Touch Panel Switch

310 Series

V1.1

- **Declaration of Conformity**

  Hereby, we declare that the device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

- **WEEE Directive Compliance**

  The device marked with this symbol should not be disposed of with household waste. It is the user's responsibility to deliver the used appliance to a designated recycling point.
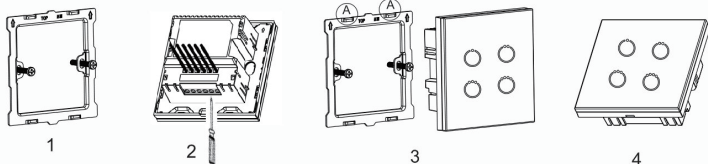
- **Z-Wave Compliance**

  The switch is a fully compatible Z-Wave Plus device.

Important Safety Instruction

⚠ Read the instructions before starting up the unit!

⚠ This product is not a toy. Keep out of reach of children and animals!

⚠ Do not expose the device to moisture, water or other liquids. Do not place liquids near or on the device!

Installation

Step 1: Remove the steel frame from the device, and secure it onto the junction box with two screws.

Step 2: Insert all wires into the right terminals by following the wiring diagrams as below, and tighten screws.

Step 3: Attach the wired device on "A" points of the steel frame as shown first, and then push the whole device into junction box.

Step 4: Confirm the device is well mounted, power on and it is ready to operate.

Wiring (standard strip length: 6-8mm)

MH-S311, MH-S311H

MH-S312, MH-S312H

MH-S314
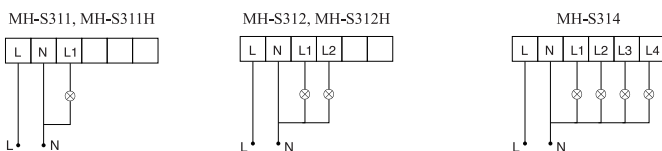
Z-Wave Operation

INCLUDING the device into Z-Wave network:

Introduction

Touch Panel Switch is a wall panel built-in with Z-Wave Plus module. With its stylish design and stable performance, the panel can be used to control house-hold electrical appliances like lamp, motor, coffee machine, TV set etc. It supports basic command class, multi channel command class and multi channel association command class, also works as a repeater in a Z-Wave network. The device can be included and operated in any Z-Wave network with other Z-Wave certified devices from any other manufacturers.

Specification

- **Power Supply:** AC85~260V, 50/60Hz
- **Z-Wave Frequency:** Operating frequency range, defined by the regulatory bodies (for Z-wave in Europe: 868.0 - 868.6 MHz, 869.7 - 870.0 MHz)
- **Maximum Transmitting Power:** +3dBm
- **Active Element:** Relay switch μ
- **Over Current Protection:** MH-S311 required external 10A circuit breaker, MH-S312 required external 15A circuit breaker, MH-S314 required external 20A circuit breaker, MH-S311H required external 20A circuit breaker, MH-S312H required external 40A circuit breaker

Item	Models	Max Load(Resistive)	Max Load(Capacitive/Inductive)
310 series	MH-S311	1*5A	1*2A
	MH-S312	2*5A	2*2A
	MH-S314	4*5A	4*2A
	MH-S311H	1*10A	1*5A
	MH-S312H	2*10A	2*5A

⚠ Do not attempt to disassemble, repair or modify the device yourself!

⚠ This product is for indoor use only. Do not use outdoors!

⚠ **CAUTIONS!**
Flush-mount only into a UL/ETL/CE certified plastic junction box. The minimum size should be 86*86*60mm, minimum Volume is 443cm³. Use Copper Conductors Only.

⚠ **CAUTIONS!**
Risk of Electric Shock - More than one disconnect switch may be required to de-energize the equipment before servicing.

Installation

⚠ **IMPORTANT:**
A qualified electrician with the understanding of wiring diagrams and knowledge of electrical safety should complete the installation inside the main circuit box (normally outside your house).
Read all instructions and documentation and save for future reference.

