example, to enter 60 seconds, press: **45 # 60 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

2.7.5 Programming Keypad Options and Parameters

The following section details various keypad programming options.

2.7.5.a Enabling/Disabling Audio Keypress Feedback

Audio Keypress Feedback refers to the sounder beeping momentarily each time a key is pressed. This feedback indicates the key was pressed hard enough for the prox.pad to acknowledge and recognize which key you pressed. By default this option is enabled, but if you need to change it, use the following programming sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

1. To enable this feature, press: **30 # 0 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 0 # 0 # ****

   The yellow LED continues to blink slowly.

2. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.7.5.b Enabling/Disabling Visual Keypress Feedback

Visual Keypress Feedback refers to the yellow LED flashing momentarily each time a key is pressed. This feedback indicates the key was pressed hard enough for the prox.pad to acknowledge and recognize which key you pressed. By default this option is enabled, but if you need to change it, use the following programming sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To enable this feature, press: **30 # 1 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 1 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.7.5.c Enabling/Disabling Auto-Entry

Auto-Entry is a feature that determines whether or not you need to press the * key after entering your access code on the keypad. By default, the feature is disabled which means you are required to enter the * key after your access code to gain entry. If you enable the feature you are not required to enter the * key after entering your code to gain entry. This feature applies only to codes that are the same length as the master code. For example if the master code is four-digits, your user code must be four digits to use the auto-entry feature. All codes less than four digits require the * key. Codes longer than the master code are not allowed, since you'll reach that number of digits prior to entering the * key.

Note: When auto-entry is enabled you do not have to press the * key after "99 # master code" to enter program mode.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable this feature, press: **30 # 2 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 2 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.7.5.d Enabling/Disabling the Internal Request to Exit (REX) Switch

The internal REX switch refers to the button on the circuit board you can use as REX switch using the REX filler piece that comes with the unit. This feature is disabled by default. Refer to section 1.15.3 and for further details on configuring the internal REX switch.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable this feature, press: **30 # 7 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 7 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.7.5.e Enabling/Disabling Daylight Savings Time

Daylight savings time can be enabled or disabled using option 13. It is enabled by default. To enable/disable the feature use the following command sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable this feature, press: **30 # 13 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 13 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.7.5.f Selecting Daylight Savings Time Format

You can program the prox.pad Daylight Savings Time Format to either European format or US format. The formats are as follows:

- United States Format:
  - Begins Second Sunday in March - turn ahead 1 hour @ 2:00 AM
  - Ends First Sunday in November - turn back 1 hour @ 2:00 AM
- European Format:
  - Begins Last Sunday in March - turn ahead 1 hour @ 2:00 AM
  - Ends Last Sunday in October - turn back 1 hour @ 2:00 AM

The command sequence is as follows:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To select European DST Format, press: **30 # 8 # 1 # ****

   The yellow LED continues to blink slowly.

   To select US DST Format, press: **30 # 8 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.7.5.g Programming Timed Anti-Passback

When you enable Timed Anti-Passback, which is the default value, you must specify a length of time that must pass before the same prox card can be processed after it's presented. This requires that the card be outside of the prox read field during the entire period of time. If the card is reintroduced into the field prior to expiration of the time delay, the time delay restarts with a full duration. Presenting a different card (not necessarily a programmed card) causes the new card data to be processed immediately and also clears the Anti-Passback timer so that the first card presented now get processed again immediately.

Disabling the Timed Anti-Passback function provides another feature that controls how often ANY prox card is processed. When option is disabled, the timer indicates how often a card will be processed. Please note that the prox read function continues to attempt a card READ every 100 milliseconds, but a valid card read is only PROCESSED after the specified time delay elapses.

This function does not require the card to leave the read field. The main use of this feature is to adjust the processing rate of cards that remain in the field. Now you can extend the processing time to stop this type of unwanted toggling. Simply extend the timer value to accomplish this.

The anti-passback timer is set through command 32, parameter 3 (see below). The duration of the time delay can be set from a ½ second to 60 seconds in ¼ second increments.

The anti-passback feature applies only to prox cards; there is no “Anti-Passback” processing of keypad PINs. “Anti-Passback” and the “card process timer” are also turned off in program mode.

To enable or disable anti-pass back use the following command sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable this feature, press: **30 # 14 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 14 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

To program the anti-passback timer use the following command sequence

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. Enter the anti-passback time (value = 2 to 240, ¼ sec. Increments; default = 4 = 1 sec.).

   Press: 32 **# 3 # value # ****
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.7.5.h Programming the Facility Code for Card Programming without Presentation

This option is used to set the facility code used when you are programming card users using commands 51 and 56. Prior to programming users using these commands you must set this value to match that of the cards you are programming. The default value in prox.pad is 1. IEI HID format proximity cards come with a facility code value of 11.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the facility code (value = 0 to 255).

   Press: **32 # 2 # value # ****

3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

2.7.5.i Programming Invalid PIN Lockout

This feature refers to the number of invalid keypad attempts you can make on the keypad before the keypad either locks out the keypad or triggers the forced door output. It's used to keep people from continually attempting to gain access to the door by entering various code combinations by trying to guess a code.

This feature is enabled/disabled through command 30, option 18. It is disabled by default. See below.

As codes are entered, the prox.pad maintains a count of the number of consecutive invalid keypad PINs that are entered. When the invalid PIN count reaches the value programmed in command 32, parameter 4 (defaulted to 5 attempts), the invalid PIN lockout is activated.

One of two possible actions occurs once Invalid PIN lockout is triggered. Either a timed lockout occurs or the forced door output is activated, depending on which action you programmed. The action taken is programmed using command 30, option 19. Activation of the invalid PIN lockout is noted in the log with an event.

There are a couple of ways to reset this count prior reaching the count limit. You can reset it by either entering a valid keypad code, presenting a programmed prox card, pressing the program button, entering a valid [99 # Master code*] sequence or by the expiration of the keypad timer.

Please keep in mind, presenting a valid but non-programmed prox card does not affect (clear or increment) the current invalid PIN entry count. However, entering an incorrect master code in a [99 # Master Code*] sequence does increment the invalid PIN entry count. This ensures that attempts to guess the master code are not overlooked.

To enable/disable this feature use the following command sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To enable this feature, press: **30 # 14 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 14 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

To program the **Invalid PIN lockout action** use the following command sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To program the action for the forced door output, press: **30 # 19 # 1 # ****

   The yellow LED continues to blink slowly.

   To program the action for timed lockout, press: **30 # 19 # 0 # **** (default)

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

When you set it to operate the Forced Door output the system's current Forced Door settings (AUX output, duration, audio alert, etc) are used. Once the Forced Door is activated, the invalid PIN entry counter clears. Now another lockout can occur as soon as the threshold level is reached again.

When you s**elect the Timed Lockout function** all keypad PIN entries are disabled, with the exception of the [99 # Master Code*] sequence, for the duration of the lockout. The duration of the time lockout is specified through command 32, parameter 5. The command sequence is as follows:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the facility code (value = 1 to 255; set in 5 second increments; default = 60, which is 5 minutes).

   Press: 32 **# 5 # value # ****

   For example: To set for 10 seconds press 32 # 5 # 2 # **

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

Normal PIN-related indicators are disabled during a timed IPL. To determine the IPL state, enter a "known" invalid PIN such as [123456 *]. This should generate the usual three beeps, indicating the PIN is not found. If the beeps do not occur, then IPL is active. Also note that invalid PINs entries are not logged during an active IPL.

There are a number of ways to clear an active timed IPL: (1) pressing the program button or disconnecting power to the system always clears a lockout; (2) presenting a valid prox card programmed as either a "Card Only" or "CardORCode" user type also cancels an active timed lockout.

NOTE: Presenting a prox card programmed as "Card AND Code" does not clear the lockout as the entry of the required keypad PIN is ignored.

There is a special situation when using the [99 # Master Code *] sequence to clear a timed IPL. If an invalid 99# Master Code* is entered as part of the sequence to clear the IPL, a good 99# Master Code* sequence does not cancel the current lockout. This prevents someone from attempting to guess the master code to cancel the lockout.

Once the IPL is activated by an invalid master code, it remains active until the IPL expires or is cancelled by some other means. Entering [99#Master Code *] with the correct master code causes the red LED to "dropout" while the IPL is active.

Note that a continuous red LED dropout is used to indicate an active User Lockout condition. This should not cause confusion because only a single red dropout occurs after the [99#Master Code *] sequence is entered.

