DieseRC 5301

DieseRC 433MHz Wireless Remote Control Relay Switch (Model 5301) User Manual

Brand: DieseRC | Model: 5301

1. INTRODUCTION

This manual provides comprehensive instructions for the DieseRC 433MHz Wireless Remote Control Relay Switch (Model 5301). It covers product features, specifications, installation, programming, operating modes, and general usage guidelines to ensure safe and efficient operation. Please read this manual thoroughly before using the device.

2. PRODUCT FEATURES

- **Reliable RF Performance:** The 433MHz wireless RF relay remote control switch offers stable and reliable performance with high reception sensitivity (> 97dBm). Its radio frequency signal can transmit through walls, floors, and doors, allowing control up to 50 meters in open areas. This enables remote operation of devices connected to the relay receiver.

- **Easy Programming:** Setup and reset are straightforward. The device supports four operating modes: Momentary, Toggle, Latched, and Delay. These modes can be easily programmed to suit specific application requirements. The default factory setting is Latched mode.

- **Durable Relay:** Equipped with a high-quality 10A relay, designed for over 100,000 operations, ensuring durability and stability. The wireless relay features three terminals: Normally Open (NO), Common (COM), and Normally Closed (NC), providing dry contact passive output.

- **Wide Voltage Compatibility:** It operates within a wide voltage range of 5V to 30V DC, compatible with 5V, 12V, 24V, and 30V power sources.

- **Flexible Control Options:** A single receiver can pair with up to 20 transmitters, allowing multiple users or remote controls for a single device. Conversely, one transmitter can control multiple receivers simultaneously. The system uses secure EV1527 learning code technology.

- **Replaceable Battery:** The remote control is designed for long-term use, featuring a replaceable battery (2x CR2016, included) accessible via a screw port on the back.

- **Broad Application:** This device is suitable for a wide range of applications, including homes, farms, factories, offices, laboratories, and supermarkets. It can remotely control various devices such as garage door openers, electric locks, electromagnetic doors, lamps, lighting systems, ventilation devices, water pumps, and DIY remote control switches.

3. PACKAGE CONTENTS

- 1 x DieseRC 433MHz Wireless Remote Control Relay Receiver Module

- 1 x Protective Case for Receiver Module
- 1 x Keychain Remote Control Transmitter (with 2x CR2016 batteries installed)

Figure 3.1: Receiver module, protective case, and remote control.

4. SPECIFICATIONS

Specification	Value
Brand	DieseRC
Model Number	5301
Product Dimensions (L x W x H)	4 x 4 x 2.5 cm
Item Weight	70 grams
Operating Voltage	DC 5V ~ 30V
Rated Current (Contact)	10 A
Power Rating	300 Watts
RF Frequency	433MHz
Contact Type	Normally Open (NO), Normally Closed (NC)
Material (Contact)	Copper
Battery (Transmitter)	2 x CR2016 (included)
Operating Mode	Automatic (Programmable: Momentary, Toggle, Latched, Delay)

