Understanding ZWave

What is ZWave

Z-Wave is a technology that uses radio signals to control compatible devices wirelessly.

From a controller (for instance a ZWave USB dongle), it is possible to control devices (such as switches, motors, bulbs...) and get datas from sensors (temperature, presence, contact...).

Look at the intro video in this web site: **http://z-wave.sigmadesigns.com**

Technical info

Z-Wave products are available in different frequencies.

Do NOT buy devices dedicated to another country!

Frequency	Countries
868,4 MHz / 869,8 MHz	All European Countries (CEPT), UAE
865,2 MHz	India
869 MHz	Russia
868,1 MHz	Malaysia
868,4 MHz	China, RSA
908,4 MHz / 916 MHz	North+South America ex. Brasil, Peru
915 ... 917 MHz	Israel
919.8 MHz	Hongkong
921,4 MHz / 919.8 MHz	Australia, New Zealand, Peru
922 - 926 MHz	Japan, Taiwan
919 - 923 MHz	Korea
921,4 MHz	Brasil

Read here **https://www.z-wave.me/index.php?id=26** for more about frequencies.

Competitors

- Enocean

- 433 MHz

The ZWave model

A **ZWave network** is a set of ZWave devices registered in a ZWave controller.

Get familiar with the terms below before starting:

- **Inclusion** Add a Z-Wave enabled device (e.g. On/Off Module) to Z-Wave network.
- **Exclusion** Delete a Z-Wave enabled device (e.g. On/Off Module) from the network.
- **Reset** Restore On/Off Module to factory default.

Each ZWave device should be paired to the ZWave USB dongle. At this time, it gets a unique ID in this network called the **node ID**.

If 3 bulbs of the same type are paired, each will have a different unique node ID.

Up to 200 devices can be paired.

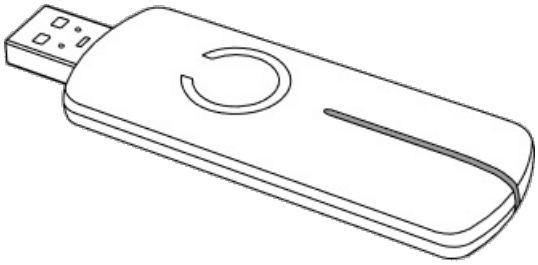
Each module is designed to act as a repeater. Repeaters will re-transmit the RF signal to ensure that the signal is received by its intended destination by routing the signal around obstacles and radio dead spots.

Direct association

A direct link can be made between a trigger (like a sensor) and a effector (like a switch). In this case, no smart behavior can be added between them.

ZWave devices

A Z-Wave USB Key is mandatory: **The Z-Wave Aeotec Z-Stick Gen 5 USB Key**



Then you can add **Z-Wave devices**.

Be aware that providing an easy to use experience needs dedicated code for each device. Thus, ONLY devices in the list below are integrated.

More

- **http://www.vesternet.com/resources/technology-indepth/understanding-z-wave-networks**
- Go to the **Using Z-Wave** part

Using Z-Wave

Don't miss the "**ZWave intoduction**" chapter!

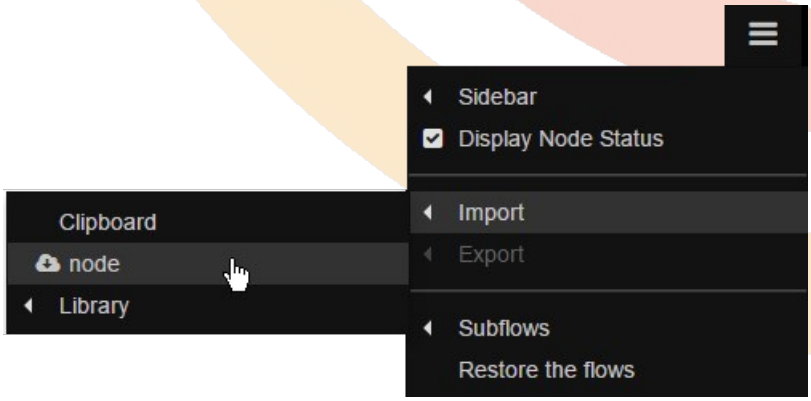
How to install Z-Wave Stuff

Z-Wave software

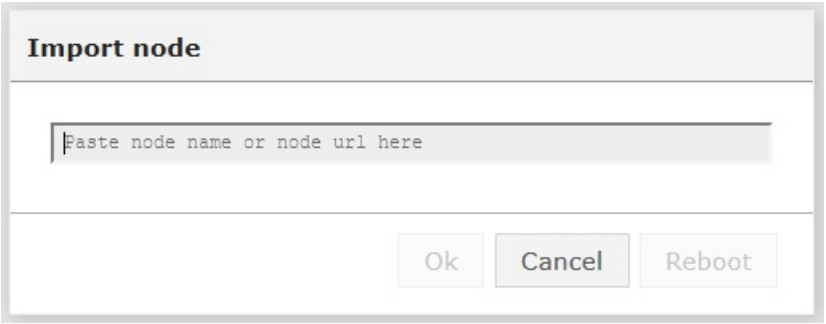
Then some nodes are needed in Node-RED to communicate with the USB Key.

If you want to install it :

- Use the menu `import / node`



- type `ttb-zwave3` in the dialog box.



- Wait for the install
- Then reboot
- then refresh the web browser page

No ZWave node in the palette? You forgot to refresh the page (or there is an error: look at the console from the right menu)

Activate Z-Wave

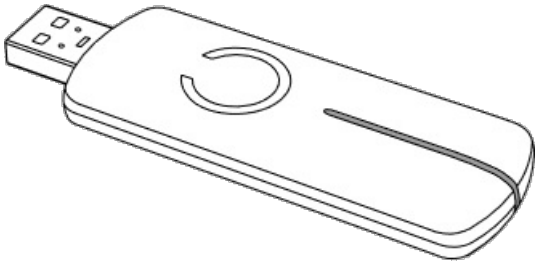
- Type "zwave" into the palette filter box.
- Drag'n drop the ZWave node to the workspace:

- Then Activate: a new Z-Wave workspace appears (if not already there) that contains one node per Z-Wave device functionality.
- Then Activate again to save this new workspace.

Using Z-Wave devices

Now it is possible to use Z-Wave devices.

First, you need to buy a Z-Wave USB Key that you should plug on the pi in any USB available port: **The Z-Wave Aeotec Z-Stick Gen 5 USB Key**



Then you can add **Z-Wave devices**.

Waiting for the devices

Devices need time to load.

use the menu/Console to check the state.

