



Manuals.plus /

› Huacae /

› Huacae WiFi Smart Relay Switch Module (Model TYWB 4ch-RF) User Manual

Huacae TYWB 4ch-RF

Huacae WiFi Smart Relay Switch Module (Model TYWB 4ch-RF) User Manual

Comprehensive instructions for installation, setup, and operation.

1. INTRODUCTION

This user manual provides detailed instructions for the Huacae WiFi Smart Relay Switch Module, Model TYWB 4ch-RF. This 4-channel wireless relay controller is designed for smart home automation, allowing remote control of appliances and devices via the Smart Life or Tuya mobile applications. It supports various input voltages and offers multiple operating modes, including compatibility with voice assistants like Amazon Alexa and Google Home.

2. SAFETY INFORMATION

Please read all safety instructions carefully before installing or operating this device. Failure to follow these instructions may result in electric shock, fire, or other hazards.

- **Electrical Safety:** Installation should only be performed by qualified personnel. Ensure power is disconnected before any wiring.
- **Voltage Compatibility:** Verify that the input voltage (USB 5V or DC 7-32V) matches your power source.
- **Load Capacity:** Do not exceed the maximum cutover current of 10A or cutover voltage of 250V per relay. The total load should not exceed 16A.
- **Environment:** Operate the device within the specified working temperature (-40 to 70 degrees Celsius) and humidity (40% to 80% RH) ranges.
- **Dry Contact:** This is a clean dry contact relay. There is no voltage on the output terminals. An external power source is required for the load.
- **Certification:** Note that this product may not be UL, CSA, or ETL marked. Consider this for professional installations.

3. PACKAGE CONTENTS

Upon opening the package, please verify that all items are present and undamaged.

- 1 x Huacae 4-Channel WiFi Smart Relay Switch Module (Model TYWB 4ch-RF)
- 1 x Instruction Manual (this document)
- 1 x External Switch Pin Harness

4. PRODUCT OVERVIEW

Familiarize yourself with the components and layout of the Huacae WiFi Smart Relay Switch Module.



Figure 4.1: Front view of the Huacae WiFi Smart Relay Switch Module (Model TYWB 4ch-RF) and its external switch pin harness. The module features input terminals, relay output terminals, manual control buttons (K1-K4), a reset button, and a network indicator.