Preparing

⚠ **CAUTIONS!**
Cut off power supply at circuit breaker or fuse before installation to avoid fire, shock or death!

1. Set controller into INCLUSION mode. Follow instructions provided by controller manufacturer.

2. Press and hold any key on the panel for 8 seconds or 3 clicks in quick succession.

Note: If inclusion is successful, all INDICATION LEDs on the panel will flash 4 times.

EXCLUDING the device from Z-Wave network:

1. Set controller into EXCLUSION mode. Follow instructions provided by controller manufacturer.

2. Press and hold any key on the panel for 8 seconds or 3 clicks in quick succession.

Note: If the exclusion is successful, all INDICATION LEDs on the panel will flash 4 times. The exclusion will delete all association data.

Turning on/off the device:

The device can be controlled by:

- Pressing any key.
- Sending commands through controller or gateway. (the command classes which support this function are Basic Command Class, Binary Command Class, Switch All Command Class, and Multi Channel Command Class.)

Multi Channel Control:

The switch can be controlled by command "MULTI_CHANNEL_ENCAP" in the command class"COMMAND_CLASS_MULTI_CHANNEL".

Device Type	GENERIC_TYPE_SWITCH_BINARY
Supported command class	COMMAND_CLASS_ZWAVEPLUS_INFO COMMAND_CLASS_ASSOCIATION COMMAND_CLASS_ASSOCIATION_GRP_INFO COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION COMMAND_CLASS_SWITCH_BINARY

Correspondence between key and endpoint number:

1. First key correspond to endpoint 1.

2. Second key correspond to endpoint 2.

3. Third key correspond to endpoint 3.

4. Fourth key correspond to endpoint 4.

Multi endpoint command format:

Byte	Name
1	COMMAND_CLASS_MULTI_CHANNEL
2	MULTI_CHANNEL_CMD_ENCAP
3	Source EndPoint
4	Destination EndPoint
5	COMMAND_CLASS_SWITCH_BASIC or COMMAND_CLASS_SWITCH_BINARY
6	BASIC_SET/BASIC_GET or BINARY_SET/BINARY_GET
7	Value (0xFF -- ON 0x0 -- OFF)

Association:

The device supports 5 association groups (AG):

AG Identifier	Max Node ID	Command Class	Trigger Situation
0x01	1	COMMAND_CLASS_BASIC, BASIC_REPORT	Short press any key for one time
		COMMAND_CLASS_DEVICE_RESET_LOCALLY, DEVICE_RESET_LOCALLY_NOTIFICATION	Touch any key 20 times in succession
		COMMAND_CLASS_CENTRAL_SCENE, CENTRAL_SCENE_NOTIFICATION	Short press any key for one time
0x02	5	COMMAND_CLASS_BASIC,BASIC_SET	Short press first button
0x05	5	COMMAND_CLASS_BASIC,BASIC_SET	Short press second button
0x08	5	COMMAND_CLASS_BASIC,BASIC_SET	Short press third button
0x0B	5	COMMAND_CLASS_BASIC,BASIC_SET	Short press fourth button

Multi-panels (up to 5) controlling one load:

For example: Five MH-S311s and their Node IDs are: A-012, B-013, C-014, D-015, E-016

1. Wire the load to any of the panel.

2. Put all the other 4 panels NIDs: 013,014,015,016 into A's AG 0X02

3. Put all the other 4 panels NIDs: 012,014,015,016 into B's AG 0X02

4. Put all the other 4 panels NIDs: 012,013,015,016 into C's AG 0X02

5. Put all the other 4 panels NIDs: 012,013,014,016 into D's AG 0X02

6. Put all the other 4 panels NIDs: 012,013,014,015 into E's AG 0X02

Multi Channel Association:

AG Identifier (Root)	Max Node	Mapped Endpoint Group	Command Class	Trigger Situation
0x01	1(EPs Max node is 0)	all endpoints	COMMAND_CLASS_BASIC, BASIC_REPORT	Short press any key for one time
		all endpoints	COMMAND_CLASS_DEVICE_RESET_LOCALLY, DEVICE_RESET_LOCALLY_NOTIFICATION	Touch any key 20 times in succession
		all endpoints	COMMAND_CLASS_CENTRAL_SCENE, CENTRAL_SCENE_NOTIFICATION	Short press any key for one time
0x02	5	EP1 group 2	COMMAND_CLASS_BASIC,BASIC_SET	Short press first button
0x05	5	EP2 group 2	COMMAND_CLASS_BASIC,BASIC_SET	Short press second button
0x08	5	EP3 group 2	COMMAND_CLASS_BASIC,BASIC_SET	Short press third button
0x0B	5	EP4 group 2	COMMAND_CLASS_BASIC,BASIC_SET	Short press fourth button

Root device:

1.The gateway controls the root device to open, all end points will open

2.The gateway controls the root device to close, all end points will close

3.When End Point 1 opened, it will report opening status to root device.

4.When End Point 1 closed, it will report closing status to root device.

Scene Function:

1. Scene Response Device

As a Scene Response device, it supports "Scene Activation CC" and "Scene Actuator Conf CC" ,which make the device can be added into any scene , and supports 255 Scene ID. In parameter item 0x10, users can configure which external switch button will respond the scene CC.

2. Scene Activate Device

As a Scene Activate device, when pressing the switch button, it will send "Scene Activation" to Association Group 1 (normally associated to the gateway) to activate corresponding scenes, and the scene ID is set by configuration parameter. This function is disabled by default, to activate it, please refer to the configuration parameter table item 0x11-0x1C.

3. Central Scene Activate Device

As a Central Scene Activate device, it supports "Central Scene CC". When pressing the switch button, it will send "Central Scene Notification" to Association Group 1 (normally associated to gateway).
This function is always being activated and cannot be disabled.

Parameter Setting:

Variable(Dec)	Function	Data Size	Description	Default(Hex)	Desired Value(Hex)
2	Switch state saved or not when power failure	1 byte hex	0x00 not saved, switch will be off when powered again 0x01 saved, switch will keep the same state when powered again	0x01	0x0-0x1
3	All On/All Off	1 byte hex	0x00 forbid ALL ON, forbid ALL OFF 0x01 forbid ALL ON, allow ALL OFF 0x02 allow ALL ON, forbid ALL OFF 0xFF allow ALL ON, allow ALL OFF	0xFF	0x00-0x02; 0xFF
4	LED Backlit brightness level	1 byte hex	0x00 LED disabled 0x01~0x0A Min level-Max level >0x0A same level as 0x0A	0x0A	0x00-0x0A
5	Key Mode	1 byte hex	0x00 single click to switch on/off status 0x01 Key default as off state. When it is turned on, then it will be turned off automatically after a time period , which can be set in item 0x06 0x02 Key default as on state. When it is turned off, then it will be turned on automatically after a time period , which can be set in item 0x06 0x03 hold >3s then key is on, and off once released 0X04 single click to switch on/off status + hold >3s then key is on,and off once released 0X05 Momentary Switch Mode2: hold the key is on, off once released. 0X06 If key is off, hold>3s then key is ON, and it remains ON after release. If key is on, hold>3s then key is OFF, and it remains OFF after release.	0x00	0x00-0x04
6	On/off state duration	2 byte hex	0x00 Infinite 0x01-0xFFFFunit "sec"	0x00	0x00-0xFFFF
8	Basic CC integration setting	1 byte hex	0x00"Basic Set" received, key 1 responds;"Basic Get" received, key 1 sends "Basic Report"; key 1 will not send unsolicited "Basic Report"（No Endpoint）to Life Line Association 0x01"Basic Set" received, key 1 responds; "Basic Get" received, key 1 sends "Basic Report"; key 1 will send unsolicited "Basic Report"（No Endpoint）to Life Line Association 0x02"Basic Set" received, all keys respond; "Basic Get" received, not reply "Basic Report"; All keys will not send unsolicited "Basic Report"（No Endpoint）to Life Line Association 0x03"Basic Set" received, all keys respond; "Basic Get" received, key 1 sends "Basic Report"; All keys will not send unsolicited"Basic Report"（No Endpoint）to Life Line Association	0x00	0x00-0x03

