PALCARE®
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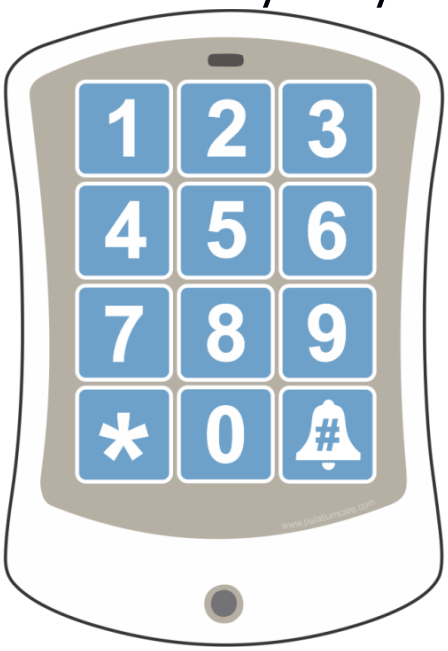
All-In-One (AIO)
Keypad Installation Guide
PAL-106050 / 60 / 70



Thank you for purchasing the PalCare AIO Keypad. The AIO Keypad is a completely integrated access control and intrusion monitoring system that can be battery powered or externally powered. The keypad includes integrated sounders and transmitters to make installations simpler, faster, and more reliable. The PalCare AIO Keypad is compliant with NFPA Life Safety Code 101 and UL294.

The AIO Keypad is used to protect doorways from unauthorized entry or exit. It is typically installed on perimeter doors of the facility and doorways between secure and unsecure zones like a memory care wing. If the door is opened without a valid code entered into the keypad, it will audibly sound an alarm tone and send a message to the nurse call system alerting staff. If a staff member wants to go through the door without sending an alert, they can enter a valid code in the keypad allowing them to pass through the doorway without an alert. This reduces the number of nuisance alerts being sent to staff and increases safety of your residents.

The AIO Keypad also includes advanced features and configuration options to help in various scenarios that may be encountered in your facility. These features are explained in the keypad configuration section below.

For technical support, please contact PalCare at 888-725-2848 or support@palcare.com

Operating Specifications

Dimensions: 5 ½" x 4" x 1 ½"
Enclosure Color: White
Color Membrane: Grey and Blue
Weight: 14 oz.
Environment: 40°F - 120°F (Non-Condensing)

Electrical Specifications

Supply Voltage*	8 – 32 VDC
Input Current Max (Dry Relay Configuration)	350 mA
Input Current Max (Wet Relay Configuration)**	2350 mA
External Sounder*	Transistor Output 100ma Max @ +/- 10% of Keypad Supply Voltage
Relay Output	Dry Form C Contacts Rated 2 A @ 30 VDC
Door Contact Input	Dry Contact Closure Required
Request to Exit (REX) Input	Dry Contact Closure Required
Maglock Alarm Input	Dry Contact Closure Required
Maglock Stopper Input	Dry Contact Closure Required
Bond Sensor Input	Dry Contact Closure Required

* Must be UL294 rated.
** Actual current consumption is 350 mA plus the external load connected to keypad relay.

Battery Power Requirements

2x Panasonic CR123A 3V Lithium Batteries
The AIO Keypad only supports a single keypad when running on batteries. If operating the keypad from batteries, please ensure both batteries are installed. When operating from batteries, the device will turn off the backlighting LEDs and the relay will not activate to conserve battery power. These features will function properly when running the keypad from an external power supply. The use of electronic locks with the keypad is not supported on battery power. When running on battery power, the unit enter low battery state at 2.8 volts. When the battery drops to 2.6 volts, the unit will enter critical low battery state. Please see the troubleshooting section below for more information about low battery states. It is recommended to run the keypad from either batteries or external power, but not both.

Wire Requirements

Recommend cable is 18 gauge shielded wire with one end securely grounded.
Do not connect cables longer than 95.4 ft (30 m) long to keypad.
All wiring shall be in accordance with the National Electrical Code ANSI/NFPA70

Fail-Safe/Fail-Secure

The relay on the AIO Keypad will de-energize upon power loss. The fail-safe or fail-secure function will be dependent on the locking hardware attached to the keypad.

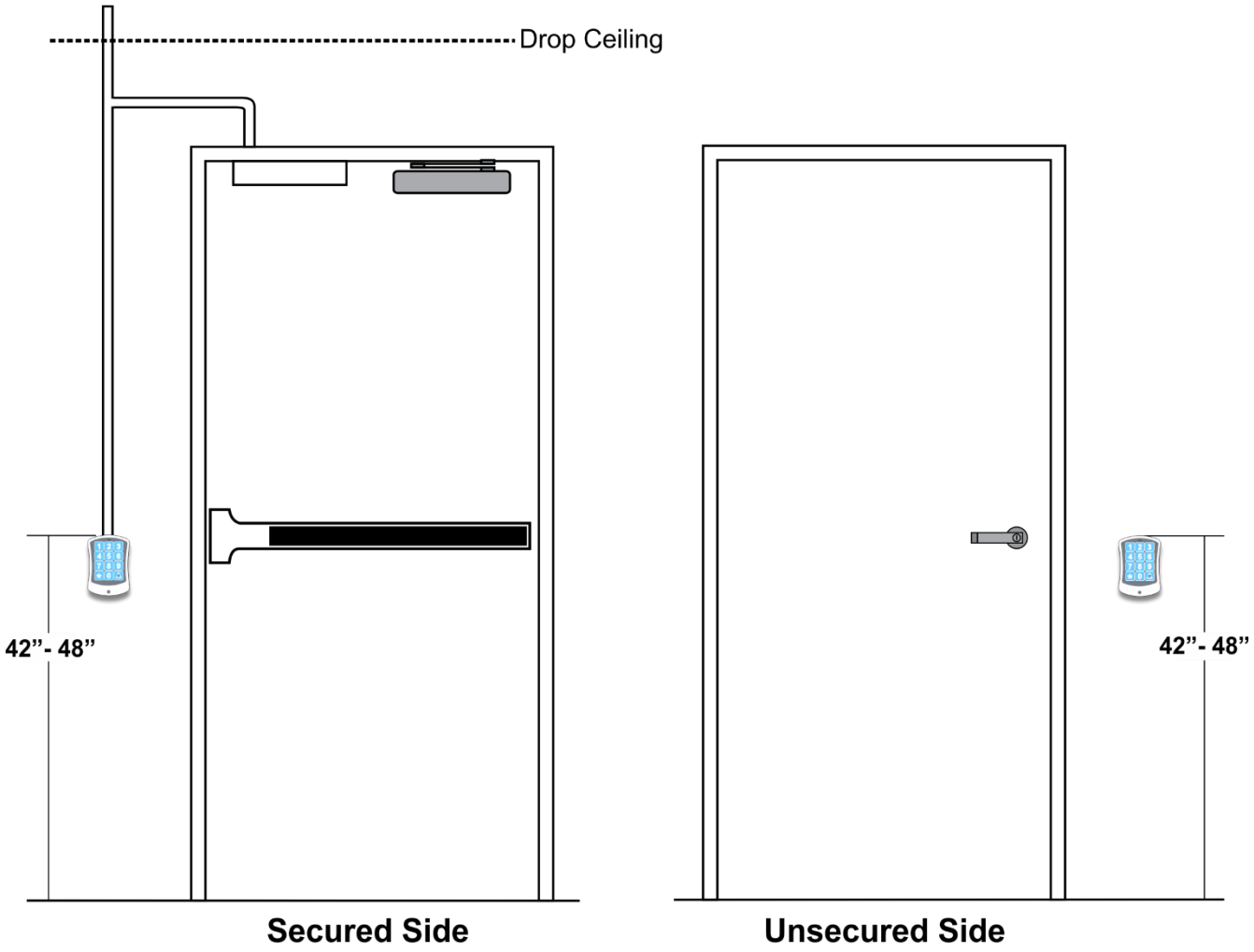
Model Differences

The PAL-106050 Keypad comes with an Inovonics EN1941 radio. This radio has a standardized transmission protocol that can work with many different monitoring systems that support Inovonics transmitters. This transmitter sends a signal that the keypad is in alarm, but not which alarm it is in. It does not send a signal for low battery but will send an alarm for critical low battery.

