Square D HM-06215

Square D LRD32 Overload Relay User Manual

Brand: Square D | Model: HM-06215

1. Introduction

This manual provides essential information for the safe and effective installation, operation, and maintenance of the Square D LRD32 Overload Relay. Please read this manual thoroughly before attempting to install or operate the device. Retain this manual for future reference.

2. Safety Information

WARNING: Risk of Electric Shock or Explosion.

- Only qualified personnel should install, operate, service, and maintain this equipment.
- Disconnect all power before working on equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors, and covers before turning on power.
- Failure to follow these instructions will result in death or serious injury.

This device is designed for industrial control applications. Ensure all local and national electrical codes are followed during installation.

3. Product Overview

The Square D LRD32 is a bimetallic, adjustable thermal overload relay designed to protect motors from overcurrent conditions. It features a Trip Class 10 rating, suitable for standard motor starting applications. The relay offers both automatic and manual reset options and is ambient temperature compensated for reliable operation across varying environmental conditions.

Figure 1: Square D LRD32 Overload Relay. The device features a white front panel with 'Schneider Electric' branding, 'LRD' indicator, blue 'RESET' button, red 'STOP' button, and screw terminals labeled 97 NO, 98 NO, 95 NC, 96 NC. The base has terminals labeled 2T1, 4T2, 6T3. The unit is dark gray and white.

Key Features:

- Bimetallic, Thermal Overload Protection
- Adjustable Trip Class 10
- 3-Pole Configuration
- Automatic/Manual Reset Capability
- Motor FLA Range: 23 to 32 Ampere
- Ambient Temperature Compensated
- Screw Clamp Terminals
- Direct Contactor/Starter Mounting
- Application for 1-Phase Systems
- UL, CSA, CE Approved

Components:

- **LRD Indicator:** Displays the status of the relay.
- **RESET Button (Blue):** Used to manually reset the relay after a trip.
- **STOP Button (Red):** Used to manually stop the motor.
- **Current Adjustment Dial:** Allows setting the motor's full load ampere (FLA) within the specified range (23-32A).
- **Auxiliary Contacts (97 NO, 98 NO, 95 NC, 96 NC):** Normally Open (NO) and Normally Closed (NC) contacts for control circuit integration.
- **Power Terminals (2T1, 4T2, 6T3):** Output terminals for connection to the motor.

4. Setup and Installation

The LRD32 overload relay is designed for direct mounting onto compatible contactors or starters. Ensure the power supply is disconnected before proceeding with installation.

Installation Steps:

1. **Mounting:** Align the LRD32 relay with the output terminals of the contactor/starter. Securely attach the relay, ensuring a firm electrical and mechanical connection.
2. **Wiring Power Circuits:** Connect the motor's power leads to the relay's output terminals (2T1, 4T2, 6T3) using appropriate gauge wiring. Ensure all screw clamp terminals are tightened to the manufacturer's specified torque.
3. **Wiring Control Circuits:** Connect the auxiliary contacts (97 NO, 98 NO, 95 NC, 96 NC) into your control circuit as required for motor start/stop and fault indication.
4. **Current Setting:** Adjust the current adjustment dial on the front of the relay to match the motor's full load ampere (FLA) rating. The range for this model is 23 to 32 Amperes.
5. **Reset Mode Selection:** If applicable, select between automatic and manual reset modes according to your application requirements.

IMPORTANT: Verify all connections are secure and correct before restoring power.

5. Operating Instructions

Once installed and wired, the LRD32 overload relay operates automatically to protect the motor. Manual intervention is typically required only for resetting after a trip or for manual stopping.

Normal Operation:

- When the motor is running within its rated current, the relay remains in its normal operating state.
- If an overcurrent condition occurs, the bimetallic strips within the relay heat up and cause the relay to trip, opening the control circuit and stopping the motor.

Resetting the Relay:

- **Manual Reset:** After a trip, allow a brief cooling period (typically a few minutes). Press the blue 'RESET' button on the front of the relay to restore the control circuit and allow the motor to be restarted.
- **Automatic Reset:** If configured for automatic reset, the relay will reset itself after a cooling period without

manual intervention. Ensure this mode is appropriate for your application, as it may allow the motor to restart unexpectedly.

Manual Stop:

- Press the red 'STOP' button on the front of the relay to manually open the control circuit and stop the motor.

6. Maintenance

The Square D LRD32 Overload Relay is designed for reliable, long-term operation with minimal maintenance. Regular inspections are recommended to ensure optimal performance and safety.

Recommended Maintenance:

- **Visual Inspection:** Periodically inspect the relay for any signs of physical damage, discoloration, or loose connections.
- **Cleaning:** Keep the relay free from dust and debris. Use a dry, soft cloth for cleaning. Do not use solvents or abrasive cleaners.
- **Connection Checks:** Ensure all screw clamp terminals remain tight. Loose connections can lead to overheating and unreliable operation.
- **Functionality Test:** Occasionally test the trip function by simulating an overload condition (if safely possible and recommended by system design) or by using the manual stop/reset buttons.

CAUTION: Always disconnect power before performing any maintenance or inspection.

7. Troubleshooting

This section provides guidance for common issues encountered with the LRD32 Overload Relay.

Problem	Possible Cause	Solution
Relay trips frequently.	◦ Motor overload (e.g., mechanical binding, high load). ◦ Incorrect FLA setting on the relay. ◦ Motor winding fault. ◦ Voltage imbalance.	◦ Check motor load and mechanical system. ◦ Verify FLA setting matches motor nameplate. ◦ Inspect motor for faults. ◦ Check supply voltage.
Relay does not reset.	◦ Insufficient cooling time after a trip. ◦ Relay stuck in tripped position. ◦ Fault in the reset mechanism.	◦ Allow more time for the bimetallic strips to cool. ◦ Inspect the reset button for mechanical issues. ◦ If persistent, the relay may need replacement.
Motor does not start.	◦ Relay is in a tripped state. ◦ Control circuit wiring error. ◦ External fault.	◦ Check if the relay needs to be reset. ◦ Verify control circuit connections, especially auxiliary contacts. ◦ Check other components in the motor control circuit.

8. Specifications

Model Number	HM-06215 (LRD32)
Brand	Square D / Telemecanique
Type	Bimetallic, Thermal Overload Relay
Trip Class	10
Poles	3
Reset Function	Automatic/Manual
Motor FLA Range	23 to 32 Ampere
Temperature Compensation	Ambient Temperature Compensated
Terminals	Screw Clamp
Mounting	Contactor/Starter Mounting
Application	1 Phase
Approvals	UL, CSA, CE
Product Dimensions	3 x 3 x 1 inches
Item Weight	4.8 ounces

9. Warranty and Support

For warranty information or technical support regarding your Square D LRD32 Overload Relay, please contact Square D customer service or visit their official website. Keep your purchase receipt and product model number (HM-06215) handy when seeking support.
For further assistance, refer to the contact information provided by your distributor or the manufacturer's official channels.