

RODOT HZ73-1C12S

RODOT HZ73-1C12S DC 12V 5-Pin Electromagnetic Relay User Manual

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of the RODOT HZ73-1C12S DC 12V 5-Pin Electromagnetic Relay. Please read this manual thoroughly before using the product to ensure safe and efficient operation.

2. PRODUCT OVERVIEW

The RODOT HZ73-1C12S is a compact, 5-pin electromagnetic relay designed for various electronic applications. It features a DC 12V coil and robust contacts capable of switching 10A at 30VDC or 10A at 277VAC. Its subminiature size and standard PCB layout make it suitable for integration into modules, development boards, and DIY PCB projects.



Figure 2.1: Overview of multiple RODOT HZ73-1C12S relays, showcasing their compact blue housing and 5 pins.

Key Features:

- **Model:** HZ73-1C12S
- **Coil Voltage:** DC 12V
- **Contact Ratings:** 10A 30VDC / 10A 277VAC
- **Number of Pins:** 5
- **Contact Configurations:** Supports 1 Form A, 1 Form B, and 1 Form C configurations
- **Design:** Subminiature, standard PCB layout
- **Applications:** Ideal for modules, development boards, DIY PCB universal boards, connectors, cables & adapters, and IC sockets.

3. SPECIFICATIONS

Specification	Value
Product Name	PCB Power Relay
Model	HZ73-1C12S

Specification	Value
Coil Voltage	DC 12V
Contact Ratings	10A 30VDC / 10A 277VAC
Number of Pins	5
Contact Configurations	1 form A, 1 form B, and 1 form C
Connector Type	Through Hole
Mounting Type	PCB Mount
Current Rating	10 Amps
Operation Mode	Automatic
Package Dimensions	5.12 x 5.1 x 0.7 inches; 1.76 ounces

4. PHYSICAL CHARACTERISTICS AND DIMENSIONS

The HZ73-1C12S relay is designed for compact integration. Below are its key dimensions and a view of its internal components.

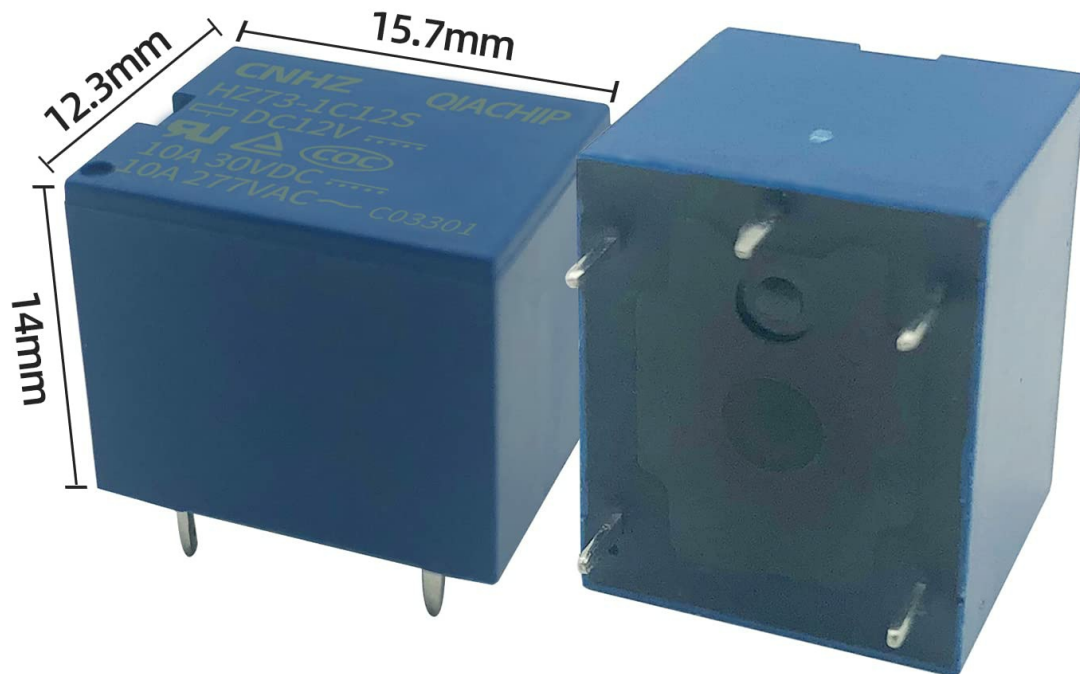


Figure 4.1: Dimensions of the HZ73-1C12S relay, showing measurements of 12.3mm, 14mm, and 15.7mm.



Figure 4.2: Internal structure of an electromagnetic relay, highlighting the coil and contact mechanism.

5. PIN CONFIGURATION AND CONTACT FORMS

The HZ73-1C12S relay features 5 pins for through-hole PCB mounting. It supports three common contact configurations: 1 Form A (Normally Open), 1 Form B (Normally Closed), and 1 Form C (Change-over/SPDT).