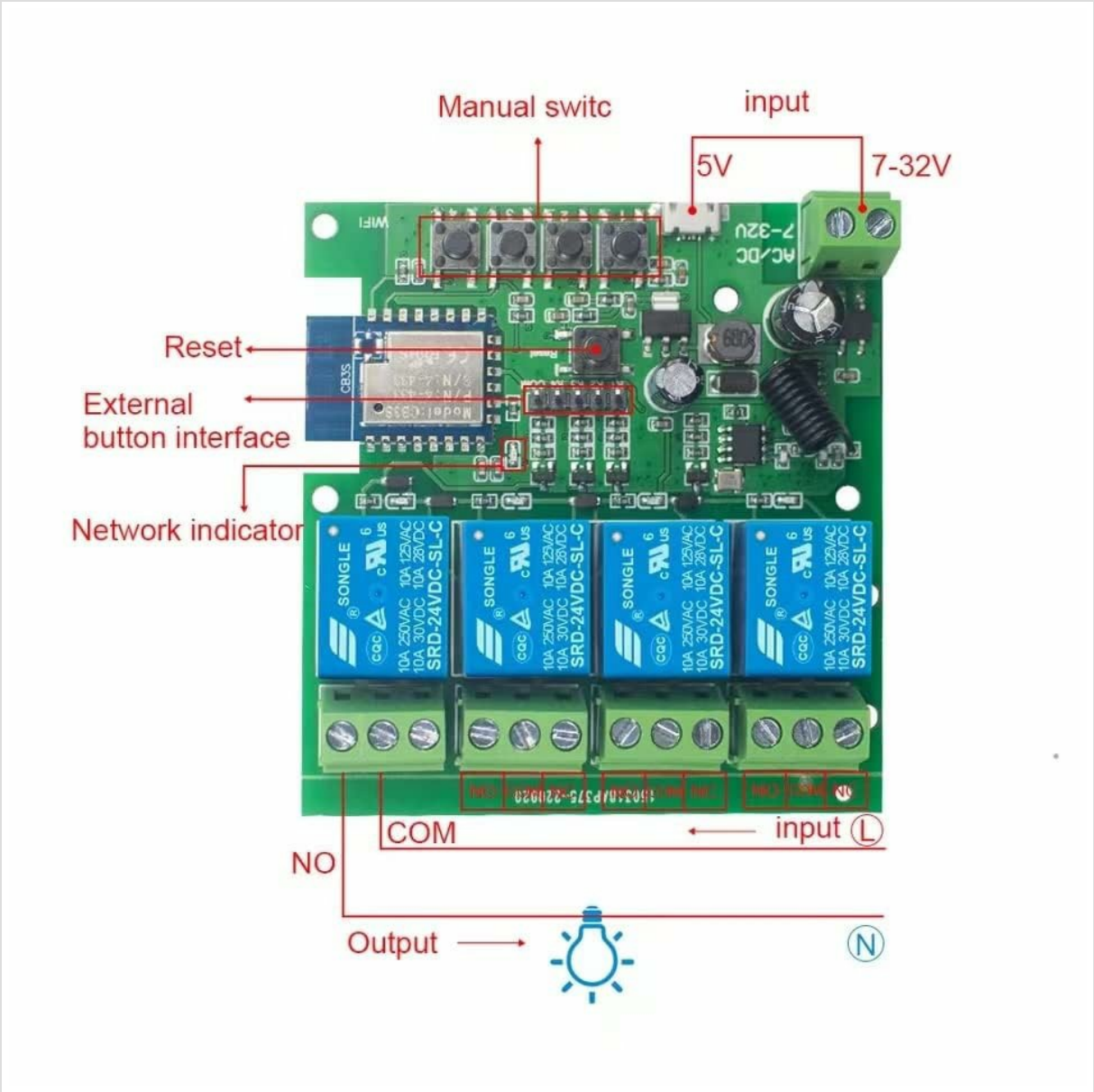


Figure 4.2: Internal view and basic wiring diagram. This image highlights the manual switches, reset button, external button interface, network indicator, 5V and 7-32V input options, and the COM/NO output terminals for each relay.

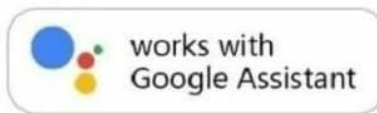


Figure 4.3: The module supports Tuya and SmartLife applications, operates on 2.4G WiFi, includes RF433MHz functionality, and is compatible with Amazon Alexa and Google Assistant for voice control.



Figure 4.4: A simplified wiring diagram illustrating the connections for input power (5V or 7-32V), external button interface, manual switches, reset button, network indicator, and the dry contact output terminals (NO, COM) for connecting a load, such as a light bulb.

5. SPECIFICATIONS

Model	TYWB 4ch-RF
Input Voltage	USB 5V or DC 7-32V
Power Consumption	<1W
Quiescent Current	80mA
Cutover Current (Max)	10A per channel, 16A total
Cutover Voltage (Max)	250V
Relay Model	10A Relay
Working Temperature	-40 to 70 degrees Celsius
Working Humidity	40% to 80% RH
Wireless Connectivity	2.4GHz WiFi (b/g/n), Bluetooth, RF433MHz
Dimensions	3.88 x 3.19 x 0.98 inches (9.85 x 8.1 x 2.49 cm)
Weight	4.16 ounces (118 grams)
Mounting Type	DIN Rail (with ABS Shell)

6. SETUP

6.1 Powering the Device

The module can be powered using either a USB 5V power source or a DC 7-32V power supply connected to the input terminals.

1. Connect your chosen power source to the appropriate input terminals (USB 5V port or DC 7-32V screw terminals).
2. Once powered, the device will enter pairing mode, indicated by the network indicator light.

6.2 App Installation and Network Configuration

The Huacaoe Smart Relay Module operates with the Smart Life or Tuya Smart application.

1. Download the "Smart Life" or "Tuya Smart" app from your mobile device's app store (available for iOS and Android).
2. Register or log in to your account.
3. Ensure your mobile device's Bluetooth is enabled and it is connected to a 2.4GHz WiFi network. The module only supports 2.4GHz WiFi.
4. Open the app. The device should be automatically discovered. If not, tap the "+" icon to add a device and select "Auto Scan" or manually add a "Switch (Wi-Fi)".
5. Follow the on-screen prompts to enter your 2.4GHz WiFi network password.
6. The device will connect to your WiFi network. Once connected, the network indicator light will change status (e.g., solid blue).