Variable(Dec)	Function	Data Size	Description	Default(Hex)	Desired Value(Hex)
10	Key 1 Mode	1 byte hex	**0x00** single click to switch on/off status **0x01** Key default as off state.When it is turned on, then it will be turned off automatically after a time period , which can be set in item 0x06 **0x02** Key default as on state.When it is turned off, then it will be turned on automatically after a time period , which can be set in item 0x06 **0x03** hold >3s then key is on, and off once released **0X04** single click to switch on/off status + hold >3s then key is on, and off once released **0X05** Momentary Switch Mode 2: hold the key is on, off once released. **0X06** If key is off, hold>3s then key is ON, and it remains ON after release. If key is on, hold>3s then key is OFF, and it remains OFF after release.	0x00	0x00-0x06
11	Key 2 Mode	1 byte hex	**0x00** single click to switch on/off status **0x01** Key default as off state.When it is turned on, then it will be turned off automatically after a time period , which can be set in item 0x06 **0x02** Key default as on state.When it is turned off, then it will be turned on automatically after a time period , which can be set in item 0x06 **0x03** hold >3s then key is on, and off once released **0X04** single click to switch on/off status + hold >3s then key is on, and off once released **0X05** Momentary Switch Mode 2: hold the key is on, off once released. **0X06** If key is off, hold>3s then key is ON, and it remains ON after release. If key is on, hold>3s then key is OFF, and it remains OFF after release.	0x00	0x00-0x06
12	Key 3 Mode	1 byte hex	**0x00** single click to switch on/off status **0x01** Key default as off state.When it is turned on, then it will be turned off automatically after a time period , which can be set in item 0x06 **0x02** Key default as on state. When it is turned off, then it will be turned on automatically after a time period , which can be set in item 0x06 **0x03** hold >3s then key is on, and off once released **0X04** single click to switch on/off status + hold >3s then key is on, and off once released **0X05** Momentary Switch Mode 2: hold the key is on, off once released. **0X06** If key is off, hold>3s then key is ON, and it remains ON after release. If key is on, hold>3s then key is OFF, and it remains OFF after release.	0x00	0x00-0x06
13	Key 4 Mode	1 byte hex	**0x00** single click to switch on/off status **0x01** Key default as off state.When it is turned on, then it will be turned off automatically after a time period , which can be set in item 0x06 **0x02** Key default as on state. When it is turned off, then it will be turned on automatically after a time period , which can be set in item 0x06 **0x03** hold >3s then key is on, and off once released **0X04** single click to switch on/off status + hold >3s then key is on, and off once released **0X05** Momentary Switch Mode 2: hold the key is on, off once released. **0X06** If key is off, hold>3s then key is ON, and it remains ON after release. If key is on, hold>3s then key is OFF, and it remains OFF after release.	0x00	0x00-0x06
14	Disable Local Control	1 byte hex	**0x00**: All keys are valid for local control **0x0F**: All keys are invalid for local control	0x00	0x00,0x0F
15	Disable Remote Control	1 byte hex	**0x00**: All keys are valid for remote(gateway) control **0x0F**: All keys are invalid for remote(gateway) control	0x00	0x00,0x0F