Here is the Dongle dump at boot time: no devices are ready:

```
--- ZWave Dongle ---------------------
node: [1] ZW090 Z-Stick Gen5 (Static PC Controller)
node: [2]  no infos yet
node: [3]  no infos yet
node: [4] empty
node: [5] empty
node: [6]  no infos yet
node: [7]  no infos yet
node: [8]  no infos yet
node: [9] empty
node: [10]  no infos yet
```

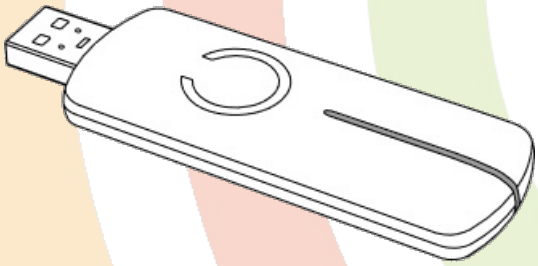
```
node: [11]  no infos yet
node: [12]  no infos yet
node: [13]  no infos yet
node: [14]  no infos yet
node: [15]  no infos yet
node: [16] empty
node: [17]  no infos yet
node: [18]  no infos yet
node: [19]  no infos yet
node: [20]  no infos yet
node: [21]  no infos yet
node: [22] empty
node: [23]  no infos yet
node: [24] empty
node: [25] empty
node: [26]  no infos yet
node: [27]  no infos yet
node: [28] empty
node: [29]  no infos yet
node: [30]  no infos yet
node: [31]  no infos yet
node: [32]  no infos yet
-------------------------------------
```

Then, progressively (it takes minutes), devices are mounting:

```
--- ZWave Dongle ----------------------
node: [1] ZW090 Z-Stick Gen5 (Static PC Controller)
node: [2] alive but no infos yet
node: [3] alive but no infos yet
node: [4] empty
node: [5] empty
node: [6] alive but no infos yet
node: [7] FGWPE Wall Plug (Binary Switch)
node: [8] ASP-3-1-00 Smart Plug (On/Off Power Switch)
node: [9] empty
node: [10] FGWPE Wall Plug (Binary Switch)
node: [11] ZW098 LED Bulb (Light Dimmer Switch)
node: [12] alive but no infos yet
node: [13] alive but no infos yet
node: [14] alive but no infos yet
node: [15] FGWPE Wall Plug (Binary Switch)
node: [16] empty
node: [17] alive but no infos yet
node: [18] AN157 Plug-in Appliance Module (Binary Power Switch)
node: [19] alive but no infos yet
node: [20] alive but no infos yet
node: [21] alive but no infos yet
node: [22] empty
node: [23] alive but no infos yet
node: [24] empty
node: [25] empty
node: [26] alive but no infos yet
node: [27] alive but no infos yet
node: [28] empty
node: [29] alive but no infos yet
node: [30] AD147 Plug-in Dimmer Module (Light Dimmer Switch)
node: [31] alive but no infos yet
node: [32] FGWPE Wall Plug (Binary Switch)
```

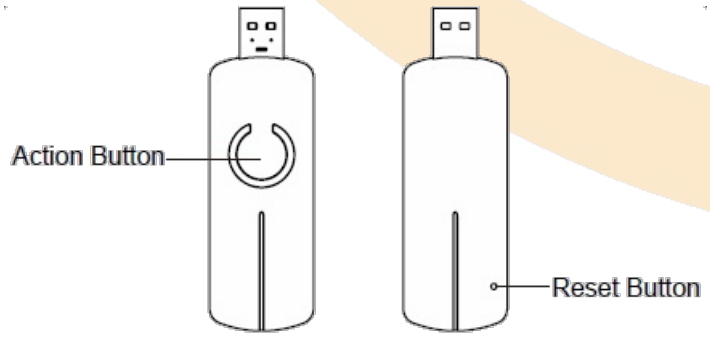
At the end, some device seems to be definitively sleeping. Try to stimulate them by pressing their setup button.

The Aeotec Z-Stick USB dongle



Aeon Labs Z-Stick is a selfpowered Z-Wave USB adapter with network creation capabilities (independent from external power and host microprocessor). By being able to remotely include/remove Z-Wave devices, this greatly simplifies Z-Wave network installation. When connected to a host controller (via USB), it enables the host controller to take part in the Z-Wave Network.

Get the full manual of the dongle here: **http://goo.gl/WDBDFU**



Reset the dongle

To reset all of your Z-Stick's settings to their factory defaults:

- Unplug the Z-Stick from the USB connector and
- **Press and hold the Reset Button**, the LED will become red, then blink faster and faster then stop blinking for 2 seconds then the blue LED will solid for 2 seconds as confirmation. All of this takes between 20 and 30 seconds.

Inclusion and exclusion mode

You'll have to include all ZWave device in to the dongle (also called "into the network").

Manual inclusion

Put your Z-Stick into:

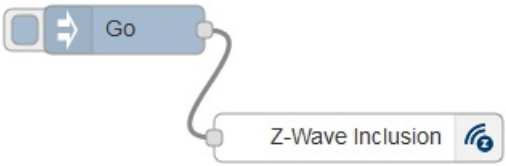
- **inclusion mode**, (also called "learning mode") by pressing its action button (it blinks blue).
- **exclusion mode**, by pressing and holding its action button until it blinks yellow rapidly.

This will be described for each device later.

Soft inclusion

It it possible to set the inclusion mode by software. This avoids shutting down and rebooting.

For this, just link a `go` node to a `ZWave inclusion` node.



Launch the flow, the manipulate your device to put it in inclusion mode.

Fibaro Door Opening Sensor

Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Fibaro Door Opening Sensor

http://www.fibaro.com/fr/syst%C3%A8me-fibaro/door-window-sensor

User guide:

http://manuals.fibaro.com/en/door-window-sensor.

Adding to the Z-Wave dongle (inclusion)

Add the device to the dongle

To add the device into a Z-Wave dongle:

from the key

- Unplug the **Z-Stick** and set it into the learning mode by **pressing its action button** (it blinks blue).
- Be sure that Sensor's cover is closed.
- The Fibaro Door/Window Sensor is added to the network by quickly **pressing the TMP button** three times (the button is located on the underside of the device and inside the casing): the LED on the Z-Stick will blink fast during a network neighbor discovery and stay solid for 3 seconds to indicate successful inclusion of the sensor into the dongle's memory. The LED will then return to blinking slowly, indicating

readiness for further device inclusions. The sensor should be closed (and powered) to succeed - One of the buttons needs to be pressed constantly (by closing the lid or by installing it on a wall). notice that If the sensor is already included, nothing happens.

- Wait until the dongle stop blinking.
- Install the sensor’s cover in desired location.
- Wake it up by triple clicking the TMP-button.

Wait for the node on the Node-RED workspace

After a while, the following appears in the info tab.

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button).

You can copy-paste the node to another workspace, but if you delete it or cut-paste it, it will be recreated later.

from Node-RED

Instead of unpluging the stick and press its button, just wire a Go node to the ZWave inclusion node and click it. Do then the device inclusion as above.