The PAL-106060 Keypad comes with an Inovonics EN1941XS radio. This radio has a custom message payload that allows detailed alarm support, which will identify which alarm is active in the keypad. In addition, it will send out low battery and critical low battery signals.

The PAL-106070 Keypad does not come with a transmitter and is used as a slave keypad when connecting two keypads together. This unit must be paired with a PAL-106050 or PAL-106060 that is connected to external power to function properly.

Typical Installation Layout



Wiring Methods: Shall be in accordance with the National Electrical Code ANSI/NFPA70

Locations: Not to be used in outdoor locations

Declaration Levels for Access Control Units

Feature	Levels
Destructive Attack Level	Level 1
Line Security	Level 1
Endurance Level	Level 4
Standby power	Level 1

Code Requirements

Please note: It is the responsibility of the installer to ensure that the installation of the keypad meets all local, state, and national code requirements. Verify with the authority having jurisdiction (AHJ) the requirements for installing keypad hardware in the type and location of the facility you are planning to install the equipment in prior to installation. Installations involving electronic locks may need approval by the AHJ.

WARNING: Improper installation, maintenance, inspection or usage of the product or any related accessories or parts may cause hardware to disengage or fail. PalCare will not be liable to the installer, purchaser, end user or anyone else for damage or injury to person or property due to improper installation, care, storage, handling, maintenance, inspection, abuse, misuse or act of God or nature involving this product or any related accessories or parts.

Device Operation

During normal standby operation, the AIO Keypad will show a red LED letting you know the door is secure (In battery operated mode, the LED will be off to save power).

The keypad allows codes between 4 and 6 digits long. The keypad can be configured to automatically accept a matching code without any additional button presses or can be configured to require a star after entering a valid code. If an incorrect digit is entered, the pound symbol button can be pressed to cancel the entered digits and start from the beginning. Each button press should cause a beep and flash of the LED.

If the door is opened without entering a valid code or Request to Exit (REX) input activation, the keypad will create a forced door alarm with audible and visual alarm indications. A valid code can be used to reset the alarm.

If the door is left open for too long after a valid code or Request to Exit (REX) activation, the keypad will create a propped door alarm with audible and visual alarm indications. Closing the door will clear the propped door alarm.

If an incorrect code is entered, the keypad will reject the code with an error beep. After four incorrect codes, the keypad will lock itself for 15 seconds rejecting any button presses.

A relay is built onto the AIO Keypad. This relay can be used to control electronic locking mechanisms, such as strikes, maglocks, and crash bars. This relay is normally de-energized and will energize on a valid code or Request to Exit (REX) input activation. The relay does not activate in battery operated mode.

Auxiliary alarm inputs are available on the AIO Keypad that can be used to monitor the alarm relays of various devices such as maglocks, bond sensors, and emergency exit buttons (Stopper). When one of these auxiliary alarm inputs are activated the keypad will create an alarm with audible and visual alarm indications. The alarms will clear when the input is deactivated.

SW1 is a reed switch that can be used to detect a case tamper scenario. For case tamper detection to work properly, a magnet installed on the backplate must be properly aligned with

SW2 is a pushbutton that can be used to reset the AIO Keypad or to send a reset signal over the wireless Inovonics board to learn into an eCall or security system.

SW4. When the AIO Keypad enclosure is opened, the separation between the magnet and SW4 will create a tamper condition. To clear the condition, the enclosure must be re-installed bringing the magnet and SW1 back together.

The Request to Exit (REX) input on the keypad can be used to connect the keypad to 3rd party systems or devices. An example of a REX device can be a 3rd party keypad, an access control system, a push button, or a motion detector. A closure on the input will grant access through the door or (if configured to) reset alarms.

Maintenance

Cleaning should be performed by hand using a damp cloth and mild soap, or disinfectant wipes designed for household use. Ensure the keypad is fully dry prior to operating the unit. Any moisture, dirt, or debris can cause erroneous button activations on the keypad.

Do Not Use the following products to clean the keypad:
- Strong cleaning agents such as ammonia, bleach, alcohol or quaternary disinfectant.
- Abrasive or powder cleansers.
- Alcohol-based hand sanitizers.

Test and clean the keypad weekly to ensure it is securely mounted and that all features are working properly.

Battery Powered Keypad Testing

If operating the keypad from batteries, check the voltage of the batteries using a multimeter. If the voltage of either battery drops below 2.8 volts, replace the battery. Once the voltage drops below 2.6 volts, the keypad will continually beep until the battery is replaced.

Enter the master code into the keypad (default is 1234). The keypad LED should turn green.
Open the door and hold it open. The propped door alarm should activate after 20 seconds.
Close the door. The propped door alarm should clear. Ensure propped door and clear messages were received on the monitoring system.

Open the door without entering a code. The forced door alarm should activate immediately.
Enter the master code into the keypad (default is 1234). The forced door alarm should clear. Ensure forced door and clear messages were received on the monitoring system.

External Powered Keypad Testing

If operating the keypad external power, the LED backlight should be on. Ensure that you see the backlight turned on.

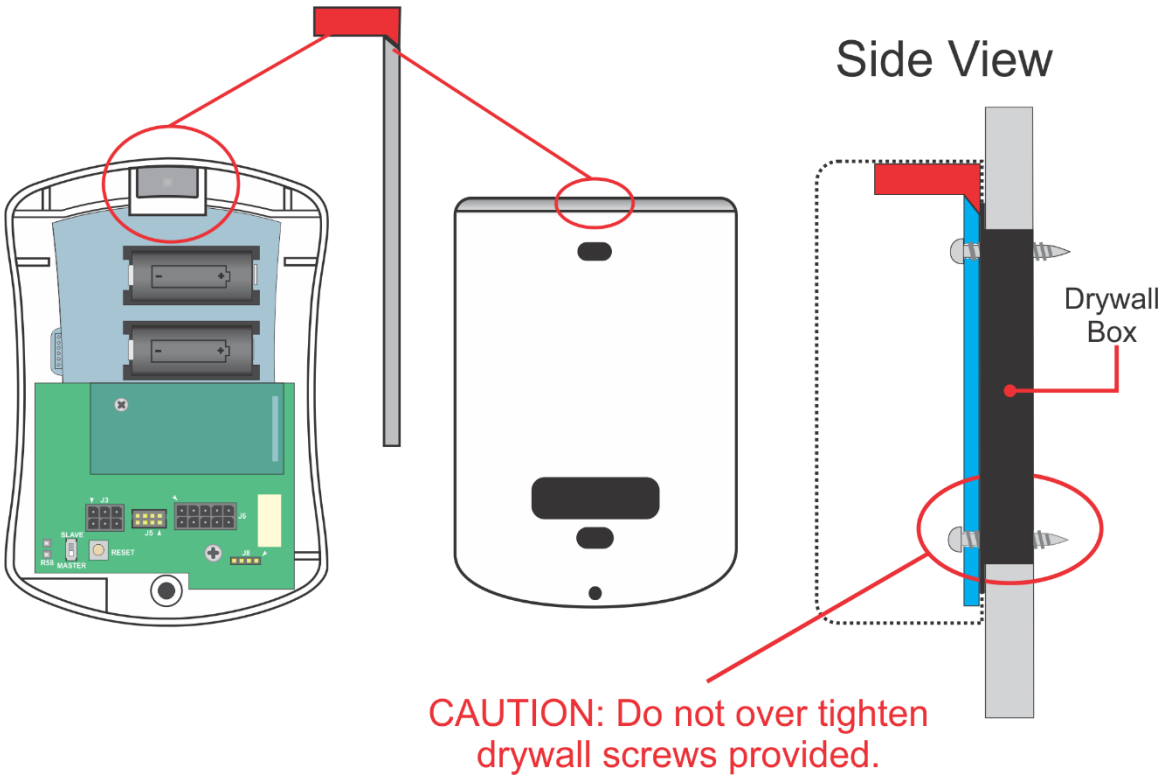
Enter the master code into the keypad (default is 1234). You should here a slight audible click from the relay activating and the keypad LED should turn green. Ensure locking device unlocks the door. Open the door and hold it open. The propped door alarm should activate after 20 seconds. Close the door. The propped door alarm should clear. Ensure propped door and clear messages were received on the monitoring system.

