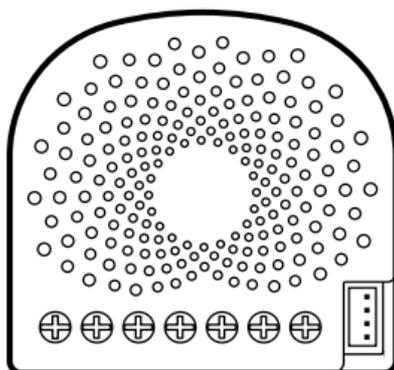




F A N T E M

In-Wall Smart Switch (Dual)



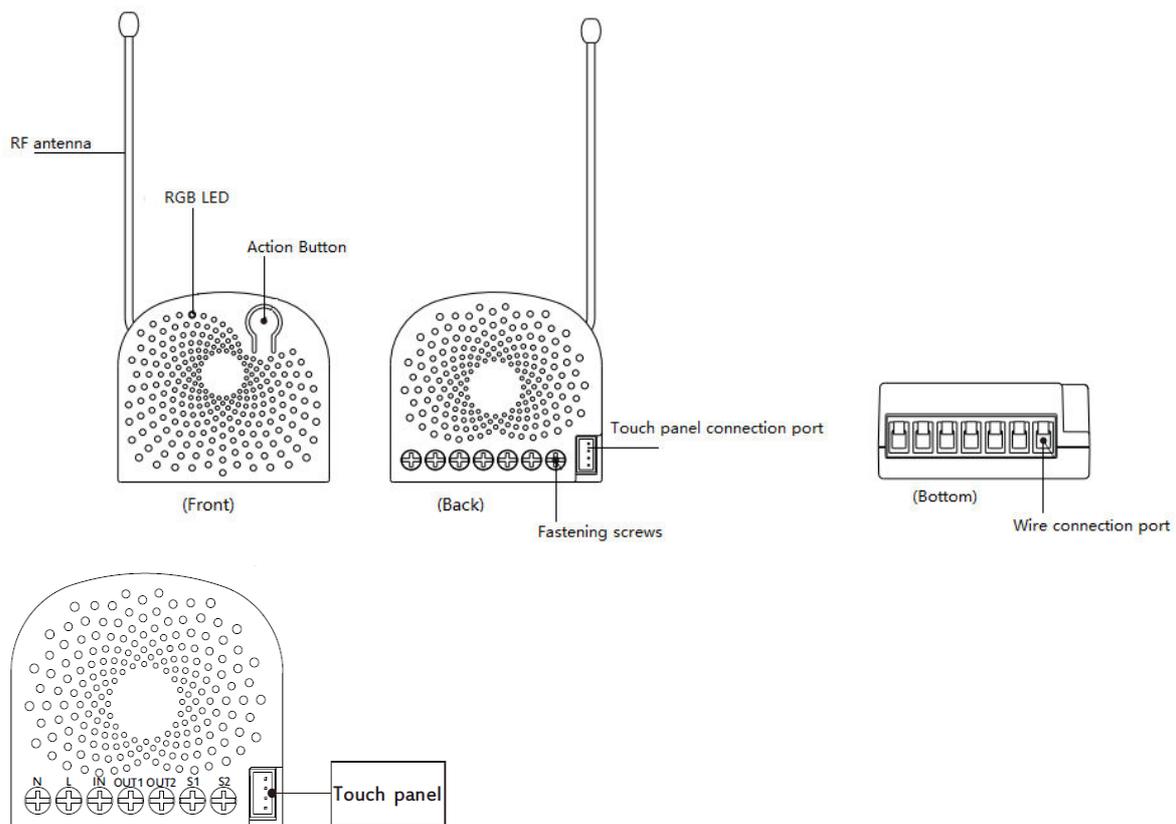
Fantem In-Wall Smart Switch (Dual)

Fantem In-Wall Smart Switch (Dual) is a low-cost Z-Wave Switch specifically used to enable Z-Wave command and control (on/off) of any wall switches. It can report immediate wattage consumption or kWh energy usage over a period of time. In the event of power failure, non-volatile memory retains all programmed information relating to the unit's operating status.