5. SETUP & INSTALLATION

5.1. Wiring Diagram

The receiver module supports various wiring configurations for different applications. Ensure all connections are secure and correctly matched to the power source and load. Refer to the diagrams below for common setups.
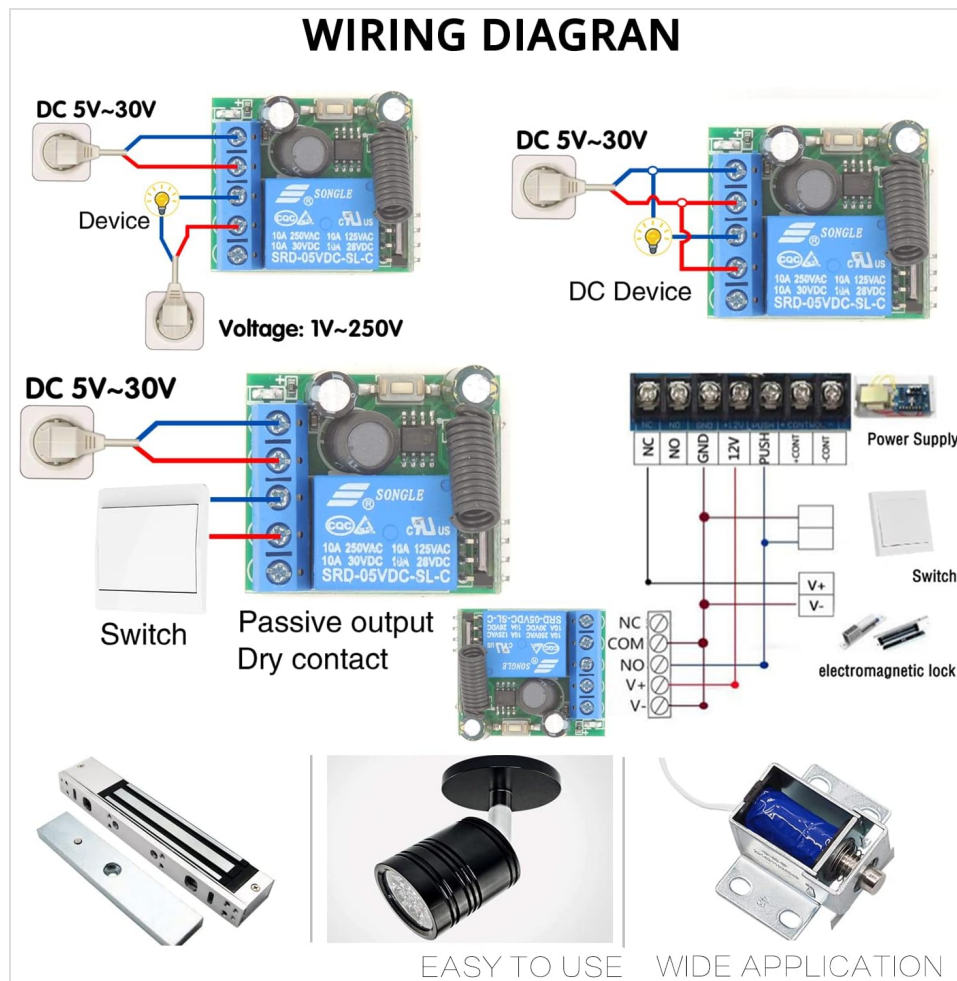

Figure 5.1: Wiring diagrams for different applications.

Key Terminals:

- **-V:** Negative power input for the receiver.

- **+V:** Positive power input for the receiver (5V-30V DC).

- **NO:** Normally Open contact.

- **COM:** Common contact.

- **NC:** Normally Closed contact.

The relay provides dry contact output, meaning it acts as a switch without providing power to the load itself. The load's power source must be connected separately.

5.2. Programming Remote Controls

The receiver can be programmed to operate in different modes and pair with remote controls. The learning button on the receiver is used for this process.
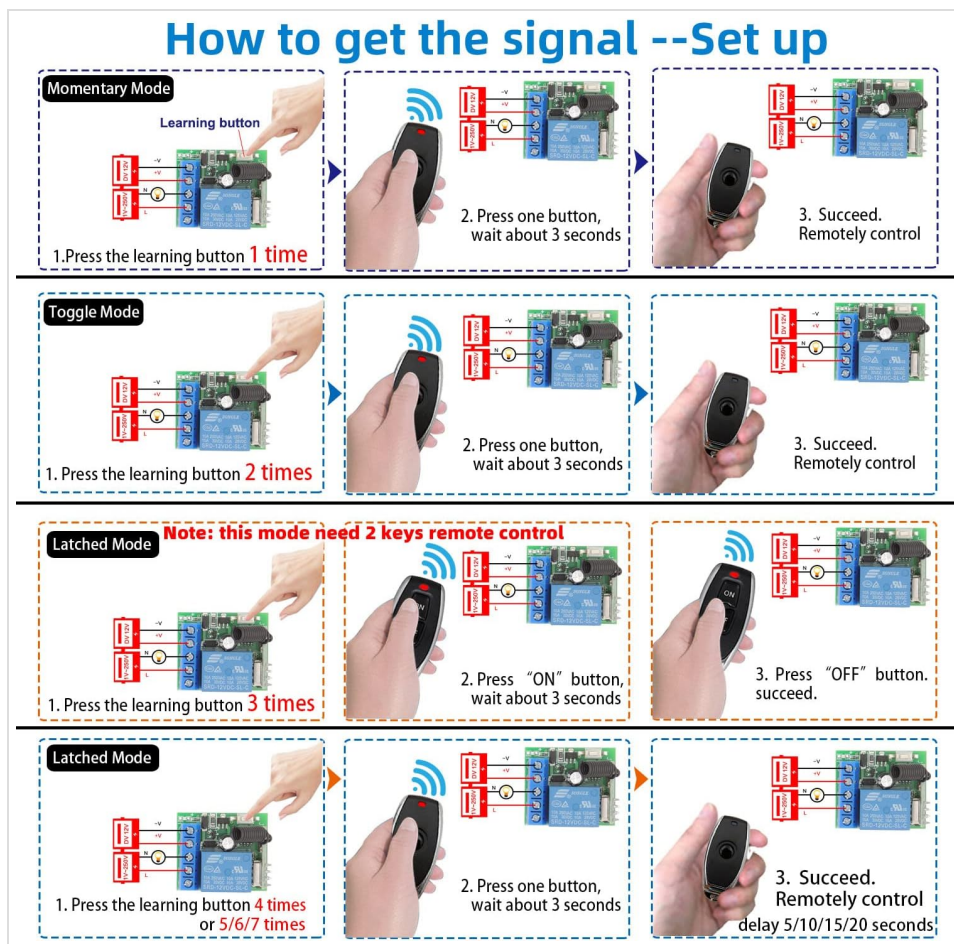
Figure 5.2: Programming steps for various operating modes.