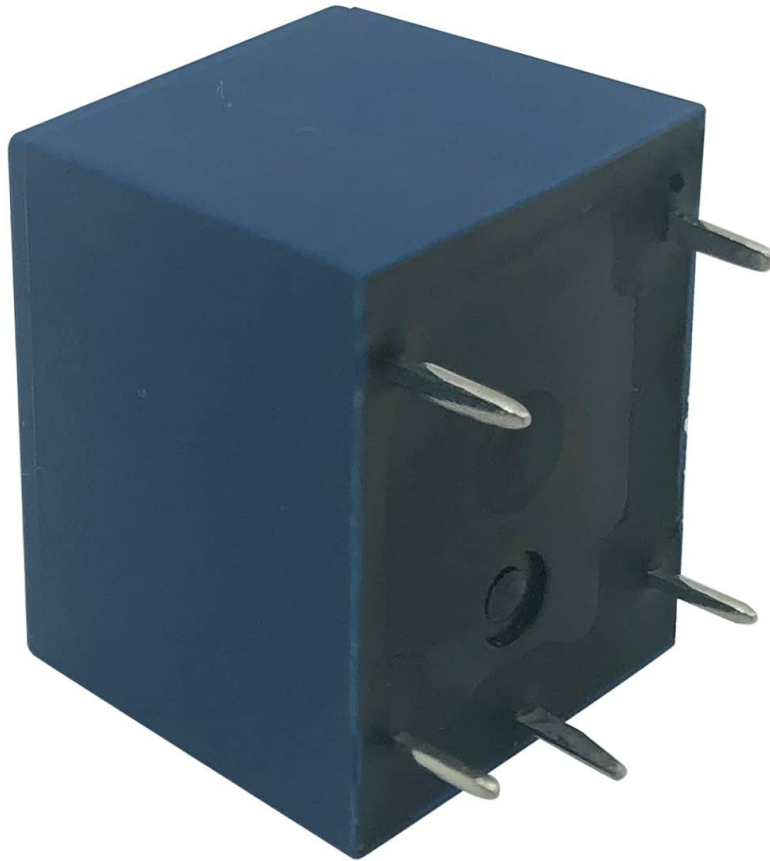


Figure 5.1: Bottom view of the HZ73-1C12S relay, illustrating the arrangement of its 5 pins for PCB mounting.

Contact Form Diagrams:

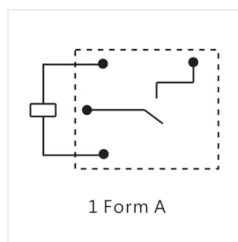


Figure 5.2: 1 Form A (Normally Open) configuration diagram.

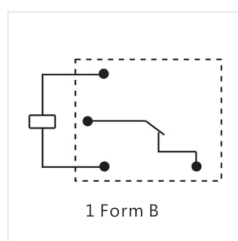


Figure 5.3: 1 Form B (Normally Closed) configuration diagram.

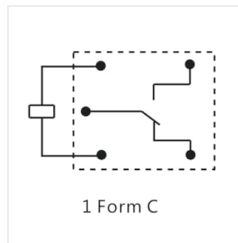


Figure 5.4: 1 Form C (Change-over/SPDT) configuration diagram.

6. ELECTRICAL CHARACTERISTICS AND PERFORMANCE

Understanding the electrical characteristics is crucial for proper application. The relay's performance curves illustrate its switching capabilities and electrical endurance.

