prox.pad Plus™ IR Access System Installer Guide

This equipment is designed to be installed and serviced by security and lock industry professionals.

Please refer to the table of contents and list of illustrations on page 3.

Service Company, Put Contact Information Here:

Company Name: _____

Service Number: _____

Access system programming: This access system possesses serial communications capability and can be managed as part of an overall access control system with Hub Manager Professional™ software. See the inside cover for system requirements.

Optional Keypad Programming: The prox.pad Plus IR unit can be programmed manually using the keypad on each unit and without the use of a personal computer (PC) and software. This manual contains the optional keypad programming instructions. Keypad programming can be helpful to get a door or doors up and running prior to having the availability of the host computer. In all cases, the personal computer programming options supersede the keypad programming options.

15.21 Information to User

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Access system programming - System Requirements

- Hub Manager Professional^{TM} access control software version 7.2 or higher (part number HUBSWR includes software installation instructions)
- LS Link PDA Software or DTD (Data Transfer Device)

PC Hardware Requirements

- IBM-compatible Pentium-class computer
- 30MB available hard disk space
- VGA monitor or better, 800 x 600 resolution recommended
- CD-ROM or DVD-ROM drive
- Mouse

Operating System List

- Windows 98
- Windows 2000
- Windows XP

Refer to our website at www.ieib.com for any changes to these specifications.

Technical Support

Service Company: To contact IEI's Technical Support department, call 1- 800-343-9502. 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.

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List of Illustrations

Description

The prox.pad Plus IR unit is a single door access system that is programmed and managed from a personal computer using Hub Manager Professional software (version 7.2 or higher). The prox.pad Plus IR unit is equipped with IR communications which is used to communicate with LS Link PDA software. In addition, you can program the unit via the keypad.

The prox.pad Plus IR unit is unique in that no separate controller is needed and there is no need to run cables from a reader to a control. The unit is self-contained and includes built in HID proximity and keypad.

Important features include:

- Managed with Hub Manager™ Professional access software
- IR Communication with PDA via LS Link PDA Software or DTD (Data Transfer Device)
- No separate control to install
- Eliminate costly reader wiring
- 2000 users per door
- 2000 event audit trail
- Integrated-HID proximity
- Card, code, card and/or code
- Locate proximity 10 ft from control
- Indoor and outdoor
- Glass mount kit
- Door monitor
- Main relay for lock
- Programmable auxiliary relay
- Local sounder for alerts
- Option for keypad programming

Table 1: IEI-Supplied Parts/Optional Items

Quantity	Description
1	Keypad/control unit assembly, with Prox Sensor, Backplate, hex socket screw
1	Communication Board
1	Filler Piece/REX Button
1	Press to Exit Label
4	Wall Anchors
4	Keypad Mounting Screws
5	Communication Board Mounting Screws
1	Antenna Backplate for remote mounting
1	Silicone Rubber "dogbone"
4	Self-Adhering Pads (for glass mounting)
1	Installer Guide
4	Cable Assemblies
1	Tamper Screw
1	Hex Wrench
Optional Items	
1	Hub Manager™ Professional PC Software (version 7.2 or higher required)
1	PDA using LS Link PDA Software
1	DTD (Data Transfer Device
1	prox.pad Plus IR Replacement Battery: Panasonic BR1225, Renata CR1225 or Varta CR1225; **Refer to caution below.**
lots of 25 only	ProxKey KeyFobs (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.

prox.pad Plus IR Specifications

Table 2: prox.pad Plus IR Specifications

Electrical	
Power Supply/Current Requirements	12-24 VDC, linear filtered and regulated power supply; 150mA
Wiring	
Remote Antenna Cable (if installing in a secured configuration)	[ALPHA 1294C (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 Output	For communicating to the LS Link PDA Software for programming
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
Unit Capacity	
Users	2000 Maximum (each user can have a card, PIN or both)
Transactions	2000 Maximum (includes event number, time, date, and user number if applicable)
Environmental	
Operating Environment	Indoor or Outdoor
Operating Temperature	-31° to 150° F (-35° to 66° C)
Operating Humidity	5% to 95% relative humidity, non-condensing

prox.pad Plus IR Default Settings

The table below lists the default settings for the prox.pad Plus IR unit as shipped from the factory. Subsequent sections in this chapter explain how to change these default settings or program additional functions.

Table 3: prox.pad Plus IR Default Settings

Option	Default Setting	Option	Default Setting
Master Code	1234	Lock Output Time	5 Seconds
Audio Keypress Feedback	Enabled	Visual Keypress Feedback	Enabled
Auxiliary Relay	Alarm Shunt	Auto-Entry	Disabled
Card/PIN Program Mode	Disabled	User Lockout	Enabled
Internal REX Switch	Disabled	Timezones	Disabled
Auto-Unlock	Disabled	First-In Auto-Unlock	Disabled
DST Time/Date Format	US	Daylight Saving Time	Enabled
Anti-Passback	Enabled	Anti-Passback Timer	1 second
Audio Alert 1	Forced Door Audio Alert	Audio Alert 2	Propped Door Audio Alert
Forced Door Time	10 Seconds	Propped Door Time	30 Seconds
Invalid PIN Lockout Count	3 Attempts	Invalid PIN Lockout Time	10 Seconds
Extended Unlock Time	10 Seconds	26-Bit Facility Code	11

Daylight Saving Time

The prox.pad Plus IR supports the following Daylight Saving Time formats:

United States (US):

Begins: Second Sunday in March at 2:00 AM

Ends: First Sunday in November at 2:00 AM

European (EU):

Begins: Last Sunday in March at 2:00 AM

Ends: Last Sunday in October at 2:00 AM

prox.pad Plus IR LED Indicators/Sounder Operations

The table below describes the various LED and Sounder indications used in the prox.pad Plus IR.

Table 4: prox.pad Plus IR LED Indicators/Sounder Operations

LED/Sounder	Visual/Audible Condition	Description
Yellow LED	Slow blink	Unit is in Program mode
	Rapid blink	Verify mode is active
	Steady	Program error; error lockout (no keypress feedback)
	Very rapid blink	Memory 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)
	Green Drop Out	Auto-Unlock is Active
	Quick double red/green flash	Prox card read correctly
	Alternating red/green	Waiting for second PIN or "card and code" user
All LED's	Rapid red, yellow, green sequencing	Power on/reset
Sounder (system)	Short beep (100 ms) every 2 seconds	Audio Alert 2 is active
	Sounder 1/2 sec on, 1/2 sec off	Audio Alert 1 is active
	3 slow beeps (250ms), followed by a double-beep with yellow LED on during both double-beeps	Indicates self-test
Sounder (after PIN)	3 rapid beeps	PIN not found
	Double Beep	User Lockout Canceled
	Pair of Double Beep	User Lockout Activated
	1 Long Beep Followed by 1 Short Beep	Access Denied – User Disabled
	1 Long Beep Followed by 2 Short Beeps	Access Denied – Back Timezone
	1 Long Beep Followed by 3 Short Beeps	Access Denied – User Locked Out
	4 Quick Beeps	First-In Auto-Unlock Activated
	6 Quick Beeps	Toggle Mode Activated