Programming Steps:

1. **Select Mode:** Press the learning button on the receiver a specific number of times to select the desired operating mode:

   - 1 time: Momentary Mode
   - 2 times: Toggle Mode
   - 3 times: Latched Mode (requires two remote buttons for ON/OFF)
   - 4, 5, 6, or 7 times: Delay Mode (for 5, 10, 15, or 20 seconds respectively)

2. **Pair Remote:** After selecting the mode, the indicator light on the receiver will flash. Press the desired button on your remote control within approximately 3 seconds. The indicator light will stop flashing and turn off, indicating successful pairing.

3. **Latched Mode Specifics:** For Latched Mode, after pressing the learning button 3 times, press the 'ON' button on your remote, then the 'OFF' button on your remote. Both buttons will be paired.

5.3. Resetting the Receiver

To clear all programmed remote controls and reset the receiver to its factory default (Latched Mode), press the learning button 8 times. The indicator light will flash rapidly and then turn off, confirming the reset.

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Video 5.1: Demonstration of programming different operating modes and resetting the receiver.

This video illustrates the step-by-step process of programming the remote control for Momentary, Toggle, Latched, and Delay modes, as well as how to perform a full reset of the receiver module. It shows the visual feedback from the indicator light during programming.

6. OPERATING MODES

The DieseRC relay switch offers four distinct operating modes to suit various control needs:
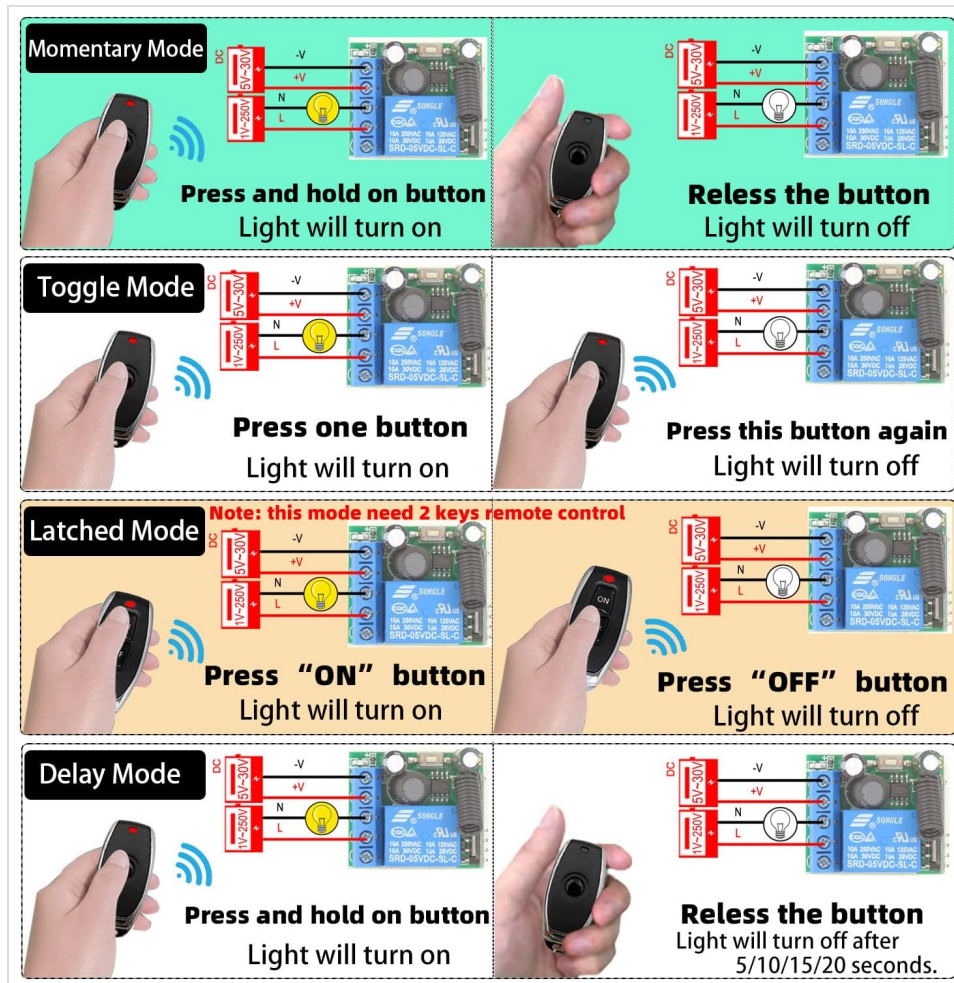

