

# Alarm.com Z-Wave Installation Guide



**ALARM.COM<sup>®</sup>**

Qolsys IQ

Updated June 8, 2016

## Contents

<b>Compatibility</b>	<b>2</b>	<b>Repairing the Z-Wave Network</b>	<b>5</b>
Panel Firmware Version Required for Major Feature Compatibility: . . .	2	<b>Deleting Z-Wave Devices</b>	<b>6</b>
Compatible Devices . . . . .	2	Using the Qolsys IQ IQ Panel . . . . .	6
<b>Z-Wave Basics</b>	<b>2</b>	<b>Triggering Z-Wave Devices</b>	<b>7</b>
Z-Wave Range . . . . .	3	Lights, Switches, and Energy Metering	7
<b>Z-Wave Installation</b>	<b>3</b>	Thermostats . . . . .	8
Using the Qolsys IQ Panel . . . . .	4	Locks . . . . .	9
<b>Network Rediscovery</b>	<b>4</b>	Other . . . . .	10
Using MobileTech . . . . .	5	<b>Device-Specific Installation</b>	<b>11</b>
Using the Dealer Website . . . . .	5	Locks & Z-Wave Garage Controllers .	11
Using the Qolsys IQ Panel . . . . .	5	Remote Temperature Sensors . . . . .	11

## Compatibility

### Panel Firmware Version Required for Major Feature Compatibility:

- Network Rediscovery: All versions
- Remote Rediscovery: All versions
- Node Neighbors: All versions
- Link Quality Indicators: Not supported
- Remote Add/Delete: Not supported
- Self-Healing Network: All versions
- Network Wide Inclusion: All versions

### Compatible Devices

Visit [alarm.com/hardware](http://alarm.com/hardware) for a full list of compatible Z-Wave devices.

## Z-Wave Basics

The first and most important thing to understand about Z-Wave is that it's a mesh network.

Unlike a Wifi network, where all communication must occur directly with the wireless router, Z-Wave allows any device powered by the home (not batteries) to relay messages between devices or nodes. This allows the panel to communicate with distant devices by passing messages through intermediary devices. For example, an Alarm.com panel may communicate with a lock by first routing the message through a lamp module and then a thermostat.

This type of distributed messaging is known as a mesh network. The best way to strengthen the mesh network is to make sure that every device has multiple paths of communication to the security panel. Remember, only devices that plug into a wall outlet or are wired into the home's electricity will repeat messages.

The Z-Wave network not only stores information about the strongest path of communication between devices, but also stores information for back-up routes. If one device in the normally strongest communication route fails for any reason, the Z-Wave network will automatically compensate by finding another available route through other repeating nodes.

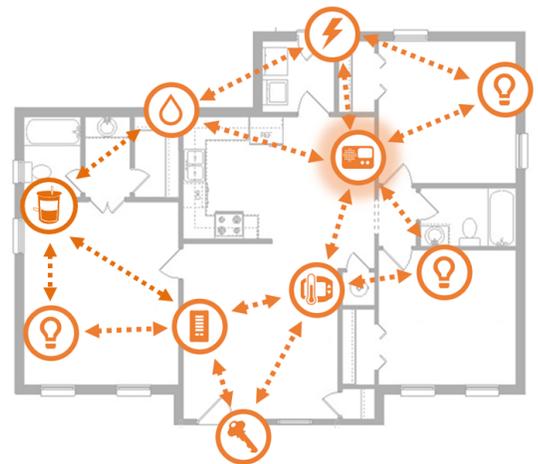


Figure 1: The security panel sends messages to nearby devices, which are then relayed to farther devices.

## Z-Wave Range

Being a low power radio frequency, Z-Wave is prone to range issues caused by materials blocking the signal. Without any obstructions, Z-Wave is advertised as having an open-air range of 100 feet. However, as shown in the chart to the below, different materials cause different signal strength dropoffs. For example, if a customer has a decorative brick wall, it may be worthwhile to avoid a direct connection through it and install in-wall light switches on either side. Likewise, be on the lookout for refrigerators, filing cabinets, cars, and other large, metal fixtures!

