



# RR-MORTISE

## Wireless Remote Control Receiver for Alarm Lock Mortise Locks

### INSTALLATION AND PROGRAMMING INSTRUCTIONS

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(Note: Technical Service is for security professionals only)  
Publicly traded on NASDAQ Symbol: NSSC

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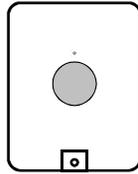
## OVERVIEW

The RR-MORTISE is a wireless remote control receiver that provides remote unlocking to Alarm Lock mortise locks. The RR-MORTISE is factory supplied with Alarm Lock compatible battery connector plugs, simplifying installation within Alarm Lock locking devices for wireless "remote release" (remote unlock). The RR-MORTISE can be used with a standard Alarm Lock battery pack or by simply cutting the power battery connector and using your own power supply (see **SPECIFICATIONS** for current consumption and power requirements).

For a wireless remote control receiver that provides remote unlocking to *cylindrical* Alarm Lock locking devices, refer to the model RR-RECEIVER (WI2012) at our website [www.alarmlock.com](http://www.alarmlock.com). The RR-RECEIVER can also be used as a general-purpose remote control receiver and/or for applications requiring a radio-controlled solid state relay closure.

RR-MORTISE features include:

- Integration within the rear housing cover to provide a wireless "remote release" function with Alarm Lock non-Network models that do not include an integral radio
- Built-in battery connectors for quick installation inside Alarm Lock mortise locking devices
- Optional settings include programmable "Relay Closure Duration", "Relay Hold Off Time" and "Relay Toggle Mode" for advanced applications
- Compatible with both the **RR-1BUTTON** wireless remote (see WI1999) and the **RR-4BKEYFOB** 4-button pocket-size remote (see WI2004). Use a **RR-4BKEYFOB** if you want a single "keyfob remote" to activate up to 4 separate RR-MORTISE's (for example, each button opens a separate door)
- Up to fifty (50) individual remote buttons can be "paired" (connected) to one RR-MORTISE
- Low current consumption provides years of operation with a standard Alarm Lock battery pack (see **Specifications** below for current consumption and power requirements)
- Relay programming and remote button pairings are maintained even when power is removed



RR-1BUTTON



RR-4BKEYFOB

**Note:** In this manual, "remote button" is used to describe the single button on the RR-1BUTTON (see WI1999) or any one of the four buttons on the RR-4BKEYFOB (see WI2004).

## SPECIFICATIONS

**Power Requirements:**..... 5-12VDC or use AL battery pack  
**Solid State Relay Contact Current:**..... 30mA maximum  
**Current Consumption:** .....50 microamperes (µA) idle current

## OPERATION

When a paired remote button is pressed, the paired RR-MORTISE relay will typically close within 2 seconds of the button press, and will remain closed for its programmed "Relay Closure Duration" (2 seconds by default, programmable from 1-250 seconds).

After the "Relay Closure Duration" ends and the relay opens, an optional Relay "Hold Off" Time can be added during which time the RR-MORTISE will ignore all paired remote button presses. After the Relay "Hold Off" Time ends, the RR-MORTISE is then ready to respond to the next wireless remote button press. The columns in the table below (from left to right) summarize these RR-MORTISE operations:

SUMMARY OF RR-MORTISE RELAY OPERATIONS OVER TIME			
Remote Button Press	RR-MORTISE "Relay Closure Duration"	RR-MORTISE "Relay Hold Off" Time	RR-MORTISE "Relay Hold Off" Time Ends
0.5-2 sec. delay before relay closes	Default is 2 seconds; programmable between 1-250 seconds	Relay opens and ignores all paired remote button presses. Default time is 4 seconds; programmable between 0-250 seconds	The RR-MORTISE is ready to respond to the next wireless remote button press

**Note:** If the lock Pass Time\* has been extended, the Relay "Hold Off" Time must be changed from its 4 second default duration to match the Pass Time duration.

A separate programmable relay option is "Relay Toggle Mode" where each press of a paired remote button causes the relay to alternate back and forth between open and closed states like a toggle switch. See "RELAY TOGGLE MODE" for details.