2.7.6 Reseting System Defaults and Erasing Memory

There are two methods for deleting programmed information from the prox.pad keypad. The first method is using command 40, which resets the system defaults and the master code only. The second method is through command 46, which erases all the memory in the prox.pad, except the transaction log.

Resetting the Master Code and System Defaults Only

Entering command 40 erases everything from the prox.pad memory except the user list and transaction log and restores the default settings. This is useful if the prox.pad unit has experienced programming problems, or wish to delete earlier programming.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the command to reset system defaults.

   Press: **40 # 00000 # 00000 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

2.7.6.a Erasing Entire Memory/Resetting System Defaults

Entering command 46 deletes everything from the prox.pad memory including the user list but not the transaction log and restores the default settings. This is used as a last resort if you need to erase a specific user and could not retrieve the Programmed User List.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the command to erase memory.

   Press: **46 # 00000 # 00000 # ****

   The yellow LED blinks rapidly for several seconds until the memory is deleted.

3. Exit Program Mode.

   Press: ***

2.8 Using the Printing Features

The prox.pad is equipped with and IR (infrared) LED which is used to transmit data to the option Data Collection Device (DCD) PDA Software. This data includes a programmed user list, the transaction event log and the self-test information.

2.8.1 Selecting Transaction Log Information

When you first install your prox.pad you should decide which transaction events you want to store in the even log. The event log can store up to 1000 events, but you may not want to see every one of them. You can select the specific transaction events you want to store in the log by "masking" out certain events. By doing so you are directing the unit not to save those events in memory and thus not be available for reporting later. The factory default is for all transaction events to be stored in the log. To select which events you want to save to the log use the following command sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To set an event to save to the log, press: **73 # Event Code # 1 # ****

   The yellow LED continues to blink slowly.

   To disable an event from saving to the log, press: **73 # Event Code # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

Table 7: Transaction Log Events

Event Code	Transaction Event	Event Code	Transaction Event
01	Access Denied	16	Dump Log
02	Program Denied	17	Access
04	REX (Request to Exit)	20	Toggle ON
05	Door Ajar	21	Toggle OFF
06	Door Closed	24	Lockout ON
07	Forced Door	25	Lockout OFF
08	Log Erased	27	Card/Code Mismatch
10	Invalid PIN Lockout Triggered	29	Enter Program Mode
12	Facility Access	30	Log Erased (can't disable)

2.8.2 Dumping a Transaction Event Log

You can dump a transaction event log to the optional Data Collection Device (DCD) PDA Software via the prox.pad's IR LED, using two different methods. You can either program a Log Dump User (user type 2) into memory or place the prox.pad into program mode and manually enter the Log Dump command (command 70). Refer to the instructions with the Data Collection Device for details on that product.

2.8.2.a Programming a Log Dump Code or Card

Below is an example of programming a "code only" or a "card only" Log Dump User. You can also use any of the other user programming commands to program this user type. Refer to the user programming section for details.

1. Enter Program Mode

   Press: **99 # master code ***

   The yellow LED flashes slowly.

2. Program the "Code Only" Log Dump User.

   Press: **50 # 2 # user location # code * repeat code ***

   Program the "Card Only" Log Dump User.

   Press: **50 # 2 # user location # ** <present card>**

   The yellow LED continues to blink slowly.

3. Exit Program Mode

   Press: ***

   The yellow LED stops flashing.

Now to dump the log to the Data Collection Device, simply enter the code or present the card while outside programming mode. Prior to entering the code/presenting the card, make sure you've set the Data Collection Device to capture the data and place the device in front of the IR LED. After you enter the log dump code/present card, the unit beeps 3 times and then the green LED flashes and yellow LED blinks slowly. When complete, the red LED turns on solid and the yellow LED continues to blink slowly.

2.8.2.b Dumping a Transaction Log Manually

You also have to option to dump the transaction log by entering command 70 while in program mode. To perform this function follow the command sequence below.

Note: Prior to entering command 70, make sure you've set the Data Collection Device to capture the data and place the device in front of the IR LED.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the command to erase memory.

   Press: **70 # 0 # 0 # ****

   The unit beeps 3 times and then the green LED flashes and yellow LED blinks slowly. When complete, the red LED turns on solid and the yellow LED continues to flash slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.8.2.c Erasing the Transaction Log Memory

The Transaction Log should be erased from memory **after being printed to prevent conflicting logs.** To erase the log, enter the following sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the command to erase log memory.

   Press: **76 # 00000 # 00000 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

2.8.2.d Dumping a Programmed User List

You can dump the programmed users list, containing all user information, to the optional Data Collection Device via the prox.pad's IR LED using command 25. You can either dump the entire user list or dump the user list starting at a specific user location.

When you dump the user list to the Data Collection Device all users from the starting location to user 2000 are transmitted, including empty user locations. You'll be able to see exactly where each user code is stored in memory. This is important in case you ever need to delete or modify a particular user.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the command to dump the entire user list.

   Press: **25 # 0 # 0 # ****

   Enter the command to dump the user list starting at a specific location.

   Press: **25 # 0 # start user location # ****

   The unit beeps 3 times and then the green LED flashes and yellow LED blinks slowly. When complete, the red LED turns on solid and the yellow LED continues to flash slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

2.9 Standalone Program 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.

Note: The master code must be changed prior to performing any programming on the prox.pad unit.

Table 8: Standalone Programming Commands

Action Desired	Press	Details
Enter Program Mode	**99 # (Master Code)***	Yellow LED blinks slowly
Change master code	**1 # (new code) * (repeat code) *** Ex: 1 # 4321 * 4321 *	Code-only operation
Set main relay time	**11 # tt # 0 # ****	tt=1-99 seconds **(default = 5 seconds)**
Set AUX relay output	**15 # output # 0 # ****	0=disabled **1=shunt (default)** 2=forced door 3=propped door
Delete Users	**user location # ****	(See section 2.7.3)
Set/clear standard option	**30 # option # s/c # ****	See Chart below

Option	Set	Clear
0 – Audio Keypress Feedback	**1 = Enabled**	0 = Disabled
1 – Visual Keypress Feedback	**1 = Enabled**	0 = Disabled
2 – Auto Entry	**0 = Disabled**	1 = Enabled
3 – Operating Mode	**0 = Standalone**	1 = Front End
4 – Facility Code Access	**0 = Disabled**	1 = Enabled
5 – Forced Door Audio Alert	0 = Disabled	**1 = Enabled**
6 – Propped Door Audio Alert	0 = Disabled	**1 = Enabled**
7 – Internal REX Switch	**0 = Disabled**	1 = Enabled
8 – Daylight Savings Time Format	**0 = US**	1 = European
13 – Daylight Savings Time	0 = Disabled	**1 = Enabled**
14 – Prox Card Anti-Passback Select	0 = Disabled	1 = Enabled
18 – Invalid PIN Lockout Select	**0 = Disabled**	1 = Enabled
19 – Invalid PIN Lockout Action	**0 = Timed Lockout**	1 = Forced Door Output

Print User List	**25 # 0 # 0 # ****	(See section 2.8.2.D)
Print User List (From Certain User Location)	**25 # 0 # start user # ****	

Action Desired	Press	Details
Change Platform Parameters	**32 # parameter # value # ****	See Chart Below

Parameter	Value
2 – 26 Bit Facility Code (for commands 51 & 56)	0 – 255; **(Default = 1)** Note: IEI Cards are Facility Code 11
3 – Process Card Timer	2 – 240; ¼ sec. Increments **(Defaults to 4 = 1 sec.)**
4 – Invalid PIN Lockout Attempts	1 – 50 **(Default = 5)**
5 – Invalid PIN Lockout Duration	1 – 255; 5 sec. increments; **(Defaults to 60 = 5 Minutes)**

Set System Time	**41 # hhmm # 0 # ****	hhmm=hour/minute (24 Hour Format)
Set System Date	**42 # mmddyy # dow # ****	mmddyy=month, date, year; dow=day of week, 1=Sunday
Set Door Number	**43 # nnnn # 0 # ****	nnnn=door number (4 digits)
Set Propped Door Time	**44 # ttt # 0 # ****	ttt=propped door time, to nearest 10's seconds, entered as 30-990; **(default=30 secs)** (this sets the time for both Aux Relay and local sounder)
Set Forced Door Time	**45 # ttt # 0 # ****	ttt=forced door time, to nearest 10's seconds, entered as 30-990; (**default=10 secs)** (this sets time for both Aux Relay and local sounder)
Reset System Defaults Only	**40 # 00000 # 00000 # ****	Does not delete users See section 2.7.6a
Delete Entire Memory and Reset System Defaults	**46 # 00000 # 00000 # ****	Deletes all memory including users See section 2.7.6b
Program User – Code Only	**50 # user type # user location # code *repeat code ***	**User Types:** 0-Toggle/latch lock 1-Normal access 2-log Dump 3-Lockout
Program User – Code AND Card By Presenting Card	**50 # user type # user location # code * repeat code * <present card>**	**User Types:** 0-Toggle/latch lock 1-Normal access 2-log Dump 3-Lockout