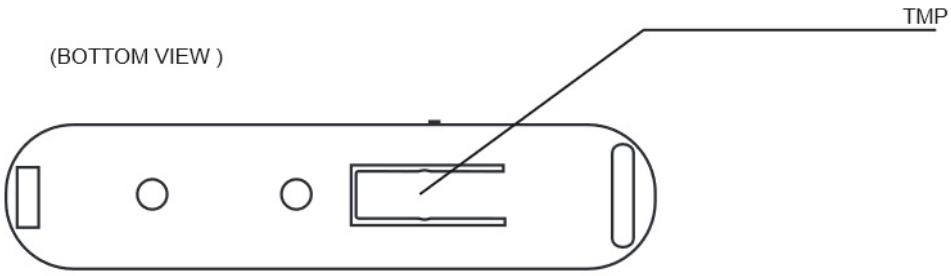
Reset to factory defaults

There is one way to reset the Fibaro Door/Window Sensor. The procedure cleans its EPROM memory, including the main controller and Z-Wave network data. To reset the Fibaro Door/Window Sensor please follow below instructions:

- Take off the Sensor's cover and remove battery. Make sure the TMP button is intact.
- Touch the Sensor's body with a magnet,
- Insert the battery,
- Within 2 seconds remove the magnet from the Sensor's body, the LED will turn off. Wait 3 seconds until the LED starts blinking quickly.
- Remove the battery

- Re-install the battery,
- Reset will be confirmed by LED blinking quickly

I found it VERY difficult to remove the magnet within two seconds after adding the battery. Good luck.

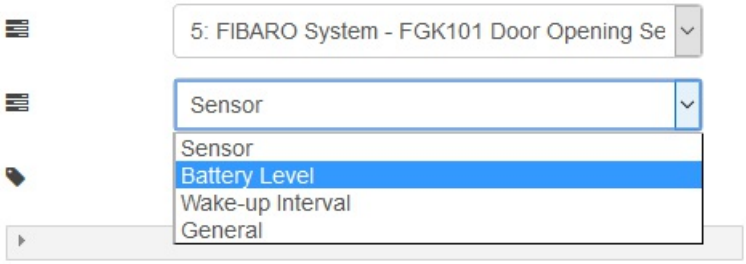


Node in the visual editor

In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node:

Beware that if you have many workspace, the order may have changed!

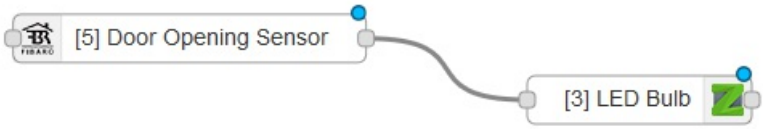
You can edit the node to choose another functionality in a popup menu:



Duplicate the node and use the item for the needed value.

If the menu is not available, it means that the sensor didn't sent its informations yet: just wait or try to stimulate the sensor by pressing its buttons or restarting.

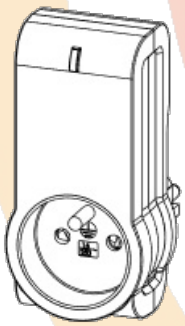
You can directly wire a Sensor:



These nodes understand intents and thus can be juste wired to another nodes that also understands intents.

Nodon Smart Plug Switch

The Nodon Smart Plug Switch can be added to a ZWave network to wirelessly control devices.



Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Smart Plug switch

http://nodon.fr/en/z-wave/prise-intelligente-z-wave-plus_9-2

User guide:

http://nodon.fr/support/NodOn_SmartPlug_ZWave_UserGuide_EN.pdf

Adding to the Z-Wave dongle (inclusion)

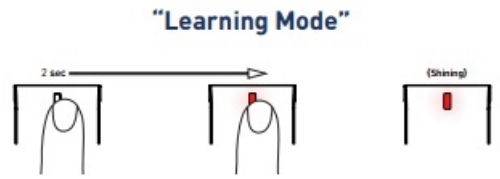
Add the device to the dongle

To add the device into a Z-Wave dongle:

from the key

- Plug the Smart Plug.

- Put the Smart Plug in "Learning mode": **press on the Smart Plug button during 2 seconds** until the LED becomes red. Release the button, the LED will then glow in red. The Smart Plug is in "Learning mode"



- Within 30 seconds put the Z-Wave Controller in 'Learning mode' : to initiate the Z-Stick inclusion-Mode, unplug the it from the USB connector and then **tap the button**. (The LED will blink slowly).
- The Smart Plug will confirm the Inclusion procedure by blinking its LED in Green.
- Plug the ZWave USB key to the USB port and power the device.

The device is added to the ZWave dongle (you have to refresh the browser to see the corresponding node): after a while, a notification appears in the info tab:

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button three times).

from Node-RED

Instead of unpluging the stick and press its button, just wire a Go node to the ZWave inclusion node and click it. Do then the device inclusion as above.

Reset to factory defaults

Factory Reset clears the Smart Plug's memory and set parameters to default value.

To perform a factory reset, plug the Smart Plug and **press on the Smart Plug button during 5 seconds** until the LED becomes orange. The LED

will blink red and green to validate the reset

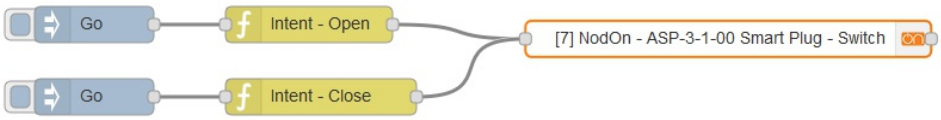
Node in the visual editor

In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node:

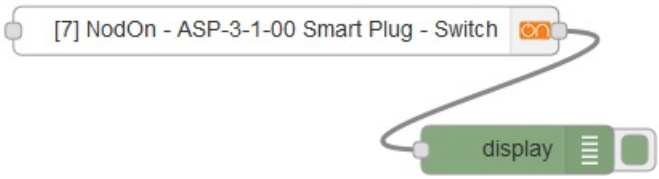
Beware that if you have many workspace, the order may have changed!

Use the switch

You can directly wire a Sensor:



Use the output to trigger a behavior when a human manually toggles the switch:



ZWave Fibaro Wall Plug

This Switch can be added to a ZWave network to wirelessly control plugged devices.

Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Fibaro Wall Plug

http://www.fibaro.com/en/the-fibaro-system/wall-plug)

User guide:

http://www.fibaro.com/files/instrukcje/eng/instrukcja%20wallplug%20FGWP011%20ENG.pdf

Seems to be wrong in the exclusion part...

Adding to the Z-Wave dongle (inclusion)

In auto-inclusion mode

The auto inclusion mode is on if the LED ring is red when plugged. If not, use "manual inclusion" below.

To add the device into a Z-Wave dongle in auto-inclusion mode:

- Insert the Plug into a socket,
- Auto-inclusion into the key will be activated. Auto-inclusion activation is signaled by a

single, red, LED ring blink.

- Unplug the **Z-Stick** and set it into the learning mode by **pressing its action button** (it blinks blue).
- The Wall Plug should be recognized and automatically included into the Z-Wave network.

After the inclusion process is completed, Plug's auto-inclusion function is deactivated, i.e. Plug will not try to include itself into a Z-Wave dongle.