prox.pad Plus IR Component Overview

The following diagram illustrates all the various components of the prox.pad Plus IR. Please not the location of the IR (Infrared) communication port on the lower right corner of the communication board in the rear housing.
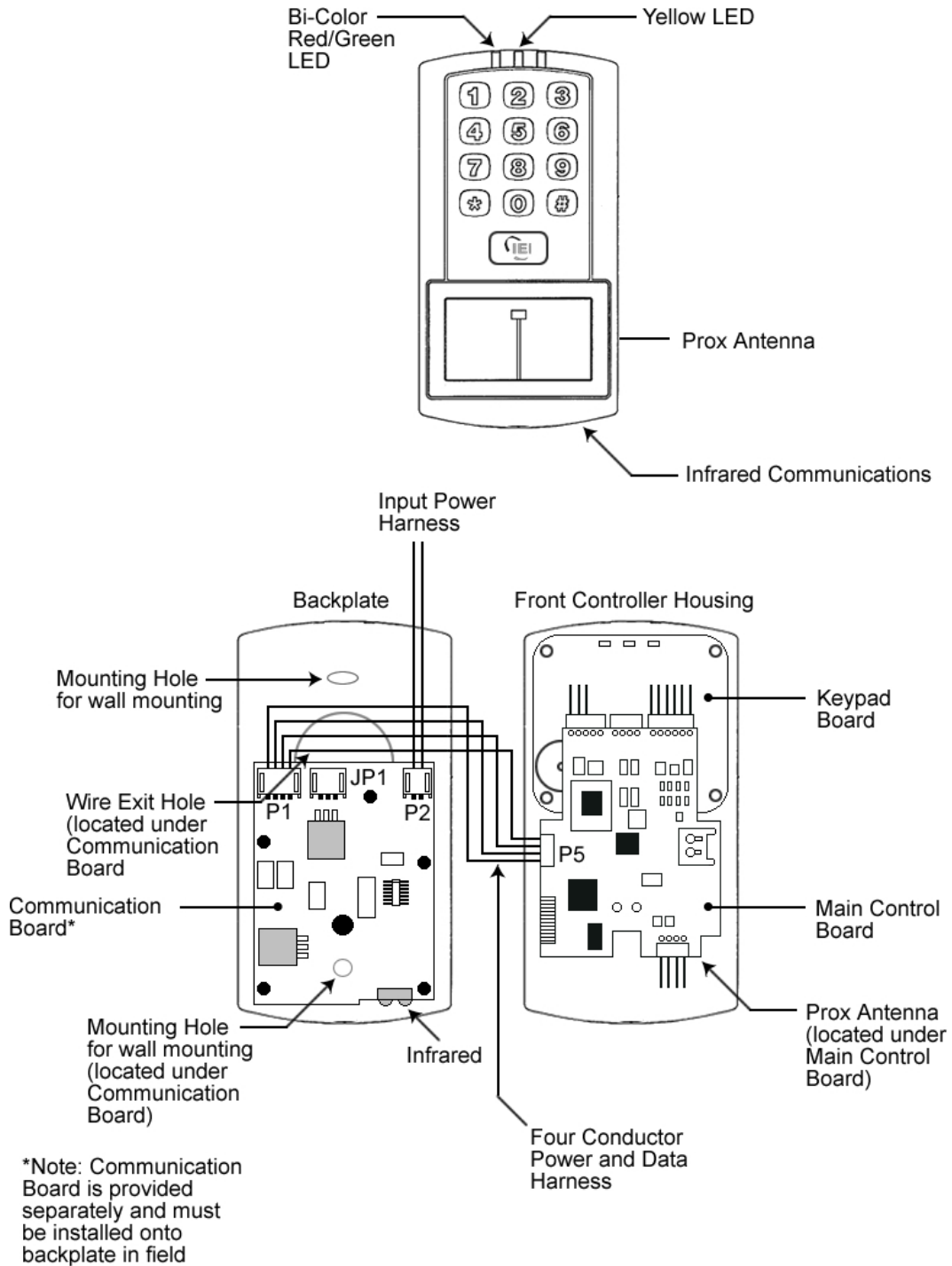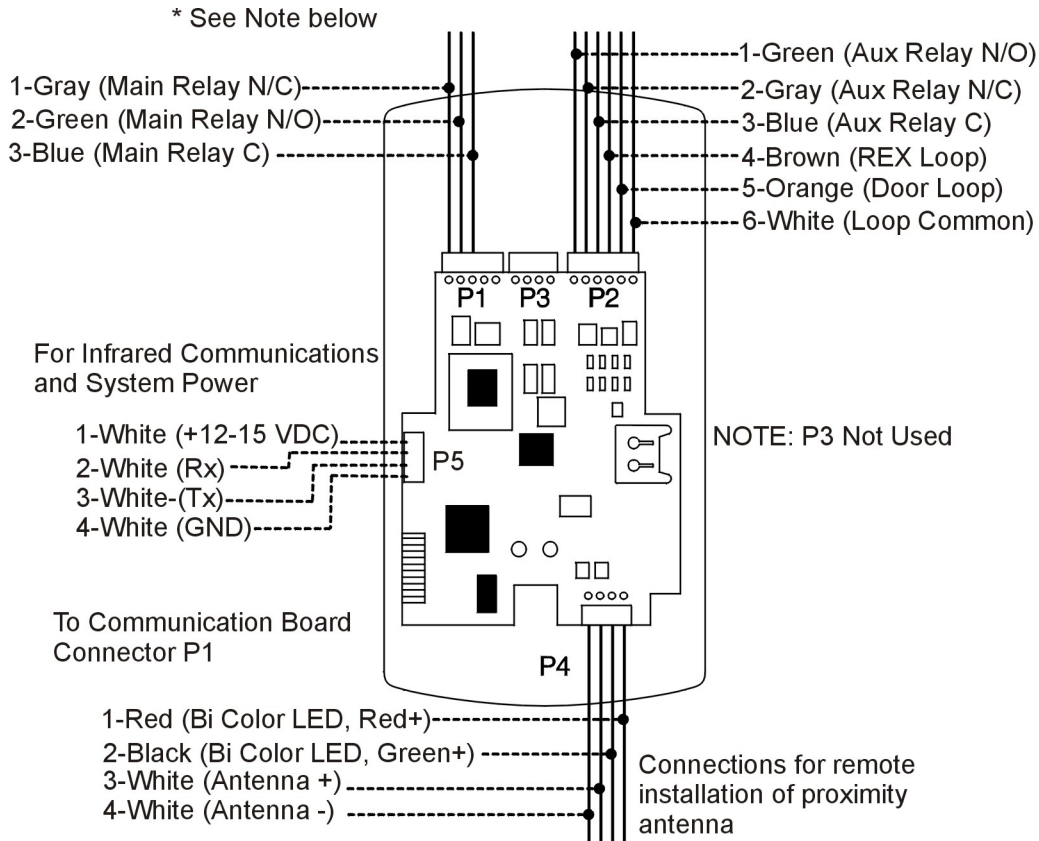

Figure 1: prox.pad Plus IR Component Overview

prox.pad Plus IR Control Board Overview

The diagram below illustrates the connectors on the prox.pad Plus IR main circuit board. The power connections are made on the communication board discussed in the next section.

* See Note below

1-Gray (Main Relay N/C)
2-Green (Main Relay N/O)
3-Blue (Main Relay C)

1-Green (Aux Relay N/O)
2-Gray (Aux Relay N/C)
3-Blue (Aux Relay C)
4-Brown (REX Loop)
5-Orange (Door Loop)
6-White (Loop Common)

P1   P3   P2

For Infrared Communications
and System Power

NOTE: P3 Not Used

1-White (+12-15 VDC)
2-White (Rx)
3-White-(Tx)
4-White (GND)

P5

To Communication Board
Connector P1

P4

1-Red (Bi Color LED, Red+)
2-Black (Bi Color LED, Green+)
3-White (Antenna +)
4-White (Antenna -)

Connections for remote
installation of proximity
antenna

Figure 2: Identifying Pin Connectors (Main Control Board)

> **Note:** If you are not using door contacts, you must twist the white and orange wires together for the REX to work.

Communication Board Overview

The following diagram shows the various connectors and wire connections on the communication board. The communication board is packaged separately from the control unit to allow you access to the backplate mounting holes and wire knockouts. You must secure communication board to the backplate using the five supplied mounting screws.

Please note the system power is connected to P2 in the upper right. You must also set the voltage selection jumper (JP1) to the correct setting. This is discussed in more detail in a later section.

Keypad Power (Output) and data wires

1 - White (+12-15VDC)
2 - White (RX)
3 - White (TX)
4 - White (GND)

To Main Control Board connector P5

Voltage Selection Jumper

JP1: Place jumper on pins 1 & 2 for 12VDC and pins 2 & 3 for 24VDC.

3 2 1

P1   JP1   P2

System Power (Input)

1 - Red (+12 or 24 VDC)
2 - Black (GND)

Note: JP1 is factory set for 24VDC operation.

