

SAMOTECH SM309-S

SAMOTECH Zigbee Retractable Dimmer Module

Model: SM309-S

1. INTRODUCTION

The SAMOTECH SM309-S is a compact Zigbee retractable dimmer module designed for smart home lighting control. It allows you to wirelessly control and dim traditional incandescent, halogen, and compatible LED lights when integrated with a Zigbee hub such as Philips Hue, Home Assistant, HomeKit (via Home Assistant or Homebridge), SmartThings, or Hubitat. This module is designed for installation behind existing wall switches or within junction boxes, offering a seamless upgrade to smart lighting without replacing your current light switches.

2. SAFETY INFORMATION

WARNING: Risk of electric shock. Installation should only be performed by a qualified electrician or trained personnel. Disconnect power at the circuit breaker before installation, maintenance, or removal of the device.

- Ensure the power supply is completely disconnected before wiring.
- Do not exceed the maximum load ratings specified in the [Specifications](#) section.
- This device is for indoor use only.
- Keep out of reach of children.
- Do not attempt to repair or modify the device. Refer all servicing to qualified personnel.

3. PACKAGE CONTENTS

- SAMOTECH SM309-S Zigbee Dimmer Module (x1)
- User Manual (this document)

4. PRODUCT OVERVIEW

The SM309-S is a compact module designed to fit into standard electrical boxes. It features screw terminals for secure wiring connections and a reset button for pairing and factory reset.



Figure 4.1: Front view of the SAMOTECH SM309-S Dimmer Module, showing the Reset button, Min. Set adjustment, and terminal labels (N, N, O, L, L, SW).

Component Identification:

- **Reset Button:** Used for pairing the device with a Zigbee hub or performing a factory reset.
- **Min. Set Adjustment:** A small potentiometer to adjust the minimum dimming level, preventing flickering at low light settings for certain bulb types.
- **Terminals:**
 - **N (Neutral):** Connects to the neutral wire.
 - **L (Live):** Connects to the live (phase) wire.
 - **SW (Switch):** Connects to the wire from your physical wall switch.
 - **O (Output):** Connects to the load (light fixture).

5. SETUP AND INSTALLATION

Before proceeding, ensure you have read and understood the [Safety Information](#). It is highly recommended that installation be performed by a qualified electrician.

5.1 Wiring Diagram (No Neutral Required for Basic Operation)

The SM309-S is designed to operate without a neutral wire for basic dimming functionality, making it suitable for installations where a neutral wire is not present in the switch box. However, connecting a neutral wire (if available) can improve stability and enable router functionality within your Zigbee mesh network.

Standard Wiring (No Neutral):

- Connect the Live (L) wire from your mains supply to the 'L' terminal on the module.
- Connect the wire going to your light fixture (load) to the 'O' (Output) terminal on the module.
- Connect one terminal of your physical wall switch to the 'L' terminal on the module.
- Connect the other terminal of your physical wall switch to the 'SW' (Switch) terminal on the module.

Wiring with Neutral (Recommended for Stability and Router Functionality):

- Connect the Live (L) wire from your mains supply to the 'L' terminal on the module.
- Connect the Neutral (N) wire from your mains supply to one of the 'N' terminals on the module.
- Connect the wire going to your light fixture (load) to the 'O' (Output) terminal on the module.
- Connect one terminal of your physical wall switch to the 'L' terminal on the module.
- Connect the other terminal of your physical wall switch to the 'SW' (Switch) terminal on the module.

After wiring, carefully place the module into the electrical box, ensuring no wires are pinched and there is adequate ventilation.

5.2 Supported Load Types

The SM309-S dimmer module supports various lighting loads. Refer to the table below for detailed compatibility and power ratings. For capacitive loads like LEDs, a bypass capacitor (not included) may be required to prevent flickering or ensure stable operation at very low loads, especially in no-neutral installations.



Figure 5.1: Supported load types and corresponding power ranges for 100-240V~ systems. Includes Resistive, Capacitive (Fluorescent, LED), and Inductive loads.

5.3 Pairing with a Zigbee Hub

Once the module is wired and power is restored, it will enter pairing mode (indicated by a blinking LED, if present, or by its network status in your hub's app). Follow these steps to pair the device:

1. Ensure your Zigbee hub (e.g., Philips Hue Bridge, Home Assistant with Zigbee dongle, SmartThings Hub) is powered on and in pairing mode. Refer to your hub's specific instructions for enabling pairing mode.
2. On the SM309-S module, press and hold the **Reset** button for approximately 5-10 seconds until the device indicates it's in pairing mode (e.g., LED blinks rapidly). Alternatively, some hubs may discover the device automatically upon power-up if it's not already paired.
3. Your Zigbee hub should detect the new device. Follow the on-screen prompts in your hub's application to complete the pairing process and assign the device to a room or group.
4. If pairing fails, try moving the module closer to the hub or another Zigbee router device, then repeat the pairing process. You may need to power cycle the module or perform a factory reset before retrying.

Factory Reset: To perform a factory reset, press and hold the **Reset** button for more than 10 seconds until the device's indicator light confirms the reset (e.g., solid light then off). This will unpair the device from any network and restore it to its default settings.