Manual inclusion

To include the Plug manually, without the use of auto-inclusion:

- Unplug the **Z-Stick** and set it into the learning mode by pressing its action button (it blinks blue).
- Triple click the B button, located on the Plug's casing

A (good) alternative is to reset the plug. When plugged again, it is in auto inclusion mode.

It may take time before the notification appears and the node is added.

Wait for the node on the Node-RED workspace

After a while, the following appears in the info tab.

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button).

You can copy-paste the node to another workspace, but if you delete it or cut-paste it, it will be recreated later.

Excluding from to the Z-Wave key (exclusion)

This step is only mandatory if the device was already added into another ZWave key before.

- Insert the Plug into a socket,
- Unplug the Z-Wave dongle and set it in exclusion mode by pressing and holding its action button until it blinks yellow rapidly.
- Triple click the button, located on the Plug's casing

LED diode will glow blue confirming the device has been excluded from the key. * Press the Action Button on the Z-Stick to take it out of removal mode.

Reset to factory defaults

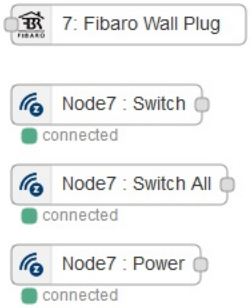
Reset procedure clears the Plug's memory, including Z-Wave network controller information and energy consumption data. To reset Fibaro Wall Plug:

- Insert the Plug into a socket,
- ***Press and hold the B button for 15 - 20 seconds** until LED ring glows yellow,
- Release the B button,
- **Press the B button, briefly**.

Once the reset procedure is completed, LED ring will glow red and turn off. Plug's relay will turn off as well.

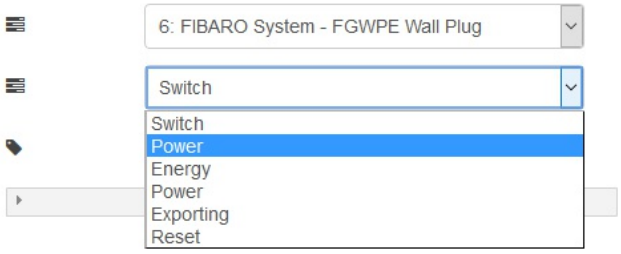
Node in the visual editor

In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node:



- The "Wall Plug" Node monitors the switch
- The "Switch" Node tells the switch state (it can be manually changed)
- The "Power" Node gives the battery state

You can edit the node to choose another functionality in a popup menu:



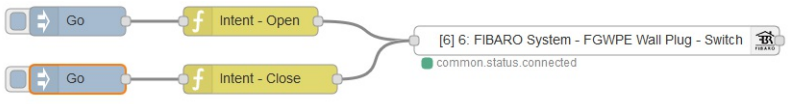
If the menu is not available, it means that the sensor didn't sent its informations yet: just wait or try to stimulate the sensor by pressing its buttons or restarting.

Duplicate the node and use the item for the needed value:

The power value allows to track the battery level.

Use the Wall Plug

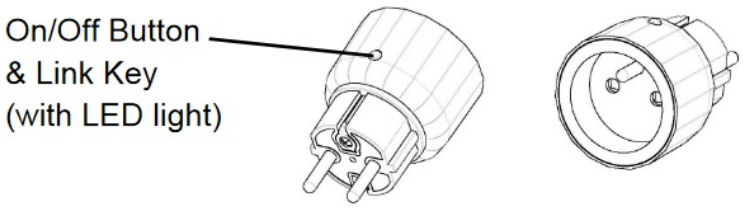
Add open and Close intents to manually operate the switch:



You can directly wire a sensor, as the **Fibaro FGMS-001** :

This node understand intents and thus can be juste wired to another nodes that also understands intents.

Everspring AD147 Plug



Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Everspring Wall Plug

Everspring Wall Plug:

http://www.fibaro.com/en/the-fibaro-system/wall-plug)

User guide:

http://www.fibaro.com/files/instrukcje/eng/instrukcja%20wallplug%20FGWP011%20ENG.pdf

Adding to the Z-Wave dongle (inclusion)

Add the device to the dongle

On the unit you can find a link key which is used to carry out the functi on of inclusion, exclusion, and reset.

When power is applied for the first time, **the LED will flash on and off alternately and repeatedly, implying that it has not been assigned a node ID** and cannot work with other Z-Wave devices yet.

This unit supports the Auto Inclusion function when power is applied and no node ID is stores in the memory.

In auto-inclusion mode

The module may automatically execute the function of inclusion when:

1. The power is applied for the first time and no node ID has been stored in the module
2. The execution of reset is successful where the stored node ID is cleared

To add the device into a Z-Wave key in auto-inclusion mode:

- Insert the Plug into a socket,
- Auto-inclusion into the key will be activated.
- Unplug the **Z-Stick Gen5** and set it into the learning mode by pressing its action button (it blinks blue).
- The Wall Plug should be recognized and automatically included into the Z-Wave network (the Z-Stick stop flashing for 1 s.

Wait for the node on the Node-RED workspace

After a while, the following appears in the info tab.

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button).

You can copy-paste the node to another workspace, but if you delete it or cut-paste it, it will be recreated later.

Manual inclusion

To include the Plug manually, without the use of auto-inclusion:

- Unplug the **Z-Stick Gen5** and set it into the learning mode by pressing its action button (it blinks blue).
- Triple click the link key within 1.5 seconds

Resetting Everspring Wall Plug

1. Press the link key **three times** within 1.5 seconds to put the unit in to exclusion mode .
2. Within 1 second of step 1 , press **link key again and hold** it until LED is off (about 5 seconds) .

The device reverts to factory default state and will be in auto inclusion mode for 4 minutes.

About the local switch

Be aware that the LED on the local switch does NOT indicate the switch state: it may be ON even if the LED if off.

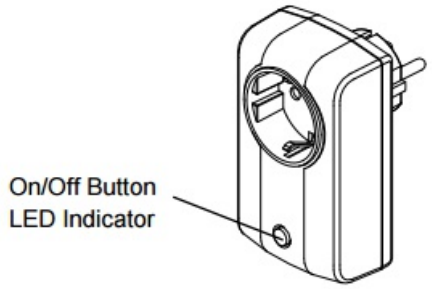
Node in the visual editor

In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node.

Beware that if you have many workspace, the order may have changed!

Everspring AN157 Switch

This Switch can be added to a ZWave network to wirelessly control plugged devices.

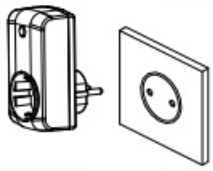
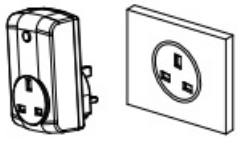
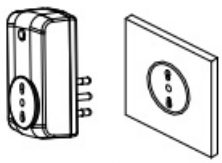
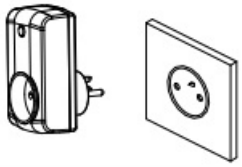
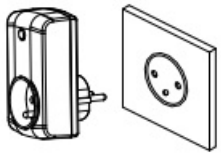


Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Everspring switch

Get the right one:

AN157-2	Germany	AN157-3	U.K.
			