Note: For environments without a continuous WiFi network, you can initially configure the device with 2.4G WiFi. After configuration, if the router settings are changed to block WiFi connectivity for the relay, you may still be able to use Bluetooth remote control if supported by the app and device.

7. OPERATING MODES

The module supports three primary operating modes, configurable independently for each of the four channels via the Smart Life/Tuya app.

7.1 Self-locking Latching Mode

In this mode, each relay acts as a standard on/off switch. Pressing the button (physical or in-app) toggles the relay's state.

- Turn on/off connected devices independently.
- The relay remains in its last state (on or off) until manually changed again.

7.2 Momentary Inching Mode

This mode is suitable for applications requiring a brief pulse of power, such as garage door openers or momentary button presses.

- When activated (via app or physical button), the relay will turn on for a set duration and then automatically turn off.
- The duration can be adjusted in the Smart Life/Tuya app, typically from 2 seconds to 1 minute.

7.3 Interlock Mode

Interlock mode ensures that only one relay can be active at a time. When one relay is turned on, all other

relays in the interlock group are automatically turned off.

- Useful for applications where only one device should operate at a time, preventing conflicts.

8. ADVANCED FEATURES

8.1 Scheduling and Timers

Automate your devices by setting schedules and timers within the Smart Life/Tuya app.

- Create single, repeat, circle, or countdown timers to automatically turn devices on or off at specified times.
- Timers can operate even if the network connection is temporarily unavailable.