Z- Wave Signal Strength Retention Through Different Materials

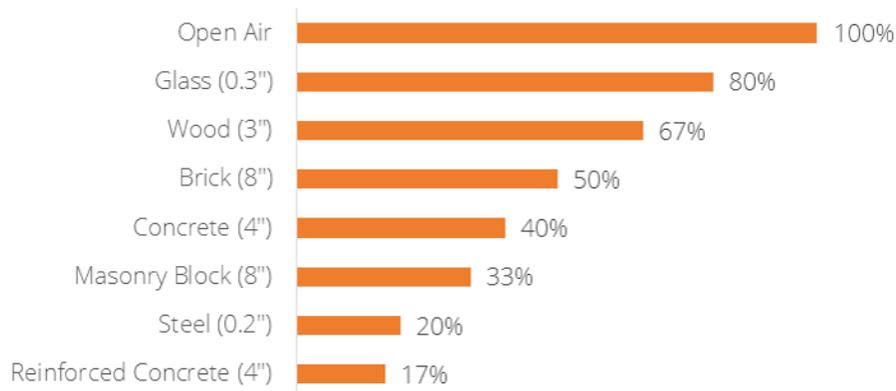


Figure 2: Z-Wave signal strength loss through different materials. Reinforced concrete almost completely eliminates a Z-Wave signal, whereas most of the signal will pass through glass or wood.

## Z-Wave Installation

A Z-Wave network is established by putting the Z-Wave controller, in this case the Qolsys IQ, into "Add Mode" and triggering devices, or nodes, to join the network. Below are a few tips to keep in mind while setting up a Z-Wave network:

1. Before adding devices to the network, make sure to put the devices in their final locations (except locks—those should be kept near the panel until you are about to perform a Network Rediscovery). This way, the network can correctly identify the strongest communication pathway for each device.
2. Always add devices closest to the panel first, and work outwards from there. Devices that have already been added can relay the panel's "Add Mode" signal to add farther

devices to the network.

3. Make sure each device adds successfully before moving on to the next device. Depending on which method you use to add the device, the panel, module, Dealer Site, or MobileTech app will indicate that a device has been added to the network.

Alarm.com has equipped its dealers with a variety of tools to install and manage Z-Wave networks. To create a Z-Wave network, enable any of the Z-Wave emPower services on the customer's service plan, put the panel into Add Mode, and begin adding devices.

Complete the following steps to put the panel into Add Mode:

## Using the Qolsys IQ Panel

1. Select **Settings**.
2. Select **Installation**.
3. Select **Home Control Devices**.
4. Select **Add Device**.
5. Trigger a device to add it to the network.
6. When a device is added successfully, the panel will beep.
7. You will need to re-enter Add Mode before triggering the next device.

Devices should show up on the Alarm.com Customer Website, Dealer Website, and MobileTech Apps within five minutes of adding the devices. If the devices do not show up, navigate to the **Equipment** page on MobileTech and click **Request Updated List**, or navigate to the **emPower Devices** page on the Dealer Website and click **Get Equipment List**.

### **Troubleshooting Tip:**

*If you can't add a device to the network, you may need to delete the device's network data using the device deletion process before you can add it to the new network (some devices come from the factory with network data). Note that it is possible to delete devices from other Z-Wave networks using any panel. See "Deleting Z-Wave Devices" below for instructions.*

## Network Rediscovery

After adding all desired Z-Wave devices to the network, it is important to run a Network Rediscovery. Running a Network Rediscovery allows each device to detect nearby devices and identify a best path of communication to the panel, as well as alternate paths in the case of a node failure.

This process can take up to thirty minutes, depending on the size of the Z-Wave network. To check that the rediscovery was initiated, navigate to **Event History**. A *Non-wiping network*

*rediscovery* command followed by several *Z-Wave link quality test request* commands should be sent. We recommend not using Z-Wave devices during this time.

Complete the following steps to perform a Network Rediscovery:

**Note: If the following options do not appear in the MobileTech app or Dealer Website, make sure your firmware version supports Remote Rediscovery (see "Compatible Devices" section).**

### Using MobileTech

1. Install the MobileTech App (if not already done) and select the customer of interest.
2. Navigate to the **Equipment List** page.
3. Select **emPower Management**.
4. Select **Rediscover Network**.

### Using the Dealer Website

1. Navigate to the **Equipment** page.
2. Click the **emPower Devices** tab.
3. Click **Rediscover Network** above the equipment list.

### Using the Qolsys IQ Panel

1. Select **Settings**.
2. Enter the Installer Code.
3. Select **Installation**.
4. Select **Home Control Devices**.
5. Select **Rediscover Network**.
6. Check **All Devices** in list.
7. Select **Rediscover**.

## Repairing the Z-Wave Network

If any device is not functioning consistently, the network may have trouble communicating with the device, either because it is too far from the nearest node or because there is an obstruction blocking the Z-Wave signal.

If this happens, Alarm.com recommends the following troubleshooting steps:

- Make sure the device is powered and functions properly on its own (outside of the Z-Wave network).
- Check that the device has been added into the Z-Wave network by looking at the Z-Wave devices list.