Action Desired	Press	Details
Program User - Card Only By Presenting Card	**50 # user type # user location # ** <present card>**	**User Types:** 0-Toggle/latch lock 1-Normal access 2-log Dump 3-Lockout
Program User – Card Only Without Presenting Card	**51 # user type # user location # card PIN * card PIN ***	**User Types:** 0-Toggle/latch lock 1-Normal access 2-log Dump 3-Lockout For 26-bit Cards only. The card PIN appears on the card (facility code must be entered first; see 32 # 2 # command)
Program User – Code OR Card By Presenting Card	**52 # user type # user location # code * repeat code * <present card>**	**User Types:** 0-Toggle/latch lock 1-Normal access 2-log Dump 3-Lockout
Program Consecutive Users – Card Only By Presenting Cards	**53 # user type # start user # ** <present card> <present card> ...**	**User Types:** 0-Toggle/latch lock 1-Normal access 2-log Dump 3-Lockout Simply present one card after another.
Program Consecutive Users – Card Only Without Presenting Cards	**56 # total count # user location # card PIN * card pin ***	"Total count" = total number of cards to be entered; card PIN appears on card; a facility code must be entered first (see command 32, option # 2)
Delete Block of Consecutive Users	**58 # start user # start user # number of users * number of users ***	
Dump Transaction Event Log	**70 # 0 # 0 # ****	See section 2.8.2.B

Action Desired	Press	Details
Enable/Disable Transaction Log Events	**73 # event # set/clear # ****	See section 2.8.1 and refer to chart below. Set = 1 (Enable) Clear = 0 (Disable)

Event Code	Transaction Event
01	Access Denied
02	Program Denied
04	REX (Request to Exit)
05	Propped Door
06	Door Closed
07	Forced Door
08	Log Erased
10	Error Lockout Triggered
12	Facility Access
16	Print
17	Access
20	Toggle ON
21	Toggle OFF
24	Lockout ON
25	Lockout OFF
27	Card/Code Mismatch
29	Enter Program Mode
30	Log Erased (can't disable)

Erase Transaction Log	**76 # 00000 # 00000 # ****	(See section 2.8.2.C)
To exit Program mode	Press *****	Yellow stops flashing

Chapter 3: Wiegand Front End Mode

Chapter 3 describes Wiegand Front End mode and supplies wiring diagrams and a programming chart specific to Wiegand mode.

3.1 Wiegand Front End Mode Description

In Wiegand Front End Mode (also known as "WFE" mode), the prox.pad unit is used as a front end for a Wiegand Access control panel. The prox.pad operates as "code only" or "card only", in Wiegand Front End Mode. Refer to the instruction manual with your Wiegand panel for more information.

In Wiegand Front End Mode, the Wiegand access control panel makes all the access control decisions, controls the locking device, controls the alarm output relays and the monitors any other inputs and outputs it may have.

The prox.pad maintains its own set of programming commands for various keypad options.

3.2 Wiring the Wiegand Front End

The following section shows how to wire the prox.pad to a Wiegand control panel. If you require further information on the Wiegand panel connections please refer to the instructions that came with the panel.

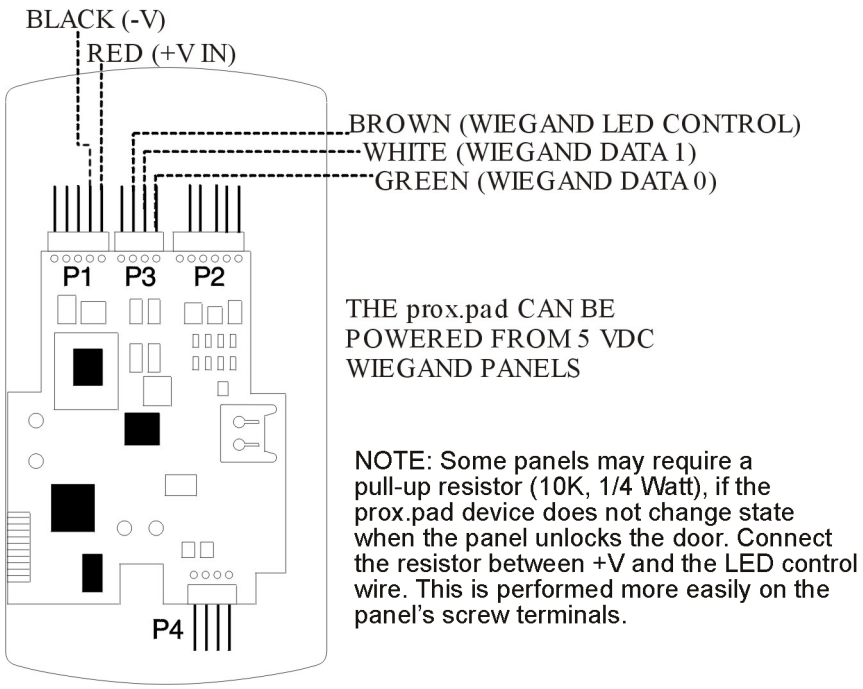


Figure 16: Wiring to a Wiegand Panel

Use ALPHA 1295C (22AWG) 4-wire, stranded and shielded cable. The cable shield drain wire must be grounded at the reader end to P1, pin 4 connection (DC Power Supply Ground).

3.3 Wiegand Front End Programming

The following sections detail how to program the prox.pad while in Weigand Front End Mode.

3.3.1 Entering Program Mode

The first step in programming the prox.pad unit is to place it into program mode by using the master code, which is defaulted to 1234.

To place the prox.pad unit in program mode, press: **99 # Master Code ***

When the prox.pad is in program mode the yellow LED flashes slowly.

When you are done programming, to exit program mode press the * key.

If at any point you make a programming error (either press a wrong key or perform a command the unit does not recognize), the unit produces a program error by turning on the yellow LED solid. To clear a program error, simply press the * key.

Note: If you don't know the master code, refer to section 1.17 to press the program button (SW1) on the main circuit board. Momentarily pushing this button forces the unit into program mode. Also refer to Table 13 for further details on troubleshooting issues with the master code.

3.3.2 Changing the Master Code

The default **master code** of 1234 **must be changed** prior to performing any programming on the prox.pad unit. Attempting to perform any programming commands produces a program error (solid yellow LED). To clear this error simply press the * key. The only exception to this rule is the 46 command, used to default the unit. All other programming is not allowed.

To change the master code use the following programming sequence:

1. Enter Program Mode

   Press: **99 # master code ***

   The yellow LED flashes slowly.

2. Program the new master code.

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

3. Exit Program Mode

   Press: ***

   The yellow LED stops flashing.

Note: Throughout the programming section the last step is to exit program mode. If you are going to program multiple keypad options, you are not required to exit program mode after each command sequence. You may continue to the next programming option without exiting program mode. When all your programming is complete, you can then exit program mode by pressing the * key.

3.3.3 Enabling Wiegand Front End Mode

The prox.pad is defaulted to operate in standalone mode. To use it as a Wiegand Front End you must change the operating mode. First, change it to Front End Mode, then change it to Weigand Front End Mode. Use the following commands to change the operating mode.

1. Enter Program Mode.

   Press: **99 # master code ***

   The yellow LED blinks slowly.

2. Program the prox.pad for Front End Mode operation.

   Press: **30 # 3 # 1 # ****

3. Program the prox.pad for Weigand Front End Mode.

   Press: **30 # 15 # 0 # ****

4. Exit Program Mode.

   Press: ***

   The yellow LED stops blinking.

3.3.4 Wiegand Keypad Data

The prox.pad transmits keypad data as 26-Bit wiegand card data after you press the * key. If you have auto-entry enabled, as soon as you've entered the final digit in the code, the data is sent. Remember, when auto-entry is used, the code must be the same length as the master code.

When the prox.pad sends the 26-Bit data, the facility code programmed in command 32, option 2 is used in the data. Please refer to section 3.3.5 below for details.