AN157-4	**Italy**	**AN157-5**	**Denmark**
			
AN157-6	**France**		
			

User guide:

evr_an157manual (pdf)

Adding to the Z-Wave dongle (inclusion)

plug the switch. If it does not blink, you have to exclude it before including it

Add the device to the dongle

To add the device into a Z-Wave dongle:

- plug the switch, it blinks red
- unplug the ZSTick gen 5 USB key
- push 1s on the button: it blinks blue
- toggle the swith button 3 times quickly
- the key button turns solid blue.

Wait for the node on the Node-RED workspace

After a while, the following appears in the info tab.

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button).

You can copy-paste the node to another workspace, but if you delete it or cut-paste it, it will be recreated later.

Excluding from to the Z-Wave key (exclusion)

This step is only mandatory if the device was already added into another ZWave dongle before.

- plug the switch, let it in off mode
- unplug the ZSTick USB key
- push 3 seconds on the ZStick button (it goes bliking orange)

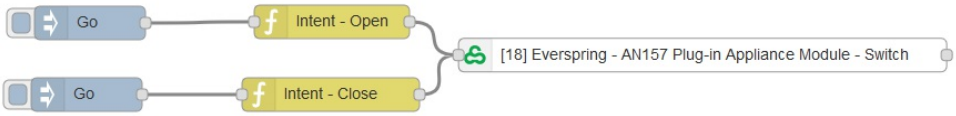
- toggle the button of the switch 3 times.

Node in the visual editor

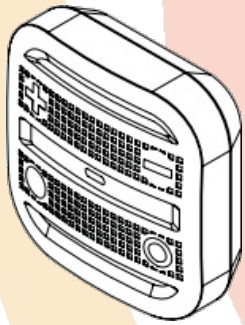
In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node:

Beware that if you have many workspace, the order may have changed!

Add open and Close intents to manually operate the switch:



Z-Wave Nodon Soft Remote



Install Z-Wave Stuff

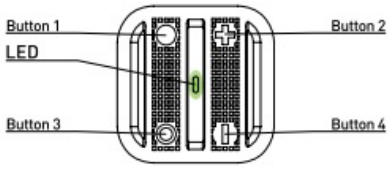
First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Nodon Soft Remote

http://nodon.fr/en/z-wave/z-wave-soft-remote_8-2

User guide:
http://nodon.fr/support/NodOn_TheSoftRemote_ZWave_UserGuide_EN.pdf

Adding to the Z-Wave dongle (inclusion)



Add the device to the dongle

To add the device into a Z-Wave dongle:

from the key

- Unplug the **Z-Stick** and set it into the learning mode by **pressing its action button** (it blinks blue).

- **Simultaneously push on "ON" (button 1) and "PLUS" (button 2), during 1sec**. The LED glows in pink to confirm the selection
- Then **push on "ON" (button 1), within 10 seconds**. The LED blinks in pink to confirm your choice
- The LED blinks in green to confirm the procedure
- Plug the dongle back and reboot

The device is added to the ZWave dongle (you have to refresh the browser to see the corresponding node):

after a while, a notification appears in the info tab:

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the buttons).

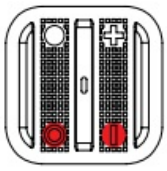
from Node-RED

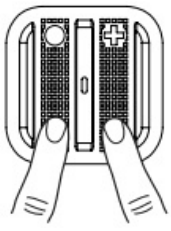
Instead of unpluging the stick and press its button, just wire a Go node to the ZWave inclusion node and click it. Do then the device inclusion as above.

Reset to factory defaults

A factory reset will completely delete the memory of the Soft Remote and restore all the parameters to default value. A **simultaneous long press (1sec) on Off (button 3) and Minus (button 4)** will perform this factory reset.

The LED will blink red and green to validate the reset





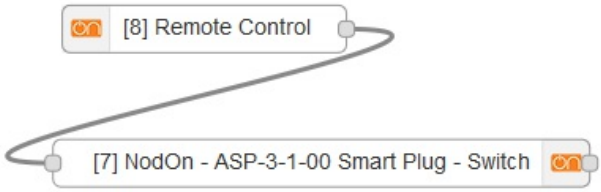
Node in the visual editor

In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node:

Beware that if you have many workspace, the order may have changed!

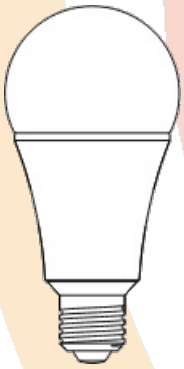
Use the remote

You can directly wire a switch:



These nodes understand intents and thus can be just wired to another nodes that also understands intents.

Aeotec Bulb



Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Aeotec Bulb

http://aeotec.com/z-wave-led-lightbulb

User guide:

https://aeotec.freshdesk.com/support/solutions/articles/6000056917-led-bulb-user-guide-

Adding to the Z-Wave dongle (inclusion)

Add the device to the dongle

To add the device into a Z-Wave dongle:

from the key

- Screw in LED Bulb, off mode.

- Unplug the **Z-Stick** and set it into the learning mode by **pressing its action button** (it blinks blue).
- Then toggle the wall switch to turn your LED Bulb on, the green LED will blink to indicate the Bulb is entering into pairing mode.

If LED Bulb has been successfully added to your Z-Wave network, its light will be continuous when you turn it on.

It is is not successful, try a "Removing from the Z-Wave key" step before.

The device is added to the ZWave dongle (you have to refresh the browser to see the corresponding node): after a while, a notification appears in the info tab.

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button).

from Node-RED

Instead of unpluging the stick and press its button, just wire a Go node to the ZWave inclusion node and click it. Do then the device inclusion as above.

You can copy-paste the node to another workspace, but if you delete it or cut-paste it, it will be recreated later.

Excluding from to the Z-Wave key (exclusion)

This step is only mandatory if the device was already added into another ZWave dongle before.

If your bulb was already paired to an existing network, you have to remove it first.

To check if LED Bulb is already paired to an existing network, **toggle the wall switch on-off-on fast**. If LED Bulb blinks orange for 3 seconds, it is already paired into a Z-Wave network.

Your LED Bulb can be removed from your Z-Wave network at any time using your Z-Wave gateway. To set your gateway into removal mode, please refer to the respective section of its user manual.

1. Set your Z-Wave key in exclusion mode by pressing and holding its

action button until it blinks yellow rapidly.

2. Turn LED Bulb’s wall switch on.
3. Toggle LED Bulb’s wall switch off, on, off, on, off, on in fast succession.
4. LED Bulb should now be removed from your Z-Wave network.

To confirm successful removal its colour will change to orange for 2 seconds before changing to white.

If removal was unsuccessful, LED Bulb will blink orange for 3 seconds before changing to red for 2 seconds.