16	Scene respond	1 byte hex	**0x00**: Scene respond disabled **0x01**:Key1 respond scene;Key2Key3 key4 not respond scene **0x02**:Key2 respond scene; Key1 Key3 key4 not respond scene **0x03**:Key1 and Key2respond scene; Key3 key4not respond scene **0x04**:Key3 respond scene; Key1 Key2 key4 not respond scene **0x05**:Key1 and Key3 respond scene; Key2key4not respond scene **0x06**:Key2and Key3 respond scene; Key1key4not respond scene **0x07**:Key1, Key2 and Key3 respond scene, Key4 not respond scene **0x08**:Key4 respond scene; Key1 Key2 Key3 not respond scene **0x09**:Key1 Key4 respond scene; Key2 Key3 not respond scene **0x0A**:Key2 Key4 respond scene;Key1 Key3 not respond scene **0x0B**:Key1 Key2 Key4 respond scene; Key3 not respond scene **0x0C**:Key3 Key4 respond scene; Key1 Key2 not respond scene **0x0D**:Key1 Key3 Key4 respond scene; Key2 not respond scene **0x0E**:Key2 Key3 Key4 respond scene; Key1not respond scene **0x0F**:Key1 Key2 Key3 Key4 respond scene;	0x00	0x00,0x0F
17	Key1 Scene Activate Mode Setting	1 byte hex	**0x00**Scene activate function disabled **0x01**One click key1 always activate scene ID1 no matter what the status of key1 is. **0x02**One click key1,only activate scene ID1 when key1's relay output is open **0x03**One click key1,only activate scene ID1 when key1's relay output is close	0x00	0x00-0x03
18	Key1 Activate Scene ID	1 byte hex	**0x00**Scene ID is invalid and will not send scene activate command. **0x01~0xFF** Scene ID	0x00	0x00-0xFF
19	Key1 Activate Scene Duration	1 byte hex	**0x00**Instantly **0x01~0x7F**:Dimming durations from 1 second (0x01) to 127 seconds(0x7F) in1-second resolution **0x80~0xFE**: Specify dimming durations from 1 minute (0x80) to 127 minutes (0xFE) in 1-minute resolution.	0x00	0x00-0xFF
20	Key2 Scene Activate Mode Setting	1 byte hex	**0x00**Scene activate function disabled **0x01**One click key2 always activate scene ID1 no matter what the status of key2 is. **0x02**One click key2,only activate scene ID1 when key2's relay output is open **0x03**One click key2,only activate scene ID1 when key2's relay output is close	0x00	0x00-0x03
21	Key2 Activate Scene ID	1 byte hex	**0x00**Scene ID is invalid and will not send scene activate command. **0x01~0xFF** Scene ID	0x00	0x00-0xFF
22	Key2 Activate Scene Duration	1 byte hex	**0x00** Instantly **0x01~0x7F**: Dimming durations from 1 second (0x01) to 127 seconds(0x7F) in1-second resolution **0x80~0xFE**: Specify dimming durations from 1 minute (0x80) to 127 minutes (0xFE) in 1-minute resolution.	0x00	0x00-0xFF
23	Key3 Scene Activate Mode Setting	1 byte hex	**0x00**Scene activate function disabled **0x01**One click key3 always activate scene ID1 no matter what the status of key3 is. **0x02**One click key3,only activate scene ID1 when key3's relay output is open **0x03**One click key3,only activate scene ID1 when key3's relay output is close	0x00	0x00-0x03
24	Key3 Activate Scene ID	1 byte hex	**0x00** Scene ID is invalid and will not send scene activate command. **0x01~0xFF** Scene ID	0x00	0x00-0xFF
25	Key3 Activate Scene Duration	1 byte hex	**0x00** Instantly **0x01~0x7F**:Dimming durations from 1 second (0x01) to 127 seconds(0x7F) in1-second resolution **0x80~0xFE**: Specify dimming durations from 1 minute (0x80) to 127 minutes (0xFE) in 1-minute resolution.	0x00	0x00-0xFF