**Note:** If "Relay Toggle Mode" is programmed, we recommend powering the RR-MORTISE with a DC power supply, as the voltage drain due to extended relay close durations will decrease battery life. See **SPECIFICATIONS**.

\*The "Pass Time" is the duration the lock stays unlocked after a valid User Code (or other valid credential) is entered. When the Pass Time expires, the lock re-locks automatically. See the Programming Instructions for more information.

## CAPACITY

Up to fifty (50) individual remote buttons can be "paired" to **one** RR-MORTISE. However, a remote button can only be paired with **one** RR-MORTISE at a time. If a paired remote button is later paired with a second RR-MORTISE, the first pairing will be erased.

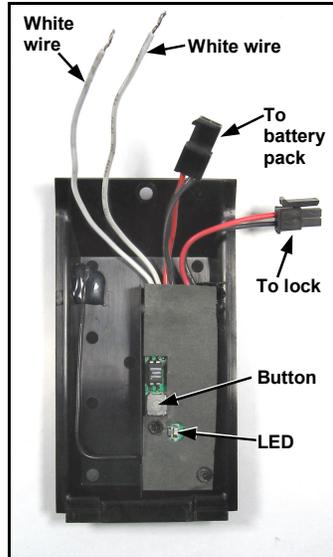
## INSTALLATION WITHIN THE LOCK HOUSING

Alarm Lock mortise locking device models have a programmable Remote Input feature (momentary closure to unlock the

locking device, enabled by default). Check the Programming Instructions that came with your Alarm Lock locking device; if in doubt, enter Program Mode and enable Function 65 (press **4** **6** **5** **\***) to enable this Remote Input feature.

To install the RR-MORTISE, proceed as follows:

1. Remove the screw at the back of the lock housing and remove the rear cover.
2. Remove and disconnect the battery pack.
3. Inside the rear housing, locate and take hold of the two white "Remote Input" wires and the disconnected battery plug connector.
4. Connect the battery connector inside the housing to the RR-MORTISE plug. Then connect the battery pack to the RR-MORTISE.  
**Note:** The lock may beep upon supplying power; the internal clock may need to be reset (if equipped).
5. Connect the remote input wire of the lock to one white wire of the RR-MORTISE. Then connect the other remote input wire to the other white wire of the RR-MORTISE.
6. Before replacing the battery pack inside the housing, perform the "**PAIRING PROCEDURE**" (see below) that pairs a wireless remote button to the RR-MORTISE\*. If the lock Pass Time has been extended, the **Relay "Hold Off" Time** must be changed from its 4 second default duration to match the Pass Time duration. See "**RELAY OPERATIONAL PROGRAMMING**" below for instructions. When finished pairing, return to this section and perform step 7 to replace the battery pack.
7. Make room inside the housing for the battery pack: Before replacing the battery pack, carefully push all of the remaining wires that are inside the housing out of the way of the battery pack. Replace the battery pack.
8. At the back of the lock, replace the cover (containing the RR-MORTISE) and secure with the cover screw.



RR-MORTISE with two white wires, two battery connectors, recessed button and LED.

\***Note:** The use of a pencil or other small pointed tool is required to press the small recessed button on the RR-MORTISE.

## PAIRING PROCEDURE

After the RR-MORTISE is powered, be sure to have either an RR-1BUTTON or RR-4BKEYFOB wireless remote powered and ready.

**Important:** The RR-1BUTTON or RR-4BKEYFOB remote must be at least 3 feet away from the RR-MORTISE when pairing.

Pair a remote button to a RR-MORTISE as follows:

**a. Use a pencil or other small pointed tool to press and release the RR-MORTISE button.** The green LED on the RR-MORTISE will turn on, indicating the RR-MORTISE is ready to pair ("pairing mode" begins). Within 30 seconds perform the next step.

**(Note:** Cancel pairing mode by simply pressing and releasing the RR-MORTISE button again; the RR-MORTISE LED will flicker and turn off).

**b. With the RR-1BUTTON or RR-4BKEYFOB wireless remote in hand,** observe the remote's LED as you perform the following:

☞ With the remote located at least 3 feet away from the RR-MORTISE, **press and hold** a button on the remote...