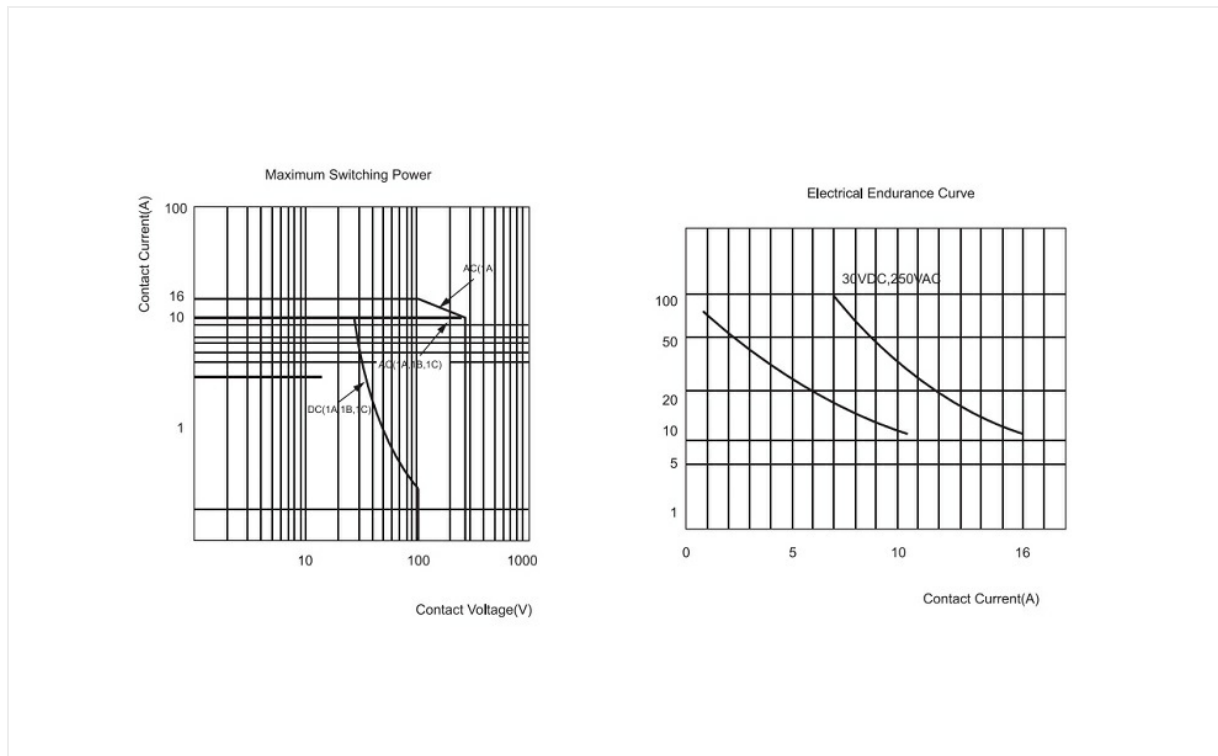


Figure 6.1: Performance curves for the HZ73-1C12S relay, including maximum switching power and electrical endurance.

7. SETUP AND INSTALLATION

The HZ73-1C12S relay is designed for through-hole mounting on a Printed Circuit Board (PCB).

Installation Steps:

1. **Prepare PCB:** Ensure your PCB has appropriate holes drilled for the 5 pins of the relay, matching the standard PCB layout.
2. **Insert Relay:** Carefully insert the relay pins into the corresponding holes on the PCB. Ensure the relay is oriented correctly according to your circuit design.
3. **Solder Pins:** Solder each pin securely to the PCB using appropriate soldering techniques. Ensure good electrical contact and mechanical stability.
4. **Connect Coil:** Connect the DC 12V power supply to the relay coil pins. Observe polarity if specified, though most DC relays are not polarity sensitive for the coil.
5. **Connect Load:** Wire the load circuit to the appropriate contact pins (Common, Normally Open, or Normally Closed) based on your desired switching function and the contact form diagrams provided.

in Section 5.

Important: Always ensure power is disconnected from the circuit before performing any installation or wiring to prevent electrical shock or damage to components.

8. OPERATING PRINCIPLES

An electromagnetic relay operates as an electrically controlled switch. When current flows through the coil, it generates a magnetic field that attracts an armature, causing the contacts to change state. When the coil is de-energized, a spring returns the armature and contacts to their original position.

- **Coil Activation:** Applying 12V DC to the coil pins energizes the relay.
- **Contact Switching:** Upon coil activation, the common contact switches from the Normally Closed (NC) position to the Normally Open (NO) position.
- **Deactivation:** Removing the 12V DC from the coil de-energizes the relay, and the contacts return to their default state.

9. MAINTENANCE

The RODOT HZ73-1C12S relay is a sealed component and generally requires no routine maintenance. However, proper handling and environmental conditions are important for its longevity.

- **Environmental Conditions:** Operate the relay within specified temperature and humidity ranges. Avoid exposure to excessive dust, moisture, or corrosive gases.
- **Cleaning:** If necessary, gently clean the exterior of the relay with a dry, soft cloth. Do not use solvents or abrasive cleaners.
- **Inspection:** Periodically inspect the soldered connections for any signs of corrosion or fatigue, especially in high-vibration environments.

10. TROUBLESHOOTING

If the relay is not functioning as expected, consider the following common issues and solutions:

- **Relay Not Activating:**
 - Check if the DC 12V coil voltage is correctly applied and stable.
 - Verify that the coil pins are correctly soldered and have good contact.
 - Ensure the power supply for the coil is sufficient.
- **Contacts Not Switching Load:**
 - Confirm that the load circuit is correctly wired to the appropriate contact pins (Common, NO, NC).
 - Check if the load current or voltage exceeds the relay's contact ratings (10A 30VDC / 10A 277VAC). Overloading can damage contacts.
 - Inspect for any physical damage to the relay contacts.
- **Intermittent Operation:**
 - Check for loose or cold solder joints on the PCB.
 - Ensure stable power supply to both the coil and the load.
 - Verify that the operating environment is within specified conditions.

If issues persist after troubleshooting, consider replacing the relay.

11. WARRANTY AND SUPPORT

RODOT products are manufactured to high-quality standards. For specific warranty information or technical support, please refer to the product's purchase documentation or contact your vendor. Keep your purchase receipt for warranty claims.