26	Key4 Scene Activate Mode Setting	1	**0x00** Scene activate function disabled **0x01** One click key4 always activate scene ID1 no matter what the status of key4 is. **0x02** One click key4,only activate scene ID1 when key4's relay output is open **0x03** One click key4,only activate scene ID1 when key4's relay output is close	0x00	0x00-0x03
27	Key4 Activate Scene ID	1	**0x00** Scene ID is invalid and will not send scene activate command. **0x01~0xFF** Scene ID	0x00	0x00-0xFF
28	Key4 Activate Scene Duration	1	**0x00** Instantly **0x01~0x7F**:Dimming durations from 1 second (0x01) to 127 seconds(0x7F) in1-second resolution **0x80~0xFE**: Specify dimming durations from 1 minute (0x80) to 127 minutes (0xFE) in 1-minute resolution.	0x00	0x00-0xFF
32	Scene respond ID 1-50	1 byte hex	Valid only when the default is **0X00** for Variable 16 **0x00**: Scene respond disabled **0x01**:Key1 respond scene; Key2 Key3 Key4 not respond scene	0x00	
33	Scene respond ID 51-100	1 byte hex	**0x02**:Key2 respond scene; Key1 Key3 Key4 not respond scene **0x03**:Key1 and Key2 respond scene; Key3 Key4 not respond scene **0x04**:Key3 respond scene; Key1 Key2 Key4 not respond scene **0x05**:Key1 and Key3 respond scene; Key2 Key4 not respond scene	0x00	0x00-0xFF
34	Scene respond ID 101-150	1 byte hex	**0x06**:Key2 and Key3 respond scene; Key1 Key4 not respond scene **0x07**:Key1, Key2 and Key3 respond scene; Key4 not respond scene **0x08**:Key4 respond scene; Key1 Key2 Key3 not respond scene	0x00	
35	Scene respond ID 151-200	1 byte hex	**0x09**:Key1 Key4 respond scene; Key2 Key3 not respond scene **0x0A**:Key2 Key4 respond scene; Key1 Key3 not respond scene **0x0B**:Key1 Key2 Key4 respond scene; Key3 not respond scene	0x00	
36	Scene respond ID 201-250	1 byte hex	**0x0C**:Key3 Key4 respond scene; Key1 Key2 not respond scene **0x0D**:Key1 Key3 Key4 respond scene; Key2 not respond scene **0x0E**:Key2 Key3 Key4 respond scene; Key1 not respond scene **0x0F**:Key1Key2 Key3 Key4 respond scene;	0x00	
255	Factory setting	1 byte hex	**0x55** Restore factory setting		Write only

Restoring Factory Settings

Press 20 times of any button or exclude the device from Z-Wave network, the factory setting will be restored.

1-Year Limited Warranty

We warrant this product to be free from defects in material and workmanship under normal and proper use for one year from purchase date of the original purchaser. We will, at its option, either repair or replace any part of its products that prove defective by reason of improper workmanship or materials. THIS LIMITED WARRANTY DOES NOT COVER ANY DAMAGE TO THIS PRODUCT THAT RESULTS FROM IMPROPER INSTALLATION, ACCIDENT, ABUSE, MISUSE, NATURAL DISASTER, INSUFFICIENT OR EXCESSIVE ELECTRICAL SUPPLY, ABNORMAL MECHANICAL OR ENVIRONMENTAL CONDITIONS, OR ANY UNAUTHORIZED DISASSEMBLY, REPAIR OR MODIFICATION. This limited warranty shall not apply if: (i) the product was not used in accordance with any accompanying instructions, or (ii) the product was not used for its intended function. This limited warranty also does not apply to any product on which the original identification information has been altered, obliterated or removed, that has not been handled or packaged correctly, that has been sold as second-hand or that has been resold contrary to Country and other applicable export regulations.