

Z-Wave Informational and Troubleshooting Guide

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Introduction to Z-Wave

Transitioning from X10 to Z-Wave

The X-10 and Z-Wave networks are technically different:

X-10:

1. Uses a House Code (A-P) and Unit Number (1-16)
2. Can have a total of 256 modules
3. Uses Power Line Carrier (PLC) Technology
4. Limited to the phase the X-10 transmitter is on

Z-Wave:

1. Uses a Network ID and a “**Node**” ID (Similar to an IP Address)
2. Uses RF technology to transmit between Nodes (Phases do not matter)
3. Uses a Mesh Network configuration
4. Has a transmission limit of 75’
5. Each node can act as repeaters, for extending the distance
6. Must have a “**Primary Controller**” to learn in the modules
7. Can have a maximum of 232 devices

Z-Wave Terminology

| | |
|----------------------------|--|
| Primary Controller: | This is a device that contains a description of the Z-Wave network and controls the outputs |
| Include: | Refers to enrolling the device into the network |
| Exclude: | Refers to removing the device from the network |
| Node: | This refers to the Z-Wave module itself (lights, thermostats, outlets, etc.) |
| Network Id: | Also known as the Home ID, refers to the ID that the Primary Controller assigns the node (Similar to the House Code on an X-10 Module) |

Z-Wave Overview and Functionality

Z-Wave communicates using wireless technology designed specifically for remote control applications. Z-Wave operates in the sub-gigahertz frequency range, around 900 MHz. This band competes with some cordless telephones and other consumer electronics devices, but avoids interference with Wi-Fi and other systems.

Z-Wave is a mesh networking technology where each node or device on the network is capable of sending and receiving control commands through walls or floors and use intermediate nodes to route around household obstacles or radio dead spots that might occur in the home.

Z-Wave uses a source-routed mesh network topology and has one or more master (primary) controllers that control routing and security. Devices can communicate to another by using intermediate nodes to actively route around and circumvent household obstacles or radio dead spots that might occur.

Example:

A message from node A to node C can be successfully delivered even if the two nodes are not within range, providing that a third node B can communicate with nodes A and C.

If the preferred route is unavailable, the message originator will attempt other routes until a path is found to the "C" node.

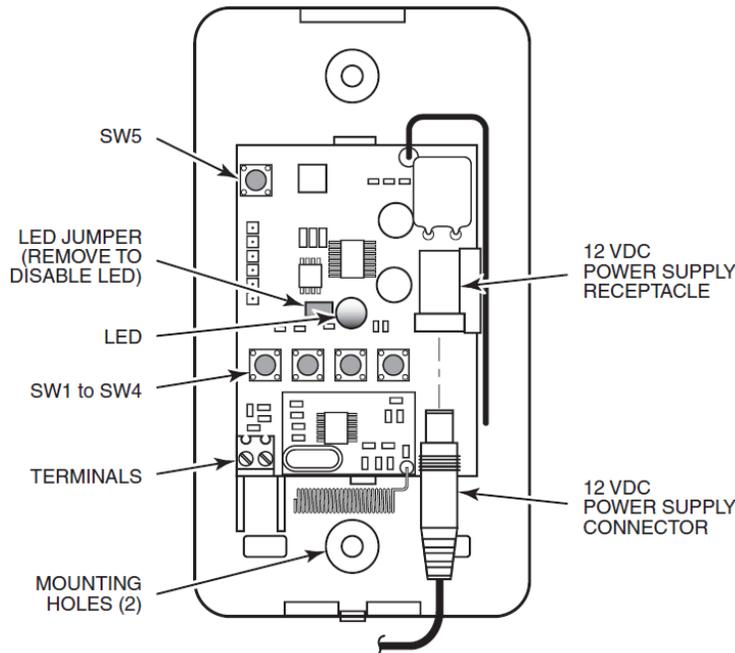
This allows a Z-Wave network to span much farther than the radio range of a single unit; however, with the use of several hops a delay could occur between the control command and the desired result. (Z-Wave, 2011)

For more information on the Z-Wave, technologies go to <http://en.wikipedia.org/wiki/Z-Wave>.