Since the keypad only transmits as 26-Bit data, codes can't exceed 65535. This is because there are only 16 bits availible in the 26 bit data stream. If you enter a code that exceeds this number a single long beep is generate, indicating the value is too large, and the data is not sent.

It is not possible to perform “Card and Code” operation (requiring both) to gain access in this mode.

3.3.5 Programming the Facility Code for Wiegand Keypad Data

This option is used to set the facility code used when you are using the prox.pad as a keypad front end. This value must match the facility code used in your panel if required. The default value in prox.pad is 1.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the facility code (value = 0 to 255).

   Press: **32 # 2 # value # ****

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

3.3.6 Card Data

When an HID format card is presented, the raw card data stored on the card is sent directly to the Wiegand panel without any data manipulation by the prox.pad. You can use any HID format card up to 40 bits. Simply present the card to reader and data is immediately transmitted.

3.3.7 Enabling/Disabling Audio Keypress Feedback

Audio Keypress Feedback refers to the sounder beeping momentarily each time a key is pressed. This feedback indicates the key was pressed hard enough for the prox.pad to acknowledge and recognize which key you pressed. By default this option is enabled, but if you need to change it, use the following programming sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To enable this feature, press: **30 # 0 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 0 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

3.3.8 Enabling/Disabling Visual Keypress Feedback

Visual Keypress Feedback refers to the yellow LED flashing momentarily each time a key is pressed. This feedback indicates the key was pressed hard enough for the prox.pad to acknowledge and recognize which key you pressed. By default this option is enabled, but if you need to change it, use the following programming sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To enable this feature, press: **30 # 1 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 1 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

3.3.9 Enabling/Disabling Auto-Entry

Auto-Entry is a feature that determines whether or not you need to press the * key after entering your access code on the keypad. By default, the feature is disabled which means you are required to enter the * key after your access code to gain entry. If you enable the feature you are not required to enter the * key after entering your code to gain entry. This feature applies only to codes that are the same length as the master code. For example if the master code is four-digits, your user code must be four digits to use the auto-entry feature. All codes less than four digits require the * key. Codes longer than the master code are not allowed, since you'll reach that number of digits prior to entering the * key.

Note: When auto-entry is enabled you do not have to press the * key after "99 # master code" to enter program mode.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable this feature, press: **30 # 2 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 2 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

3.3.10 Enabling/Disabling the Red LED

The prox.pad is equipped with a Bi-Color red/green LED. You have the option of enabling or disabling the red LED operation. By default, the red LED is enabled and turns on/off depending on which state you have the LED wire programmed for.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable the red LED, press: **30 # 9 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable the red LED, press: **30 # 9 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

3.3.11 Enabling/Disabling the Green LED

The prox.pad is equipped with a Bi-Color red/green LED. You have the option of enabling or disabling the green LED operation. By default, the green LED is enabled and turns on/off depending on which state you have the programmed LED active state (high or low).

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To enable the green LED, press: **30 # 11 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable the green LED, press: **30 # 11 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

3.3.12 Programming the Red LED Active State

In Wiegand Front End Mode you can control how the red LED operates using the LED wire, which is the brown wire on connector P3. When you program this option for an active high state, the red LED turns on when the wire is connected to positive voltage. When you program this option for an active low state, the red LED turns on when the wire is connected to ground. The default is an active low state.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To set the red LED for an active high state, press: **30 # 10 # 1 # ****

   The yellow LED continues to blink slowly.

   To set the red LED for an active low state, press: **30 # 10 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

3.3.13 Programming the Green LED Active State

In Wiegand Front End Mode you can control how the green LED operates using the LED wire, which is the brown wire on connector P3. When you program this option for an active high state, the green LED turns on when the wire is connected to positive voltage. When you program this option for an active low state, the green LED turns on when the wire is connected to ground. The default is an active high state.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To set the green LED for an active high state, press: **30 # 12 # 1 # ****

   The yellow LED continues to blink slowly.

   To set the green LED for an active low state, press: **30 # 12 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

3.3.14 Programming the Wiegand Pulse Width

If you panel requires a specific pulse width (the width of each individual data bit) you can program that with the parameter below. It's programmable from 20µS (micro-seconds) to 5100µS; the default value is 160µS. The value field in the command requires a number from 1 to 255 in 20µS increments. For example is you want 200µS enter a value of 10 in the field. Only change this option if your panel specifically states you need a specific pulse width.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the pulse width (value = 1 to 255; 20µS increments; default = 8, 160µS).

   Press: **32 # 0 # value # ****

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

3.3.15 Programming the Wiegand Inter-Pulse Spacing

If you panel requires a specific inter-pulse spacing (the width between each data bit) you can program that with the parameter below. It's programmable from 20µS (micro-seconds) to 5100µS; the default value is 640µS. The value field in the command requires a number from 1 to 255 in 20µS increments. For example is you want 200µS enter a value of 10 in the field. Only change this option if your panel specifically states you need a specific inter-pulse spacing.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. Enter the pulse width (value = 1 to 255; 20µS increments; default = 32, 640µS).

   Press: **32 # 1 # value # ****
3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

3.3.16 Reseting System Defaults and Erasing Memory

Entering command 46 deletes everything from the prox.pad memory except the transaction log and restores the default settings.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. Enter the command to erase memory.

   Press: **46 # 00000 # 00000 # ****

   The yellow LED blinks rapidly for several seconds until the memory is deleted.
3. Exit Program Mode.

   Press: *

3.3.17 Wiegand Mode LED Indicators/Sounder Operations

The table below describes the various LED and sounder indications used in the prox.pad while in Wiegand Front End Mode.

Table 9: prox.pad LED Indicators/Sounder – Wiegand Mode

LED/Sounder	Visual/Audible Condition	Description
Yellow LED	Slow blink	Unit is in Program mode
	Rapid blink	Verify mode is active (checking that the last two values in sequence match)
	Steady	Program error; entry error lockout (no keypress feedback)
	Very rapid blink	Memory (eeprom) erase is in progress (command 46)
Bi-color LED	Steady red	Lock is locked
	Steady green	Lock is energized (timed or latched)
	Quick double red/green flash	Prox card read correctly
All LED's	Rapid red, yellow, green sequencing	Power on/reset
Sounder (system)	Very quick beep (10 ms) with yellow LED blink every second	EEPROM read error during get system parameters; can be turned off by running self-test
Sounder (after PIN)	Single long beep	Value entered too big, cannot be represented in 16 bits (Wiegand mode)
Sounder (after card)	1 short beep	Valid card access

3.3.18 Wiegand Front End Mode Default Settings

Option	Default Setting	Option	Default Setting
Master Code	1234	Audio Keypress Feedback	Enabled
Visual Keypress Feedback	Enabled	Auto-Entry	Disabled
Wiegand RED LED	Enabled	Red LED Active State	Low
Wiegand Green LED	Enabled	Green LED Active State	High
Pulse Width	8 = 160µS	Inter-pulse Spacing	32 = 640µS

3.4 Wiegand 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.

Note: The master code must be changed prior to performing any programming on the prox.pad unit.

Table 10: Wiegand Programming Commands

Action Desired	Press	Details
Enter Program Mode	**99 # (Master Code)***	Yellow LED blinks slowly
Change master code	**1 # (new code) * (repeat code) *** Ex: 1 # 4321 * 4321 *	Code-only operation
Set/clear standard option	**30 # option # s/c # ****	See Chart below

Option	Set	Clear
0 – Audio Keypress Feedback	**1 = Enabled**	0 = Disabled
1 – Visual Keypress Feedback	**1 = Enabled**	0 = Disabled
2 – Auto Entry	**0 = Disabled**	1 = Enabled
3 – Operating Mode	**0 = Standalone**	1 = Front End
9 – Wiegand Red LED Enable	0 = Disabled	**1 = Enabled**
10 – Wiegand Red LED Active State	**0 = Low**	1 = High
11 – Wiegand Geen LED Enable	0 = Disabled	**1 = Enabled**
12 – Wiegand Green LED Active State	0 = Low	**1 = High**
15 – Front End Mode Select	**0 = Wiegand Front End**	**1 = Secured Series Front End**

Change Platform Parameters	**32 # parameter # value # ****	See Chart Below

Parameter	Value
0 – Wiegand Pulse Width	1 – 255; 20µS increments; **(Defaults to 8 = 160µS)**
1 = Wiegand Interpulse Spacing	1 – 255; 20µS increments; **(Defaults to 32 = 640µS)**
2 – 26-Bit Facility Code (for keypad output)	0 – 255 **(Default = 1)**

Delete Entire Memory and Reset System Defaults	**46 # 00000 # 00000 # ****	
To exit Program mode	Press *	Yellow stops flashing

Chapter 4: Secured Series Front End Mode

Chapter 4 describes Secured Series Front End mode and supplies wiring diagrams and a programming chart specific to Secured Series Front End mode.