Infrared Output

Five screw holes for mounting to backplate
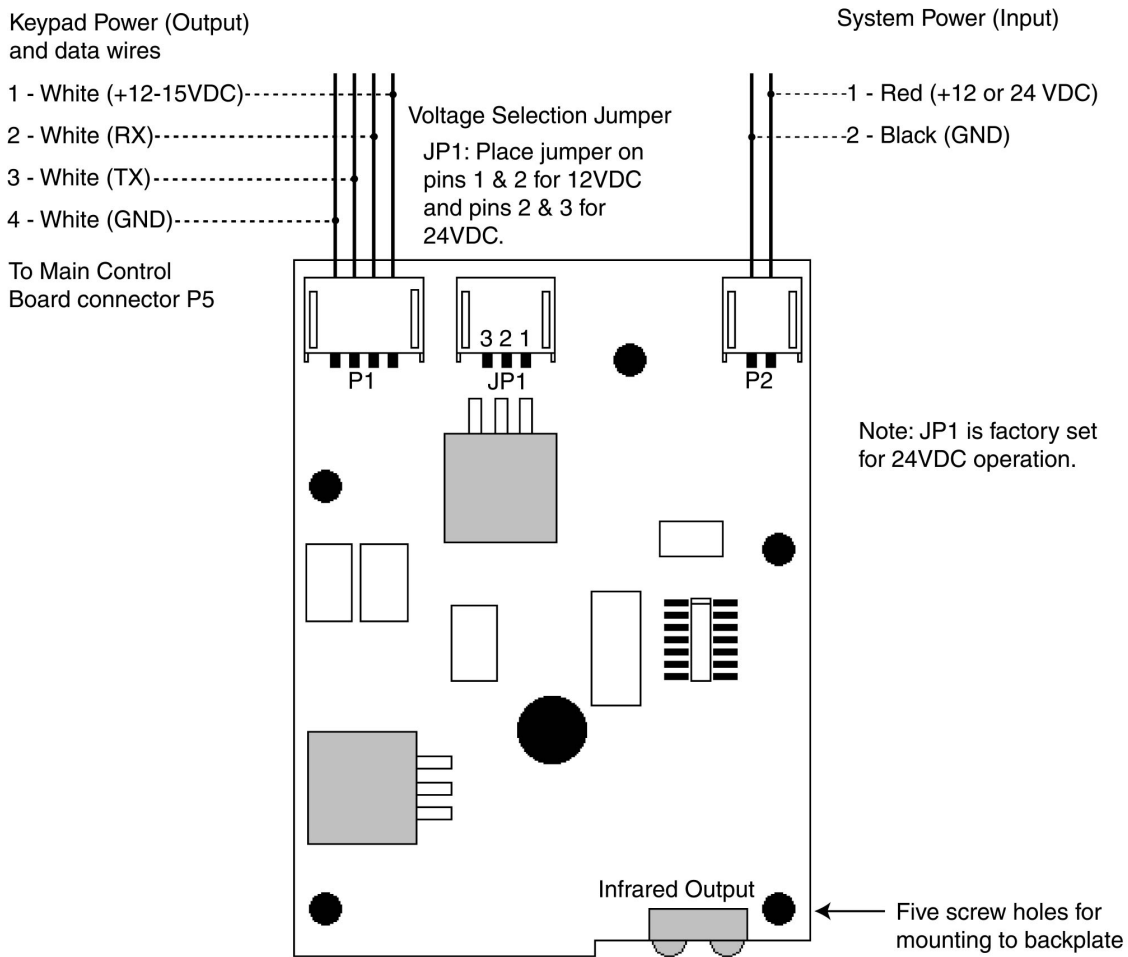
Figure 3: Identifying Pin Connectors (Communication Board)

Performing a Wall Mounted Installation

This section provides general considerations when performing a wall mounted installation. Typically, the prox.pad Plus IR 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 Plus IR unit is wall mounted outside the access area on the unsecured side of the door.

Figure 4 below illustrates the components on the prox.pad Plus IR 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 Plus IR 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 Plus IR unit.

3. Disconnect the controller backplate of the prox.pad Plus IR 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 Plus IR 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).
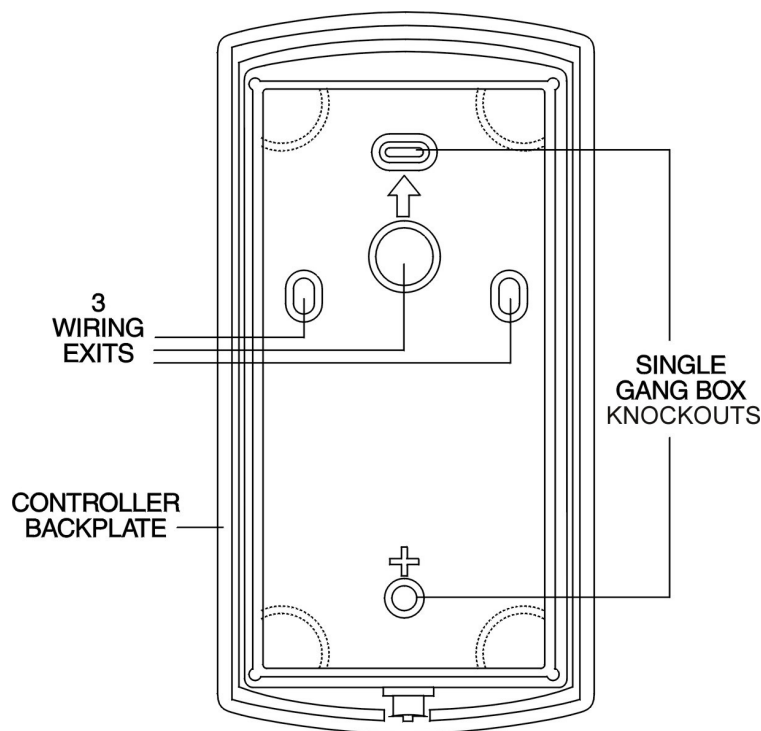

Figure 4: Performing a Wall Mounted Installation

# Preventing Possible Water Problems

To avoid damage to electronics caused by water when used on exterior applications, follow these instructions carefully.

1. 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.

2. Use the supplied gasket for exterior applications.

3. Use silicone to seal wire runs and mounting holes.

4. Bend the wires before they enter the case to form a drip loop.

    Water can follow the wires to the connection point of the circuit board and short out the terminals to which the wires are connected.
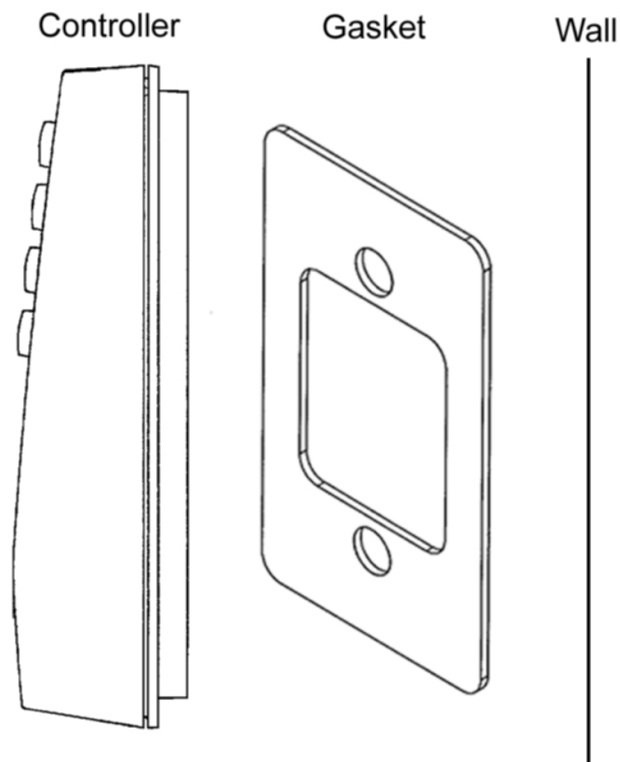
Figure 5: Gasket Installation for Exterior Applications

Performing a Glass Mounted Installation

Figure 5 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 Plus IR 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 Plus IR 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).
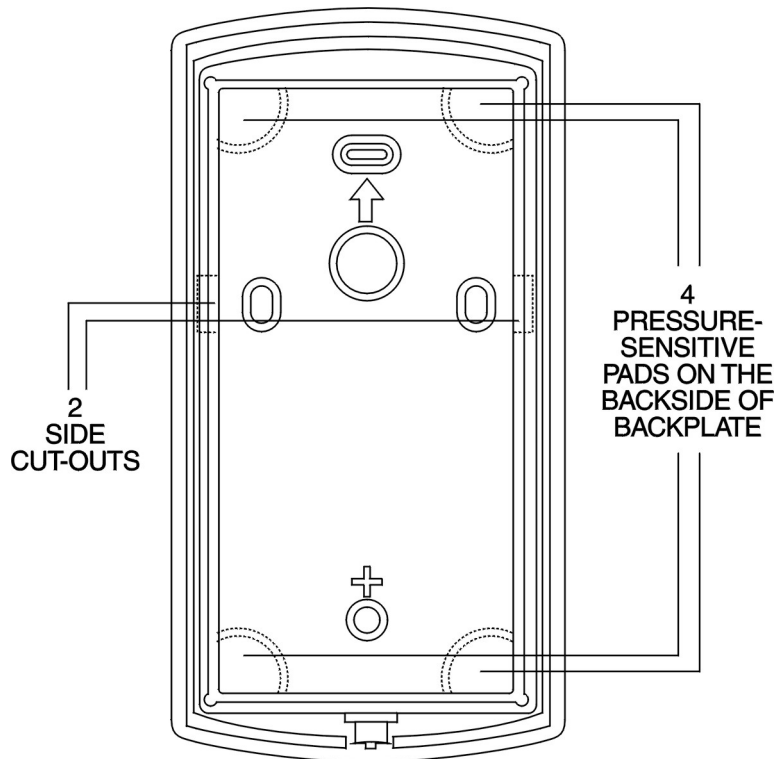
Figure 6: Performing a Glass Mounted Installation