Z-Wave. (2011, October 11). Retrieved October 31, 2011, from Wikipedia:
<http://en.wikipedia.org/wiki/Z-Wave>

5800ZBridge Overview

Summary of Connections



Switches Buttons:

1. Z-Wave node 1
2. Z-Wave node 2
3. Z-Wave node 3
4. Z-Wave node 4
5. HID Learn/Reset

Power supply: 12 VDC 500mA

Status LED:

- Gives Panel status
- Used for Programming and Diagnostics

Terminal Block

- Used for manually triggering the nodes

5800ZBridge Notes

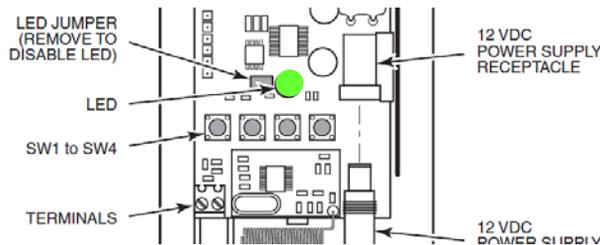
1. The 5800-Zbridge will control up to four Z-Wave devices. These devices are limited to Lighting, Plugs, and Thermostat nodes.
2. The 5800ZBridge controller does not respond to or map received basic commands to any functions.
3. The Range from the 5800 transmission module is 100'
4. Requires one of the following Honeywell products for proper operation:
 - a. Lynx Control Panels
 - b. 6150rf (Models with the T3 circuit board, 2007 and newer)
 - c. 6160rf
 - d. 5883H Receiver (Dipswitch 6 must be on)

Note: The 5800tm module is NOT compatible with the 5800ZBridge

Programming the 5800Zbridge

Learning the House ID from the Honeywell Security Panel

1. Press and Release SW5 on the 5800Zbridge
 - a. The LED will begin to flash Green.

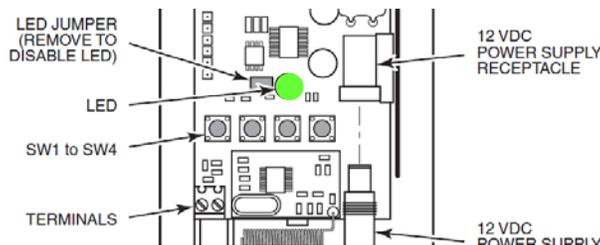


2. Arm the security system and the LED will return status of the panel.

| Indication | Meaning |
|-----------------|-------------|
| Flashing Red | Armed Away |
| Steady Red | Armed Stay |
| Solid Green | Ready |
| Flashing Orange | ALARM/Panic |

Including a Node into the 5800ZBridges Network

1. Press the respective button (SW1, SW2, SW3, or SW4) for the **Node** you want to “Include”
 - a. The LED will start flashing green.



2. Press the “Include” (enroll) button on the device (see device instructions)

Programming the Honeywell ZSTAT Thermostat and 5800ZBRIDGE

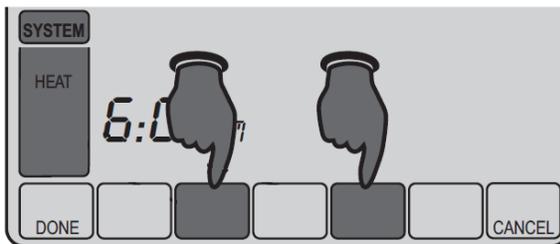
Notes before you begin:

- If you need help wiring your thermostat, please call 1-800-468-1502, and choose the option for contractor.
 - If required please have a licensed professional install your product for you.



Programming the thermostat

1. Press System:
2. Press the 3rd and 5th buttons simultaneously



3. Used the following buttons to program:

Use the Up and down arrows to scroll through the questions (fields).



Use the Up and down arrows to enter the desired value.