Open the door without entering a code. The forced door alarm should activate immediately. Enter the master code into the keypad (default is 1234). The LED should turn green and the forced door alarm should clear. Ensure forced door and clear messages were received on the monitoring system.

Mounting Instructions

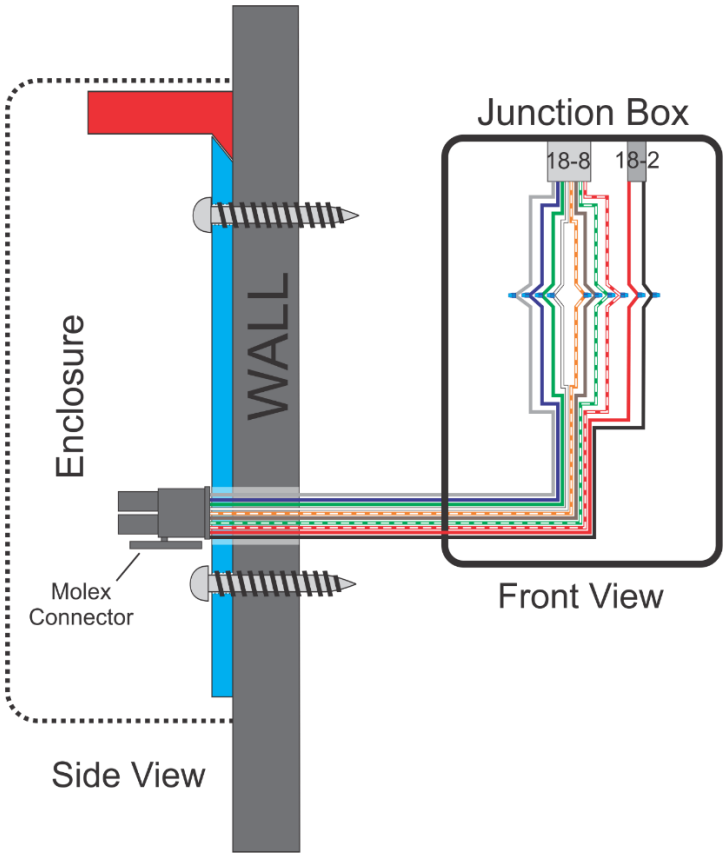
1. Determine the height that the device is to be mounted from floor to the top of the device.
2. Make a small horizontal mark on the wall one inch lower than the top of the intended height.
3. Install a single gang drywall box at this mark matching the top of the mark with the top of the drywall box cutout.
4. Feed the needed wires into the drywall box and connect them to the proper pigtails. Cap unused wires. See wiring diagrams and pigtail pinouts for further details.
5. Push the pigtail connectors through the wide oval hole in the mounting plate and mount the top hole of the back plate onto the top hole of the single gang box with the included screw.
6. Using a level on the side of back plate, make sure the back plate is level on the wall.
7. Screw the bottom of the mounting plate to the bottom hole of the single gang box.
8. Plug the pigtails into the AIO Keypad.
9. If powering the device from batteries, install two batteries into the keypad.
10. Learn keypad into the PalatiumCare system, and test to ensure it is functioning properly.
11. Hang the AIO Keypad on the back plate.
12. Screw in bottom mounting screw until tight.

Caution: Over-tightening the housing screws can result in microcracks in the plastic and/or stripping of the bushing. Any of these conditions can compromise the stability of the device as well as future secure mounting.

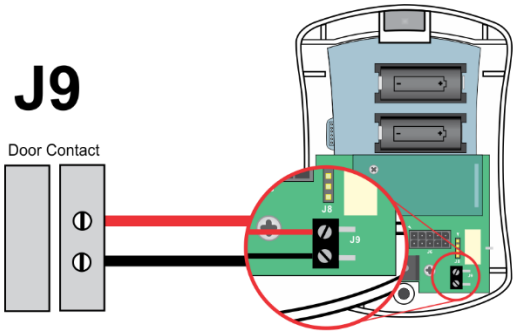


Wiring Examples

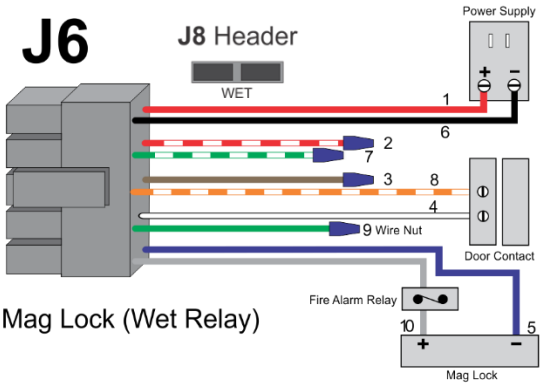
All wiring splices should be made in approved junction boxes. Ensure all unused wires are capped off with wire nuts.



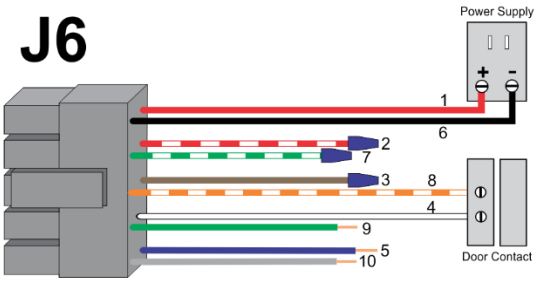
Typical Wiring Door Scenarios



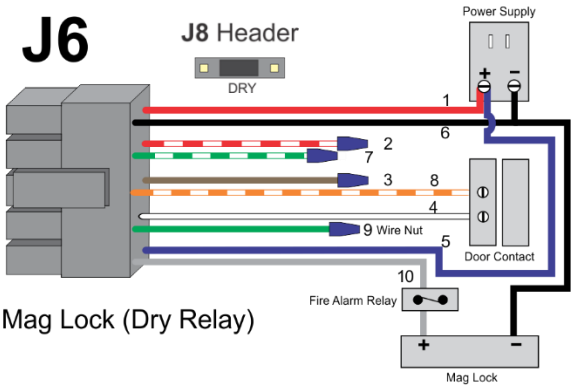
Battery Powered Intrusion



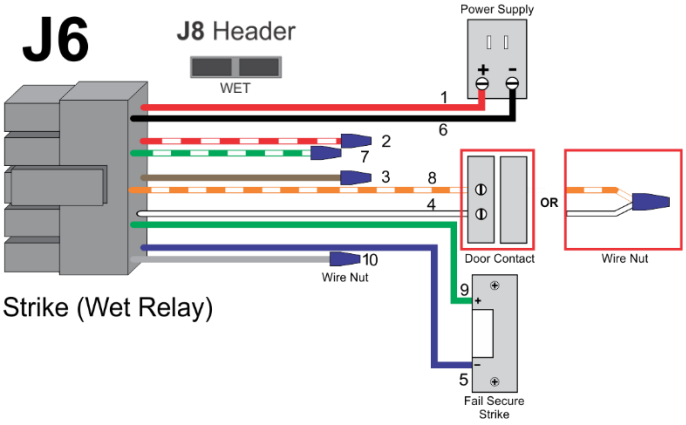
Mag Lock (Wet Relay)