Figure 6.1: Visual representation of the four operating modes.

- **Momentary Mode (Mode 1):** The relay remains active only while the remote button is pressed. Releasing the button deactivates the relay. Ideal for applications requiring temporary contact, like a doorbell.

- **Toggle Mode (Mode 2):** Pressing the remote button once activates the relay. Pressing the same button again deactivates the relay. This acts like a standard ON/OFF switch.

- **Latched Mode (Mode 3):** One remote button activates the relay, and a different remote button deactivates it. This mode requires a remote with at least two distinct buttons for ON and OFF functions.

- **Delay Mode (Mode 4, 5, 6, 7):** Pressing the remote button activates the relay, which then remains active for a preset duration (5, 10, 15, or 20 seconds) before automatically deactivating.

7. APPLICATIONS

The versatility of the DieseRC wireless relay switch makes it suitable for numerous applications:
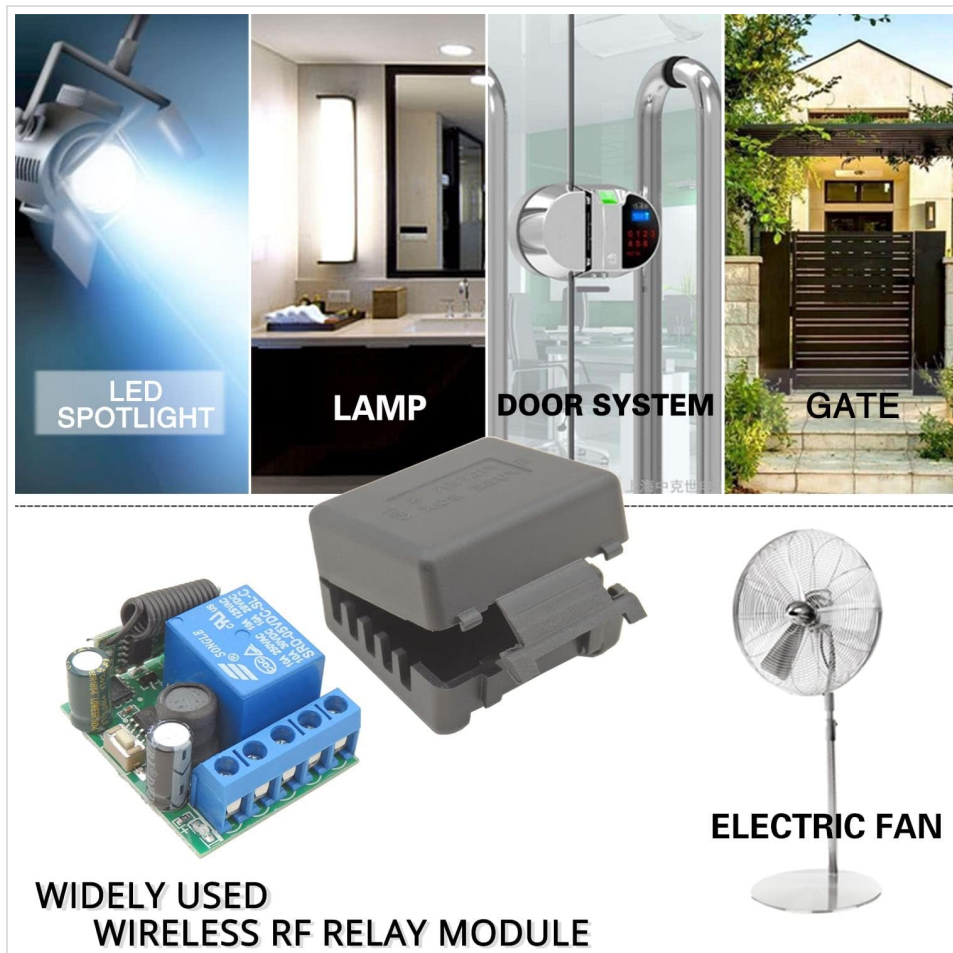
Figure 7.1: Diverse applications of the wireless relay module.