Performing a Secure Installation

In this configuration, the prox.pad Plus IR 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.
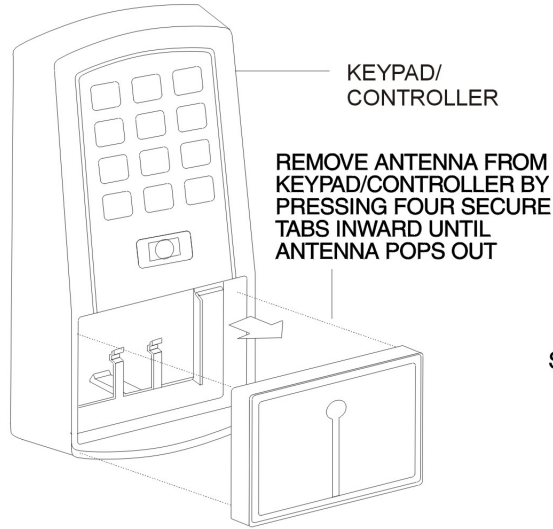
1. Remove the antenna housing from the prox.pad Plus IR keypad/controller as described below:

   ● Disconnect the backplate of the prox.pad Plus IR 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 Plus IR unit. Remove the main printed circuit board by pressing the two spring tabs in the direction of the arrows as shown in the diagram 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 diagram on the next page) until the antenna housing pops out.

2. Prepare the wiring and extension wiring as follows:

   ● Cut off the plastic end of the prox.pad Plus IR 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.
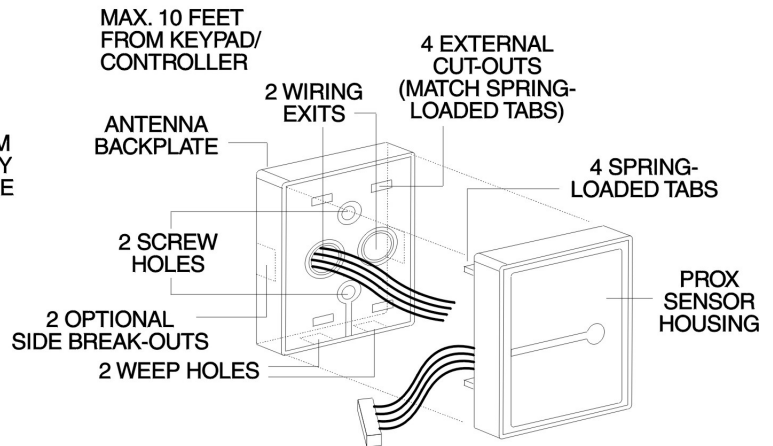
   ● Once the antenna backplate is mounted properly, align the antenna to the backplate and connect the antenna to the antenna backplate. The large tab in the center of the antenna assembly must be broken off before being attached to the antenna backplate.

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 the diagram. The filler piece replaces the antenna on the front of the keypad/controller for secure installations. Refer to the programming options chart 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).
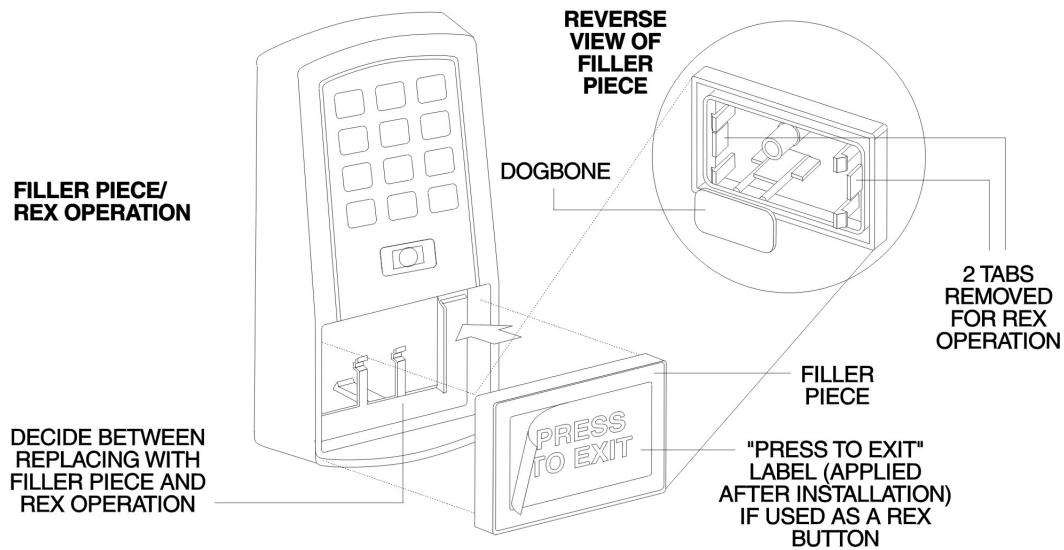
SECURE INSTALLATION SITE

KEYPAD/
CONTROLLER

REMOVE ANTENNA FROM
KEYPAD/CONTROLLER BY
PRESSING FOUR SECURE
TABS INWARD UNTIL
ANTENNA POPS OUT

REMOTE INSTALLATION SITE

MAX. 10 FEET
FROM KEYPAD/
CONTROLLER

2 WIRING
EXITS

4 EXTERNAL
CUT-OUTS
(MATCH SPRING-
LOADED TABS)

ANTENNA
BACKPLATE

4 SPRING-
LOADED TABS

2 SCREW
HOLES

PROX
SENSOR
HOUSING

2 OPTIONAL
SIDE BREAK-OUTS

2 WEEP HOLES

**REVERSE
VIEW OF
FILLER
PIECE**

DOGBONE

**FILLER PIECE/
REX OPERATION**

2 TABS
REMOVED
FOR REX
OPERATION

FILLER
PIECE

DECIDE BETWEEN
REPLACING WITH
FILLER PIECE AND
REX OPERATION

PRESS
TO EXIT

"PRESS TO EXIT"
LABEL (APPLIED
AFTER INSTALLATION)
IF USED AS A REX
BUTTON

Figure 7: Performing a Secure Installation

Installing a Tamper Switch

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

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 Plus IR 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.

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.
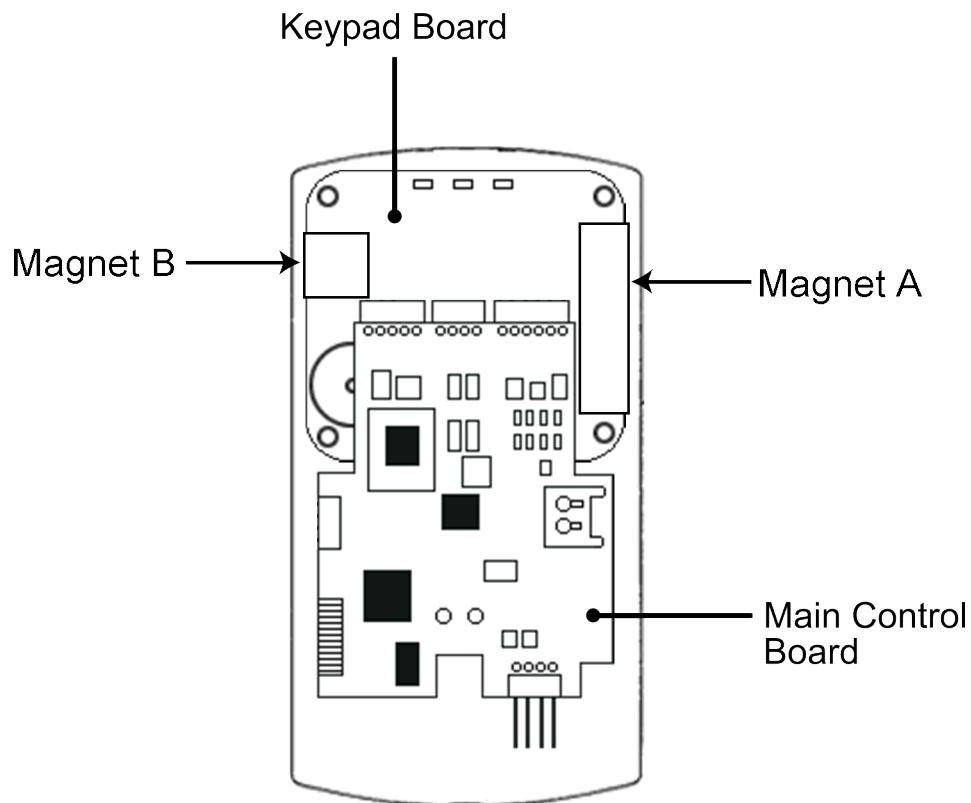
Figure 8: Tamper Switch Locations