☞ Continue holding button on remote until LED **flashes green**, then **release the button**. Observe the remote LED:

- **Solid green LED** = Pairing successful; go to step c to test.

**Note:** The RR-MORTISE LED will blink twice indicating it is ready for another pairing.

- **Solid red LED** = Pairing failure (start again at step a).

☞ To pair another remote button to this RR-MORTISE, repeat step b (or do nothing and after 30 seconds the RR-MORTISE's "pairing mode" will end automatically).

Pairing mode can be exited by simply pressing and releasing the RR-MORTISE button again; the RR-MORTISE LED will flicker and turn off.

**c. Test the pairing:** Once paired to a remote button, the RR-MORTISE automatically enters a "Test Mode" that works in conjunction with the relay to simplify testing. To save battery power, this Test Mode ends after 30 minutes, and is nothing more than an LED on the RR-MORTISE that turns on when its relay activates.

Simply press the button on the paired remote and ensure the RR-MORTISE green LED turns on. **Note:** This LED will turn on for the length of the programmed **Relay Closure Duration** (see **RELAY OPERATIONAL PROGRAMMING**, below).

**Pairing procedure is complete!**

**Optional: To re-activate "Test Mode" for another 30 minutes:** Press and release the RR-MORTISE button (LED turns on), wait two seconds, then press and release the RR-MORTISE button again (LED turns off).

Although we do NOT recommend changing the default settings of the relay, if special changes to the relay are necessary for your installation, follow the instructions in the next section, "**RELAY OPERATIONAL PROGRAMMING**".

## RELAY OPERATIONAL PROGRAMMING

Three characteristics of the RR-MORTISE relay can be changed from its default settings:

- **Relay Closure Duration**
- **Relay "Hold Off" Time**
- **Relay Toggle Mode**

These three characteristics are defined as follows:

## RELAY CLOSURE DURATION

When a paired remote button is pressed, its paired RR-MORTISE relay will typically close within 2 seconds of the button press, and will remain closed for its programmed "**Relay Closure Duration**" (2 seconds by default, programmable from 1-250 seconds).

## RELAY "HOLD OFF" TIME

After the "**Relay Closure Duration**" ends and the relay opens, an optional **Relay "Hold Off" Time** can be added during which time the RR-MORTISE will ignore all paired remote button presses. After the **Relay "Hold Off" Time** ends, the open RR-MORTISE relay is then ready to respond to another remote button press (the default **Relay "Hold Off" Time** is 4 seconds, programmable from 0-250 seconds). **Note:** If the lock Pass Time has been extended, this **Relay "Hold Off" Time** must be changed from its 4 second default duration to match the Pass Time duration.

Although we do NOT recommend changing the default settings of the relay, if special changes to the relay are necessary for your installation, make changes to the **Relay Closure Duration** and **Relay "Hold Off" Time** in one set of steps, below. We recommend having these durations planned and ready beforehand to simplify programming. Also, verify the RR-MORTISE LED is off before continuing:

- a. **Press and hold the button on the RR-MORTISE** until the solid green LED on the RR-MORTISE turns off. The RR-MORTISE is now in "relay program mode".
- b. **Press and release the RR-MORTISE button for each second** you wish to assign to the **Relay Closure Duration**. (For example, 1 press = 1 second, 2 presses = 2 seconds, etc.).
- c. **Stop and observe the RR-MORTISE:** Its LED will verify the **Relay Closure Duration** entered by flashing *once* for each *second* pressed in step b.  
(If no **Relay "Hold Off" Time** is desired, go to step f)
- d. **Press and release the RR-MORTISE button for each second** you wish to assign to the **Relay "Hold Off" Time**. (For example, 1 press = 1 second, 2 presses = 2 seconds, etc.).
- e. **Stop and observe the RR-MORTISE:** Its LED will verify the **Relay "Hold Off" Time** entered by flashing *once* for each *second* pressed in step d.
- f. **Wait for RR-MORTISE LED** to flash rapidly indicating the end of "relay program mode".
- g. **Test the pairing:** After step f ends, the RR-MORTISE automatically enters a "Test Mode" that works in conjunction with the relay to simplify testing. To save battery power, this Test Mode ends after 30 minutes, and is nothing more than an LED on the RR-MORTISE that turns on when its relay activates.  
Simply press the button on the paired remote and ensure the RR-MORTISE green LED turns on for the length of the programmed **Relay Closure Duration**. If a **Relay "Hold Off" Time** was programmed, the RR-MORTISE will likewise ignore all paired remote button presses during this time (its LED will remain off when the paired remote button is pressed).

