Omron LY2-AC110/120

Omron LY2-AC110/120 General Purpose Relay Instruction Manual

Model: LY2-AC110/120 | Brand: Omron

1. Introduction

This manual provides essential information for the safe and effective use of the Omron LY2-AC110/120 General Purpose Relay. This relay is designed for low current applications, featuring double pole double throw (DPDT) contacts and compatibility with 110-120VAC input. Please read this manual thoroughly before installation and operation.

2. Safety Information

WARNING: Risk of Electric Shock. Always disconnect power before installing, servicing, or removing this device.

- Ensure all wiring is performed by qualified personnel in accordance with local and national electrical codes.
- Do not exceed the specified voltage and current ratings.
- Avoid contact with live terminals.
- Do not operate the relay in environments exceeding its specified operating temperature range (-25 to +55 degrees C).
- Protect the relay from moisture, dust, and corrosive gases.

3. Product Overview

Figure 3.1: Omron LY2-AC110/120 General Purpose Relay. This image shows the transparent casing of the relay, revealing the internal components including the coil, contacts, and wiring. The Omron brand name is visible on the internal structure.

The Omron LY2-AC110/120 is a compact general purpose relay designed for reliable switching in various industrial and electrical applications. Key features include:

- **Contact Form:** Double Pole Double Throw (DPDT) for versatile switching configurations.
- **Terminal Type:** Plug-in/Solder terminals for flexible connection options.
- **Mounting:** Designed for standard bracket mounting on a flat surface.
- **Input Voltage:** 110 to 120 VAC.
- **Load Rating:** 110VAC at 15 Amps.
- **Certifications:** UL, CSA, IEC certified, and complies with the Electrical Appliances and Material Safety Act.

4. Setup and Installation

The LY2-AC110/120 relay offers both plug-in and solder terminal options for installation.

4.1 Mounting

1. Identify a suitable flat surface for mounting the relay.
2. Secure the relay using a standard bracket (not included) to the chosen surface. Ensure the mounting is stable and free from vibration.

4.2 Wiring (Plug-in/Solder)

Before wiring, ensure all power sources are disconnected.

- **Plug-in Connection:** Insert the relay's terminals into a compatible relay socket. Ensure a firm and secure connection.
- **Solder Connection:** If soldering, carefully connect the appropriate wires to the relay terminals. Use proper soldering techniques to ensure strong, reliable electrical connections.
- Refer to the relay's pinout diagram (typically found on the relay body or accompanying documentation) for correct terminal assignments.
- Connect the 110-120VAC input voltage to the coil terminals.
- Connect the load circuit to the DPDT contacts as required for your application.

5. Operating Principles

The Omron LY2-AC110/120 is an electromechanical relay that operates by using a small amount of power to control a larger power source. Its operation is based on an electromagnetic coil and a set of contacts.

- When current flows through the relay's coil, it generates a magnetic field.
- This magnetic field attracts an armature, causing the contacts to change state.
- As a Double Pole Double Throw (DPDT) relay, it has two independent sets of contacts, each capable of switching between two positions (normally open and normally closed). This allows for complex switching operations.
- When the coil is energized, the normally open (NO) contacts close, and the normally closed (NC) contacts open. When the coil is de-energized, the contacts return to their original state.

6. Specifications

Parameter	Value
Contact Form	DPDT
Input Current Rating at 50Hz	9.9 to 10.8 mA
Input Current Rating at 60Hz	8.4 to 9.2 mA
Input Voltage	110 to 120 VAC
Load Rating	110VAC, 15 Amp
Dielectric Strength	2,000 VAC
Operating Temperature	-25 to +55 degrees C

Parameter	Value
Enclosure Dimensions (H x W x D)	35.6 x 21.6 x 27.9 mm
Connector Type	Plug-In, Solder
Contact Material	Silver Alloy
Mounting Type	Standard Bracket
Standards Met	UL, CSA, IEC, Electrical Appliances and Material Safety Act

7. Maintenance

The Omron LY2-AC110/120 relay is designed for long-term reliability with minimal maintenance. However, periodic inspection is recommended to ensure optimal performance and safety.

- **Visual Inspection:** Regularly check the relay for any signs of physical damage, discoloration, or loose connections.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and humidity ranges. Protect the relay from excessive dust or corrosive substances.
- **Cleaning:** If necessary, gently clean the exterior of the relay with a dry, soft cloth. Do not use solvents or abrasive cleaners.
- **Connection Integrity:** Periodically verify that all plug-in or soldered connections are secure and free from corrosion.

8. Troubleshooting

If you encounter issues with your Omron LY2-AC110/120 relay, consider the following common troubleshooting steps:

- **Relay Not Energizing:**
  - Check if the correct input voltage (110-120VAC) is applied to the coil terminals.
  - Verify that the power supply is active and stable.
  - Inspect the coil for any visible damage or open circuits.
- **Contacts Not Switching:**
  - Ensure the coil is energizing correctly (you may hear a click or see an indicator if present).
  - Check the load circuit for continuity and proper connection to the relay contacts.
  - Verify that the load current does not exceed the relay's 15 Amp rating.
- **Intermittent Operation:**
  - Check for loose wiring connections at the terminals or socket.
  - Ensure the operating environment is stable and free from excessive vibration or temperature fluctuations.
  - Inspect contacts for signs of pitting or carbon buildup, which can affect conductivity.

If issues persist after troubleshooting, contact a qualified electrician or Omron customer support.

9. Warranty and Support

For information regarding warranty terms, technical support, or service, please refer to the official Omron website or contact your authorized Omron distributor. Keep your purchase receipt for warranty claims.

Omron Official Website: www.omron.com