- **Home Automation:** Remote control of lights, fans, garage doors, and other household appliances.

- **Access Control:** Operating electric locks, gates, and door systems.

- **Industrial Control:** Activating machinery, pumps, or ventilation systems in factories and farms.

- **DIY Projects:** Integrating remote control functionality into custom electronic projects.

8. MAINTENANCE

To ensure the longevity and optimal performance of your DieseRC wireless remote control relay switch, follow these maintenance guidelines:

- **Keep Dry:** Avoid exposing the receiver module to moisture or liquids.

- **Clean Gently:** Use a soft, dry cloth to clean the device. Do not use harsh chemicals or abrasive cleaners.

- **Battery Replacement:** Replace the remote control batteries (2x CR2016) when the signal strength weakens or the indicator light on the remote does not illuminate. Access the battery compartment via the screw port on the back of the remote.

- **Environmental Conditions:** Operate the device within its specified temperature and humidity ranges to prevent damage.

9. TROUBLESHOOTING

If you encounter issues with your DieseRC wireless remote control relay switch, consider the following:

- **No Response from Remote:**

  - Check remote control battery. Replace if necessary.

- Ensure the receiver is powered correctly (5V-30V DC).
- Verify that the remote is paired with the receiver. If unsure, try reprogramming the remote (refer to Section 5.2).
- Check for excessive distance or obstructions between the remote and receiver.

- **Incorrect Operating Mode:**

  - If the relay behaves unexpectedly, it might be programmed in a different mode than intended. Reset the receiver (Section 5.3) and reprogram it to the desired mode.

- **Relay Not Activating Load:**

  - Confirm the load is correctly wired to the NO/COM or NC/COM terminals.
  - Ensure the load itself is functional and receiving power from its dedicated source.
  - Check the current and voltage ratings of your load against the relay's specifications (max 10A, 300W).

For persistent issues, please contact DieseRC customer support.

10. WARRANTY & SUPPORT

DieseRC products are designed for reliability and performance. For warranty information or technical support, please refer to the product packaging or contact your retailer. Keep your purchase receipt for warranty claims.
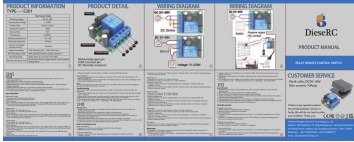
Related Documents - 5301

	[DieseRC 5301 Wireless Remote Control Switch Manual](#) User manual for the DieseRC 5301 Wireless Remote Control Switch, detailing technical specifications, wiring diagrams, operating modes (Momentary, Toggle, Latched, Delay), programming instructions, and troubleshooting.
	[DieseRC 1204 Relay Remote Control Switch Manual](#) User manual for the DieseRC 1204 Relay Remote Control Switch, detailing product information, wiring diagrams, operating modes (momentary, toggle, latched), programming instructions, and troubleshooting.
	[DieseRC 2202G Relay Remote Control Switch Product Manual](#) Comprehensive product manual for the DieseRC 2202G Relay Remote Control Switch. Details technical specifications, operating modes (momentary, toggle, latched), programming instructions, wiring diagrams, troubleshooting, and customer support information for this 433MHz RF wireless relay.
	[DieseRC 2402 Relay Remote Control Switch User Manual](#) User manual for the DieseRC 2402 Relay Remote Control Switch. This document provides detailed product information, technical specifications, wiring diagrams, operating modes (Momentary, Toggle, Latched), programming instructions, reset procedures, and troubleshooting guidance.
	[DieseRC 1201 Relay Remote Control Switch User Manual](#) User manual for the DieseRC 1201 Relay Remote Control Switch, detailing product information, wiring diagrams, operating modes (Momentary, Toggle, Latched, Delay), programming instructions, and troubleshooting.

Documents - DieseRC – 5301

[DieseRC 5301 Wireless Remote Control Switch Manual](#)

User manual for the DieseRC 5301 Wireless Remote Control Switch, detailing technical specifications, wiring diagrams, operating modes (Momentary, Toggle, Latched, Delay), programming instructions, and troubleshooting.

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