4.1 Secured Series Front End Mode Description

In Secured Series Front End Mode, the prox.pad unit is used as a front end for an IEI Secured Series Door Control Module. The prox.pad operates as “code only”, “card only”, “card or code” or “card and code” with the Secured Series Door Control Module. Refer to the instruction manual with your Secured Series product for more information.

In Secured Series Front End Mode, the Secured Series Door Control Module makes all the access control decisions, controls the locking device, controls the alarm output relays and the monitors REX and the door contacts.

The prox.pad maintains it's own set of programming commands for various keypad options.

4.2 Wiring the Secured Series Front End

You can connect the prox.pad as a front end to an IEI Secured Series Door Control Module by following the diagram below. Using connector P3 on the prox.pad, connect the white wire to the Secured Series DCM's white/yellow wire or the the white/yellow terminal strip and connect the green wire to the white/black wire or white/black terminal strip on the Secured Series DCM.

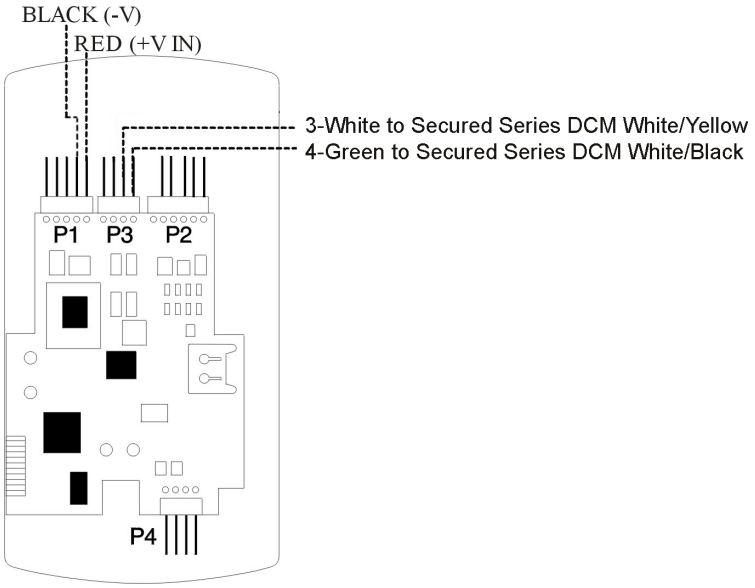


Figure 17: Wiring the prox.pad to the Secured Series DCM

Use ALPHA 1295C (22AWG) 4-wire, stranded and shielded cable. The cable shield drain wire must be grounded at the reader end to P1, pin 4 connection (DC Power Supply Ground).

4.3 Secured Series Front End LED Indicators/Sounder Operations

Table 11: prox.pad LED Indicators/Sounder Operations – Secured Series Mode

LED/Sounder	Visual/Audible Condition	Description
Yellow LED	Slow blink	Unit is in Program mode
	Rapid blink	Verify mode is active (checking that the last two values in sequence match)
	Steady	Program error; entry error lockout (no keypress feedback)
	Very rapid blink	Memory (eeprom) erase is in progress (command 46)
	“Pulsing” rapid blink	Batch program of cards in progress (command 56); block delete of users (command 58)
Bi-color LED	Steady red	Lock is locked
	Steady green	Lock is energized (timed or latched)
	Quick double red/green flash	Prox card read correctly
All LED's	Rapid red, yellow, green sequencing	Power on/reset
Sounder (system)	Very quick beep (10 ms) with yellow LED blink every second	EEPROM read error during get system parameters; can be turned off by running self-test
Sounder (after PIN)	3 rapid beeps after	PIN not found
Sounder (after card)	3 very rapid beeps	PIN not found, facility code/company ID mismatch and access by facility mode enabled; incorrect card type (option #20)
	1 short beep	Valid card access

4.4 Secured Series Front End Mode Default Settings

Option	Default Setting	Option	Default Setting
Master Code	1234	Audio Keypress Feedback	Enabled
Visual Keypress Feedback	Enabled	Auto-Entry	Disabled
Anti-Passback	Enabled	Reader In/Out Select	In
Keypad In/Out Select	In	Prox Card Type	26-bit
Facility Match Required	Disabled	Facility Code	1
Corporate 1000 ID	4095		

4.5 Secured Series Front End Programming

4.5.1 Entering Program Mode

The first step in programming the prox.pad unit is to place it into program mode by using the master code, which is defaulted to 1234.

To place the prox.pad unit in program mode, press: **99 # Master Code ***

When the prox.pad is in program mode the yellow LED flashes slowly.

When you are done programming, to exit program mode press the * key.

If at any point you make a programming error (either press a wrong key or perform a command the unit does not recognize), the unit produces a program error by turning on the yellow LED solid. To clear a program error, simply press the * key.

Note: If you don't know the master code, refer to section 1.17 to press the program button (SW1) on the main circuit board. Momentarily pushing this button forces the unit into program mode. Also refer to Table 13 for further details on troubleshooting issues with the master code.

4.5.2 Changing the Master Code

The default **master code** of 1234 **must be changed** prior to performing any programming on the prox.pad unit. Attempting to perform any programming commands produces a program error (solid yellow LED). To clear this error simply press the * key. The only exception to this rule is the 46 command, used to default the unit. All other programming is not allowed.

To change the master code use the following programming sequence:

4. Enter Program Mode

   Press: **99 # master code ***

   The yellow LED flashes slowly.

5. Program the new master code.

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

6. Exit Program Mode

   Press: ***

   The yellow LED stops flashing.

Note: Throughout the programming section the last step is to exit program mode. If you are going to program multiple keypad options, you are not required to exit program mode after each command sequence. You may continue to the next programming option without exiting program mode. When all your programming is complete, you can then exit program mode by pressing the * key.

4.5.3 Enabling Secured Series Front End Mode

The prox.pad is defaulted to operate in standalone mode. To use it as a Secured Series Front End you must change the operating mode. First, change it to Front End Mode, then change it to Secured Series Front End Mode. Use the following commands to change the operating mode.

1. Enter Program Mode.

   Press: **99 # master code ***

   The yellow LED blinks slowly.

2. Program the prox.pad for Front End Mode operation.

   Press: **30 # 3 # 1 # ****

3. Program the prox.pad for Secured Series Front End Mode.

   Press: **30 # 15 # 1 # ****

4. Exit Program Mode.

   Press: ***

   The yellow LED stops blinking.

4.5.4 Selecting the Card Type

Either standard 26-bit (which is the default value) or Corporate 1000 prox cards are allowed during Secured Series mode. No other format cards can be used. The PIN data is extracted from these card types and sent to the Secured Series Door Control Module for verification.

This card type option is set using the following commands:

1. Enter Program Mode.

   Press: **99 # master code ***

   The yellow LED blinks slowly.

2. Program the prox.pad to accept 26-bit HID Format Cards (default)

   Press: **30 # 20 # 0 # ****

   Program the prox.pad to accept Corporate 1000 Cards.

   Press: **30 # 20 # 1 # ****

3. Exit Program Mode.

   Press: ***

   The yellow LED stops blinking.

Note: Because Secured Series systems only support 6-digit card PINs, presenting a Corporate 1000 card with a PIN greater than 999,999 causes the system to ignore the card and generate a single long beep.

4.5.5 In/Out Select

In Secured Series Front End mode, you can change set the prox.pad to record and IN or OUT event in the Secured Series Door Control Module transaction event log. The keypad and antenna portions of the unit are programmed independently. This allows you to mount the antenna remotely up to 10 feet away on the outside of the door and place the keypad on the inside of the door. Programming card reader is option 16 and the keypad is option 17. The command sequence is as follows:

1. Enter Program Mode.

   Press: **99 # master code ***

   The yellow LED blinks slowly.
2. Program the prox.pad reader for IN operation

   Press: **30 # 16 # 0 # ****

   Program the prox.pad reader for OUT operation

   Press: **30 # 16 # 1 # ****
3. Program the prox.pad keypad for IN operation

   Press: **30 # 17 # 0 # ****

   Program the prox.pad keypad for OUT operation

   Press: **30 # 17 # 1 # ****
4. Exit Program Mode.

   Press: ***

   The yellow LED stops blinking.