It can connect to 2 external manual switches to control the load ON/OFF independently. Its surface has a pin socket, which can be used for connecting to the touch panel, so you can also use the touch panel to control the In-Wall Smart Switch (Dual).

The In-Wall Smart Switch (Dual) is also a security Z-Wave device and supports Over The Air (OTA) feature for the products firmware upgrade.

Familiarize yourself with your In-Wall Smart Switch (Dual).



Notes for the wire connection ports:

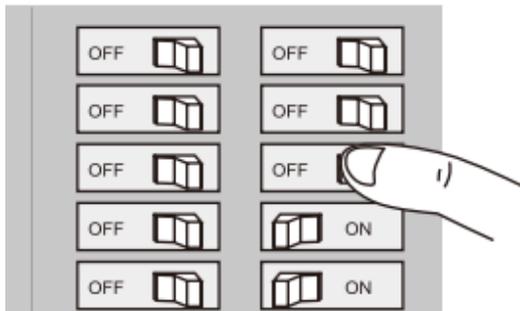
- N** – Power input for neutral
- L** – Power input for live
- IN** – Input for load power supply
- OUT1** – Output for load 1
- OUT2** – Output for load 2

- S1** – External switch control for load 1
- S2** – External switch control for load 2

Install the In-Wall Smart Switch (Dual).

Important: A licensed electrician with knowledge and understanding electrician systems and electrical safety should complete the electrical installation.

1. Shut off the main circuit breaker of your home for safety during the installation and ensure the wires are not short circuited during the installation which will cause damage to the In-Wall Smart Switch (Dual).

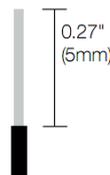


Note: Your home's main circuit breaker must support the overload protection for safety.

2. Preparing connection wires
 - 14 AWG power wires for Input/ Output.
 - 18 AWG copper wires for external manual switch.
 Use the wire stripper cut the metallic part of the connection wire and make sure the length of the metallic part is about 5mm.



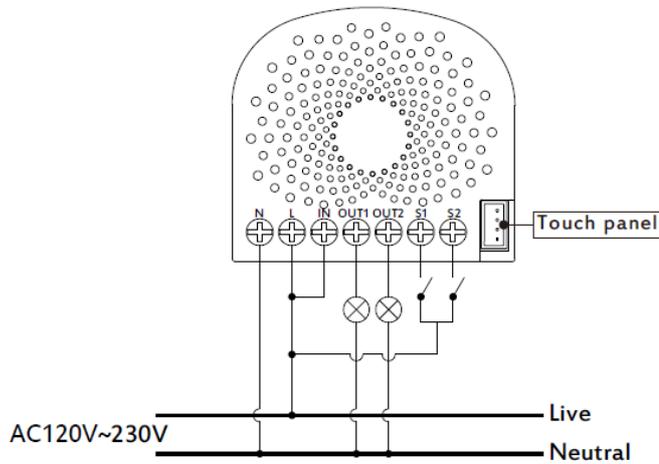
Cut wire if necessary



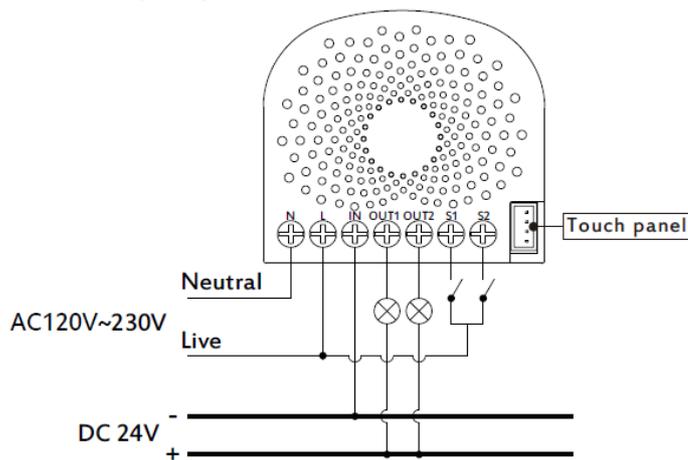
Strip Gage (measure barehere)

Note: All connection wires needs to be flexible cable.