Removing/Inserting Circuit Boards

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

1. Disconnect the back housing of the prox.pad Plus IR 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 Plus IR unit.)** Remove the main printed circuit board by pressing the two spring tabs in the direction of the arrows as shown in Figure 8. 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.
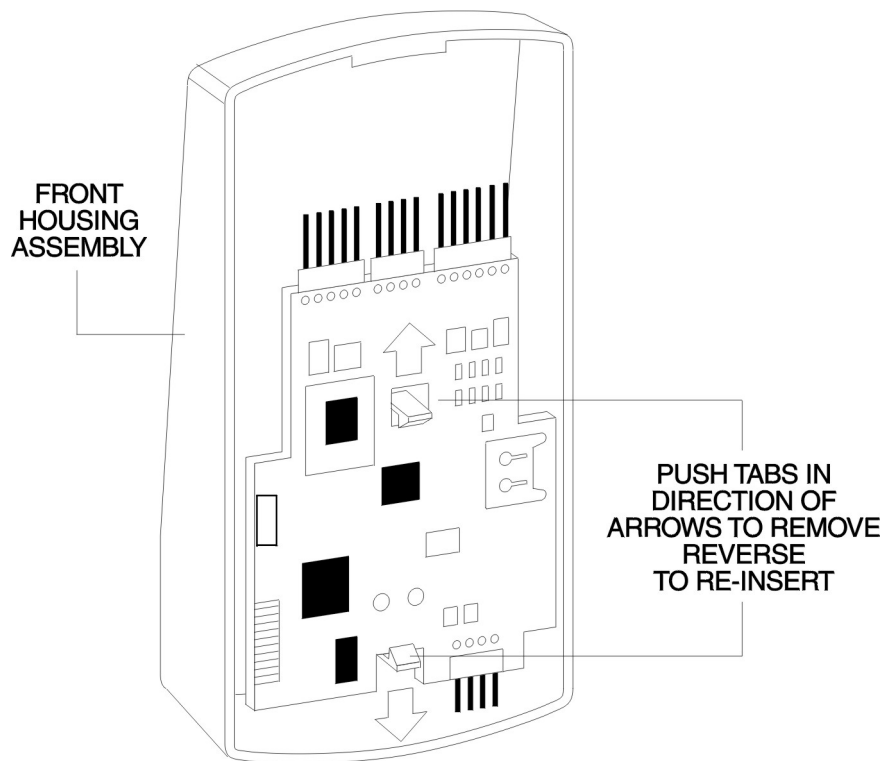
Figure 9: Removing/Inserting Printed Circuit Board

Connecting the Communication Board to the Main Control Board

The prox.pad Plus IR is composed of two circuit boards, the control board and the communication board, which is mounted in the rear keypad housing. The communication board contains the infrared communications circuitry used for communicating to a PDA device, as well as the power supply. **The power supply circuit should be powered with 12 or 24 VDC. This is selectable by jumper JP1; 24 VDC is the factory setting.**

The prox.pad Plus IR unit is powered through P2 on the communication board. Connector P1 on the communication board then provides power to the keypad control board using the supplied wire harness; this connects to P5 on the control board. The two data wires for infrared communications are also on this same wire harness.
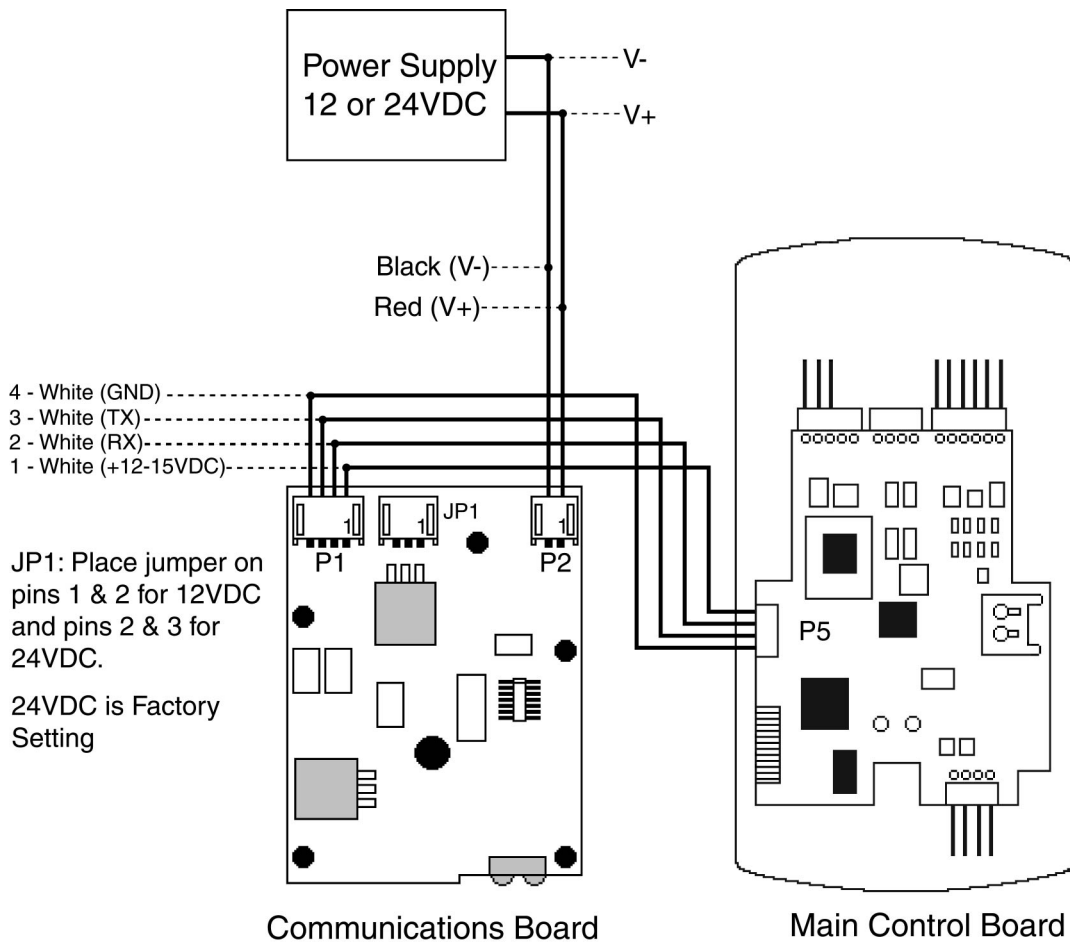
Figure 10: Connecting the Communication Board to the Main Control Board

Wiring the Main Relay to Fail Secure Lock

The door lock is wired to connector P1 on the prox.pad Plus IR main circuit board. The following section describes how to wire an Electric Door Strike.