4.5.6 Enabling/Disabling Facility Code Matching

The “facility match required” option provides an extra level of security for Secured Series Front End card operations. This option ensures that only cards with a facility code matching the value programmed into the prox.pad unit are processed. Cards containing different facility codes or of the wrong type cause the unit to generate a single long beep when presented. The command sequence to enable this feature is as follows:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable facility code matching, press: **30 # 21 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable facility code matching, press: **30 # 21 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

4.5.7 Programming Facility Code

This option is used to set the facility code that is processed when you are using the facility code matching feature. The default value in prox.pad is 1. IEI HID format proximity cards come with a facility code value of 11. When using the facility code matching feature, the facility code of each card used on the prox.pad to gain access, must match the facility code programming with this command.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the facility code (value = 0 to 255).

   Press: **32 # 2 # value # ****

3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

4.5.8 Corporate 1000 Company ID

This option is only used when you are using corporate 1000 proximity cards and you are using the facility matching feature. When using the facility code matching feature, the facility code of each card used on the prox.pad to gain access, must match the facility code programming with this command. You must first select this type of card using command 30, option 20, which is discussed in section 4.4.4, before this option will work. The command sequence is as follows:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. Enter the facility code (value = 0 to 4095; default = 4095).

   Press: **35 # 0 # Facility Code # ****

3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

4.5.9 Programming Timed Anti-Passback

When you enable Timed Anti-Passback, which is the default value, you must specify a length of time that must pass before the same prox card can be processed after being presented. The feature is included so that the card must be outside of the prox read field during the entire period of time. If the card is reintroduced into the field prior to expiration of the time delay, the time delay restarts with a full duration. Presenting a different card (not necessarily a programmed card) causes the new card data to be processed immediately and also clears the Anti-Passback timer so that the first card presented now get processed again immediately.

Disabling the Timed Anti-Passback function provides another feature that controls how often ANY prox card is processed. When option is disabled, the timer indicates how often a card will be processed. Please note that the prox read function continues to attempt a card READ every 100 milliseconds, but a valid card read is only PROCESSED after the specified time delay elapses.

Also note that this function does not require the card to leave the read field. In fact one of the main uses of this feature is to adjust the processing rate of cards that remain in the field. Now you can extend the processing time to stop this type of unwanted toggling. Simply extend the timer value to accomplish this.

The anti-passback timer is set through command 32, parameter 3 (see below). The duration of the time delay can be set from a ½ second to 60 seconds in ¼ second increments.

The anti-passback feature applies only to prox cards; there is no “Anti-Passback” processing of keypad PINs. “Anti-Passback” and the “card process timer” are also turned off in program mode.

To enable or disable anti-pass back use the following command sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable this feature, press: **30 # 14 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 14 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

To program the anti-passback timer use the following command sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. Enter the anti-passback time (value = 2 to 240, ¼ sec. Increments; default = 4 = 1 sec.).

   Press: **32 # 3 # value # ****
3. Exit Program Mode.

   Press: *

   The yellow LED stops flashing.

4.5.10 Enabling/Disabling Audio Keypress Feedback

Audio Keypress Feedback refers to the sounder beeping momentarily each time a key is pressed. This feedback indicates the key was pressed hard enough for the prox.pad to acknowledge and recognize which key you pressed. By default this option is enabled, but if you need to change it, use the following programming sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To enable this feature, press: **30 # 0 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 0 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

4.5.11 Enabling/Disabling Visual Keypress Feedback

Visual Keypress Feedback refers to the yellow LED flashing momentarily each time a key is pressed. This feedback indicates the key was pressed hard enough for the prox.pad to acknowledge and recognize which key you pressed. By default this option is enabled, but if you need to change it, use the following programming sequence:

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.

2. To enable this feature, press: **30 # 1 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 1 # 0 # ****

   The yellow LED continues to blink slowly.

3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

4.5.12 Enabling/Disabling Auto-Entry

Auto-Entry is a feature that determines whether or not you need to press the * key after entering your access code on the keypad. By default, the feature is disabled which means you are required to enter the * key after your access code to gain entry. If you enable the feature you are not required to enter the * key after entering your code to gain entry. This feature applies only to codes that are the same length as the master code. For example if the master code is four-digits, your user code must be four digits to use the auto-entry feature. All codes less than four digits require the * key. Codes longer than the master code are not allowed, since you'll reach that number of digits prior to entering the * key.

Note: When auto-entry is enabled you do not have to press the * key after "99 # master code" to enter program mode.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. To enable this feature, press: **30 # 2 # 1 # ****

   The yellow LED continues to blink slowly.

   To disable this feature, press: **30 # 2 # 0 # ****

   The yellow LED continues to blink slowly.
3. Exit Program Mode.

   Press: ***

   The yellow LED stops flashing.

4.5.13 Reseting System Defaults and Erasing Memory

Entering command 46 deletes everything from the prox.pad memory except the transaction log and restores the default settings.

1. Enter Program Mode.

   Press: **99 # Master Code ***

   The yellow LED flashes slowly.
2. Enter the command to erase memory.

   Press: **46 # 00000 # 00000 # ****

   The yellow LED blinks rapidly for several seconds until the memory is deleted.
3. Exit Program Mode.

   Press: ***

4.6 Secured Series Front End Program 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.

Note: The master code must be changed prior to performing any programming on the prox.pad unit.

Table 12: Secured Series Front End Programming Commands

Action Desired	Press	Details
Enter Program Mode	**99 # (Master Code)***	Yellow LED blinks slowly
Change master code	**1 # (new code) * (repeat code) *** Ex: 1 # 4321 * 4321 *	Code-only operation
Set/clear standard option	**30 # option # s/c # ****	See Chart below

Option	Set	Clear
0 – Audio Keypress Feedback	**1 = Enabled**	0 = Disabled
1 – Visual Keypress Feedback	**1 = Enabled**	0 = Disabled
2 – Auto Entry	**0 = Disabled**	1 = Enabled
3 – Operating Mode	**0 = Standalone**	1 = Front End
14 – Prox Card Anti-Passback Select	0 = Disabled	**1 = Enabled**
15 – Front End Mode Select	**0 = Wiegand Front End**	1 = Secured Series Front End
16 – Secured Series Keypad In/Out Select	**0 = In (keypad outside)**	1 = Out (keypad inside)
17 – Secured Series Reader In/Out Select	**0 = In (reader outside)**	1 = Out (reader inside)
20 – Prox Card Type Select	**0 = 26 Bit**	1 = Corporate 1000
21 – Facility Match Required	**0 = Disabled**	1 = Enabled

Change Platform Parameters	**32 # parameter # value # ****	See Chart Below

Parameter	Value
2 – 26 Bit Facility Code (for facility code matching)	0 – 255 **(default = 1)**

Enter Corporate 1000 Company ID	**35 # parameter # value # ****	See Chart Below

Parameter	Value
0 – Corporate 1000 Company ID	0 – 4095 **(default = 4095)**

Delete Entire Memory and Reset System Defaults	**46 # 00000 # 00000 # ****	
To exit Program mode	Press *	Yellow stops flashing

Chapter 5: Troubleshooting

Chapter 5 contains a troubleshooting chart, diagnostic flow charts, a power supply integrity test, and information to correct possible water problems. These are intended to help you troubleshoot any problems that occur on your own.

5.1 Before Calling IEI

Whenever your prox.pad unit experiences difficulty, before calling IEI for help, first refer to the Troubleshooting **Chart for answers**. If the Troubleshooting Chart does not help, perform the following:

1. Write down the time and date that the problem occurred, or the time and date when you first noticed the problem. Also note what the unit was doing when the problem occurred or was first noticed.
2. Note all other relevant information, paying particular attention to recent updates, new or inexperienced installers/programmers, separate Wiegand panel or Secured Series Door Control Module.
3. Attempt to isolate the problem.
4. Refer to the “Troubleshooting Chart” and flow charts in this chapter. They are designed such that many common problems can be easily diagnosed and corrected by users without IEI assistance.
5. Contact your supervisor or the “technical subject expert” at your facility for assistance for help if you cannot diagnose and correct the problem yourself.
6. Contact IEI for help only if using steps 1-5 above fails to resolve the problem. Make sure that you have a written description of the problem (and any steps you may have taken attempting to remedy the problem) before calling for help. Write down the version number of your prox.pad unit before calling IEI for help.

5.2 Performing a Keypad Self-Test

To determine which version of the prox.pad keypad you have and to verify all the keys are operating properly you can perform the keypad self-test.

