Schneider Electric LC1D40AF7

Schneider Electric TeSys D LC1D40AF7 AC Contactor

INSTRUCTION MANUAL

1. Introduction

This manual provides essential information for the safe and effective installation, operation, and maintenance of the Schneider Electric TeSys D LC1D40AF7 AC Contactor. This device is a 3-pole contactor designed for controlling electrical loads up to 40A at 440V AC-3, featuring a 110V AC 50/60 Hz coil.

Please read this manual thoroughly before attempting any installation or operation. Retain this manual for future reference.

2. Safety Information

WARNING: Electrical shock hazard. Only qualified personnel should install, operate, or service this equipment. Disconnect all power before working on the contactor or connected equipment.

- Always follow local and national electrical codes.
- Ensure proper grounding of all equipment.
- Do not exceed the specified voltage and current ratings.
- Use appropriate personal protective equipment (PPE).
- Verify all connections are secure before applying power.

3. Product Overview

The LC1D40AF7 is a TeSys D series contactor, known for its compact design and reliability in industrial control applications. It features three main power poles (3 NO) and is controlled by a 110V AC coil.

Figure 1: Side view of the LC1D40AF7 Contactor, showing the product label with wiring diagrams and technical specifications for power and control terminals.

The product label (Figure 1) provides detailed information regarding terminal connections, wire sizes, and tightening torques for both power and control circuits. This information is crucial for correct installation.

4. Setup and Installation

4.1 Mounting

The LC1D40AF7 contactor is designed for DIN rail mounting. Ensure the mounting surface is stable and free from excessive vibration.

1. Align the contactor's rear mounting clips with the DIN rail.
2. Press firmly until the contactor snaps securely onto the rail.
3. Verify the contactor is firmly attached and does not wobble.

Figure 2: Rear view of the LC1D40AF7 Contactor, illustrating the integrated clips for DIN rail mounting.

4.2 Wiring

Refer to the wiring diagram on the product label (Figure 1) for precise terminal identification. Ensure all wiring is performed with power disconnected.

1. **Power Circuit:** Connect the main power lines to the L1, L2, L3 terminals and the load to the T1, T2, T3 terminals. Use appropriate wire gauges as specified on the label (e.g., 10mm² / AWG 8 for power).
2. **Control Circuit:** Connect the 110V AC control voltage to the A1 and A2 coil terminals. The coil voltage is clearly marked on the front of the contactor.
3. **Terminal Tightening:** Ensure all terminal screws are tightened to the specified torque values to prevent loose connections and overheating. For power terminals, the recommended torque is 3.5 N.m (30.97 lb-in). For control terminals, it is 1.7 N.m (15.04 lb-in).
4. Verify all connections are secure and correctly polarized before restoring power.

Figure 3: Front view of the LC1D40AF7 Contactor, highlighting the EverLink power terminals and the coil voltage marking (110V 50/60Hz).

5. Operating Instructions

The LC1D40AF7 contactor operates by energizing its 110V AC coil. When the coil is energized, the main power contacts close, allowing current to flow to the connected load. When the coil is de-energized, the contacts open, interrupting the power to the load.

- Apply 110V AC to the A1 and A2 coil terminals to close the main contacts.
- Remove 110V AC from the A1 and A2 coil terminals to open the main contacts.
- Observe the mechanical indicator (if present) on the front of the contactor to confirm its operational state (open/closed).

6. Maintenance

Regular maintenance ensures the longevity and reliable operation of the contactor. Always disconnect power before performing any maintenance.

- **Inspection:** Periodically inspect the contactor for signs of wear, damage, or discoloration, especially around the terminals and contacts.
- **Cleaning:** Keep the contactor free from dust, dirt, and debris. Use a dry, soft cloth or compressed air for cleaning. Do not use solvents.
- **Terminal Tightness:** Re-check terminal screw tightness periodically, especially in environments with vibration or significant temperature fluctuations.

- **Contact Wear:** If excessive contact wear is observed, the contactor should be replaced.

7. Troubleshooting

Problem	Possible Cause	Solution
Contactor does not engage when control voltage is applied.	No control voltage. Incorrect control voltage. Damaged coil. Loose wiring connection.	Check control circuit power supply. Verify control voltage matches 110V AC. Test coil resistance; replace contactor if coil is open/shorted. Inspect and tighten A1/A2 terminal connections.
Contactor hums loudly or overheats.	Incorrect control voltage (too low/high). Mechanical obstruction. Loose power connections.	Verify control voltage is stable at 110V AC. Inspect for foreign objects preventing full contact closure. Check and tighten all power terminal connections.
Contactor contacts weld or stick.	Overcurrent condition. Frequent switching under heavy load.	Investigate and correct the cause of overcurrent. Consider a contactor with a higher rating or more robust contacts for the application. Replace the contactor.

8. Specifications

Attribute	Value
Model Number	LC1D40AF7
Manufacturer	Schneider Electric
Poles	3P (3 NO)
Rated Operational Current (AC-3)	40A at 440V
Coil Voltage	110V AC 50/60 Hz
Item Weight	1.87 pounds (0.85 kg)
Product Dimensions	4.33 x 3.94 x 2.36 inches (110 x 100 x 60 mm)
Material	Plastic
Mounting Type	DIN Rail
Switch Style	Alternating Current

9. Warranty and Support

This product is sold without an explicit warranty description. For specific warranty terms or technical support, please contact Schneider Electric directly or refer to their official website.

Schneider Electric Contact Information:

- Official Website: www.se.com
- Refer to the website for local support contacts and service centers.