- Verify Z-Wave functionality by bringing the device closer to the module. If the node is not communicating properly at close proximity, delete it from the Z-Wave network, re-add it, and run the Network Rediscovery a second time.
- Make sure that each Z-Wave device is within 25 feet of the nearest AC-powered Z-Wave device in the same network. Placing devices at a greater distance can cause significant reduction in communication ability. Note that devices running on battery power will not repeat Z-Wave signals—they will only receive them.
- Install one or more Z-Wave plug-in modules. These modules act as Z-wave range extenders and can be installed in any wall plug. Place them midway between the failing node and the nearest non-battery powered node that has not failed the rediscovery.

After completing one or all of the above troubleshooting steps, run a Network Rediscovery a second time to verify that the network has been repaired.

If, after completing the above steps and running a Network Rediscovery, your device is still having trouble communicating, contact Dealer Support at 1-866-834-0470 for help.

## Deleting Z-Wave Devices

To remove a node from the panel's Z-Wave network, the device must be "deleted". This can also be useful to erase existing Z-Wave network settings from a device you are trying to add to the new network. The device deletion process mirrors the device addition; the panel is placed into delete mode, and devices are triggered one by one.

Complete the following steps to put the panel into Delete Mode:

### Using the Qolsys IQ IQ Panel

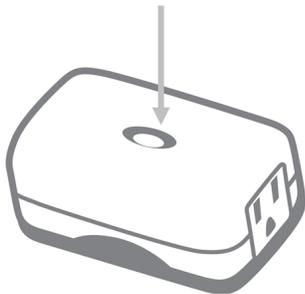
1. Select **Settings**.
2. Select **Installation**.
3. Select **Home Control Devices**.
4. Select **Clear Device**.
5. Trigger a device to clear its network data and remove it from the existing Z-Wave network.
6. The panel will beep when a device has been deleted.
7. You will need to re-enter Delete Mode to delete more devices.

In most cases, the same trigger used to add a device is used to delete the device from the network. Devices should be removed from Alarm.com within twenty seconds after being triggered. If the device is not deleting, you may need to move the device closer to the panel and try again.

# Appendices

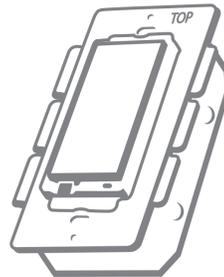
## Triggering Z-Wave Devices

### Lights, Switches, and Energy Metering



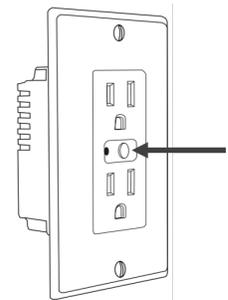
#### Plug-in Module (All Brands)

With the device plugged into an outlet, tap the button twice.



#### In-Wall Switch (All Brands)

With the switch installed and wired, click the top or bottom of the rocker twice.



#### In-Wall Outlets

With the device powered:

Evolve: Tap button twice.

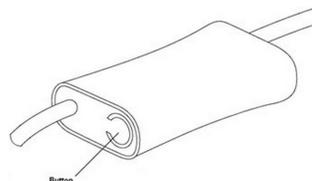
GE: Tap button once.

Linear: Tap button once.



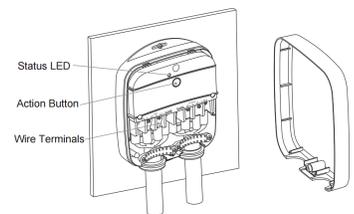
#### Smart Energy Meter

With the device powered, tap the Action/Home Energy Meter button. The light will remain solid for 3 seconds.



#### Smart Energy Switch

With the device plugged in, tap the button once.



#### Heavy Duty Smart Switch

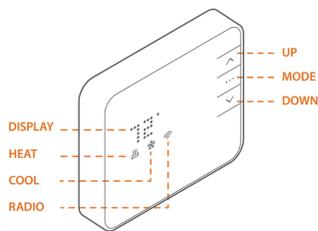
With the device powered up, tap the action button.



### GoControl and Qolsys IQ Lightbulbs

Power the lightbulb. The light will blink.

## Thermostats



### Alarm.com Thermostat

With the device installed and powered, press MODE until the HEAT and COOL lights are off. Hold DOWN until the radio icon flashes.



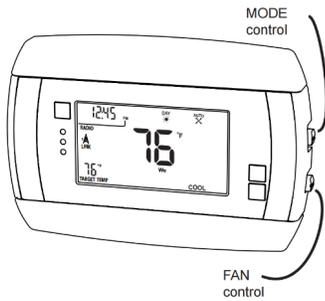
### Alarm.com Remote Temperature Sensor

Tap the button on the side of the sensor.