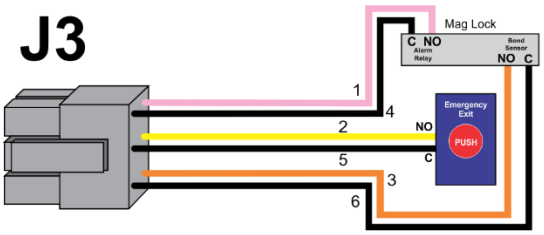
Externally Powered Intrusion



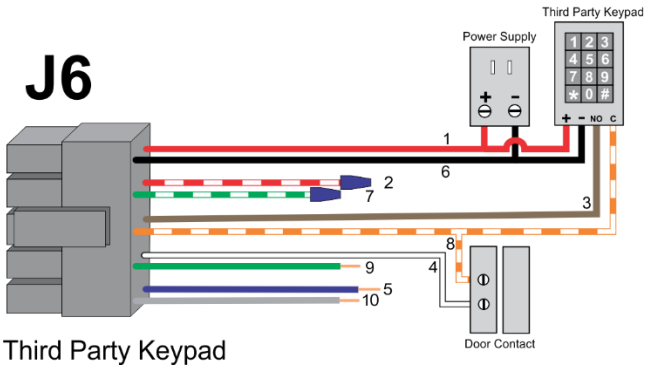
Mag Lock (Dry Relay)



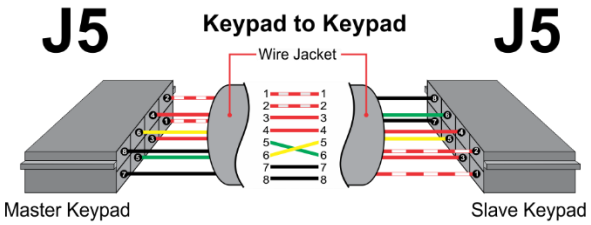
Strike (Wet Relay)