To perform the keypad self-test enter the following on the keypad outside of programming mode:

Press: **7890#123456***

While you are pressing the keys pay attention to the keypress audible and visual feeback (if enabled). Each key should beep when pressed and the yellow LED should flash.

If the test is successful the following happens:

Standalone Mode: LED's Cycle: Green, Yellow, Red, then 3 slow beeps, 2 quick beeps (yellow flash on first quick beep)

Wiegand Front End Mode: LED's Cycle: Green, Yellow, Red, then 3 slow beeps, 1 quick beep with yellow flash.

Secured Series Front End Mode: LED's Cycle: Green, Yellow, Red, then 3 slow beeps, 1 quick beep with yellow flash followed by rapidly flickering yellow LED. Press the * key to clear.

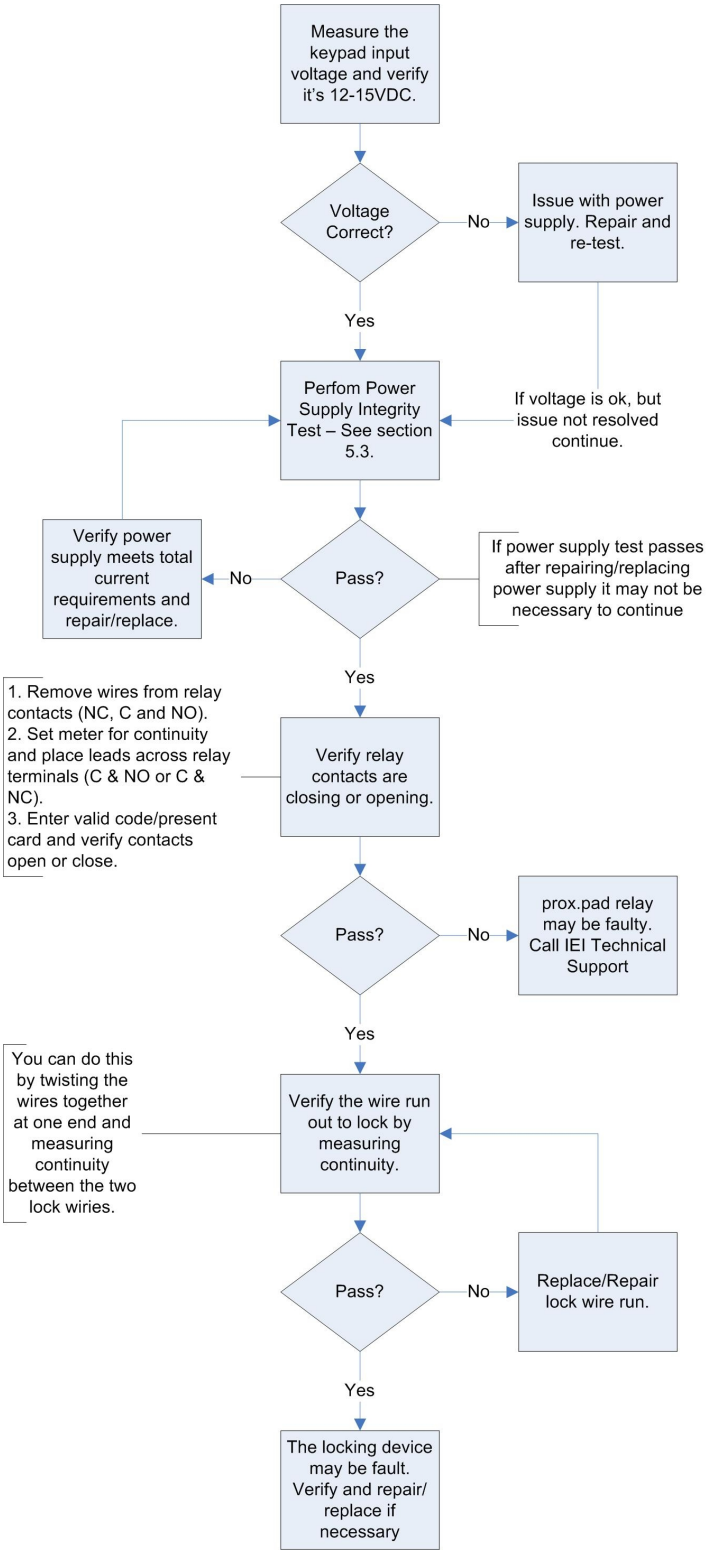
In addition to the audible and visual feedback, when the self-test is complete, data is sent out the IR LED which you can capture with the Data Collection Device (DCD) PDA Software. This data includes: the prox.pad serial number, time, date, firmware version, firmware part number and the door number.

Table 13: Troubleshooting Chart

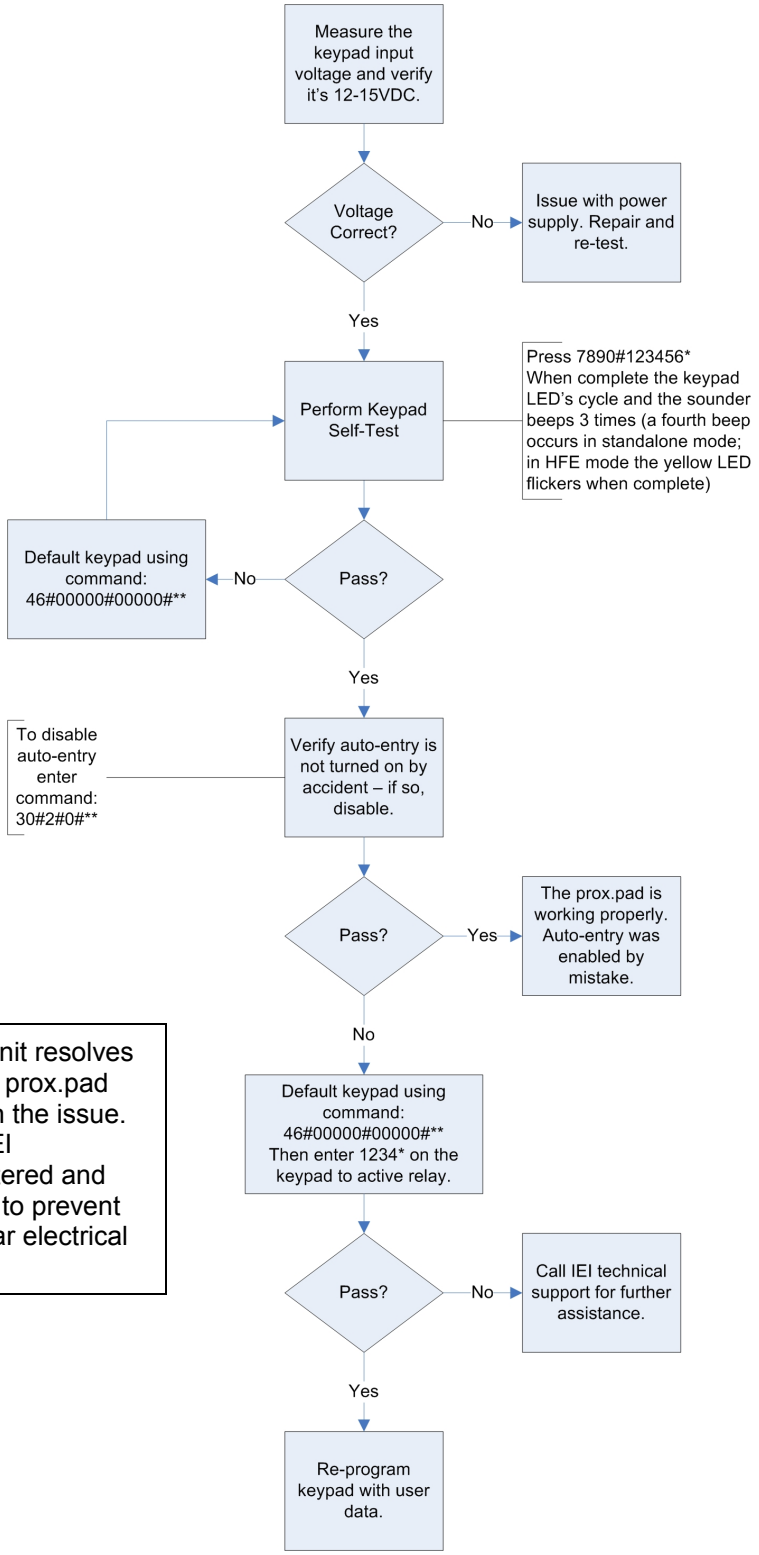
Problem	Probable Cause	Solution
Red LED turns green when access accepted, but door does not open.	Various: power supply voltage problems, locking device power supply not set correctly.	1. Check power supply voltage. 2. Monitor voltage at unit's V+ and V- terminals (on P1) with meter, enter a valid code, and ensure that voltage remains constant while locking device attempts to unlock and relock. If voltage varies 1/4 volt or more during this test, this is a problem you must correct; look for the following: -verify that power supply is rated sufficiently for all equipment being powered -verify that locking device, if on same power supply, is set up for current being drawn (example: if a lock draws 300mA at 24VDC, same lock may draw 600mA at 12VDC, especially if the unit requires that jumpers be placed in a different configuration -place meter across lock power wires at lock and ensure the lock is receiving proper voltage
prox.pad unit experiences reduced read range problems	Various: unit is mounted on a metal surface, or other equipment producing RF interference	For metal surface problems, see section 1.13.3; for RF interference problems, see section 1.13.4.
prox.pad unit not entering program mode when 99 # Master code * is pressed on the prox.pad keypad or installer/programmer forgets the "master code"	Various: master code has been changed, is incorrect, or new code not programmed correctly	1. With power to the prox.pad unit turned ON, remove the main circuit board from the unit as described in section 1.16. 2. Locate the "Program" button (SW1) underneath the main circuit board and press it for about 2 seconds. Take care if you must pull the circuit board out of the plastic housing. Handle the board by its edges, otherwise, your fingers can short the solder points. Figure 1-7 illustrates the location of this button. (When handling the main printed circuit board, to guard against possible static discharges, touch a grounded object BEFORE touching the prox.pad unit.) (The yellow LED blinks slowly, indicating that program mode is active.) 3. To program a new master code, press: 1# new-code * repeat-code * The code can be 1-6 digits, with repeated numbers acceptable. 4. To exit program mode, press * . 5. Continue programming as described in Chapter 2, 3, or 4.