6. OPERATING THE DIMMER MODULE

After successful pairing, you can control the connected lights using your Zigbee hub's application or through voice commands if integrated with a voice assistant.

6.1 App Control

Use your Zigbee hub's dedicated application (e.g., Philips Hue app, Home Assistant app, SmartThings app) to turn the lights on/off and adjust their brightness. The module will appear as a dimmable light device within your smart home system.



Figure 6.1: Example of SM309-S device information and controls within Home Assistant, showing active power, voltage, and dimming options.



Figure 6.2: Example of the SM309-S appearing as a controllable light ("Hue white light 1") within the Philips Hue application.

6.2 Physical Wall Switch Control

If connected to a physical wall switch, you can still control the lights manually. The behavior of the physical switch (e.g., toggle, momentary push-button) can often be configured within your Zigbee hub's settings for the device.

- **Toggle Switch:** A quick flip of the switch will turn the lights on/off.
- **Momentary Push-Button:** A short press typically toggles on/off. A long press may initiate dimming up or down, depending on configuration.

6.3 Minimum Dimming Level Adjustment (Min. Set)

The "Min. Set" adjustment allows you to set the lowest dimming level for the connected lights. This is crucial for preventing flickering or ensuring stable operation with certain LED bulbs at very low brightness. Use a small screwdriver to carefully turn the potentiometer:

- **Clockwise:** Increases the minimum brightness level.
- **Counter-clockwise:** Decreases the minimum brightness level.

Adjust the "Min. Set" until the lights operate smoothly without flickering at their lowest desired brightness.

7. MAINTENANCE

The SAMOTECH SM309-S dimmer module requires minimal maintenance. Ensure the device is kept dry and free from dust. Do not use liquid cleaners or abrasive materials. There are no user-serviceable parts inside the module.

- Periodically check wiring connections to ensure they remain secure.
- If cleaning is necessary, disconnect power at the circuit breaker and wipe the exterior of the module with a dry, soft cloth.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not pair with Zigbee hub.	<ul style="list-style-type: none">◦ Not in pairing mode.◦ Too far from hub/router.◦ Already paired to another network.◦ Interference.	<ul style="list-style-type: none">◦ Ensure hub is in pairing mode.◦ Perform a factory reset on the module (hold Reset button >10s).◦ Move module closer to the hub or a strong Zigbee router.◦ Check for Wi-Fi interference (Zigbee uses 2.4GHz).

Problem	Possible Cause	Solution
Lights flicker or do not dim properly.	<ul style="list-style-type: none">◦ Incompatible bulb type.◦ Load too low for module.◦ Min. Set not adjusted.◦ No neutral wire (for some LED loads).	<ul style="list-style-type: none">◦ Ensure bulbs are dimmable and compatible with TRIAC dimmers.◦ Check load against Specifications. Consider adding more bulbs or a bypass capacitor for low loads.◦ Adjust the "Min. Set" potentiometer.◦ If possible, wire with a neutral connection.
Physical switch does not control lights.	<ul style="list-style-type: none">◦ Incorrect wiring.◦ Switch type not configured in hub.	<ul style="list-style-type: none">◦ Verify wiring according to Section 5.1.◦ Check your Zigbee hub's settings for the device to ensure the correct switch type (toggle/momentary) is selected.
Module becomes hot.	<ul style="list-style-type: none">◦ Overload.◦ Poor ventilation.	<ul style="list-style-type: none">◦ Immediately disconnect power. Check total wattage of connected lights against maximum load in Specifications.◦ Ensure adequate space and ventilation in the electrical box.

9. SPECIFICATIONS

Feature	Detail
Model Number	SM309-S
Brand	SAMOTECH
Input Voltage	100-240V~, 50/60Hz
Max. Load (Resistive)	250W (230V), 500W (110V)
Max. Load (LED)	200W (230V), 300W (110V)
Wireless Protocol	Zigbee 3.0
Operating Temperature	-25°C to +50°C
Dimensions (Package)	5.7 x 5.5 x 3.7 cm
Weight (Package)	50 grams
Switch Type	TRIAC Dimmer
Connector Type	Screw Terminal

Feature	Detail
Circuit Type	1-way
Mounting Type	Panel Mount (designed for in-wall boxes)
Contact Material	Metal

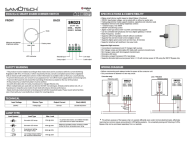
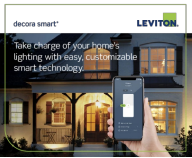

Note: The "Operating Mode: ON-OFF" and "Actuator Type: Hinge Lever" listed in some product specifications are generic and may not fully describe the dimmer's functionality. This device is specifically a dimming module.

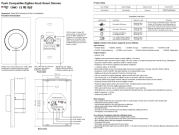

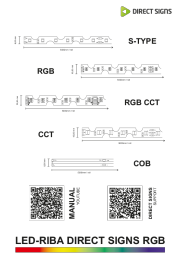
10. WARRANTY AND SUPPORT

SAMOTECH products are designed for reliability and performance. For warranty information and technical support, please refer to the official SAMOTECH website or contact your local distributor. Keep your proof of purchase for warranty claims.

