NGDOLAOV EAL-18

NGDOLAOV EAL-18 4P Type A Residual Current Circuit Breaker Instruction Manual

Model: EAL-18

1. Introduction

This manual provides essential information for the safe and effective installation, operation, and maintenance of the NGDOLAOV EAL-18 4P Type A Electromagnetic Residual Current Circuit Breaker (RCCB). This device is designed to protect against electric shock by detecting and rapidly disconnecting power in the event of a residual current fault. Please read this manual thoroughly before installation or use.

2. Safety Information

WARNING: Electrical shock hazard. Installation and maintenance must be performed by qualified personnel only. Disconnect all power before working on the circuit breaker or associated wiring.

- Always ensure the main power supply is disconnected before attempting any installation, wiring, or maintenance.
- Verify that the voltage and current ratings of the circuit breaker match the requirements of your electrical system.
- Do not use the device if it appears damaged.
- This device is designed to protect against residual current faults. It does not protect against overcurrents (overload or short circuit), for which separate overcurrent protective devices (e.g., MCBs) are required.
- Adhere to all local and national electrical codes and regulations.

3. Product Features

- **Model:** EAL-18
- **Type A:** Detects both sinusoidal alternating residual currents and pulsating direct residual currents.
- **Poles:** 4P (Four-pole) for three-phase systems with neutral.
- **Rated Residual Operating Current:** Available in 100mA and 300mA versions, providing protection against indirect contact and fire hazards.

- **Electromagnetic Tripping:** Ensures reliable and rapid disconnection upon fault detection.
- **Standard Compliance:** Conforms to IEC 61008-1.

4. Setup and Installation

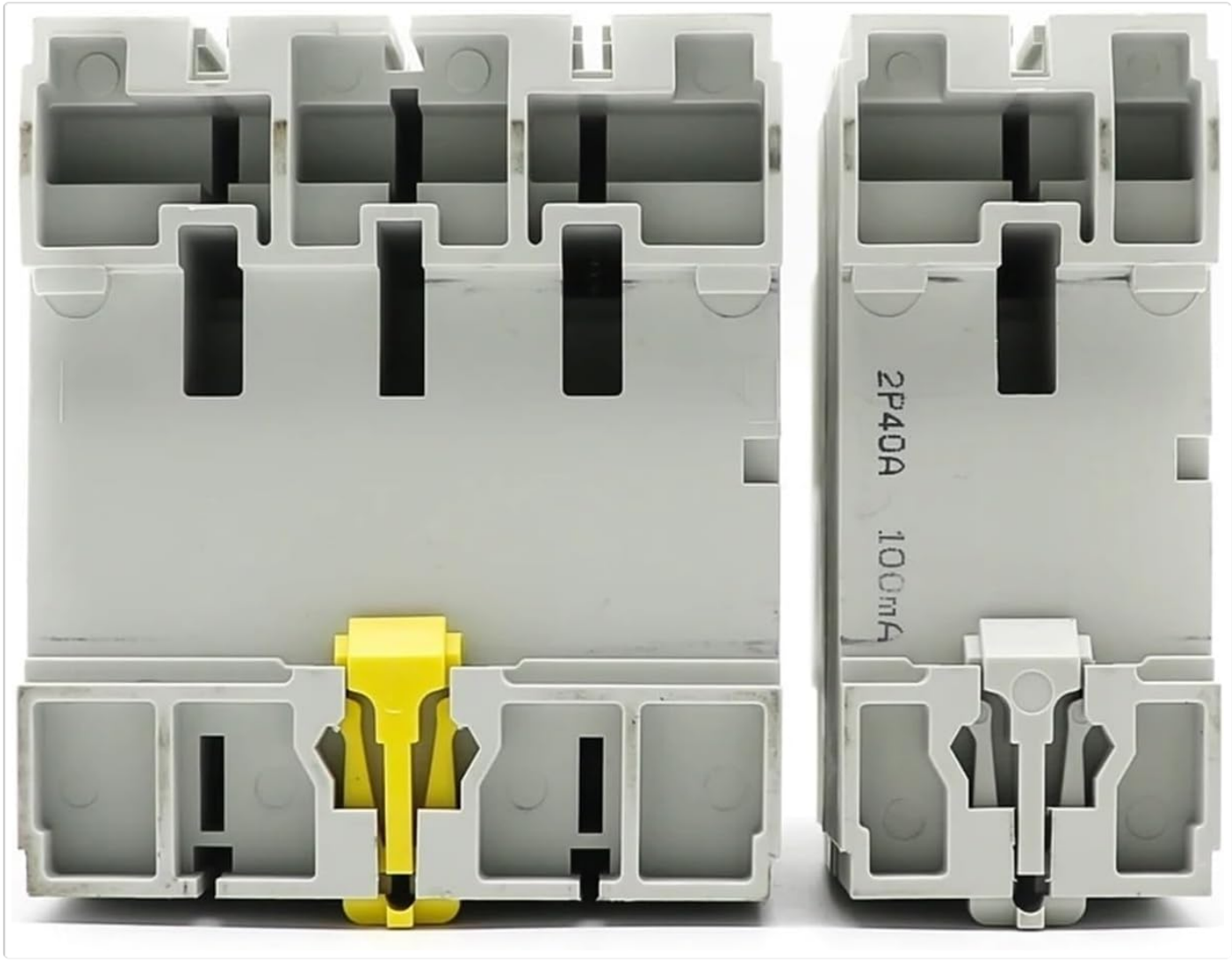
The EAL-18 RCCB is designed for DIN rail mounting. Follow these steps for proper installation:

1. **Power Disconnection:** Ensure the main power supply to the installation is completely disconnected and locked out.
2. **Mounting:** Attach the RCCB securely onto a standard 35mm DIN rail. The device features a latch mechanism (often yellow) at the bottom for easy mounting and removal.



This image shows two EAL-18 residual current circuit breakers installed side-by-side on a standard DIN rail, demonstrating their mounting mechanism and compact design.

3. **Wiring Connections:** Connect the incoming and outgoing electrical conductors to the appropriate terminals. The EAL-18 is a 4-pole device, typically used for three-phase systems with a neutral conductor. Ensure correct phase sequence and neutral connection.



This image provides a front and side view of the EAL-18 circuit breaker, highlighting its terminal connections and the yellow latch mechanism for DIN rail mounting.

Refer to the following table for recommended nominal section areas of copper wire based on rated current:

Connection: Nominal Section Area of Copper Wire

Rated Current	Nominal Section Area of Copper Wire (mm^2)
1–6A	1
10A	1.5
16, 20A	2.5
25A	4
32A	6
40, 50A	10
63A	16
80A	25
100A	35

4. **Tighten Terminals:** Ensure all terminal screws are tightened to the manufacturer's specified torque to prevent loose connections and overheating.
5. **Verification:** After wiring, double-check all connections for correctness and security.
6. **Power Restoration:** Restore power to the installation.

5. Operating Instructions

The EAL-18 RCCB operates with a simple ON/OFF lever and a test button.

- **Turning ON:** Push the operating lever upwards to the 'ON' position.
- **Turning OFF:** Push the operating lever downwards to the 'OFF' position.
- **Tripped State:** If a residual current fault occurs, the RCCB will automatically trip, and the operating lever will move to an intermediate or 'OFF' position, indicating a fault.
- **Resetting:** To reset the RCCB after a trip, first move the lever fully to the 'OFF' position, then push it upwards to the 'ON' position. If the RCCB immediately trips again, a fault still exists in the circuit. Do not attempt to reset repeatedly without investigating the cause.
- **Test Button:** The red 'T' button on the front of the RCCB is for testing its functionality. Pressing this button simulates a residual current fault and should cause the RCCB to trip immediately.

