

EKL13-63

# ETEK RCBO Type A 1P+N Residual Automatic Circuit Breaker EKL13-63 User Manual

Model: EKL13-63

## 1. INTRODUCTION

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This manual provides essential information for the safe and effective installation, operation, and maintenance of the ETEK RCBO Type A 1P+N Residual Automatic Circuit Breaker, model EKL13-63. This device combines residual current protection with overcurrent protection, offering comprehensive electrical safety. Please read this manual thoroughly before installation and use.

## 2. SAFETY INFORMATION

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**WARNING:** Electrical work should only be performed by qualified and authorized personnel. Failure to follow these instructions can result in serious injury or death.

- Always disconnect power at the main supply before installing, servicing, or removing the device.
- Ensure all wiring connections are secure and comply with local and national electrical codes.
- Do not use the device if it appears damaged.
- The RCBO must be installed in an appropriate enclosure to prevent access to live parts.
- Regularly test the device as instructed in the maintenance section.

## 3. PRODUCT OVERVIEW

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The ETEK RCBO Type A EKL13-63 is a compact 1P+N residual current circuit breaker with overcurrent protection (RCBO). It is designed for DIN rail mounting in electrical distribution systems. This device provides protection against earth leakage faults (Type A, 30mA sensitivity) and overloads or short circuits (6kA breaking capacity).