Auxillary Alarm Inputs

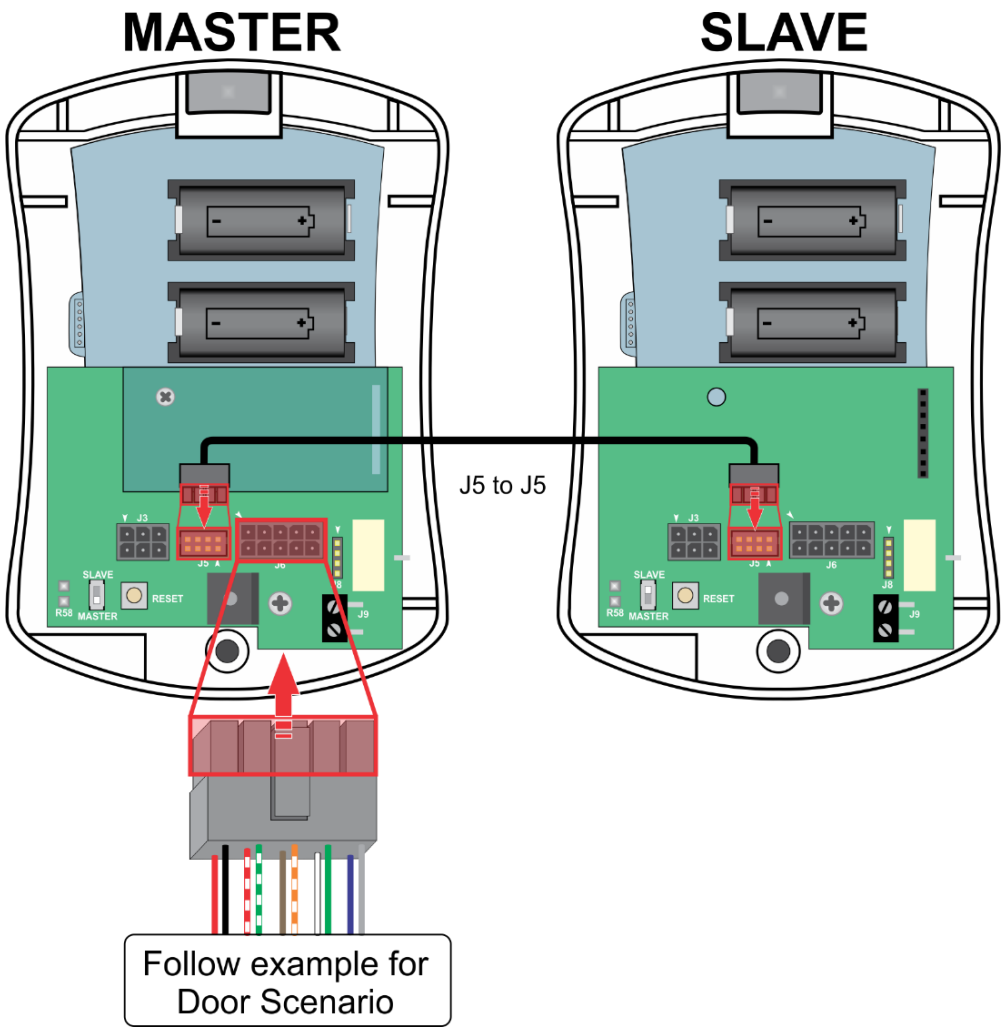


Third Party Keypad

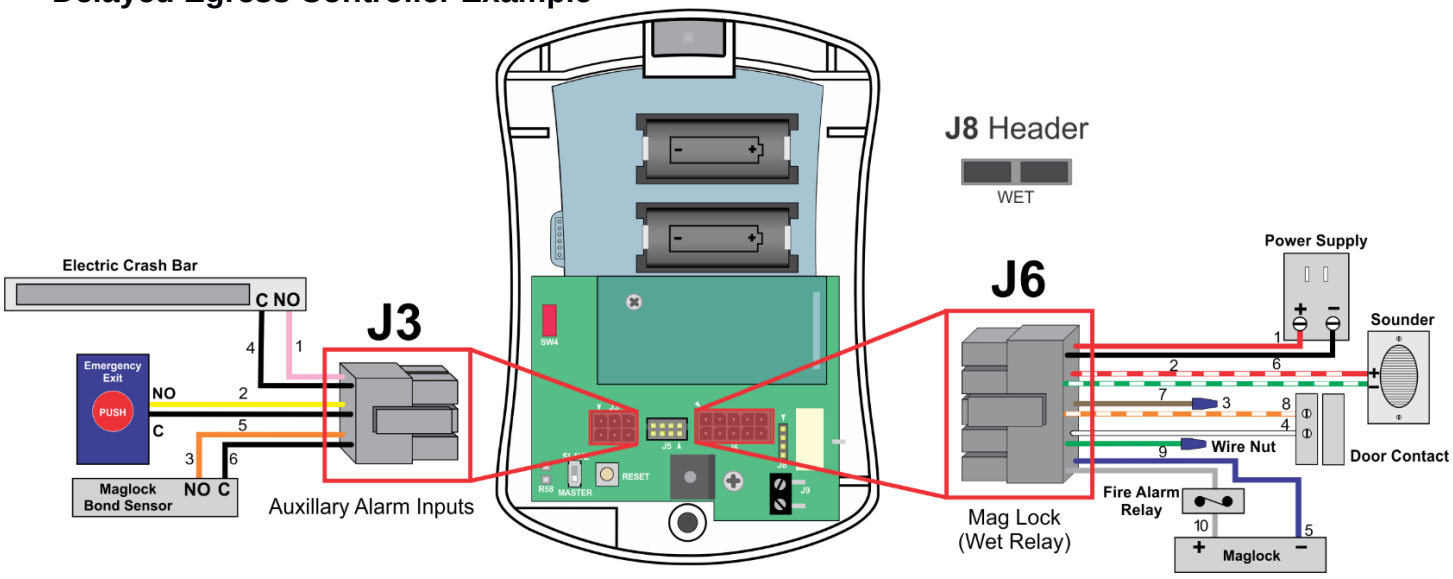


**** Either end can be plugged into either keypad ****

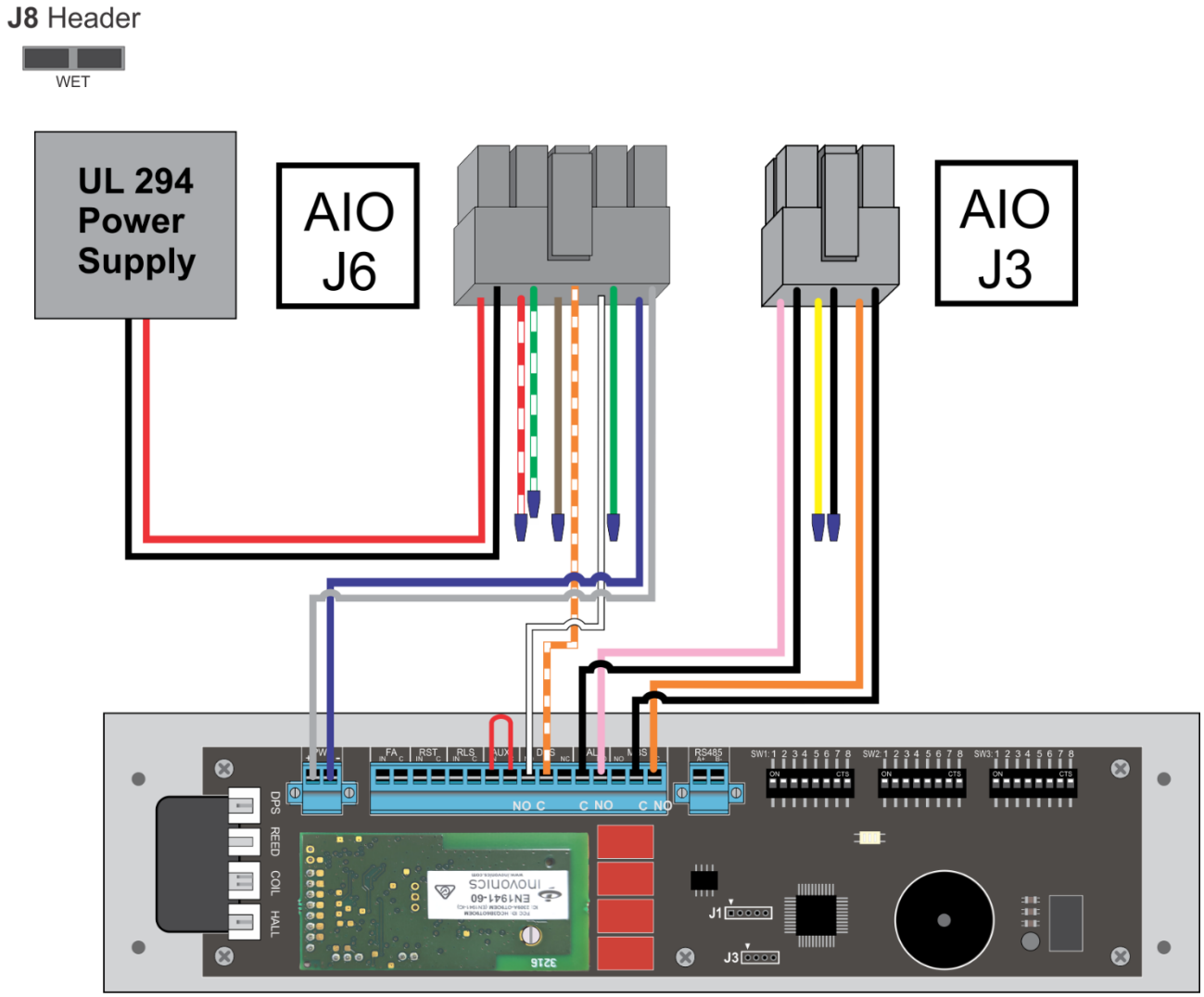
AIO Keypad Master and Slave Keypad Connections



Delayed Egress Controller Example

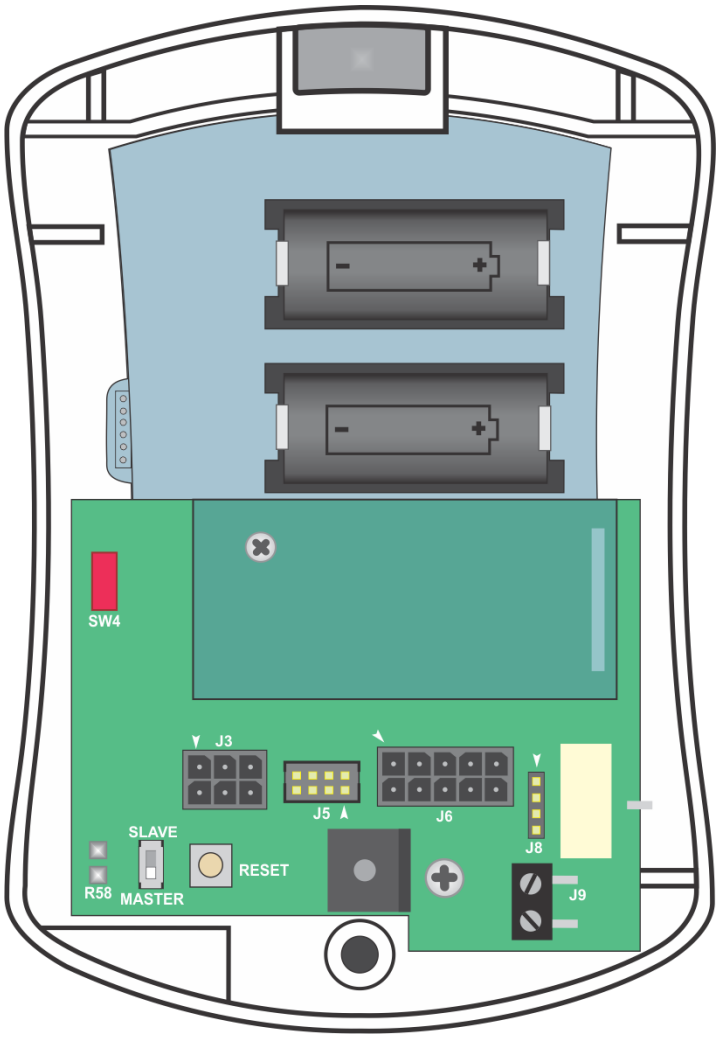


AIO Keypad (Wet Relay) with PalCare Delayed Egress Maglock Example



Fire Alarm Connection is still required

Connector Layout



Relay Jumper Config (J8)

By default, the keypad ships with the relay in “wet” mode with two jumpers on all four J8 pins. By installing one jumper on the inner two pins, the relay can be switched to “dry” mode. When the relay is in “dry” mode, it will function like a standard relay. When the relay is in “wet” mode, the common wire (blue) becomes a ground or negative wire. The normally open wire (green) becomes positive when the relay is activated. The normally closed wire (gray) becomes positive when the relay is deactivated. You can directly connect a strike or maglock to these wires. Please note: you must still follow all life safety codes when installing this product, including the requirement to connect a fire alarm relay to deactivate mag locks in the event of a fire.

Alarm Inputs (J3)

Input	Description
Maglock Alarm	Input used to monitor the alarm relay on the maglock. Will send alarm information to the nurse call system when activated.
Stopper Alarm	Input used to monitor the emergency exit button near the door. Will send alarm information to the nurse call system when activated.
Bond Sensor	Input used to monitor the bond sensor on the maglock. Will send alarm information to the nurse call system if the maglock is not securely locked when the door is supposed to be secure.

User Types

User	Notes
Master User	Can enter programming mode, granted access through the door, and can reset alarms.
Access User	Granted access through the door only.
Toggle User	Disables the door security for a fixed amount of time. See Keypad Configuration for changing the duration.
Reset User	Used to reset alarms only.
REX User	Tied to the REX input on J6 wiring harness. Used to grant access only by default. Can be changed in Keypad Configuration to also be allowed to reset alarms.

Master and Slave Keypads

The AIO Keypad supports two keypads, one on each side of the door connected together via J5. Power is shared between keypads through this connection as well so only one side needs to be powered. LEDs and alarms should be replicated on both keypads so the two keypads should function as one.

One keypad must be set as a master and one must be set as a slave. If only one keypad is being used, it must be set as master.