Wiring diagram of AC120V/230V power input



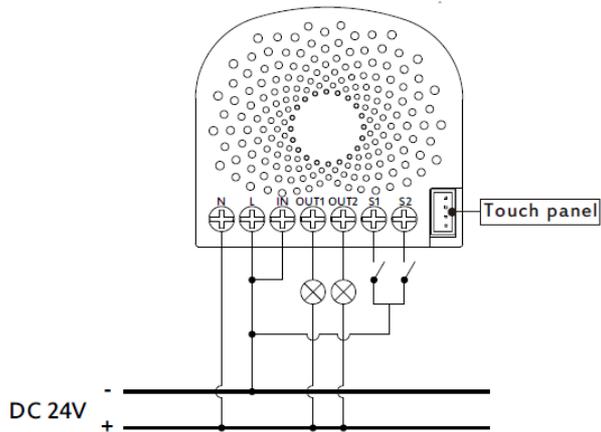
In some cases, you may have some loads just only can be used on the voltage of DC24V and hope that it still can be controlled by the In-Wall Smart Switch (Dual), so please refer to the following diagram to achieve this:



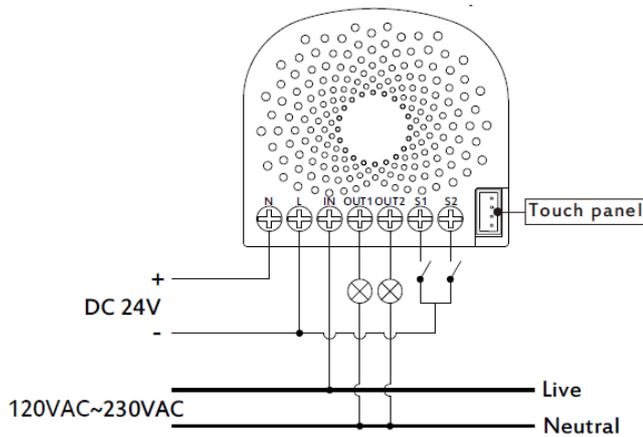
Note: The “IN” terminal should be connected to the “-” of DC 24V input.

Wiring diagram of DC24V power input

Since the In-Wall Smart Switch (Dual) also supports the DC24V power input, so you can use it to control the loads that powered by DC24V.



If the output loads should be only powered by AC120V or AC230V, you can change the wire connection as below:

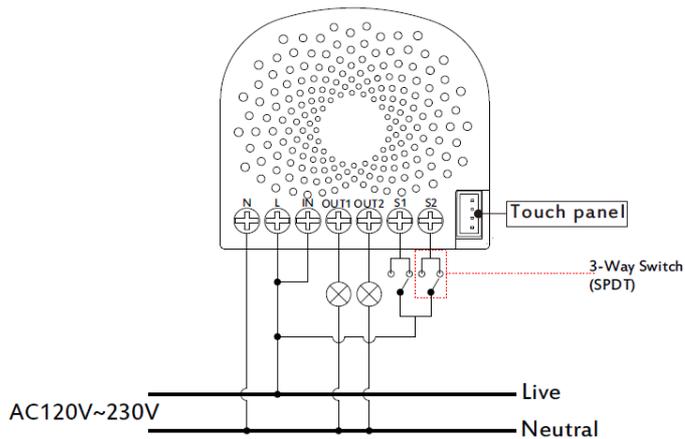


Note: The “IN” terminal should be connected to the “Live” of AC 120V/230V power wire.