# 0.1 LEAKAGE PROTECTION CORE RAPID POWER OFF

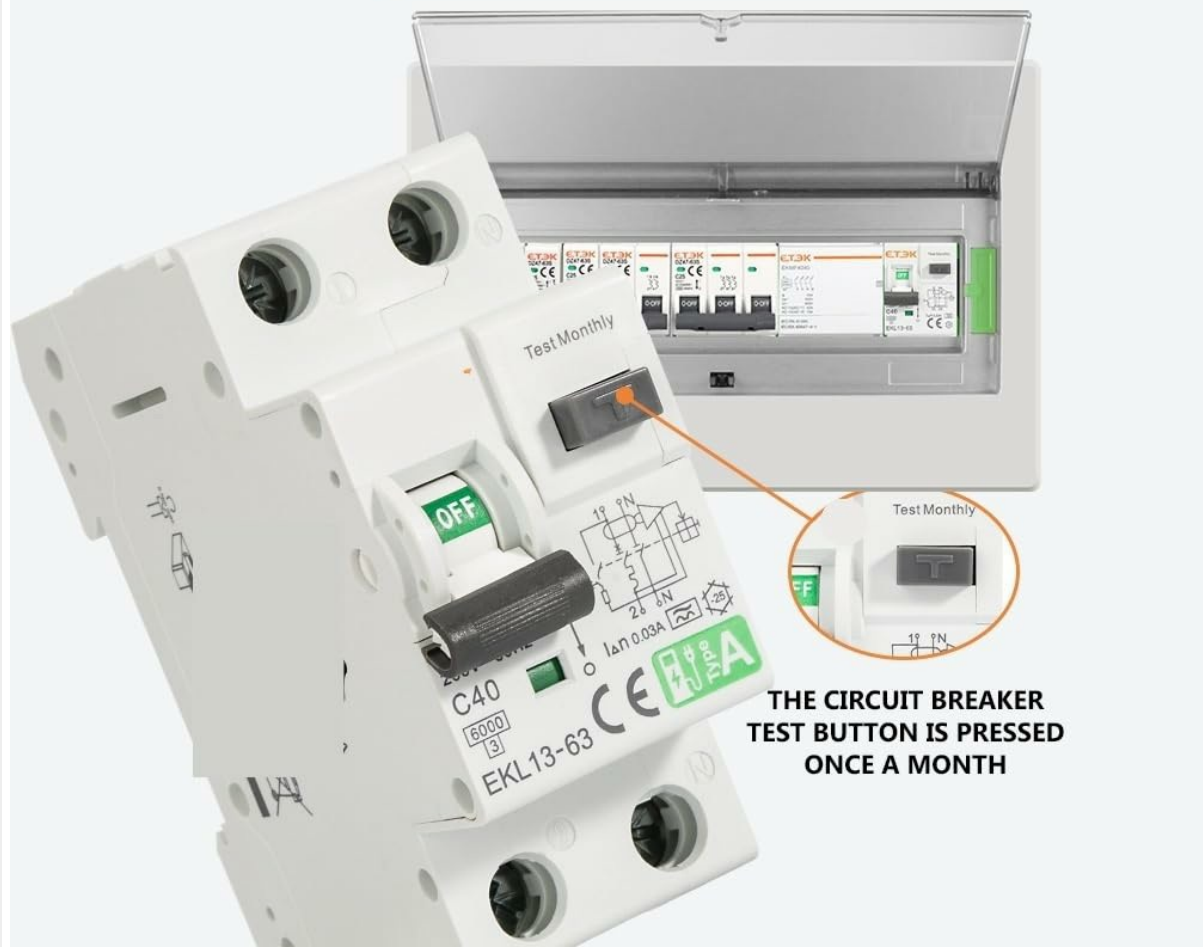


Figure 3.1: General view of the ETEK RCBO Type A 1P+N Residual Automatic Circuit Breaker EKL13-63.

## Key Features:

- **Combined Protection:** Integrates residual current protection (earth leakage) and overcurrent protection (overload and short circuit) in a single device.
- **High Sensitivity:** Features 30mA leakage protection to quickly disconnect circuits upon detecting dangerous residual currents, minimizing electric shock risks.
- **Breaking Capacity:** Rated with a 6kA breaking capacity to safely interrupt fault currents.
- **Type A Protection:** Suitable for circuits that may produce Type A residual currents, which include sinusoidal AC currents and pulsating DC currents.
- **Compact Design:** 19mm width RCBO module for space-efficient panel installation.
- **DIN Rail Mounted:** Designed for easy installation in standard electrical distribution systems.