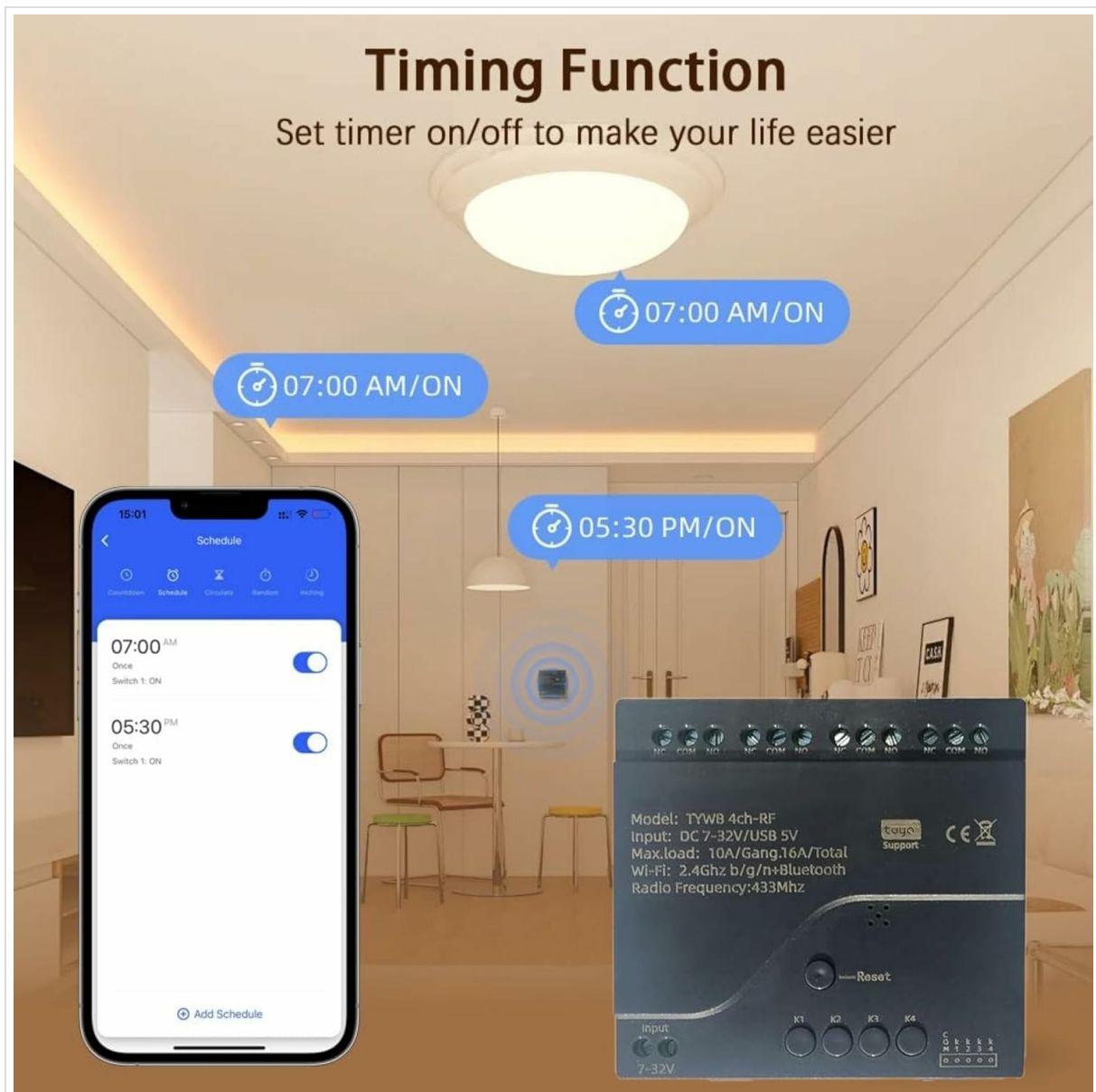


Figure 8.1: Example of setting up a timing function in the Smart Life app to automate device operation.

8.2 Voice Control

Integrate the module with Amazon Alexa or Google Home for convenient voice control of your connected devices.

- Link your Smart Life/Tuya account to your Alexa or Google Home app.

- Discover devices.
- Use voice commands such as:
 - "Alexa, turn on the light."
 - "Hey Google, turn off the bedroom light."



Figure 8.2: The module supports voice control through Amazon Alexa and Google Home, allowing hands-free operation.

8.3 Family Sharing

Share control of your smart devices with family members through the Smart Life/Tuya app.

- In the app, navigate to the device settings and select "Share Device" or "Family Management".
- Invite family members to control the module, enabling collaborative smart home management.



Figure 8.3: The family sharing function in the Smart Life app allows multiple users to control the smart relay module.

8.4 External Switch Pin Interface

The module includes an external switch pin interface, allowing for local control using momentary dry contacts. This is useful for integrating with microcontrollers or traditional wall switches.

- Connect external momentary switches to the provided harness and interface pins.
- These external inputs can trigger relays based on sensors or other digital inputs, providing a local override or additional control method.

9. INSTALLATION

The Huacaoe WiFi Smart Relay Switch Module is designed for easy installation, particularly with its DIN rail mountable ABS shell.

1. **Mounting:** Secure the module to a DIN rail within an appropriate electrical enclosure.
2. **Wiring Input:** Connect the power supply (USB 5V or DC 7-32V) to the designated input terminals.
3. **Wiring Output:** Connect the devices you wish to control to the relay output terminals (NO and COM). Remember that these are dry contacts, so the load requires its own power source. For example, to control a light, connect the light's power line through the NO and COM terminals of a relay.

4. **External Switches (Optional):** If using external switches, connect them to the external switch pin interface using the provided harness.
5. **Safety Check:** Double-check all wiring connections before restoring power. Ensure no bare wires are exposed.