SW3 is used to configure the keypad's mode. The keypad must be unpowered while changing the master/slave setting. To set a keypad as master, SW3 must be in the down position. To set a keypad as slave, SW3 must be in the up position.

The slave keypad will automatically download all configuration from the master, so no programming is required on the slave.

If you are converting a master into a slave, the reset button (SW2) on the back of the keypad must be pressed to clear the configuration on the keypad.

If you are using any of the external inputs (J3 and J6), they must be connected to the master keypad.

Programming can be performed on either keypad and both keypads will be updated.

Scheduled Unlock
If you wish to unlock the door and keep it unlocked on a schedule, this can be achieved by connecting a timer relay to the REX and REX Common wires. When the timer activates the relay, the green LED should turn on and stay on as long as the timer keeps the relay activated.

J9 Door Contact Input
If running the keypad on batteries only, you can use the dedicated door contact input (J9) for the door contacts to avoid drilling a hole in the wall for the pigtail wires.

SW4 Tamper Input
If you wish to monitor when the keypad is opened or taken off the wall, you can install a magnet on the backplate that lines up with SW4 on the keypad. You will then need to enable Case Tamper Reporting (see programming section below) to enable the feature. Once enabled, anytime the magnet moves away from the SW4 reed switch, the wireless transmitter will send a tamper signal.

UL Requirements
• Units shall not impair operation of panic hardware mounted on door.
• Units shall not impair intended operation of an emergency exit.
• Not to be used without UL approved latching hardware.
• Units/Models are intended to be connected to UL Listed Equipment, not intended for Burglar or Fire Alarm Initiating or Indicating Devices.
• Ambient Conditions - “For Indoor Use Only”.
• Wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70.
• This device complies with part 15 of FCC rules.

Operation is subject to following two conditions:
1. This device may not cause harmful interference.
2. This device must accept any interference received, including any interference that may cause undesired operation. Changes or modifications not expressly approved by party responsible for compliance could void user’s authority to operate equipment.

Programming the Keypad

Entering Programming Mode
The first step to changing the configuration of your AIO Keypad is to enter programming mode. To do so, you must enter the following key sequence:

99 # Master Code (default is 1234)

Once the keypad is in programming mode, the keypad will flash the orange LED. You can now change all of the configuration items below. When entering a configuration sequence, the keypad will give one long beep if the sequence was successful. If the sequence failed, you will receive two quick beeps. Once you are finished changing your configuration, you can press the * key to exit programming.

Master User Code
The Master User code is used to grant access through the door, reset alarms, and enter programming mode.
To change the master user code, enter the following sequence including the stars:
1 # New Code * New Code *

Access User Code
The Access User code is used to grant access through the door only. It will not reset alarms or allow you to enter programming mode.
To change the access user code, enter the following sequence including the stars:
2 # New Code * New Code *

Toggle User Code
The Toggle User code is used to deactivate the keypad for an extended period of time. The timeframe can be configured using the steps listed further in the manual. To deactivate the keypad, enter the Toggle User code into the keypad. This will deactivate it for the full duration. If at any time you need to reactivate the keypad before the duration has expired, enter the Toggle User code again. Typical use scenarios is for loading dock doors when deliveries come, moving people and furniture into and out of the building, and for main entrances to be unlocked during the day.
To change the toggle user code, enter the following sequence including the stars:
3 # New Code * New Code *

Reset User Code
The Reset User code is used to reset alarms only. It will not grant access through the door or allow you to enter programming mode.
To change the rest user code, enter the following sequence including the stars:
4 # New Code * New Code *

Relay Activation Mode
The relay reactivation mode configures when the keypad will deactivate the relay after access is granted. With some locking devices like strikes and straight mag locks, you will want to relock them as soon as the door is opened. With other locking devices like delayed egress mag locks, you will want to relock them when the door is closed. A value of 0 deactivates the relay when the door is opened. A value of 1 deactivates the relay when the door is closed. The default value is 1.
To change the relay reactivation mode, enter the following sequence in programming mode:
10 # 2 # VALUE # **

Master User Unlock Timeout
The master user unlock timeout is the amount of time in seconds the relay is activated when you enter the master user code. If the door is opened and closed quicker than the unlock time, the keypad will return to a secure state when the door is closed. The value can be between 1 and 255 seconds. The default value is 20.
To change the master user unlock timeout, enter the following sequence in programming mode:
11 # VALUE # 0 # **

Access User Unlock Timeout
The access user unlock timeout is the amount of time in seconds the relay is activated when you enter the access user code. If the door is opened and closed quicker than the unlock time, the keypad will return to a secure state when the door is closed. The value can be between 0 and 255 seconds. 0 disables the access user. The default value is 20.
To change the access user unlock timeout, enter the following sequence in programming mode:
11 # VALUE # 1 # **

Propped Door Timer
The propped door timer is the amount of time in seconds that the door can be held open before the keypad issues a propped door alarm. The value can be between 0 and 255 seconds. 0 disables the propped door alarm. The default value is 20.
To change the propped door timer, enter the following sequence in programming mode:
11 # VALUE # 2 # **

Toggle User Unlock Timeout
The toggle user unlock timeout is the amount of time in minutes that the keypad will be disabled after entering the toggle user code. The value can be between 0 and 1440 minutes. 0 disables the toggle user. The default value is 720.
To change the toggle user unlock timeout, enter the following sequence in programming mode:
11 # VALUE # 3 # **

Door Contact Debounce Timeout
The door contact debounce timeout is the amount of time in deciseconds (tenths of a second) that the keypad will wait before it recognizes the door changing state between open and closed. This is used when you have a closer that closes the door too fast and the door immediately bounces open slightly. Adjusting this value can prevent a forced door alarm from occurring in this scenario. The value can be between 1 and 99 deciseconds (0.1 to 9.9 seconds). The default value is 5.
To change the door contact debounce timeout, enter the following sequence in programming mode:
11 # VALUE # 4 # **

Delayed Egress Timer
The AIO Keypad can function as a delayed egress controller. When changing the Egress Timer to either 15 or 30 seconds, the Maglock Alarm Input becomes the delayed egress initiation device. You will need to connect a Normally Open (NO) crashbar or similar imitation device to this input to use this feature. The value can be set to 0, 15, or 30.
To change the delayed egress timer, enter the following sequence in programming mode:
11 # VALUE # 5 # **

Delayed Egress Nuisance Delay
When using the AIO Keypad as a delayed egress controller, you can set a nuisance delay to prevent accidental activations of the delayed egress system. This value can be set to 0,1,2, or 3 seconds.
To change the nuisance delay, enter the following sequence in programming mode:
11 # VALUE # 6 # **

Auxiliary Input Debounce Timers
When using the auxiliary inputs on the J3 wiring harness, a custom debounce can be set for the inputs. This is useful when these inputs are connected to a maglock that momentarily activates the inputs when they are powered up and then deactivates them. You can increase the debounce to avoid these nuisance delays. The value can be between 1 and 99 deciseconds (0.1 to 9.9 seconds). The default value is 15.
11 # VALUE # 7 # **

Alarm Volume
The alarm volume is the sound level set for the buzzer when the keypad is in alarm. The value can be between 0 and 9, with 9 being the loudest. 0 will make the alarm silent. The default value is 9.
To change the alarm volume, enter the following sequence in programming mode:
30 # 0 # VALUE # **

Keypad Press Volume
The keypad press volume is the sound level set for the beep after any key is pressed on the keypad. The value can be between 0 and 9, with 9 being the loudest. 0 will make the key presses silent. The default value is 5.
To change the alarm volume, enter the following sequence in programming mode:
30 # 1 # VALUE # **

Auto Accept Code
The auto accept code feature allows the keypad to automatically accept the correct code when entered. If this option is disabled, you must push * after you enter the code to the keypad. This option is useful if you are using codes of different length or are trying to match the functionality of a different manufacturer's keypad in your facility. A value of 0 will not require a * after the code. A value of 1 will require a * to be entered after the code. The default value is 0.
To change the auto accept code feature, enter the following sequence in programming mode:
30 # 2 # VALUE # **