6. Maintenance

Regular maintenance ensures the continued reliable operation of your RCCB.

- **Monthly Test:** Press the 'T' (Test) button at least once a month. The RCCB should trip immediately. If it does not trip, the device may be faulty and requires replacement.
- **Visual Inspection:** Periodically inspect the RCCB for any signs of physical damage, discoloration, or loose connections.
- **Cleaning:** If necessary, clean the exterior of the RCCB with a dry, soft cloth. Ensure power is disconnected before cleaning. Do not use abrasive cleaners or solvents.

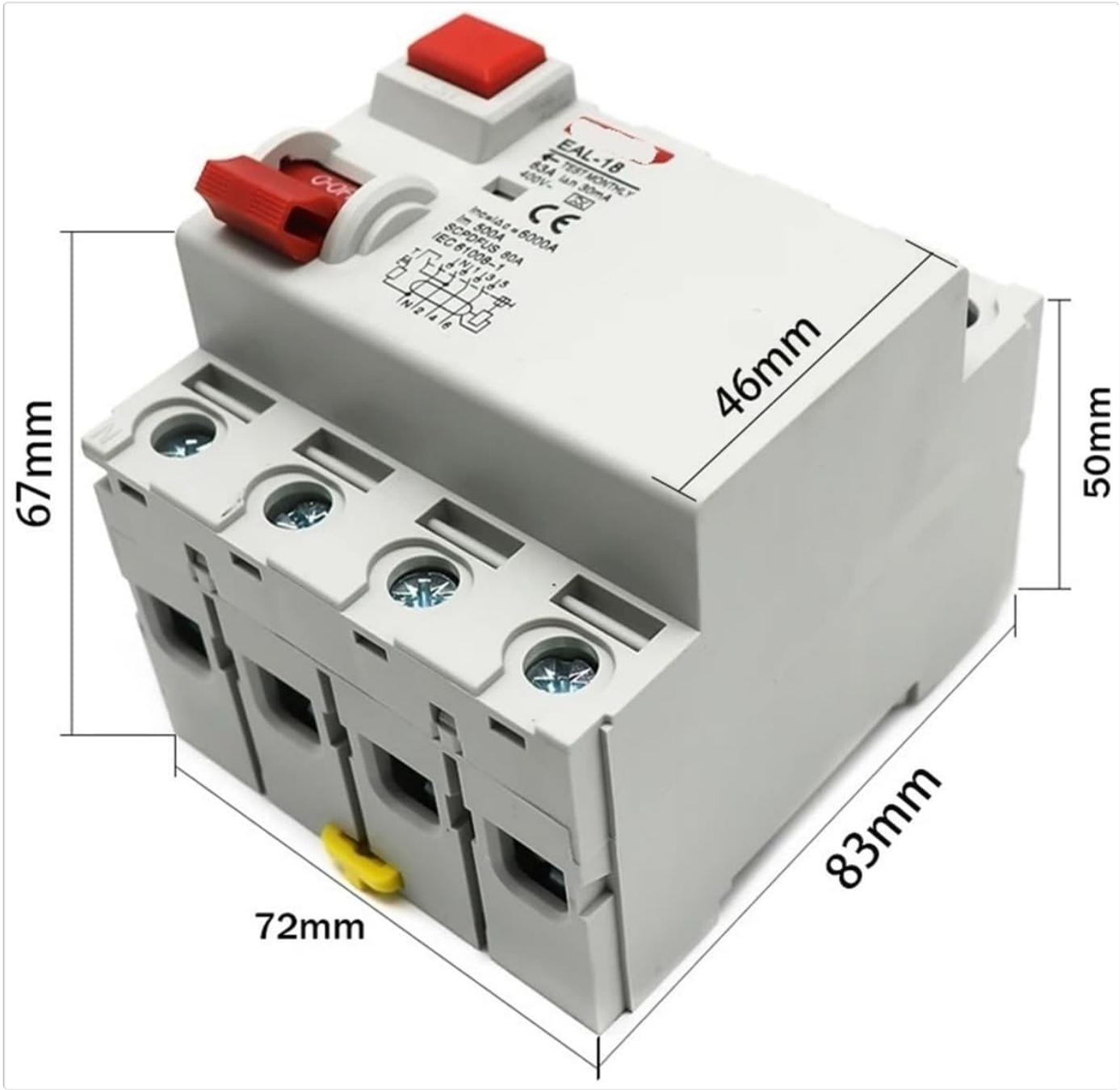
7. Troubleshooting

- **RCCB trips frequently:**
  - **Cause:** Persistent residual current fault in the protected circuit. This could be due to faulty appliances, damaged wiring insulation, or moisture ingress.
  - **Solution:** Disconnect all loads from the protected circuit. Reset the RCCB. If it holds, reconnect loads one by one to identify the faulty appliance or section of wiring. Consult a qualified electrician to inspect wiring.
- **RCCB does not reset:**
  - **Cause:** A severe or persistent fault is present, or the device itself is damaged.
  - **Solution:** Ensure the lever is pushed fully to the 'OFF' position before attempting to reset to 'ON'. If it still does not reset, disconnect power and have the device inspected by a qualified electrician.
- **RCCB does not trip when test button is pressed:**
  - **Cause:** The RCCB is faulty, or there is no power supply to the device.
  - **Solution:** Verify power supply to the RCCB. If power is present and the test button still fails to trip the device, the RCCB is defective and must be replaced immediately by a qualified electrician.

8. Specifications

NGDOLAOV EAL-18 4P RCCB Specifications