- **Online Support:** Visit the SAMOTECH official website for FAQs, updated manuals, and support resources.
- **Contact Support:** If you require further assistance, please contact SAMOTECH customer service with your product model number and a detailed description of the issue.

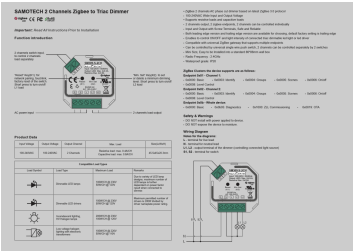
Related Documents - SM309-S

	<p>Samotech SM323(v2) Smart Zigbee Dimmer Switch Installation and Operation Guide</p> <p>Comprehensive guide for the Samotech SM323(v2) Smart Zigbee Dimmer Switch, covering specifications, wiring, pairing, brightness settings, and compatible light sources. Learn how to install and operate your Zigbee dimmer for optimal performance.</p>
	<p>Leviton Decora Smart Home Lighting Control Solutions - Wi-Fi, Z-Wave, Zigbee</p> <p>Explore Leviton's Decora Smart family of products for easy, customizable smart lighting control. Features Wi-Fi, Z-Wave Plus, and Zigbee 3.0 technologies, voice control compatibility, and companion devices for multi-location setups.</p>
	<p>LZWSM16-1 Zigbee Switch Module User Manual</p> <p>User manual for the LZWSM16-1 1Gang Zigbee Switch Module No Neutral, detailing technical specifications, installation, function introduction, wiring diagrams, FAQ, and app usage for smart home integration with Google Home and Amazon Alexa.</p>

	<p>Push Compatible ZigBee Knob Smart Dimmer - User Manual</p> <p>Comprehensive user manual for the Shenzhen Sunricher Technology Limited Push Compatible ZigBee Knob Smart Dimmer (SR-ZG2835RAC-S-US-A), detailing installation, operation, ZigBee integration, and advanced settings.</p>
	<p>Philips Hue Slim Recessed Light S User Manual and Installation Guide</p> <p>Comprehensive user manual and installation guide for the Philips Hue Slim Recessed Light S, covering setup, safety, specifications, and connectivity. Learn how to install and integrate your smart lighting.</p>
	<p>Direct Signs LED-RIBA RGB LED Strips: Technical Specifications and Installation Guide</p> <p>Comprehensive guide to Direct Signs LED-RIBA RGB LED strips, covering technical specifications, available types (S-TYPE, RGB, RGB CCT, CCT, COB), controller compatibility (Zigbee, WiFi Tuya), installation guidelines, and EU compliance.</p>

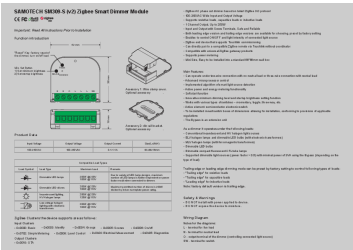
Documents - SAMOTECH – SM309-S

[pdf] User Manual Instructions



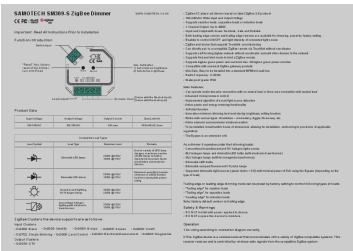
400200072701 SR ZG9101SAC HP2 instruction cdr Administrator 11 thg 2024 — Step 1 From your ZigBee Controller or hub interface choose to add lighting device and enter Pairing mode as instructed by the controller 2 Short press SAMOTECH Zigbee Dimmer SM309 S 2CH Manual samotech co uk ||| SAMOTECH 2 Channels Zigbee to Triac Dimmer Important: Read All Instructions Prior to Installation F ... network pairing, touchlink, factory reset of the switch. Short press to turn on/off L1 load S1 S2 **SM309-S**-2CH Input: 100-240V- 50/60Hz Output: LEDi Max. 2x0.4A, Resistive Max. 2x0.8A Reset Min.Set ... lang:en score:57 filesize: 1.08 M page_count: 2 document date: 2024-11-11

[pdf] User Manual Instructions Accessories



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[pdf] Instructions



70110019 SR ZG9040A S instruction cdr Administrator SAMOTECH SM309 ZigBee DimmerZigBee AC phase cut dimmer based on latest 3 protocol 100 240VAC Wide Input and Output Voltage Supports resistive loads capacitive or 9135ds3tGyLm media amazon images I 9135ds3tGyL ref dp product quick view ||| SAMOTECH **SM309-S** ZigBee Dimmer WWW.SAMOTECH.CO.UK Important: Read All Instructions Prior to Installation Function introduction Switch input Reset Key: factory reset of the dimmer, turn on/off load S1 COM Reset Min.Set OUT AC 100-240V L LN N Min. Set Button 1 Set minimum brightness 2 Set sta... lang:en score:31 filesize: 860.19 K page_count: 4 document date: 2021-11-10