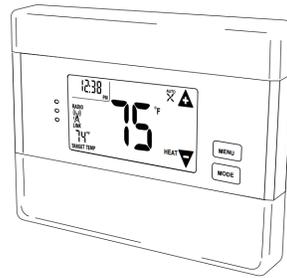
### Trane and RCS Thermostats

With the device installed and powered, press MENU. Scroll to Z-WAVE INSTALL and press SELECT. Then press YES.



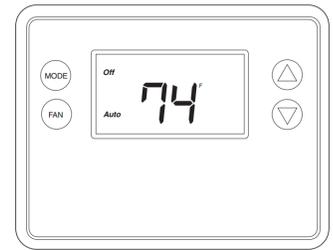
**2GIG CT-30/  
GE TSTAT-300**

With the device installed and powered, press MENU, then press MATE twice. The word "link" will appear below the radio.



**2GIG CT-100**

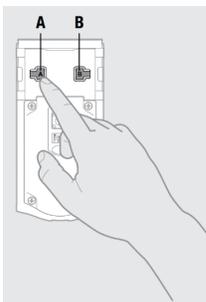
With the device installed and powered, press MENU, then press MATE twice. The word "link" will appear below the radio.



**Linear Thermostat**

With the device installed, powered, and woken up, press FAN until "SETUP" displays in the status line. Scroll to "Z-Wave" and press SELECT. Press SELECT again.

**Locks**



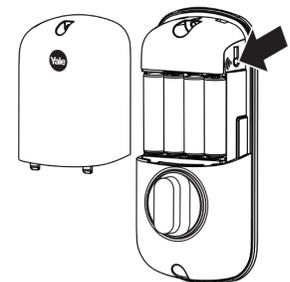
**All Kwikset Locks**

With the lock powered, press the A (or top left) button on the inner side of the lock once.



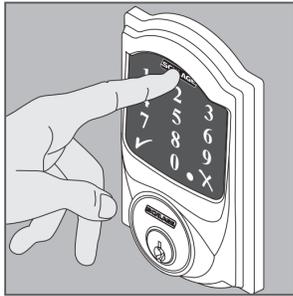
**Yale Keyed Locks**

With the lock powered, enter the master code and press #. Enter 7,#,1,#.



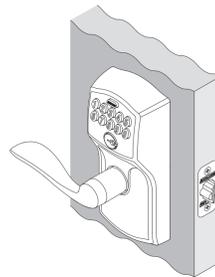
**Yale Key-Free Locks**

With the lock powered, press the button with the radio icon until the device beeps twice.



**Schlage BE468/469**

With the lock powered and locked, press the SCHLAGE button. Enter the 6-digit programming code, followed by 0.



**Schlage FE599**

With the lock powered and locked, enter the 6-digit programming code. After 3 lights and 3 beeps, press the SCHLAGE button, followed by 0.

**Other**



**Linear Garage Controller**

Tap the button on the side of the controller.



**The Quickbox**

Open the box using a supplied credential. Press the blue button on the underside of the lid.



**FortrezZ or WaterCop Water Valves**

Press the MODE button.

For a full list of supported devices, visit [Alarm.com/hardware](http://Alarm.com/hardware).

## Device-Specific Installation

### Locks & Z-Wave Garage Controllers

Locks and z-wave garage devices use encrypted communication over Z-Wave, meaning their communication is completely secure. However, this added security comes at a cost; the lock and the controller must use additional Z-Wave commands to learn-in and communicate. With each additional command sent, the probability of a communication breakdown increases. To mitigate the chances of a learn-in failure for locks and garage controllers, complete the following steps:

1. Begin with the lock or garage controller within 6' of the panel or module.
2. Delete the lock or garage controller from the Z-Wave network.
3. Place the panel into Add Mode and trigger the lock or garage controller.
4. Wait two minutes before locally operating the device.
5. Verify that the lock or garage controller shows up on the Alarm.com website and responds to lock/unlock or open/close commands.
6. Move the lock or garage controller to its final location and run a Network Rediscovery.
- 7. For locks, do not add or delete user codes locally to or from the lock! Only use the Alarm.com web interface for user code management!**

### Remote Temperature Sensors

Alarm.com Remote Temperature Sensors will not respond to a Network Rediscovery. Therefore, it is important to set up the rest of the Z-Wave network and run a Network Rediscovery before learning in Temperature Sensors. To correctly install an Alarm.com Remote Temperature Sensor, complete the following steps:

1. Install all other Z-Wave devices and run a Network Rediscovery by following the instructions in this manual. If your panel supports Link Quality Indicators, make sure all devices show a "Good" rating on the Z-Wave Equipment list.
2. Place the Temperature Sensors in their final locations.
3. Put the panel into Add Mode.
4. Add the sensors by pressing the buttons on the sides of the devices.
5. Verify that the sensors show up on the Customer and Dealer sites and report changes in temperature appropriately. No additional Network Rediscovery is necessary.