Power for the prox.pad Plus IR unit **must** be from a 12-24 volt DC linear, filtered and regulated power supply. It is typical for the chosen power supply to power BOTH the prox.pad Plus IR unit and the selected locking device. When using one power supply for both the prox.pad Plus IR 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.
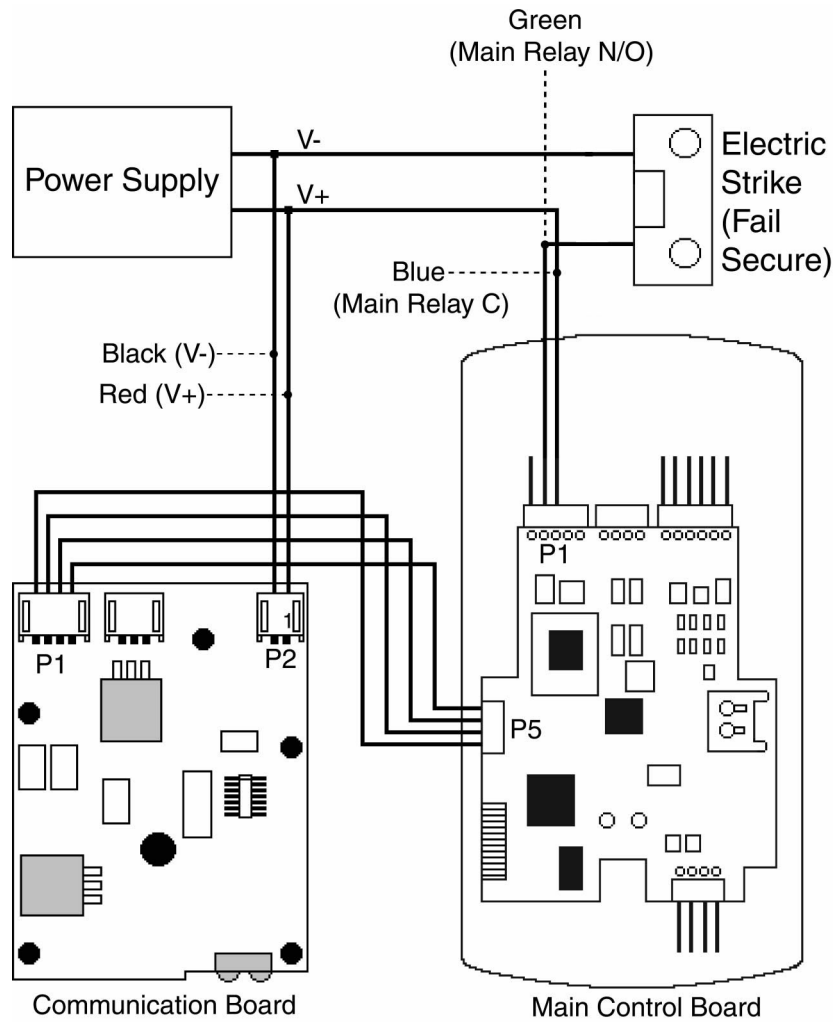
Figure 11: Electric Strike (Fail Secure) Wiring Diagram

Wiring the Main Relay to Fail Safe Lock

The door lock is wired to connector P1 on the prox.pad Plus IR main circuit board. The following section describes how to wire a Maglock.

Power for the prox.pad Plus IR unit **must** be from a 12-24 volt DC linear, filtered and regulated power supply. It is typical for the chosen power supply to power BOTH the prox.pad Plus IR unit and the selected locking device. When using one power supply for both the prox.pad Plus IR 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.
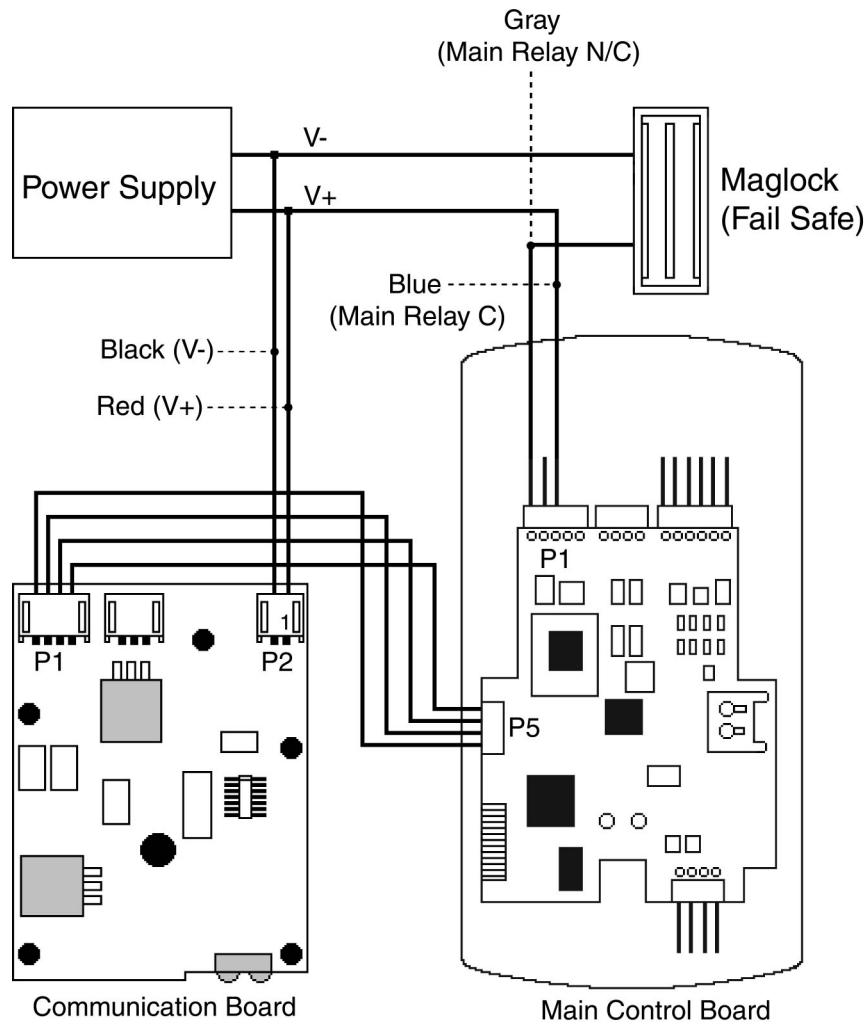
Figure 12: Maglock (Fail Safe) Wiring Diagram

Wiring the Aux Relay For Alarm Shunt

The diagram below shows how to wire the Aux relay for use as alarm shunt. By default, the Aux Relay is set for Alarm Shunt so no programming is required for this feature. For the alarm shunt feature to work, you must connect a dedicated normally closed door switch to the white and orange wire on connector P2 as shown below.
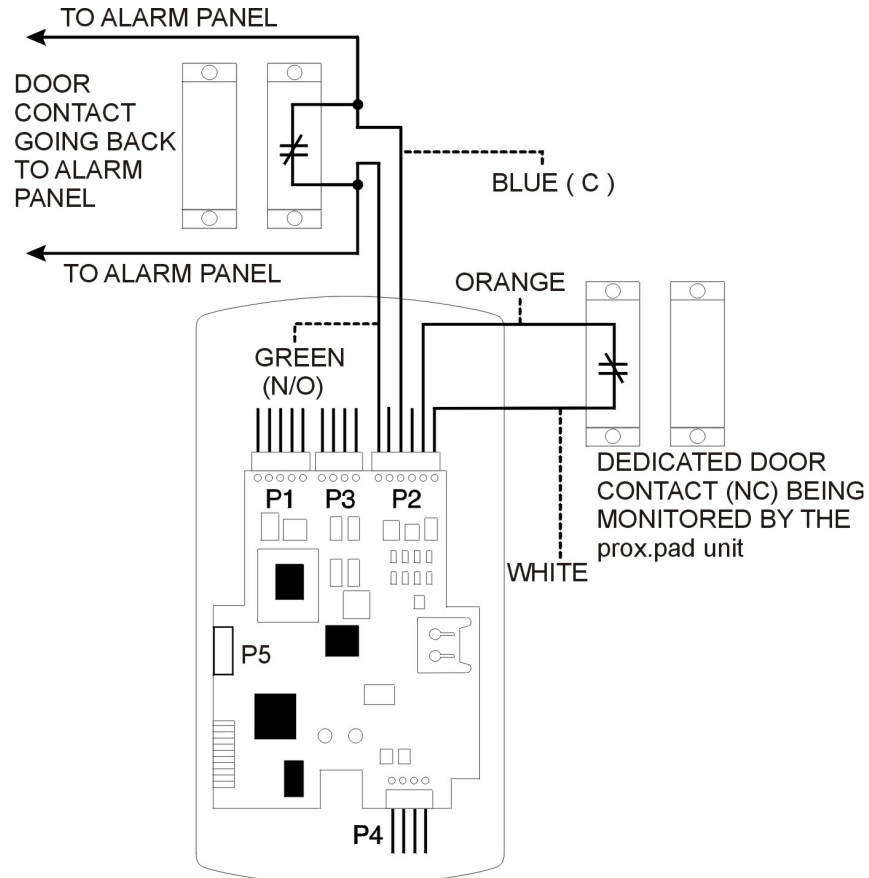
Figure 13: Wiring the Aux Relay for Alarm Shunt