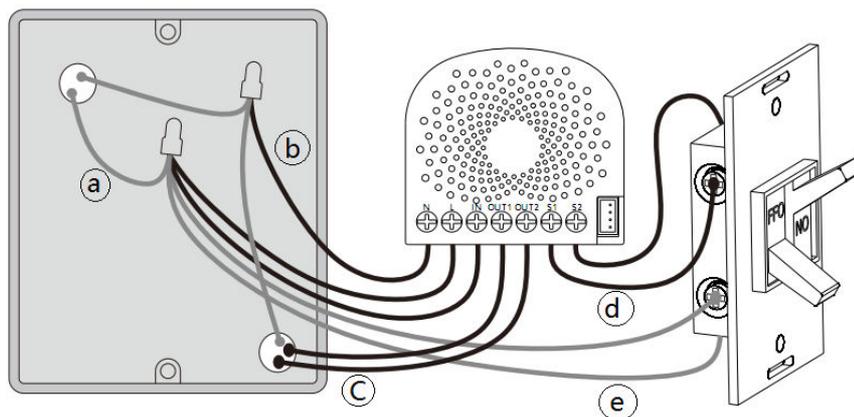
All above wiring diagrams show that the In-Wall Smart Switch (Dual) uses 2-Way or momentary button switches as the external manual switch for 2-Way connection.

The below diagram will show you that the In-Wall Smart Switch (Dual) uses the SPDT (Single-Pole Double-Throw) switches as the external manual switch for 3-Way connection.

Wiring diagram of 3-Way connection for the external manual switch



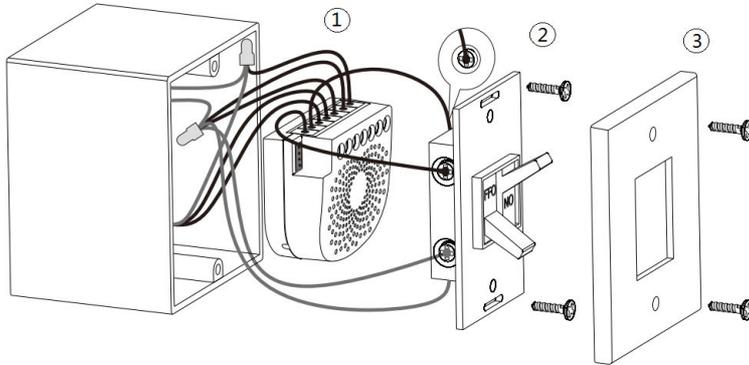
3. Install In-Wall Smart Switch (Dual) to the gang box.
 - a. Live/Hot wire connection: Connect the Live/Hot wire to the “L” terminal on the In-Wall Smart Switch (Dual).
 - b. Neutral wire connection: Connect the Neutral wire to the “N” terminal on the In-Wall Smart Switch (Dual).
 - c. Load wire connection: Connect the 2 Load wires to the “OUT1” and “OUT2” on the In-Wall Smart Switch (Dual).
 - d. External/manual Switch connection: Connect 2 18AWG wires to the “S1” and “S2” on the In-Wall Smart Switch (Dual).
 - e. External/manual Switch connection: Connect 2 18AWG wires from the 2 terminals on the External/manual Switch to the Live wire.



Note: This is the physical connection diagram for AC120V/230V power input

4. Mounting the gang box.
 - a. Position all wires to provide room for the device. Place the In-Wall Smart Switch (Dual) inside the gang box towards the back of the box.
 - b. Position the antenna towards the back of the box, away from all other wiring.

- c. Reinstall the In-Wall Smart Switch (Dual) to the gang box.
- d. Reinstall the cover onto the gang box.

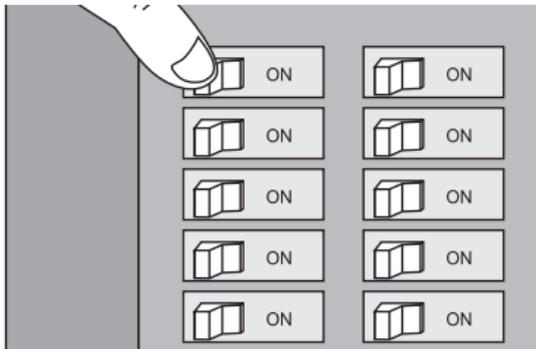


Note:

- 1) The gang box should be sized $3 \times 2 \times 2.75$ inch/ $75 \times 50 \times 70$ mm or larger, minimum volume $14 \text{ in}^3 / 230\text{cm}^3$.
- 2) Use flexible copper conductors only.