Removing LED Bulb from your Z-Wave network will reset LED Bulb to default factory settings.

Node in the visual editor

In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node.

Zipato Bulb

Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Zipato Bulb

https://www.zipato.com/product/zipato-rgbw-bulb

User guide:

https://www.zipato.com/wp-content/uploads/2015/10/rgbwe27zw-Zipato-RGBW-Bulb-User-Manual-v1.1.pdf

Adding to the Z-Wave dongle (inclusion)

Add the device to the dongle

To add the device into a Z-Wave dongle:

From the dongle

- Screw in LED Bulb, off mode.

- Unplug the **Z-Stick Gen5** and set it into the learning mode by pressing its action button (it blinks blue).
- Inclusion mode is activated by gently tapping the light bulb (it becomes green).

The light bulb will shine green to indicate a successful activation of inclusion or exclusion mode.

It is is not successful, try a "Removing from the Z-Wave key" step before.

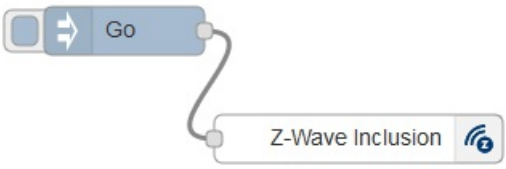
The device is added to the ZWave dongle (you have to refresh the browser to see the corresponding node): after a while, a notification appears in the info tab.

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button three times).

From Node-RED

- Instead of unpluging the stick and press its button, just wire a Go node to the ZWave inclusion node and click it.



- Inclusion mode is activated by gently tapping the light bulb.

You can copy-paste the node to another workspace, but if you delete it or cut-paste it, it will be recreated later.

Excluding from to the Z-Wave key (exclusion)

This step is only mandatory if the device was already added into another ZWave dongle before.

If your bulb was already paired to an existing network, you have to remove it first.

To check if LED Bulb is already paired to an existing network, **toggle the wall switch on-off-on fast**. If LED Bulb blinks orange for 3 seconds, it is

already paired into a Z-Wave network.

Your LED Bulb can be removed from your Z-Wave network at any time using your Z-Wave gateway. To set your gateway into removal mode, please refer to the respective section of its user manual.

1. Set your Z-Wave key in exclusion mode by pressing and holding its action button until it blinks yellow rapidly.
2. Turn LED Bulb's wall switch on.
3. Exclusion mode is activated by gently tapping the light bulb
4. LED Bulb should now be removed from your Z-Wave network.

The light bulb will shine green to indicate a successful activation of inclusion or exclusion mode.

Removing LED Bulb from your Z-Wave network will reset LED Bulb to default factory settings.

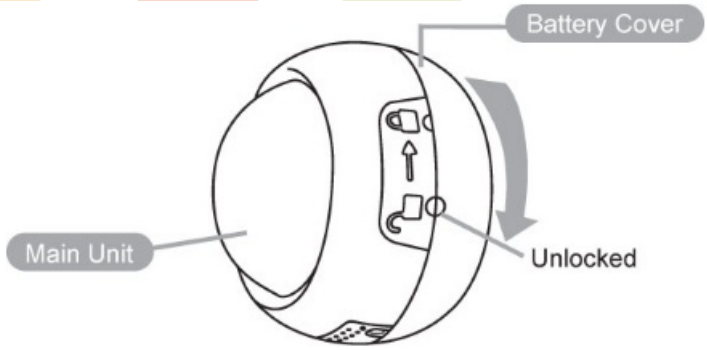
Factory reset

A factory default reset is performed when the bulb is excluded from the Z-wave network.

Node in the visual editor

In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node.

Aeotec multi sensor Gen5



Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Aeotec multi sensor Gen 5

User guide:

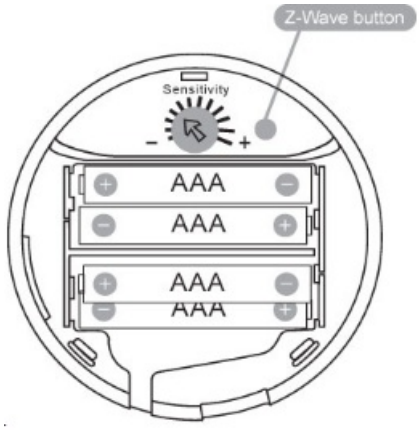
http://aeotec.com/z-wave-sensor/47-multisensor-manual.html

Adding to the Z-Wave dongle (inclusion)

Add the device to the dongle

To add the device into a Z-Wave dongle:

- Unplug the **Z-Stick** and set it into the learning mode by **pressing its action button** (it blinks blue).
- **Press the Action Button** on the MultiSensor.



If the MultiSensor was not successfully paired into any Z-Wave network the LED on the MultiSensor will blink when pressing the Z-Wave button. If the MultiSensor was successfully paired into a Z-Wave network, the LED will stay solid for a few seconds when pressing the Z-Wave button.

- Press the Action Button on the Z-Stick to return it to standard operating mode.
- Plug the dongle back and reboot

Wait for the node on the Node-RED workspace

After a while, the following appears in the info tab.

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button).

You can copy-paste the node to another workspace, but if you delete it or cut-paste it, it will be recreated later.

Excluding from to the Z-Wave key (exclusion)

This step is only mandatory if the device was already added into another ZWave dongle before.

- Unplug the Z-Wave dongle and set it in exclusion mode by pressing and holding its action button until it blinks yellow rapidly.
- Press the Action Button on your MultiSensor.

If the MultiSensor was successfully removed from the Z-Wave network,

pressing the Z-Wave button will cause the LED to blink. If the MultiSensor was not successfully removed from the Z-Wave network the LED will stay solid for a few seconds.

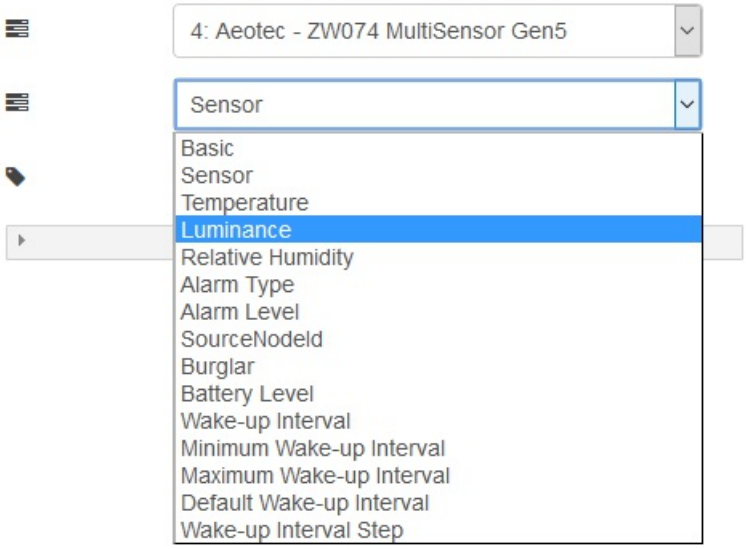
- Press the Action Button on the Z-Stick to take it out of removal mode.