Change Case Tamper Reporting
The change case tamper reporting feature allow the keypad to report when it has been removed from the wall. A value of 0 will disable case tamper reporting. A value of 1 will enable case tamper reporting. The default value is 0.
To change the case tamper reporting, enter the following sequence in programming mode:
30 # 5 # VALUE # **

Change Keypad Backlight Level – Active
The change keypad backlight level – Active feature allows you to change the brightness of the backlight LEDs when the keypad is active. The keypad goes into active mode when any key on the keypad is pressed. Please note, the backlight will not turn on when the keypad is running on battery power. The value can be between 0 and 9 with 9 being the brightest. 0 will make the backlight turn off. The default value is 9.
To change the keypad backlight level – active feature, enter the following sequence in programming mode:
30 # 6 # VALUE # **

Change Keypad Backlight Level – Passive
The change keypad backlight level – Passive feature allows you to change the brightness of the backlight LEDs when the keypad is passive. The keypad goes into passive mode after 10 seconds of no keys being pressed. Please note, the backlight will not turn on when the keypad is running on battery power. The value can be between 0 and 9 with 9 being the brightest. 0 will make the backlight turn off. The default value is 9.
To change the keypad backlight level – passive feature, enter the following sequence in programming mode:
30 # 7 # VALUE # **

Change REX to Reset Alarms
The change REX to reset alarms feature allows you to configure the keypad to reset alarms with the REX input. This is useful when you have a 3rd party keypad on the other side of the door connected to the REX input and you want a valid code entry to reset the alarm. A value of 0 will not allow the REX input to reset an alarm, only grant access through the door. A value of 1 will allow the REX input to reset an alarm in addition to granting access throught he door. The default setting is 1.
To change the REX to reset alarms feature, enter the following sequence in programming mode:
30 # 8 # VALUE # **

Change Radio Monitoring
The change radio monitoring feature allows you to configure the keypad to poll the radio to ensure the EN1941XS radio module is connected and responding to the keypad. If the radio module is disconnected, not responding, or a different module is inserted the keypad will start beeping and flashing the Radio Communication Error pattern until the problem is resolved. If you are using the EN1941, you must disable radio monitoring. A value of 0 will stop the keypad from polling for the radio module. A value of 1 will make the keypad poll for the radio module. The default value is 1.
To change the radio monitor feature, enter the following sequence in programming mode:
30 # 9 # VALUE # **

Change User Code Length
The change user code length feature allows you to change the length of the user codes to make them more secure. The value can be set between 4 and 6 digits. The default value is 4.
To change the radio monitor feature, enter the following sequence in programming mode:
32 # 4 # VALUE # **

Factory Default Keypad
The factory default keypad feature allows you to set all of the keypad's configuration settings back to factory defaults.
To change all of the settings to factory defaults, enter the following sequence in programming mode:
46 # 00000 # 00000 # **

Learning in the Transmitter
The AIO Keypad is used as a location device in the PalatiumCare system. When learning in the device, press the reset button (SW2) immediately after clicking the ready button on the UI.

Keypad Configuration Options

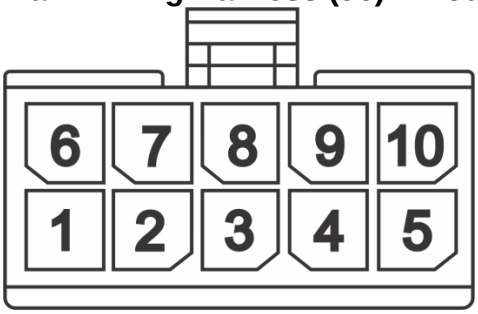
Key Presses	Summary	Default	Range
99 # VALUE	Enter Programming Mode using Master Code	1234	4 to 6 digits
1 # VALUE * VALUE *	Change Master User Code	1234	4 to 6 digits
2 # VALUE * VALUE *	Change Access User Code		4 to 6 digits
3 # VALUE * VALUE *	Change Toggle User Code		4 to 6 digits
4 # VALUE * VALUE *	Change Reset User Code		4 to 6 digits
10 # 2 # VALUE # **	Unlock relay re-arms when door opens or when door closes	1 (closes)	0 to 1 0 = opens 1 = closes
11 # VALUE # 0 # **	Change Master User Unlock Time Seconds	20 seconds	1 to 255
11 # VALUE # 1 # **	Change Access User Unlock Time Seconds	20 seconds	0 to 255 0 = disabled
11 # VALUE # 2 # **	Change Propped Door Timer Seconds	20 seconds	0 to 255 0 = disabled
11 # VALUE # 3 # **	Change Toggle User Unlock Timeout Minutes	720 minutes	0 to 1440 0 = disabled
11 # VALUE # 4 # **	Change Door Contact Bounce Timeout Deciseconds (Tenths of a second)	5 deciseconds	1 to 99 (1 to 99 tenths of a second)
11 # VALUE # 5 # **	Change Delayed Egress Timer	0 (disabled)	0, 15, or 30 seconds
11 # VALUE # 6 # **	Change Delayed Egress Nuisance Delay	3 seconds	0 to 3 seconds
11 # VALUE # 7 # **	Change Auxiliary Input Debounce Times	15 deciseconds	1 to 99 (1 to 99 tenths of a second)
30 # 0 # VALUE # **	Change Alarm Volume	9 volume	0 to 9 0 = mute 9 = loudest
30 # 1 # VALUE # **	Change Key Press Volume	9 volume	0 to 9 0 = mute 9 = loudest
30 # 2 # VALUE # **	Change * Press Requirement After Entering User Code	0 (disabled)	0 to 1 0 = disabled 1 = enabled
30 # 5 # VALUE # **	Change Case Tamper Reporting	0 (disabled)	0 = disabled 1 = enabled
30 # 6 # VALUE # **	Change Key Back-light Brightness During Use	9 bright	0 to 9 0 = off 9 = brightest
30 # 7 # VALUE # **	Change Key Back-light Brightness During Idle	5 bright	0 to 9 0 = off 9 = brightest
30 # 8 # VALUE # **	Change REX to Reset Alarms	1 (enabled)	0 to 1 0 = disabled 1 = enabled
30 # 9 # VALUE # **	Change Radio Monitoring	1 (enabled)	0 to 1 0 = disabled 1 = enabled
32 # 4 # VALUE # **	Change User Code Length	4 digits	4 to 6
46 # 00000 # 00000 # **	Factory Reset Configuration		
*	Exit Programming Mode		

After a successful command, the keypad will give one long beep. If there is an error with the command, it will give two quick beeps.