The Follow locations are the bare minimum fields required for operation:

| Setup | Functions (Fields) | Settings & Options (Factory default is in bold) |
|-------|---|---|
| 0120 | Year (First 2 Digits) | 20 (2000-2078) |
| 0130 | Year (Second 2 Digits) | 11 (2011) |
| 0140 | Month | 6 (1-12) |
| 0150 | Date | 15 (1-31) |
| 0160 | Schedule Format (Does not affect Z-Wave Operation) | 0 (Non Programmable) 4 (Programmable) |
| 0615 | Energy Saving Heat Setpoint | 65°F (18.5°C) 40-90°F (4.5°C-32°C) |
| 0616 | Energy Saving Cool Setpoint | 78°F (25.5°C) 50-99°F (10°C-37°C) |

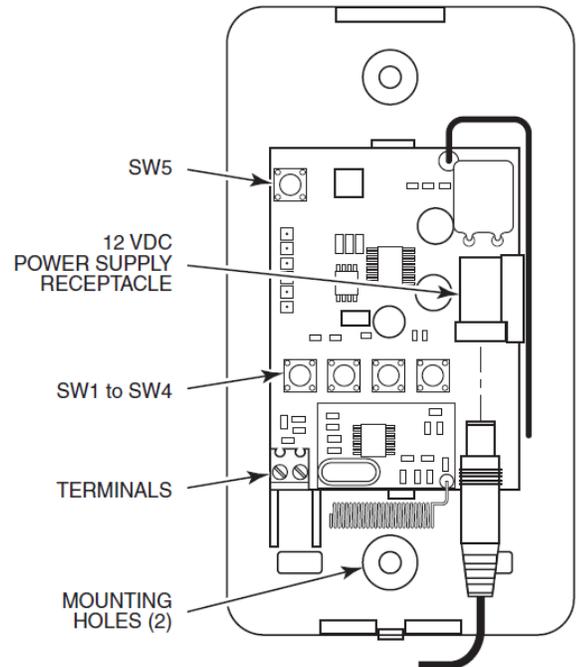
Enrolling the Z-Bridge Module into the Honeywell Z-wave thermostat

1. Navigate through the programming of the thermostat until you reach the following screen:

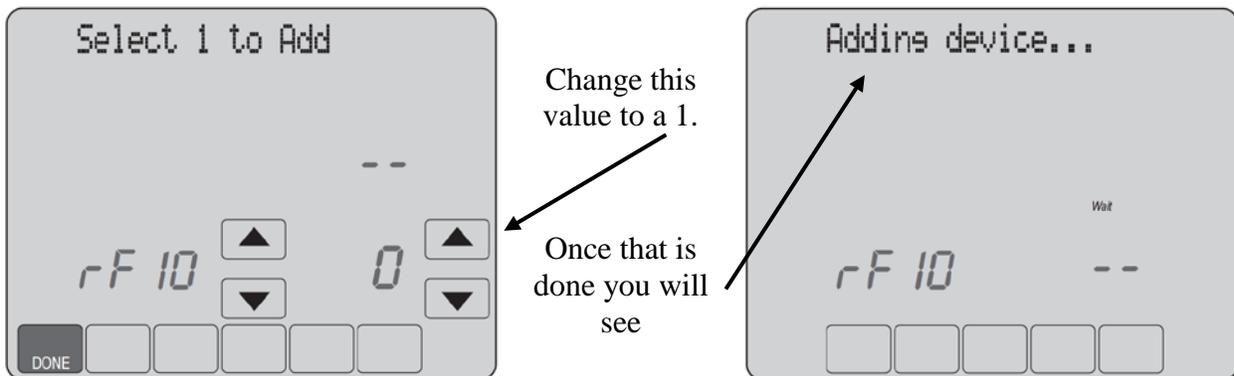


2. Power up the Z-Bridge with the supplied 12v power supply.
 - a. Upon power up the yellow LED will flash 3 times.
3. **Press** the corresponding switch (1-4) for 1 second then release for any combination of four Thermostats or Lights.
 - a. Switch 1 = Thermostat/Light 1
 - b. Switch 2 = Thermostat/Light 2
 - c. Switch 3 = Thermostat/Light 3
 - d. Switch 4 = Thermostat/Light 4

The LED on the Z-Bridge will begin flashing green.



4. On the Thermostat, change the 0 to a 1 to learn the Z-Bridge.



Once learned in the LED will flash three times and return to the status of the control panel.