# PRODUCT PARAMETERS

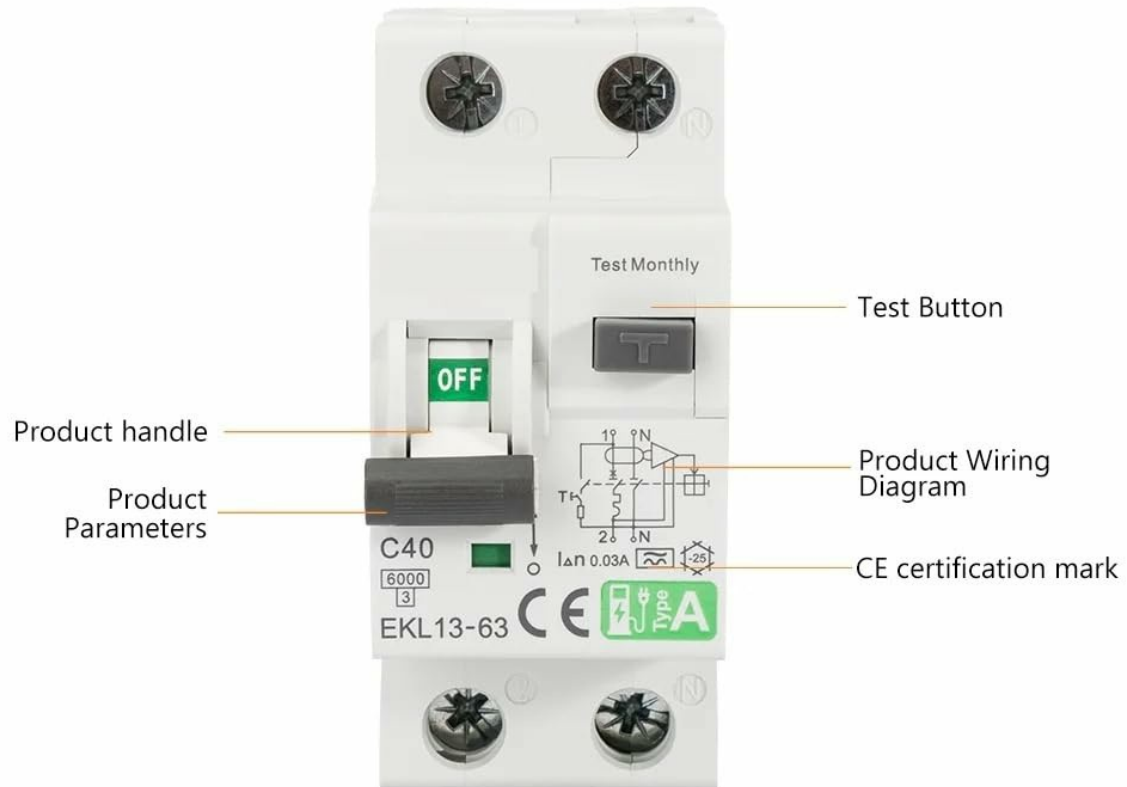
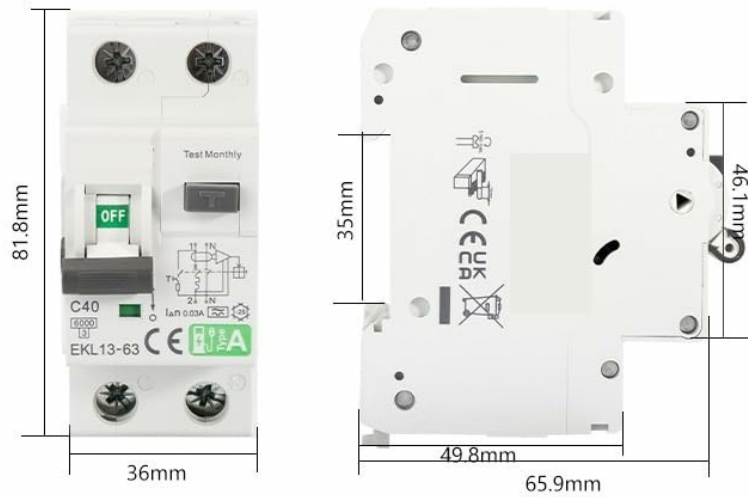


Figure 3.2: Labeled components of the ETEK RCBO EKL13-63, showing the product handle, test button, product wiring diagram, and CE certification mark.

## 4. SPECIFICATIONS

The following table outlines the technical specifications for the ETEK RCBO Type A EKL13-63:



<b>Standard</b>	<b>IEC/EN61009-1</b>	<b>Rated voltage(U<sub>e</sub>)</b>	<b>230/240V~</b>
<b>No.of poles</b>	<b>1P+N</b>	<b>Rated frequency</b>	<b>50/60Hz</b>
<b>Rated current</b>	<b>6-63A</b>	<b>Rated breaking capacity</b>	<b>6,000A</b>
<b>Type of protection</b>	<b>AC,A</b>	<b>Rated impulse voltage(U<sub>imp</sub>)</b>	<b>4,000V</b>
<b>Rated sensitivity currents(I<math>\Delta</math>n)</b>	<b>10,30,100,300mA</b>	<b>Thermal-magnetic characteristic</b>	<b>B,C</b>
<b>Residual current off-time under I<math>\Delta</math>n</b>	<b>≤0.1s</b>	<b>Electrical life</b>	<b>4,000Cycles</b>

Figure 4.1: Detailed technical specifications and dimensions for the ETEK RCBO EKL13-63.

Parameter	Value
Standard	IEC/EN61009-1
No. of poles	1P+N
Rated current	6-63A (Specific model 16A)
Type of protection	AC, A
Rated sensitivity currents (I $\Delta$ n)	10, 30, 100, 300mA (Specific model 30mA)
Residual current off-time under I $\Delta$ n	≤0.1s
Rated voltage (Ue)	230/240V~
Rated frequency	50/60Hz
Rated breaking capacity	6,000A (6kA)
Rated impulse voltage (Uimp)	4,000V
Thermal-magnetic characteristic	B, C
Electrical life	4,000 Cycles

## 5. SETUP AND INSTALLATION

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**IMPORTANT:** Installation must be carried out by a qualified electrician in accordance with all applicable national and local wiring regulations.