5.3 Troubleshooting Flow Charts

prox.pad Indicates "Acceptance," But Lock Does Not Active

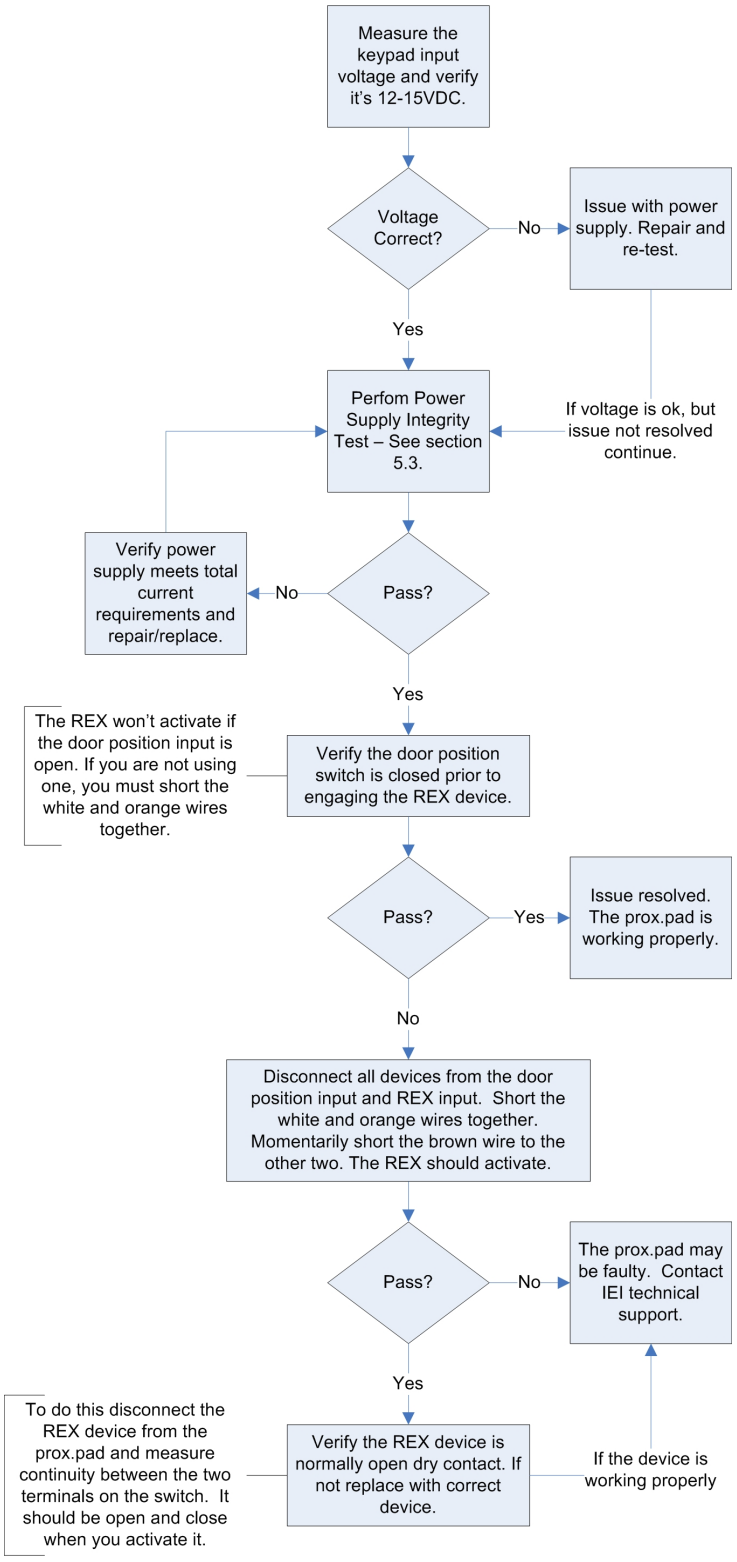


Programmed Codes Stop Working; prox.pad Buttons Not Working



Note: If defaulting the unit resolves the issue, a glitch in the prox.pad memory may have been the issue. To solve this problem IEI recommends using a filtered and regulated power supply to prevent power surges and similar electrical issues from occurring.

External Request to Exit Input Not



5.4 Performing Power Supply Integrity Test

This test confirms whether or not the power source is providing sufficient amperage to support all the equipment. It indicates whether or not a stable electrical environment exists by revealing fluctuating voltages during operations. A fluctuation in voltage exists when the equipment draws more amperage than the power supply offers.

1. As the prox.pad unit cycles the equipment ON and OFF, power must remain constant. If a voltage fluctuation of one-quarter volt or more occurs during testing, in either the positive or negative direction, the test results indicates a "fail" response. If the voltage retains proper amplitude (remains constant), the test indicates a "pass" response.
2. Set the meter to read voltage and place meter probes on the red and black wires of P1, located on the prox.pad unit. You may have to reference Figure 2 for details. If the prox.pad unit consists of two parts, a reader and a controller, the terminals are located on the controller. The voltage reading is monitored throughout the entire test.
3. With power being applied to the entire prox.pad unit, enter a valid code on the prox.pad keypad. The REX input can be used in place of a valid code; the test results remain the same. Reference the keypad circuits diagram for REX input, located in Chapter 2 of this manual.
4. Observe the meter as the keypad cycles the system ON and OFF. The voltage must remain constant during this operation, indicating that the electrical system is stable and adequate. Constant voltage during the test indicates a "PASS" response. If the voltage changes more than one-quarter of a volt (.25), the test indicates a "FAIL" response.
5. If the test indicates a "FAIL" response, then there is likely and issue with your power supply. Correct the problem, then run the test again. If the test indicates a "PASS" response, then continue troubleshooting the issue.

5.5 Correcting Possible Water Problems

prox.pad units that are mounted outdoors require certain preventive steps to avoid being damaged by water. This section discusses the reasons water can accumulate in keypads and the steps to prevent this.

5.5.1 Silicone

1. Use silicone to seal wire runs and mounting holes.
2. Do NOT seal the cover and base together. Keypads are designed to direct any water that enters the two constituent pieces, base and cover, towards the bottom and out a drain or weep hole.

5.5.2 Wire Run

Bend the wires before they enter the case to form a drip loop. Often water follows the wires to the connection point of the circuit board and shorts out the terminals to which the wires are connected.

5.5.3 Lithium Battery Replacement

Replacement Battery: Panasonic BR1225, Renata CR1225 or Varta CR1225; **Refer to caution below.**

> **Caution:** Replace battery with types listed above only. Use of another battery may present risk of fire or explosion. Battery may explode if mistreated. Do not recharge, disassemble or dispose of battery in fire.

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