5. Press 'Done' to exit programming.

Notes:

1. To test the connectivity simply arm and disarm the panel and watch the LED on the Z-Bridge to make sure it is illuminating properly (See Z-Bridge Installation Instructions).
2. To verify the Z-Bridge is communicating with the Thermostat look for the word 'Saving' which will be present above the 'Set To' temperature. This represents the thermostat is in 'Setback Mode'.

3. Locations 0615 (Heat Set Back) and 0616 (Cool Set Back) are End User Programmable. (See the thermostat Owner's Manual for more information)

Troubleshooting the 5800Zbridge

The House ID will not learn in

1. Make sure you are following the proper programming procedure defined above.
2. Verify the Green LED is flashing
3. Make sure you are using one of the transmission modules identified in the 5800ZBridge Overview note 4.
4. Verify the panel programming is correct and the transmission module enabled on the 6150/6160rf keypad or the 5883H dipswitch number 6 is on.
5. Unplug the 5800Zbridge count to five, and then plug back in.
6. If still unsuccessful, see the Installation Instruction for the procedure to reset the 5800Zbridge.

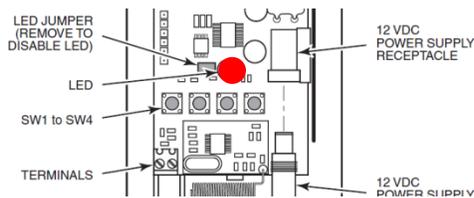
Z-Wave device will not learn into the 5800ZBridge

1. Was this a new Z-Wave device?
 - a. If **yes** follow the enrollment process on your Z-Wave device.
 - b. If **no**, then you must exclude the device first, see question #2.
2. Was this an existing Z-Wave device that was enrolled into a previous Z-Wave network?
 - a. If **no**, verify that you are properly **"Including"** the device, follow steps established by the manufacturer of the Z-Wave node.
 - b. If the answer is **yes**, you have to **"Exclude"** the device from the old Z-Wave network.

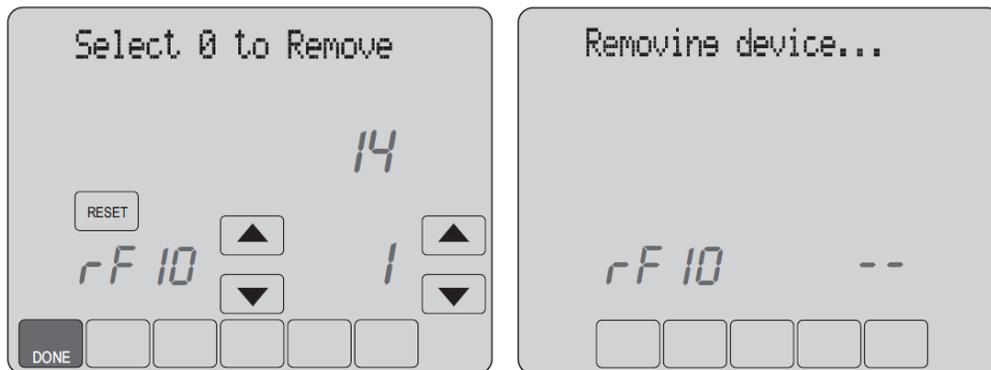
Excluding a Z-Wave module using the 5800ZBridge

This section will describe how to use the Z-Bridge to **“Exclude”** a node from an existing network, so that you can **“Include”** the node into the Z-Bridges network.

1. **Press** and **Hold** SW1, SW2, SW3, or SW4 button on the 5800Zbridge for 5 seconds
 - a. The LED will flash Red



2. **Press** the **“Exclude”**(enrollment) button on the **“Node”** (see node instructions)
 - a. Example: Using the Honeywell Zstat you would press the **Down** Arrow at the rF10 prompt in programming:
 - i. In the example below the 14 represents the Node ID and the 1 underneath is represents the Z-Wave feature is enabled. Pushing the down arrow next to it will disable the Z-Wave feature and exclude the device.



3. Now you can **“Include”** the device into you 5800Zbridges network as shown on Page 5.