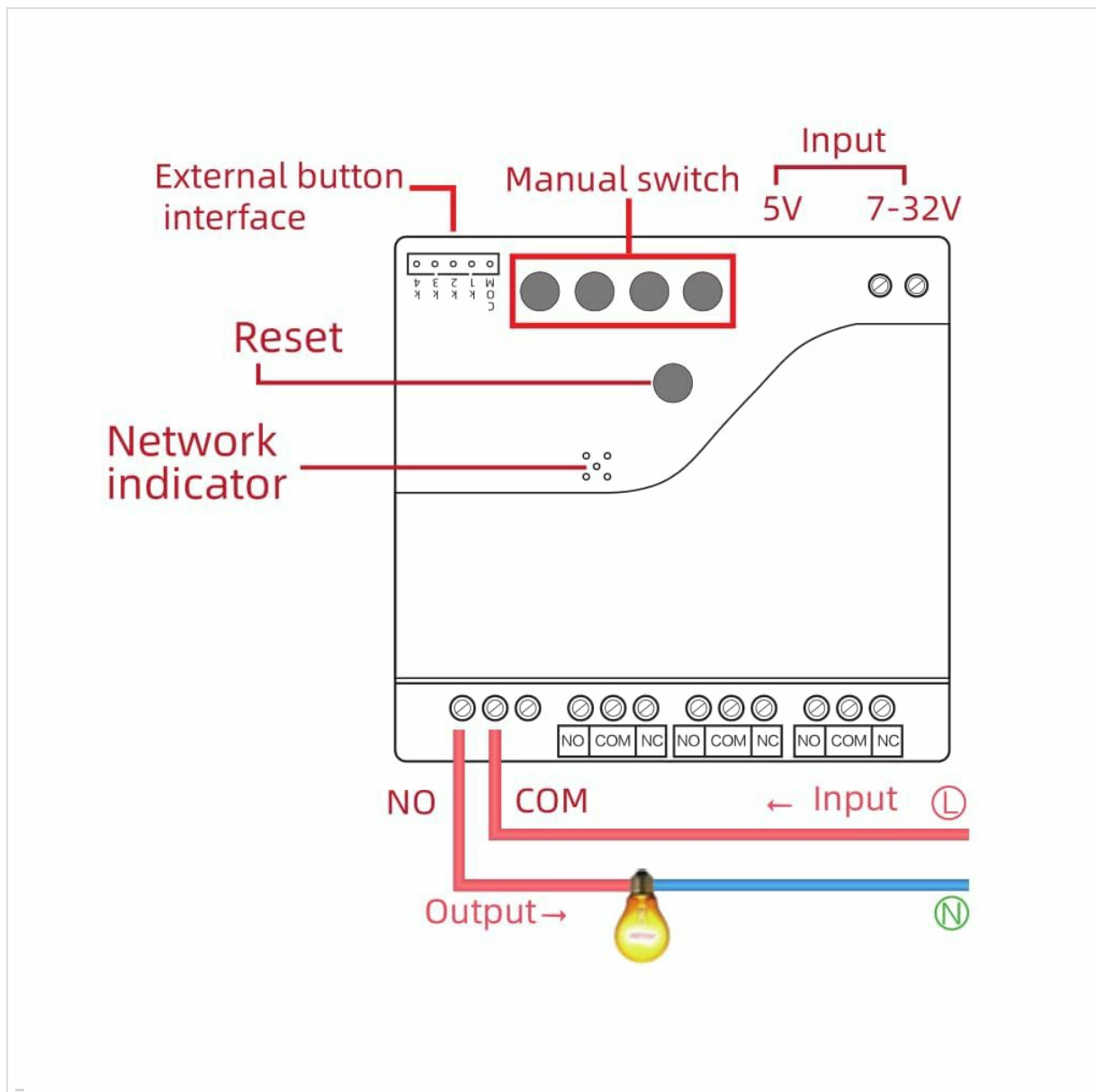


Figure 9.1: The module features an ABS shell designed for DIN rail mounting, facilitating neat and secure installation within electrical panels or enclosures.

Multiple use cases

Garage door switch, light switch, socket, water pump, etc



Figure 9.2: A detailed diagram showing the connection points for input power, external buttons, and the dry contact relay outputs (NO, COM) for controlling a load.

10. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device not powering on.	Incorrect voltage input or no power.	Verify power supply (USB 5V or DC 7-32V) is connected correctly and providing power. Check wiring.
Cannot connect to WiFi.	Incorrect WiFi band (not 2.4GHz), wrong password, or weak signal.	Ensure your router is broadcasting a 2.4GHz network. Re-enter WiFi password carefully. Move the module closer to the router. Reset the module and try pairing again.
Relay not responding to app/voice commands.	No network connection, app issue, or incorrect mode setting.	Check network indicator light. Ensure the app is connected to the internet. Verify the relay mode (self-locking, momentary, interlock) is set correctly in the app. Try manual control via physical buttons.
Connected device not turning on/off.	Incorrect wiring of the load, load power issue, or exceeding relay capacity.	Ensure the load has its own power supply and is correctly wired to the NO and COM terminals. Check the load's functionality independently. Verify the load's current and voltage do not exceed the relay's specifications.
Voice control not working.	Incorrect linking with Alexa/Google Home, device not discovered, or incorrect commands.	Ensure your Smart Life/Tuya account is correctly linked to your voice assistant app. Redo device discovery. Use precise voice commands as configured.

11. MAINTENANCE

The Huacae WiFi Smart Relay Switch Module requires minimal maintenance.

- **Cleaning:** Use a dry, soft cloth to clean the device. Do not use liquid cleaners or solvents.
- **Firmware Updates:** Periodically check the Smart Life/Tuya app for available firmware updates to ensure optimal performance and security.
- **Environmental Conditions:** Ensure the device remains within its specified operating temperature and humidity ranges to prolong its lifespan.

12. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided at the point of purchase or contact Huacae customer service.

Manufacturer: Huacae Technologies Ltd.