Node in the visual editor

In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node:

Beware that if you have many workspace, the order may have changed!

You can edit the node to choose another functionality in a popup menu:



Duplicate the node and use the item for the needed value:

If the menu is not available, it means that the sensor didn't sent its informations yet: just wait or try to stimulate the sensor by pressing its buttons or restarting.

Aeotec multi sensor 6

Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Aeotec multi sensor 6

http://aeotec.com/z-wave-sensor

User guide:

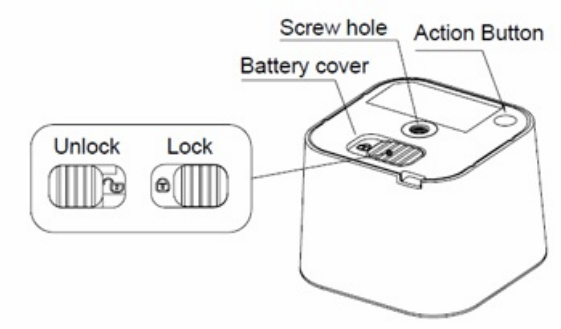
https://aeotec.freshdesk.com/support/solutions/articles/6000057073-multisensor-6-user-guide-

Adding to the Z-Wave dongle (inclusion)

Add the device to the dongle

To add the device into a Z-Wave dongle:

- Unplug the **Z-Stick** and set it into the learning mode by **pressing its action button** (it blinks blue).
- **Press the Action Button** on the MultiSensor.



You can test if your MultiSensor has been successfully included by pressing its Action Button. If you press the button and your sensor's LED is solid for a few seconds, then inclusion has been successful. If the LED blinks when the button is pressed, the inclusion has been unsuccessful and you should repeat the above steps.

- Press the Action Button on the Z-Stick to return it to standard operating mode.
- Plug the dongle back and reboot

Wait for the node on the Node-RED workspace

After a while, the following appears in the info tab:

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button).

You can copy-paste the node to another workspace, but if you delete it or cut-paste it, it will be recreated later.

Excluding from to the Z-Wave key (exclusion)

This step is only mandatory if the device was already added into another ZWave dongle before.

- Unplug the Z-Wave dongle and set it in exclusion mode by pressing and holding its action button until it blinks yellow rapidly.
- Press (hardly!) the Action Button on your MultiSensor.

If your MultiSensor has been successfully removed from your network:

If your MultiSensor has been successfully removed, its LED will blink when you press the Action Button on

the MultiSensor.

If the removal was unsuccessful, the LED will stay solid for a few seconds when you press the Action Button.

- Press the Action Button on the Z-Stick to take it out of removal mode.

Reset to factory defaults

At some stage or your primary controller is missing or inoperable, you may also wish to reset all of your MultiSensor's settings to their factory defaults. To do this, **press (hardly!) and hold the Z-Wave Button for 20 seconds** (LED goes purple then red) and then **release it**.

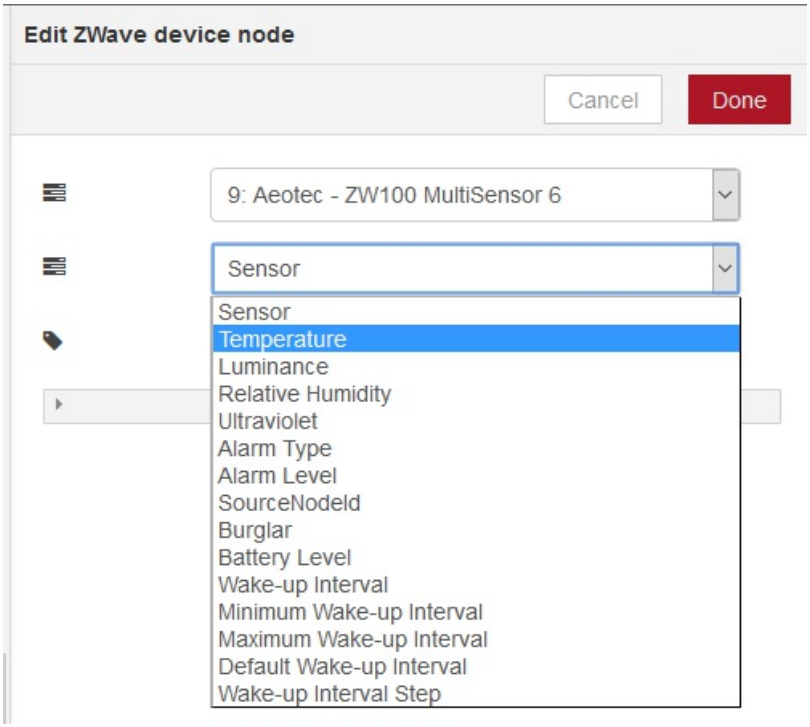
Your MultiSensor will now be reset to its original settings, and the LED will stay solid for 2 seconds and then turn off as a confirmation.

Node in the visual editor

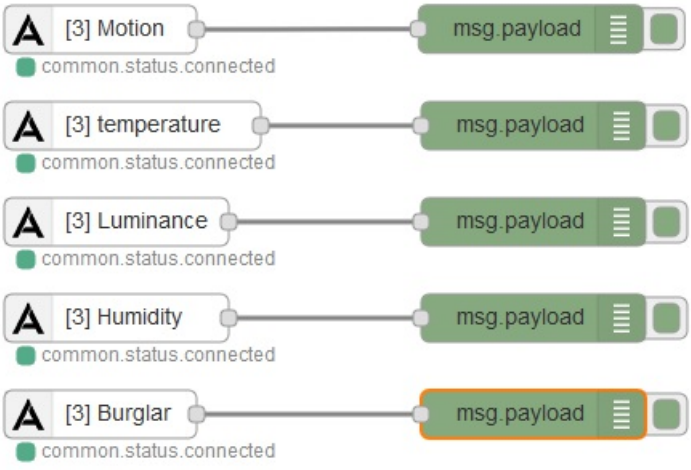
In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node:

Beware that if you have many workspace, the order may have changed!

You can edit the node to choose another functionality in a popup menu:



Duplicate the node and use the item for the needed value:



If the menu is not available, it means that the sensor didn't sent its informations yet: just wait or try to stimulate the sensor by pressing its buttons or restarting.