5. Restore Power.

Restore power at the circuit breaker or fuse.



Quick start.

Adding your In-Wall Smart Switch (Dual) to a Z-Wave network.

After your In-Wall Smart Switch (Dual) is installed and powered on, you are now able to manually control the In-Wall Smart Switch (Dual) to turn it On/Off directly via pressing your In-Wall Smart Switch (Dual)'s Action Button, it is time to add your In-Wall Smart Switch (Dual) to the Z-Wave network. To set your Z-Wave gateway/controller into pairing mode, please refer to the respective section within your controller instruction manual.

1. Set your Z-Wave controller into pairing mode.
2. Press the Action Button on the In-Wall Smart Switch (Dual) or toggle the external manual switch once, the green LED (non-secure indication) will blink to indicate the In-Wall Smart

Switch (Dual) is entering into pairing mode.

3. If the In-Wall Smart Switch (Dual) has been successfully added to your Z-Wave network, its RGB LED will be solid. If the pairing was unsuccessful, the red LED will be on for 2 seconds and then remain a colourful gradient, repeat the instructions above from step 1.

With your In-Wall Smart Switch (Dual) now working as a part of your smart home, you'll be able to configure it from your home control software/phone application. Please refer to your software's user guide for further instructions on configuring In-Wall Smart Switch (Dual) to your needs.

Removing In-Wall Smart Switch (Dual) from a Z-Wave network.

Your In-Wall Smart Switch (Dual) can be removed from your Z-Wave network at any time. You'll need to use your Z-Wave network's main controller. To set your Z-Wave controller/gateway into removal mode, please refer to the respective section within your controller instruction manual.

1. Set your Z-Wave controller into removal mode.
2. Press the Action Button on the In-Wall Smart Switch (Dual) or toggle the external manual switch 3 times in fast succession.
3. If the In-Wall Smart Switch (Dual) has been successfully removed from your Z-Wave network, its RGB LED will remain colourful gradient. If the removal was unsuccessful, the RGB LED will still be solid (following the state of the output load), repeat the instructions above from step 1.

Advanced functions.

Changing mode on the External Switch/Button Control.

The In-Wall Smart Switch (Dual) can be controlled via 2-state (flip/flop) external/manual switch, momentary push button or the 3-way switch. To automatically detect and set the mode to the appropriate type of manual switch wired into In-Wall Smart Switch (Dual), toggle the button on the manual switch once and wait 2 seconds for the In-Wall Smart Switch (Dual) to detect the type of manual switch.

You can also set the external switch mode through Configuration Command Class.

Parameter 120 [1 byte dec] is the parameter that will set one of the 3 different modes for external switch S1. If you set this configuration to:

- (0) Unknown mode
- (1) 2-state switch mode
- (2) 3-way switch mode
- (3) Momentary push button mode
- (4) Enter automatic identification mode. (The blue LED will fast blink)

The parameter 121 [1 byte dec] is the parameter that will set one of the 3 different modes for external switch S2. If you set this configuration to:

- (0) Unknown mode
- (1) 2-state switch mode
- (2) 3-way switch mode

(3) Momentary push button mode

(4) Enter automatic identification mode. (The green LED will fast blink)