- Power Disconnection:** Before commencing any work, ensure the main power supply to the electrical panel is completely disconnected and locked out to prevent accidental re-energization. Verify with a voltage tester.
- Mounting:** The EKL13-63 RCBO is designed for DIN rail mounting. Snap the device onto the standard 35mm DIN rail within the electrical distribution board.
- Wiring Connections:**
  - Connect the incoming live (L) and neutral (N) conductors to the top terminals of the RCBO.
  - Connect the outgoing live (L') and neutral (N') conductors to the bottom terminals of the RCBO, leading to the protected circuit.
  - Ensure all connections are tight and secure to prevent loose contacts, which can cause overheating or arcing.
- Verification:** Double-check all wiring for correctness and security. Ensure no bare wires are exposed.
- Enclosure:** Close the electrical distribution board cover securely.
- Power Restoration:** Restore power to the main supply.

## 6. OPERATING INSTRUCTIONS

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The EKL13-63 RCBO operates automatically to protect against electrical faults. Manual operation is primarily for switching the circuit on or off and for testing.

- Switching ON:** Push the operating handle upwards to the 'ON' position.
- Switching OFF:** Push the operating handle downwards to the 'OFF' position.
- Tripping:** In the event of an overload, short circuit, or earth leakage fault, the RCBO will

automatically trip, moving the handle to the 'OFF' or intermediate position. To reset, first identify and rectify the fault, then push the handle fully down to 'OFF' (if it's in an intermediate position) and then upwards to 'ON'.



Figure 6.1: The ETEK RCBO EKL13-63 showing the 'Test Monthly' button. Pressing this button simulates an earth leakage fault to verify proper operation.

## 7. MAINTENANCE

Regular testing is crucial to ensure the continued proper functioning of the RCBO's residual current protection mechanism.

- **Monthly Test:** Press the 'Test Monthly' button (marked 'T' or 'Test') on the front of the RCBO. The device should trip immediately, moving the handle to the 'OFF' position.
- **Reset After Test:** After the test, reset the RCBO by pushing the handle fully down to 'OFF' and then upwards to 'ON'.
- **If Test Fails:** If the RCBO does not trip when the test button is pressed, it indicates a malfunction. The device must be replaced immediately by a qualified electrician. Do not rely on a faulty RCBO for protection.
- **Cleaning:** Keep the device clean and free from dust. Use a dry, soft cloth for cleaning. Do not use liquids or abrasive cleaners.

## 8. TROUBLESHOOTING

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If the RCBO trips frequently or fails to operate correctly, consider the following:

- **Frequent Tripping (Overload/Short Circuit):**
  - Check for overloaded circuits. Reduce the number of appliances or devices connected to the circuit.
  - Inspect wiring for short circuits (e.g., damaged insulation, loose connections).
  - Ensure the RCBO's current rating is appropriate for the circuit's load.
- **Frequent Tripping (Earth Leakage):**
  - Disconnect all appliances from the protected circuit. Reset the RCBO. If it holds, reconnect appliances one by one to identify the faulty appliance.
  - Inspect wiring for insulation damage or moisture ingress.
  - If the problem persists, consult a qualified electrician.
- **RCBO Does Not Reset:**
  - Ensure the fault has been cleared. The RCBO will not reset if the fault is still present.
  - If the fault is cleared and it still won't reset, the RCBO may be damaged and requires replacement.
- **RCBO Does Not Trip During Monthly Test:**
  - This indicates a malfunction of the residual current protection. The device must be replaced immediately.

For any issues not resolved by these steps, contact a qualified electrician or the manufacturer's support.

## 9. WARRANTY AND SUPPORT

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For warranty information, technical support, or service inquiries, please refer to the documentation provided at the point of purchase or contact the seller/manufacturer directly. Keep your purchase receipt as proof of purchase.