Fibaro FGMS001 multi sensor

Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the Fibaro FGMS-001

http://www.fibaro.com/en/the-fibaro-system/motion-sensor

User guide: **http://www.fibaro.com/manuals/en/Motion-Sensor/Motion-Sensor_EN_5.3.14.pdf**

Adding to the Z-Wave dongle (inclusion)

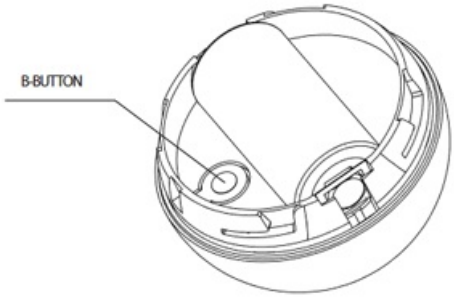
Add the device to the dongle

To add the device into a Z-Wave dongle:

- Unplug the **Z-Stick** and set it into the learning mode by **pressing its action button** (it blinks blue).
- Quickly, **triple click the B-button** - LED diode will glow blue.
- Fibaro Motion Sensor will be detected and included into the key (the

Key stops blinking 2s)

- Wait for the key to configure the sensor.
- If necessary, wake up the Motion Sensor by triple clicking the B-button.
- LED diode will glow blue to confirm the sensor woke up,
- Press the Action Button on the Z-Stick to return it to standard operating mode.
- Plug the dongle back and reboot



Wait for the node on the Node-RED workspace

After a while, the following appears in the info tab.

Refresh the browser and find the newly added node.

Beware that it may takes minutes before the nodes to appear. Reboot may help. Stimulating the device may also help (click the button).

You can copy-paste the node to another workspace, but if you delete it or cut-paste it, it will be recreated later.

Excluding from to the Z-Wave key (exclusion)

This step is only mandatory if the device was already added into another ZWave dongle before.

- Unplug the Z-Wave dongle and set it in exclusion mode by pressing and holding its action button until it blinks yellow rapidly.
- Quickly, **triple click the B-button**, located on Fibaro Motion Sensor's enclosure.

LED diode will glow blue confirming the device has been excluded from the key. * Press the Action Button on the Z-Stick to take it out of

removal mode.

Reset to factory defaults

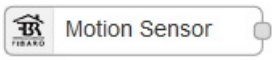
Fibaro Motion Sensor reset procedure:

- Press and hold the B-button for 4-6 seconds until the LED glows
- Release the B-button.
- Again, press the B-button briefly.

Successful reset will be confirmed with the LED changing colour to red and fading.

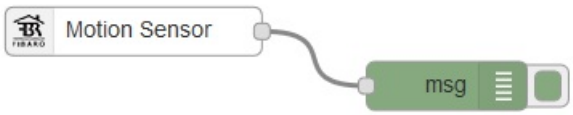
Node in the visual editor

In the Z-Wave tab (the tab where you added the Z-Wave node) you can now find the dedicated node:

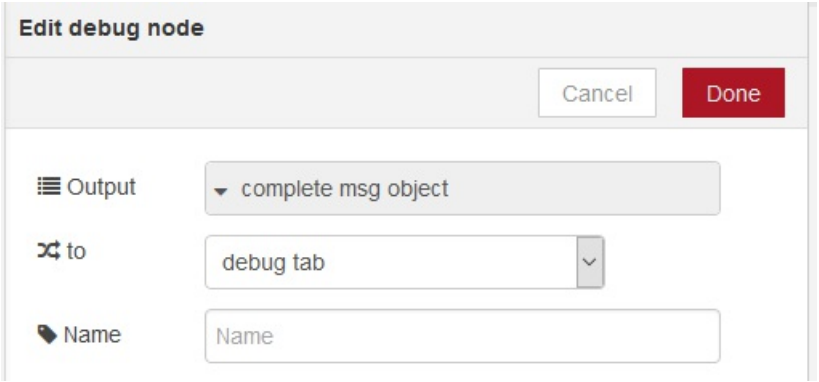


Beware that if you have many workspace, the order may have changed!

Add a `debug` node:



And edit it to display the whole message of the flow:



Beware that it may takes minutes before the node appears. If Node don't appear, wake up the Motion Sensor by triple clicking the B-button.

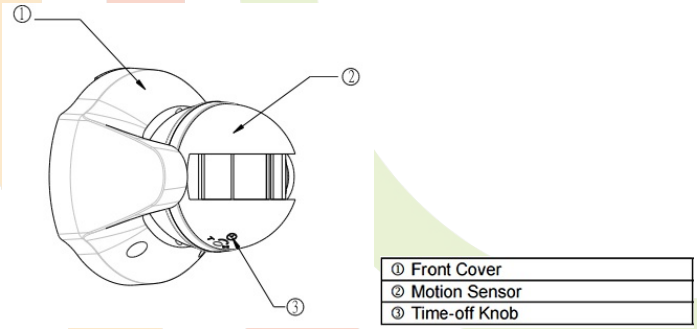
In the display/debug tab, you should see the sensor result.

The most important is the `payload` of the message which is 1 if a motion

is detected or 0 if not.

The `intent` is also set as described in the **intents** chapter.

Everspring SP 103 motion sensor



Install Z-Wave Stuff

First, you need to buy Z-Wave USB Key that you should plug in any USB available port and some sofware easy to install using the `import node` menu, as described in the **Z-Wave introduction tutorial**.

About the SP 103 motion sensor

User guide:

http://www.vesternet.com/downloads/dl/file/id/51/product/580/z_wave_everspring_sp103_motion_detector_manual.pdf

Adding to the Z-Wave dongle (inclusion)

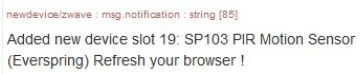
Add the device to the dongle

To add the device into a Z-Wave dongle:

from the key

- Unplug the **Z-Stick** and set it into the learning mode by **pressing its action button** (it blinks blue).
- Press the tamper button of the sensor
- The Z-Stick rapidly flashes blue then glows to indicate the inclusion
- Plug the key back and reboot

The device is added to the ZWave dongle (you have to refresh the browser to see the corresponding node): after a while, a notification appears in the info tab:



Refresh the browser and find the newly added node.

Beware that it may takes minutes before the node appears. If the node doesn't appear, wake up the Sensor by pressing its tamper button.

from Node-RED

Instead of unpluging the stick and press its button, just wire a Go node to the ZWave inclusion node and click it. Do then the device inclusion as above.

Excluding from to the Z-Wave key (exclusion)

This step is only mandatory if the device was already added into another ZWave dongle before.

- Unplug the Z-Wave dongle and set it in exclusion mode by pressing and holding its action button until it blinks yellow

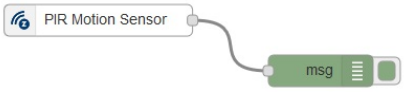
rapidly.

- press the tamper button of the sensor

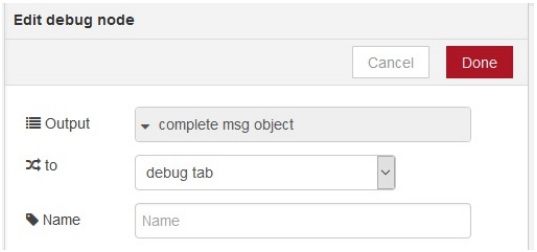
Node in the visual editor

In the Z-Wave tab you can now find the dedicated node:

Add a `debug` node:



And edit it to display the whole message of the flow:



In the display/debug tab, you should see the sensor result.

The most important is the `payload` of the message which is 1 if a motion is detected or 0 if not.

The `intent` is also set as described in the **intents** chapter.