Wiring the Aux Relay For Propped or Forced Door

The diagram below shows how to wire the Aux Relay for propped door or forced door. Before you use the Aux Relay for propped door or forced door you must assign it using command 10. For the either of these features to work, you must connect a dedicated normally closed door switch to the white and orange wire on connector P2 as shown below.
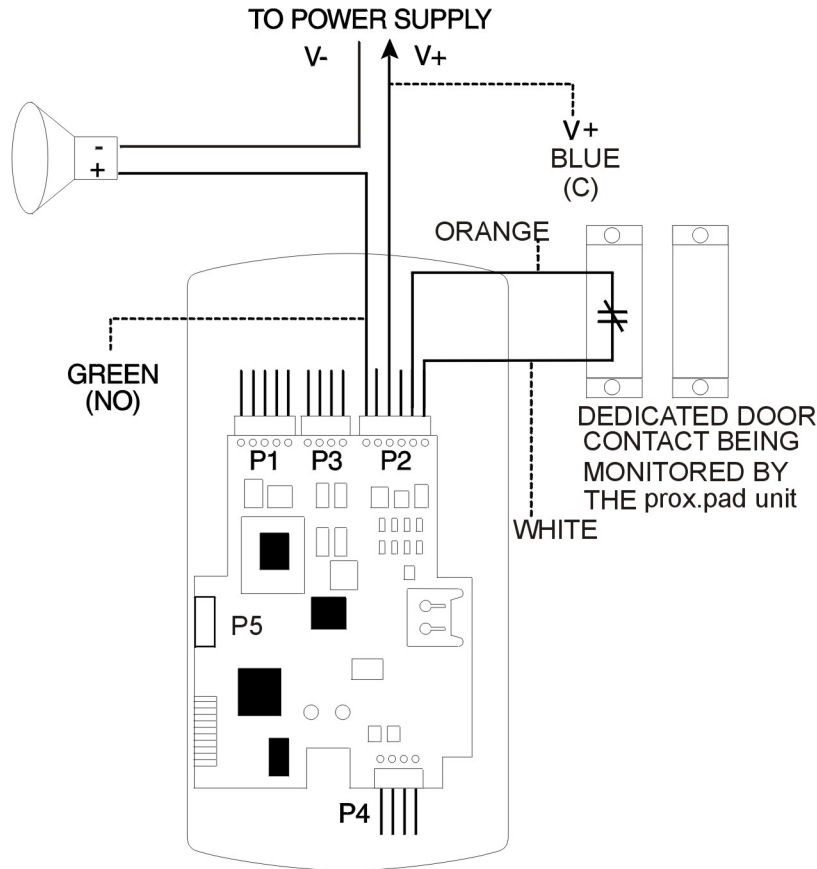
Figure 14: Wiring the Aux Relay for Forced or Propped Door

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. After entering a valid code, presenting valid card or triggering REX, Auto Re-Lock automatically overrides the main relay timer as soon as the prox.pad Plus IR unit senses that the door is open and immediately de-energizes the lock relay. 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.

> **NOTE:** In order for the Alarm Shunt, Propped Door, and Forced Door features to work, a door contact switch must be used. Before wiring the AUX relay, connect a door contact to the keypad.
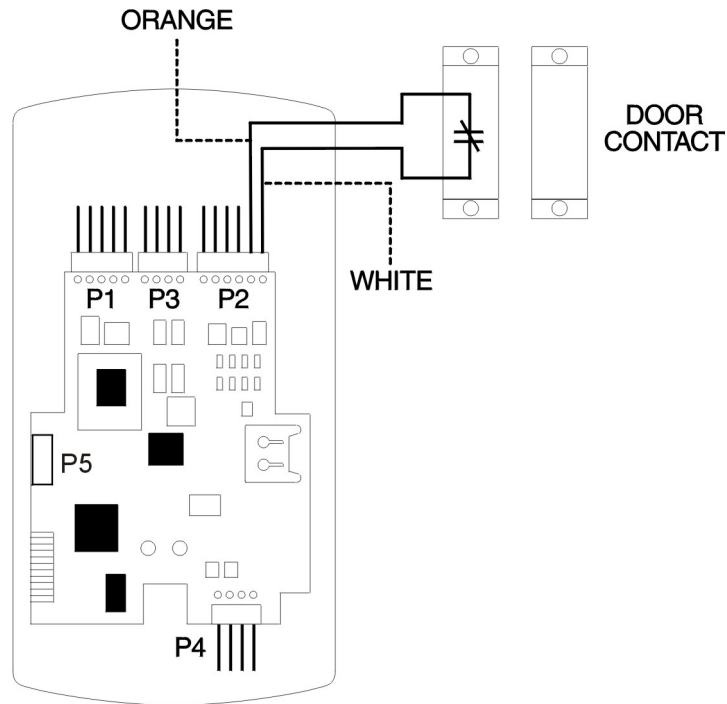
Figure 15: Wiring the Door Contact Input

Wiring an External REX Switch (Request to Exit)

The prox.pad Plus IR 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 the figure below. To incorporate this feature, follow these steps:

1. Turn OFF power to the prox.pad Plus IR 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**, 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.
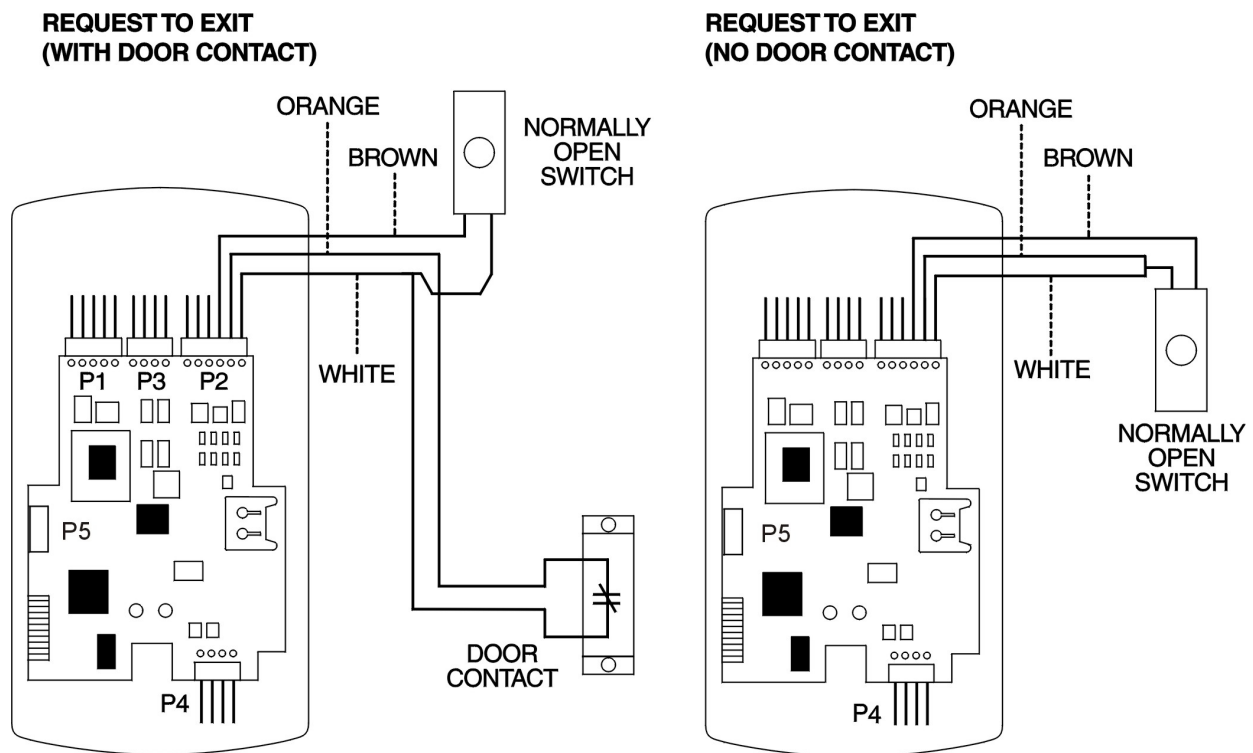
Figure 16: Wiring the REX Switch

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).

Programming

The following sections discuss how to enter program mode, change the master or supervisor code and contains a list of user types and a programming command list. You have the option of programming the prox.pad Plus IR using these programming commands on the keypad, but to take full advantage of all the features available, the PC software is required.

Entering Program Mode

The first step in programming the prox.pad Plus IR is to place it into program mode by using the master code, which is defaulted to 1234. To place the unit in program mode, press: **99 # Master Code ***.