Feature	Specification
Model	EAL-18
Brand	NGDOLAOV
Poles	4P
Type	Type A (AC and pulsating DC residual currents)
Rated Residual Operating Current	100mA / 300mA
Rated Short-Circuit Breaking Capacity (Icn)	6000A
Standard	IEC 61008-1
Mounting	35mm DIN Rail
Dimensions (L x W x H)	83mm x 72mm x 67mm
Item Weight	1.76 ounces (approx. 50g)



This image displays the physical dimensions of the EAL-18 4-pole residual current circuit breaker, showing a width of 83mm, a depth of 72mm, and a height of 67mm, with specific component heights of 46mm and 50mm.

Detection Waveform Type and Classification:

Detection Waveform Type and Classification

Waveform definition	Waveform	AC Type	A Type	B Type	A-SI Type	Tripping current
Sinusoidal exchange	~	✓	✓	✓	✓	0.5~1 I△n
Pulsating half wave	⎍	X	✓	✓	✓	0.5~1.4 I△n
Pulsating Half wave + diret current (6mA)	⎓	X	✓	✓	✓	max1.4I△n+6mA
Pulsating Half wave + diret current (10mA)	⎓	X	X	✓	✓	max1.4I△n+10mA
High frequency (up to 1KHz)	WWW	X	X	✓	X	150Hz,0.5~2.4 I n
		X	X	✓	X	400Hz,0.5~6 I△n
		X	X	✓	X	1000Hz,1~14 I△n
Two phase rectified full wave	⎓	X	X	✓	X	0.5~2 I△n
Three phase rectified full wave	⎓			✓		
Direct current	⎓			✓		

Connection

Rated current	Nominal Section Area of Copper Wire(mm^2)
1~6A	1
10A	1.5
16、20A	2.5
25A	4
32A	6
40、50A	10
63A	16
80A	25
100A	35

This table illustrates the different types of residual current waveforms (Sinusoidal exchange, Pulsating half wave, Pulsating half wave + direct current, High frequency, Two phase rectified full wave, Three phase rectified full wave, Direct current) and their detection capabilities by AC Type, A Type, B Type, and A-SI Type RCDs, along with their respective tripping current ranges.

9. Warranty and Support

NGDOLAOV products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question