Keypad LED and Buzzer Indications

Event	LED	Buzzer
Access Granted Master code	Green LED ON until Master unlock time expires or door closes	N/A
Access Granted Secondary code	Green LED ON until Secondary unlock time expires or door closes	N/A
Bad Code Entry	Flash Red LED 60ms ON, 60ms OFF	3 Beeps 60ms ON, 60ms OFF
Keypad Lockout	Yellow LED ON	3 Beeps 60ms ON, 60ms OFF
Door Open	N/A	N/A
Door Closed	Red LED ON (if powered from external power supply)	N/A
Door Forced	Flash red LED continuously 250ms ON, 250ms OFF	Continuous beeps 250ms ON, 250ms OFF
Door Propped (propped timeout expired)	Flash red LED continuously 100ms ON, 2000ms OFF	Continuous beeps 100ms ON, 2000ms OFF
Door Keypad Bypassed (Toggle User Entered)	Flash green LED continuously 250ms ON, 250ms OFF	6 Beeps 60ms ON, 60ms OFF
Maglock Alarm	Flash red LED continuously 250ms ON, 250ms OFF	Continuous beeps 250ms ON, 250ms OFF
Stopper Alarm	Flash red LED continuously 250ms ON, 250ms OFF	Continuous beeps 250ms ON, 250ms OFF
Bond Sensor Alarm	Flash red LED continuously 250ms ON, 250ms OFF	Continuous beeps 250ms ON, 250ms OFF
Delayed Egress Nuisance Alert	Flash red LED continuously 300ms ON, 300ms OFF	Continuous ON
Delayed Egress Countdown Alarm	Flash red LED continuously 700ms ON, 300ms OFF	Continuous beeps 700ms ON, 300ms OFF
Configuration Data Request (including access codes)	Flash Red 250ms ON, 250ms OFF, Flash Yellow 250ms ON, 250ms OFF, Flash Green 250ms, 250ms OFF	N/A
Trouble Condition Radio Module Communication Error	Flash green and red LED 1x 200ms ON, 200ms OFF 5 second pause and then repeated	1x 200ms ON 200ms OFF beep followed by 5 second pause and then repeated
Trouble Condition Primary and Secondary Unit Communication Error	Flash green and red LED 2x 200ms ON, 200ms OFF 5 second pause and repeated	2x 200ms ON 200ms OFF beeps followed by 5 second pause and then repeated
Trouble Condition Logic and Keypad Board Communication Error	Flash green and red LED 3x 200ms ON, 200ms OFF 5 second pause and repeated	3x 200ms ON 200ms OFF beeps followed by 5 second pause and then repeated
Trouble Condition Relay Activation Error	Flash green and red LED 4x 200ms ON, 200ms OFF 5 second pause and repeated	4x 200ms ON 200ms OFF beeps followed by 5 second pause and then repeated
Critically Low Battery	Flash red LED 5x 200ms ON, 200ms OFF 5 second pause and repeated	5x 200ms ON 200ms OFF beeps followed by 5 second pause and then repeated
Doorbell	Flash green LED 6x 60ms ON, 60ms OFF	6x Beeps 60ms ON, 60ms OFF
Send Configuration	Flash red, green, and orange LED 1x 200ms ON, 200ms OFF	Single beep 200ms ON, 200ms OFF
Factory Reset	Flash red LED 2000ms Flash green and orange 1000ms 500ms OFF	Continuous beeps 1000ms ON, 1000ms OFF

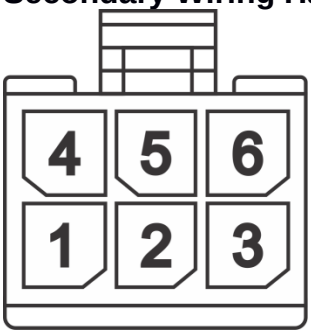
Main Wiring Harness (J6) Pinout



(Front View)

PIN	Description	Wire Color
1	+VDC	Red
2	External Sounder + (100ma Max)	White/Red
3	REX	Brown
4	Door Contact	White
5	Relay Common (dry) or Ground (wet)	Blue
6	Ground	Black
7	External Sounder Ground	White/Green
8	REX / Door Contact Common	Orange/White
9	Relay Normally Open (dry) or +VDC NO (wet)	Green
10	Relay Normally Closed (dry) or + VDC NC (wet)	Gray

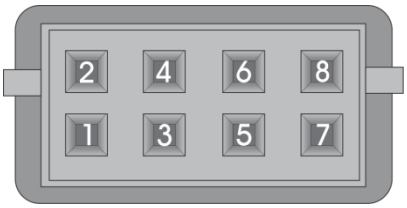
Secondary Wiring Harness (J3) Pinout



(Front View)

PIN	Description	Wire Color
1	Mag-lock Alarm	Pink
2	Mag-lock Stopper	Yellow
3	Bond Sensor	Orange
4	Ground	Black
5	Ground	Black
6	Ground	Black

Keypad to Keypad Wiring Harness (J5) Pinout



(Front View)

PIN	Description	Wire Color
1	+VDC from Battery	White/Red
2	+VDC from Battery	White/Red
3	+VDC from External Power Adapter	Red
4	+VDC from External Power Adapter	Red
5	RS232 RX **	Green or Yellow
6	RS232 TX **	Yellow or Green
7	Ground	Black
8	Ground	Black

** Wiring needs pin 5 and pin 6 crossed for communication between keypads.

Troubleshooting

Factory Defaults
If the master code has been lost and you are unable to enter programming mode, the keypad can be restored to factory defaults by shorting the R58 pads while powering up the keypad.

Low Battery
When the batteries drop below 2.8 volts, the keypad will send a low battery message to the system when using the EN1941XS transmitter. If you are using an EN1941 transmitter, no low battery message is sent.

Critical Low Battery
When the batteries drop below 2.6 volts, they keypad will start a critical low battery error. This error consists of 5 beeps and led flashes followed by a 5 second pause and then repeated. If you are using an EN1941 transmitter, an alarm message is sent. This error condition will continue until the battery is replaced or the battery is completely depleted. The keypad buttons may not respond to presses in this condition.

Radio Communication Error
If Radio Monitoring is enabled in the keypad configuration, the keypad will poll the radio to ensure the EN1941XS radio module is connected and responding to the keypad. If the radio module is disconnected, not responding, or a different module is inserted the keypad will start beeping and flashing the Radio Communication Error pattern until the problem is resolved. If you are using the EN1941 transmitter, you must disable Radio Monitoring in the keypad configuration.

Primary and Secondary Unit Communication Error
If two keypads are interconnected via the Keypad to Keypad Wiring Harness (J5) and they lose connection between each other, both keypads will start beeping and flashing the Primary and Secondary Unit Communication Error pattern until the problem is resolved. If you are permanently removing the secondary keypad, reboot the primary keypad to clear the error condition.

Logic and Keypad Board Communication Error
If the capacitive touch board fails to communicate to the logic board within in the keypad, it will start beeping and flashing the Logic and Keypad Board Communication Error pattern until the problem is resolved. Check for loose connections between the two boards. If everything is secure, please contact technical support for further assistance.

Relay Activation Error
The keypad monitors the activation of the relay. If the keypad energizes the relay and it sees that it has not actually energized, the keypad will start beeping and flashing the Relay Activation Error pattern until the relay is energized. Some relays will be slow to activate or intermittently activate. This is a sign that the relay is starting to fail and the keypad should be replaced. Please contact technical support for further assistance.

No LEDs or Response to Key Presses
If the keypad does not have any LEDs lit up and does not respond to key presses, use a multimeter to verify the keypad is receiving proper voltage, between 8 and 32 VDC. If proper voltage is being supplied to the keypad, please check that all board to board connections are secured and the wiring harness is firmly inserted. If the problem persists, please contact technical support for further assistance.

Keypad Alarms After Door Closes
If they keypad goes into alarm immediately or shortly after the door closes, check to make sure the door contact is working properly. With the J6 wiring harness disconnected from the keypad, use a multimeter set to continuity mode to verify the door contact is opening and closing when the door opens and closes. If the door contact does not follow the door, check all wiring connections. If the problem persists, the door contact or wiring needs to be replaced. If the door contact is functioning properly and the keypad still goes into alarm after the door closes, watch the door and see if it is briefly bouncing open when it closes. If the door is bouncing slightly open causing a forced door alarm, the closer may need to be adjusted to prevent this. If you are unable to adjust the closer, you can adjust the door contact debounce time in the configuration settings to prevent the alarm from occurring.

No Audible Alarm
If no audible alarm is heard from the keypad during an alarm, check your configuration settings for alarm volume. If no audible alarm is heard after increasing the alarm volume, try resetting the keypad to factory defaults. If there is still no audible alarm, please contact technical support for further assistance.

No Power to Lock
If the lock (maglock or strike) is not receiving power, check that the jumper(s) for J8 are installed properly. Please note, depending on how you have the lock wired, you may have to configure J8 for “wet” or “dry”. See wiring examples for more details. If the jumpers are connected correctly, check all connections to make sure they are secure. If the problem persists, please contact technical support for further assistance.

Random Beeps
If you see buttons that randomly activate or hear a wrong code error beep from the keypad with nobody touching the keypad, you may have to clean the surface of the keypad. The keypad is a capacitive touch device and any moisture, dirt, or debris can affect the operation of the capacitive touch buttons on the device. Please see the maintenance section of this manual for more information.