When the unit is in program mode the yellow LED flashes slowly. When you are done programming, to exit program mode press the * key and the yellow LED stops flashing.

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 press the program button (SW1) on the main circuit board. Momentarily pushing this button forces the unit into program mode. You then should change the master code immediately.

Changing the Master Code

The master code is stored in user memory location 1 and used to enter program mode. The master code also unlocks communications to allow data transfer between the prox.pad Plus IR and the PDA. To change the master code use the programming sequence below.

Action	Command
Enter Program Mode	99 # master code *
Change Master Code	1 # new master code * new master code *
Exit Program Mode	*

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 command without exiting program mode. When all your programming is complete, you can then exit program mode by pressing the * key.

Programming a Supervisor Code

The following table shows how to program a supervisor code. User location 2 is reserved for the supervisor code. This user has access to only user programming commands and can't change other system related options and parameters. The supervisor code also unlocks communications to allow data transfer between the prox.pad Plus IR and the PDA.

Action	Command
Enter Program Mode	99 # master code *
Program a Supervisor Code Code	2 # new code * new code *
Exit Program Mode	*

prox.pad Plus IR User Types

The following chart describes all the user types available in the prox.pad Plus IR.

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.
Standard 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.
Lockout User	3	A Lockout user is used to lock out other users from gaining access through the door. When you enter a lock out code, all user in a higher user location are locked out. For example, if you lockout code in memory location 5, users 6 through 2000 are locked out. To clear a lockout, enter the same lockout code. If you enter a lockout code in a lower memory location, the lockout position moves. For example, if you enter a lockout code in location 5, then enter lockout code in memory location 4, users 5 through 2000 are locked out.
Extended Unlock User	4	Extended Unlock users operate like standard access users, except they use a different unlock time programmed using command 32, parameter 3. It is defaulted to 10 seconds.
Singe Use User	5	Single use users are allowed to gain access only once. After you enter this code/card the user is deleted from memory.
Relock User	6	A Relock user is used to relock the door if it was toggled open or is in auto-unlock. Once entered, the door relocks immediately. Entering 00 # prior to entering your relock code allows auto-unlock to be re-triggered, when first-in is enabled. Relock users cannot unlock the door.
Emergency User	7	An Emergency user is a special user that can't be locked out by a user lockout code. This user also uses the extended unlock time. It is defaulted to 10 seconds.
Communication Unlock	8	A communication unlock user is used to unlock communications, which allows you to transfer data between the porx.pad Plus IR and the PDA running LS Link software or the DTD. This user type does not unlock the door.

Programming Options Chart

The following chart contains a list of programming commands available in the prox.pad Plus IR. When programming users, the term user location refers to the place in the units memory that the user is stored.

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
Program Supervisor code	**2 # (new code) * (repeat code) ***	
Assign Outputs	**10 # output # relay/audio alert # ****	

Outputs	Relay/Audio Alert
0 – Disable Output	1 – Relay 1 (Main)
1 – Lock Output	2 – Relay 2 (Aux)
2 – Alarm Shunt	5 – Audio Alert #1 (¼ sec on, ¼ sec off)
3 – Door Ajar	6 – Audio Alert #2 (beep every 2 sec)
4 – Forced Door	

Set main relay time	**11 # time # 0 # ****	Time =1-99 seconds **(default = 5 seconds)**
Set/clear standard option	**30 # option # s/c # ****	See Chart below

Option	Set	Clear
0 – Audio Keypress Feedback	0 = Disabled	**1 = Enabled**
1 – Visual Keypress Feedback	0 = Disabled	**1 = Enabled**
2 – Auto Entry Enable	**0 = Disabled**	1 = Enabled
3 – Code and Card Required for Program Mode	**0 = Disabled**	1 = Enabled
5 – User Lockout Enable	0 = Disabled	**1 = Enabled**
7 – Internal REX Switch	**0 = Disabled**	1 = Enabled
9 – Time Zone Select	**0 = Disabled**	1 = Enabled
11 – Auto-Unlock Select	**0 = Disabled**	1 = Enabled
12 – First-In Auto-Unlock	**0 = Disabled**	1 = Enabled
13 – Daylight Saving Time	0 = Disabled	**1 = Enabled**
15 – Daylight Saving Time Format	**0 = US**	1 = European
16 – Timed Anti-Passback	0 = Disabled	**1 = Enabled**

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

Parameter	Value
0 – Error Lockout Threshold	1 – 50 Attempts (**Default = 3**)
1 – Error Lockout Duration	1 – 255 Sec. (**Default = 10 Sec.**)
3 – Extended User Unlock Time	1 – 255 Sec. (**Default = 10 Sec.**)
4 – Facility Code (For commands 51 & 57)	0 – 255 (**Default = 11**)
8 – Anti-Passback Delay	2 – 240 (¼ sec increments; **Default = 4, 1 sec**)

Action Desired	Press	Details
Reset System Defaults Only	**40 # 00000 # 00000 # ****	Does not delete users
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 Propped Door Time	**44 # time # 0 # ****	Time = 10-990 seconds; (**default=30 secs**)
Set Forced Door Time	**45 # time # 0 # ****	Time =forced door time, to nearest 10's seconds, entered as 30-990; (**default=10 secs**)
Delete Entire Memory and Reset System Defaults	**46 # 00000 # 00000 # ****	Deletes all memory including users
Program User – Code Only	**50 # user type # user location # code *repeat code ***	**User Types:** 0 – Toggle 1 – Standard 3 – Lockout 4 – Extended 5 – Single Use 6 – Relock 7 – Emergency 8 – Communications Unlock
Program User – Code AND Card By Presenting Card	**50 # user type # user location # code * repeat code ** <present card>**	**User Types:** 0 – Toggle 1 – Standard 3 – Lockout 4 – Extended 5 – Single Use 6 – Relock 7 – Emergency 8 – Communications Unlock

Action Desired	Press	Details
Program User - Card Only By Presenting Card	**50 # user type # user location # ** <present card>**	**User Types:** 0 – Toggle 1 – Standard 3 – Lockout 4 – Extended 5 – Single Use 6 – Relock 7 – Emergency 8 – Communications Unlock
Program User – Card Only Without Presenting Card	**51 # user type # user location # card PIN * card PIN ***	**User Types:** 0 – Toggle 1 – Standard 3 – Lockout 4 – Extended 5 – Single Use 6 – Relock 7 – Emergency 8 – Communications Unlock For 26-bit Cards only. The card PIN appears on the card (Facility code must be entered first; see 32 # 4 # command)
Program User – Code OR Card By Presenting Card	**52 # user type # user location # code * repeat code * <present card>**	**User Types:** 0 – Toggle 1 – Standard 3 – Lockout 4 – Extended 5 – Single Use 6 – Relock 7 – Emergency 8 – Communications Unlock
Program Consecutive Users – Card Only By Presenting Cards	**53 # user type # start user # ** <present card> <present card> ...**	**User Types:** 0 – Toggle 1 – Standard 3 – Lockout 4 – Extended 5 – Single Use 6 – Relock 7 – Emergency 8 – Communications Unlock Simply present one card after another.
Enable/Disable Users	**56 # enable/disable # user location # ***	Enable = 0 Disable = 1
Program Consecutive Users – Card Only Without Presenting Cards	**57 # number of users # user location # card PIN * card pin ***	"Number of Users" = total number of cards to be entered; card PIN appears on card; a facility code must be entered first (see command 32, option # 4)

Action Desired	Press	Details
Delete Block of Consecutive Users	**58 # start user # start user # number of users * number of users ***	
Delete Single User	**user location # ****	
Erase Transaction Log	**76 # 00000 # 00000 # ****	
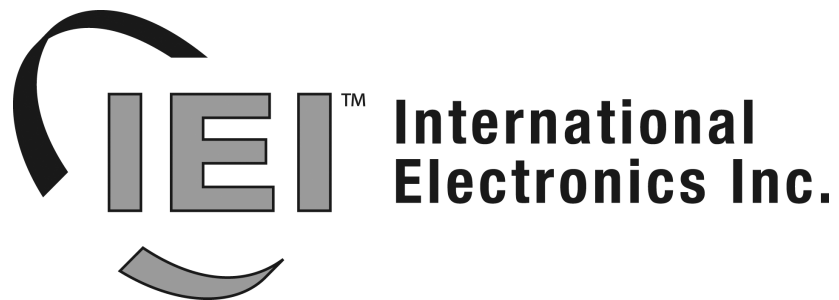
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