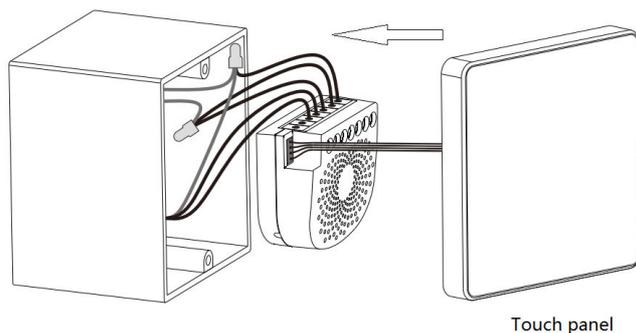
Note: You can also use the Action Button of In-Wall Smart Switch (Dual) to activate the automatic identification mode, as below:

1. Quick press the Action Button 4 times, which will activate the automatic identification mode for external switch S1, you will see the blue LED fast blinks.
2. Quick press the Action Button 6 times, which will activate the automatic identification mode for external switch S2, the green LED will fast blink.

When the In-Wall Smart Switch (Dual) enters automatic identification mode, it has 20 seconds before timeout for detecting the manual switch.

Touch panel control.

As you can see that the In-Wall Smart Switch (Dual)'s surface has a pin port, this port is used to connect the Touch panel. When you have already connected it to the In-Wall Smart Switch (Dual), you will be possible to control the In-Wall Smart Switch (Dual) through the Touch panel directly.



Monitoring Energy Consumption.

In-Wall Smart Switch (Dual) can report wattage energy usage or kWh energy usage to a Z-Wave control point when requested. If this function is supported by the control points, the energy consumption will be displayed in the user interface of the control points. (The specific Z-Wave commands supporting energy monitoring are the Meter Command Class. Automatic reports are sent to association group 1, which is setup via the Association Command Class.) Please consult the operation manual for these control points for specific instructions on monitoring the In-Wall Smart Switch (Dual).

Note: The model FT140 In-Wall Switch (Dual) does not have the ability to monitor energy consumption. The model FT132 In-Wall Smart Switch (Dual) supports the energy metering feature and you can see the word "Smart" on its packaging box.

Security or Non-security feature of your In-Wall Smart Switch (Dual) in Z-Wave network.

Including In-Wall Smart Switch (Dual) as a non-secure device:

If you want your In-Wall Smart Switch (Dual) as a non-secure device in your Z-Wave network, press the Action Button once on In-Wall Smart Switch (Dual) when you pair it to your gateway. If inclusion is successful, the green LED will be on for 2 seconds, and then return to a solid indication. If inclusion is unsuccessful, the red LED will be on for 2 seconds and then return to a colourful gradient.

Including In-Wall Smart Switch (Dual) as a secure device:

In order to take full advantage of the Smart Film Hub, you will want your In-Wall Smart Switch (Dual) as a security device that uses encrypted messages to communicate in your Z-wave network. A security enabled controller/gateway (or Z-Wave Plus controller) is required.

1. Set your Z-Wave Plus controller into pairing mode.
2. Press the Action Button 2 times within 1 second on the In-Wall Smart Switch (Dual), the blue LED (secure indication) will blink to indicate the In-Wall Smart Switch (Dual) is entering into secure pairing mode.
3. If the In-Wall Smart Switch (Dual) has been successfully added to your Z-Wave network, its RGB LED will be solid. If the pairing was unsuccessful, the red LED will be on for 2 seconds and then remain a colourful gradient, repeat the instructions above from step 1.

Reset your In-Wall Smart Switch (Dual).

If at some stage, your primary controller is missing or inoperable, you may wish to reset all of your In-Wall Smart Switch (Dual)'s settings to their factory defaults. To do this, press and hold the Action Button for 20 seconds and then release it. Your In-Wall Smart Switch (Dual) will now be reset to its original settings, and the green LED will be solid for 2 seconds and then remain the colourful gradient status as a confirmation.

Technical specifications.

Model number: FT132/FT140

Power input: 120VAC to 240VAC, 50Hz to 60Hz.

Rated output: 5A per channel for resistive load. Total current: Max 10A.

Max standby power: 0.8W.

Operating temperature: 0°C to 40°C/32°F to 104°F.

Relative humidity: 20% to 80%.

Operating distance: Up to 492 feet/150 meters outdoors.