**Optional: To re-activate "Test Mode" for another 30 minutes:** Press and release the RR-MORTISE button (LED turns on), wait two seconds, then press and release the RR-MORTISE button again (LED turns off).

## RELAY TOGGLE MODE

The RR-MORTISE can be programmed to operate in "**Relay Toggle Mode**" where each press of the same paired remote button causes the relay to alternate back and forth between open and closed states like a toggle switch. **Note:** The fastest the relay will toggle between open and closed states is 2 seconds.

Enable "**Relay Toggle Mode**" as follows:

- a. **Press and hold** the RR-MORTISE button...
  - ☞ LED lights solid green (keep holding the button)
  - ☞ LED turns off (keep holding the button)
  - ☞ LED lights solid green again
  - ☞ Release the button
  - ☞ Wait for RR-MORTISE LED to flash rapidly and turn off. "**Relay Toggle Mode**" is now operational.
- b. **Test the RR-MORTISE.** After "**Relay Toggle Mode**" is programmed, the RR-MORTISE automatically enters a "Test Mode" that works with the relay to simplify testing. To save battery power, Test Mode ends after 30 minutes. Test Mode is simply an LED on the RR-MORTISE that turns on when its relay closes. To test the "**Relay Toggle Mode**" operation, press the paired remote button and ensure the RR-MORTISE LED turns on (indicating relay closure). Press the paired remote button again to ensure the LED turns off (relay open).

**Optional: To re-activate "Test Mode" for another 30 minutes:** Press and release the RR-MORTISE button (LED turns on), wait two seconds, then press and release the RR-MORTISE button again (LED turns off).

## DEFAULTING THE RR-MORTISE

This procedure will erase all paired remote buttons, erase all Relay Operational Programming and will reset the RR-MORTISE to its factory default settings, as follows:

- **Relay Closure Duration** = Two (2) seconds
  - **Relay "Hold Off" Time** = Four (4) seconds
  - **Relay Toggle Mode** = Disabled
- a. **Remove power from the RR-MORTISE.** Wait 3 seconds.
  - b. **Replace power to the RR-MORTISE.**
  - c. **Within 5 seconds, press and hold the RR-MORTISE button** until the green LED starts to flicker (rapid flashing).

The rapid flashing indicates the RR-MORTISE has been erased and reset to the settings described above.

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ALARM LOCK SYSTEMS, INC. (ALARM LOCK) warrants its products to be free from manufacturing defects in materials and workmanship for 24 months following the date of manufacture. ALARM LOCK will, within said period, at its option, repair or replace any product failing to operate correctly without charge to the original purchaser or user.

This warranty shall not apply to any equipment, or any part thereof, which has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to acts of God, or on which any serial numbers have been altered, defaced or removed. Seller will not be responsible for any dismantling or reinstallation charges.

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Any action for breach of warranty, including but not limited to any implied warranty of merchantability, must be brought within the six months following the end of the warranty period. IN NO CASE SHALL ALARM LOCK BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY THE SELLER'S OWN NEGLIGENCE OR FAULT.

In case of defect, contact the security professional who installed and maintains your security system. In order to exercise the warranty, the product must be returned by the security professional, shipping costs prepaid and insured to ALARM LOCK. After repair or replacement, ALARM LOCK assumes the cost of returning products under warranty. ALARM LOCK shall have no obligation under this warranty, or otherwise, if the product has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to accident, nuisance, flood, fire or acts of God, or on which any serial numbers have been altered, defaced or removed. ALARM LOCK will not be responsible for any dismantling, reassembly or reinstallation charges.

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ALARM LOCK RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.

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