GEYA GRD9L-R-AC220V+A-SI RCCB 2P-63A-30mA

GEYA GRD9L-R Automatic Reclosing RCD Leakage Circuit Breaker User Manual

Model: GRD9L-R-AC220V+A-SI RCCB 2P-63A-30mA

1. Introduction

This manual provides essential information for the safe and effective installation, operation, and maintenance of the GEYA GRD9L-R Automatic Reclosing RCD Leakage Circuit Breaker. This device is designed to enhance electrical safety by automatically reclosing when a Residual Current Device (RCD) trips unexpectedly, reducing manual intervention and improving system efficiency. It is suitable for various applications including meter boxes, new energy circuit management, solar PV control boxes, smart electricity systems, smart homes, and charging stations for new energy vehicles.
Please read this manual thoroughly before installation and use, and retain it for future reference.

2. Key Features

- **Automatic Reclosing:** Coupled with a leakage protection circuit breaker (RCD), it automatically recloses when the RCD trips unexpectedly. This eliminates the need for manual reclosing, reduces maintenance costs, and promptly corrects errors to improve efficiency.
- **Integrated Reclosing Attempts:** Features 3 integrated reclosing attempts. If continuous reclosing occurs within 15 minutes, an alarm can be sent via an auxiliary contact.
- **Manual/Automatic Selector:** Equipped with a manual/automatic selector switch for flexible operation.
- **Dual Locking Mechanism:** Incorporates a double mechanical/electronic locking system for enhanced safety.
- **Accessory Compatibility:** Can be adapted with auxiliary contacts, alarm contacts, shunt releases, and undervoltage releases.
- **Reclosing Time Reset:** Reclosing attempt counts are reset if no trip occurs or if a manual reset is performed within 15 minutes of a successful reclosure.

3. Technical Specifications

Specification	Value
Model Number	GRD9L-R-AC220V+A-SI RCCB 2P-63A-30mA
Brand	GEYA
Voltage	220 Volts
Current Rating	63 A (Nominal Current) / 30 mA (Residual Current Sensitivity)
Circuit Breaker Type	RCD (Residual Current Device)
Number of Poles	2
Mounting Type	Wall Mount, Flush Mount
Package Dimensions	12 x 11.6 x 9.1 cm
Weight	350 grams

4. Setup and Installation

Installation of the GEYA GRD9L-R device should only be performed by a qualified electrician in accordance with local electrical codes and regulations. Ensure the main power supply is disconnected before commencing any installation work.

4.1 Mounting

The device supports both wall mount and flush mount installations. It is designed to be installed on a DIN rail alongside an RCCB and auxiliary components.

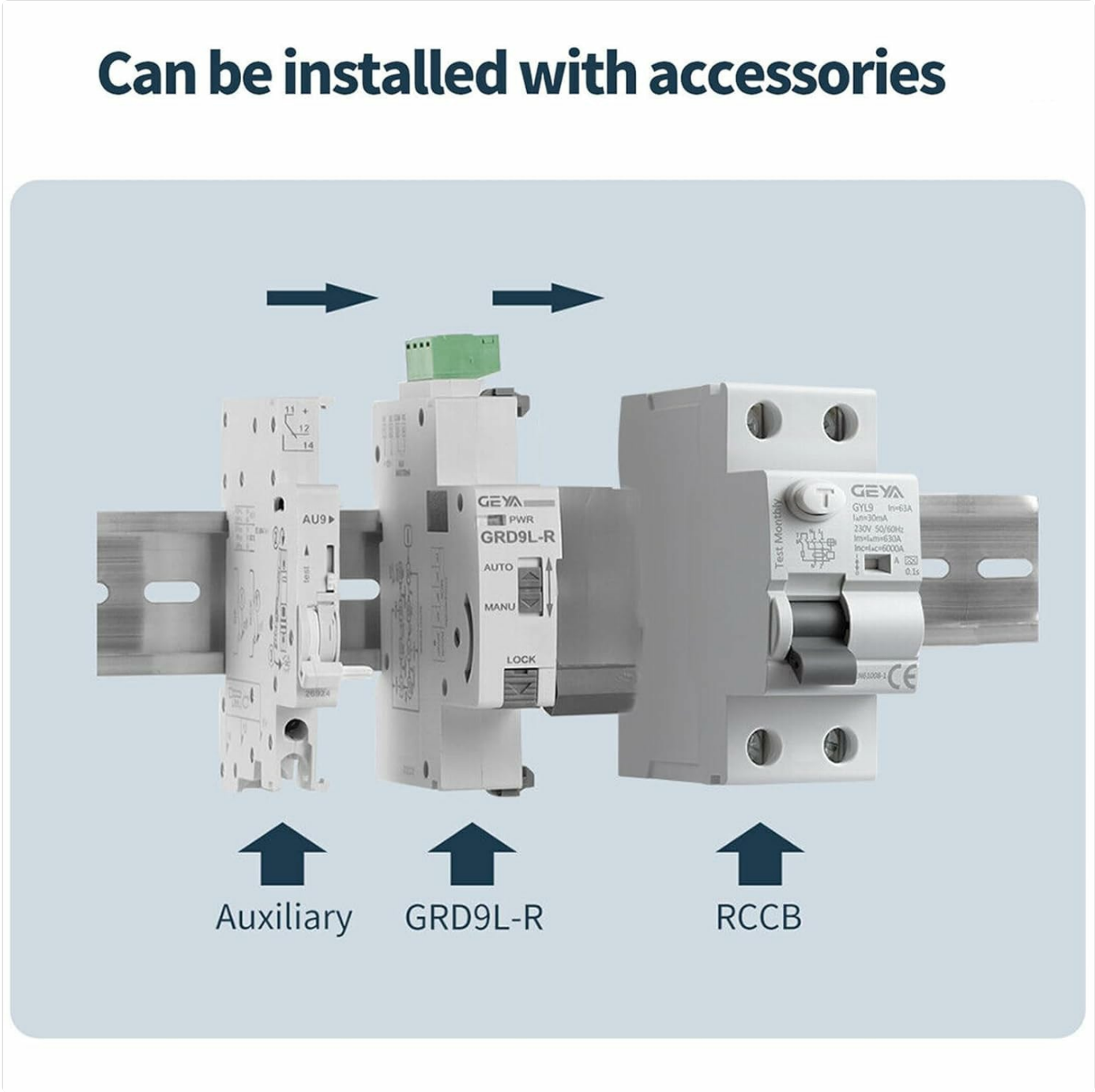

Figure 4.1: The GRD9L-R device shown installed on a DIN rail with an auxiliary contact module and an RCCB (Residual Current Circuit Breaker). Arrows indicate the direction of installation onto the rail.

Installation Steps:

1. Mount the RCCB onto the DIN rail.
2. Mount the GRD9L-R automatic reclosing device next to the RCCB.
3. If required, mount the auxiliary contact module next to the GRD9L-R.
4. Ensure all components are securely fastened to the DIN rail.

4.2 Wiring

Connect the GRD9L-R device according to the provided wiring diagram. Ensure correct polarity and secure terminal connections. The device is designed to be coupled with an RCCB for leakage protection.

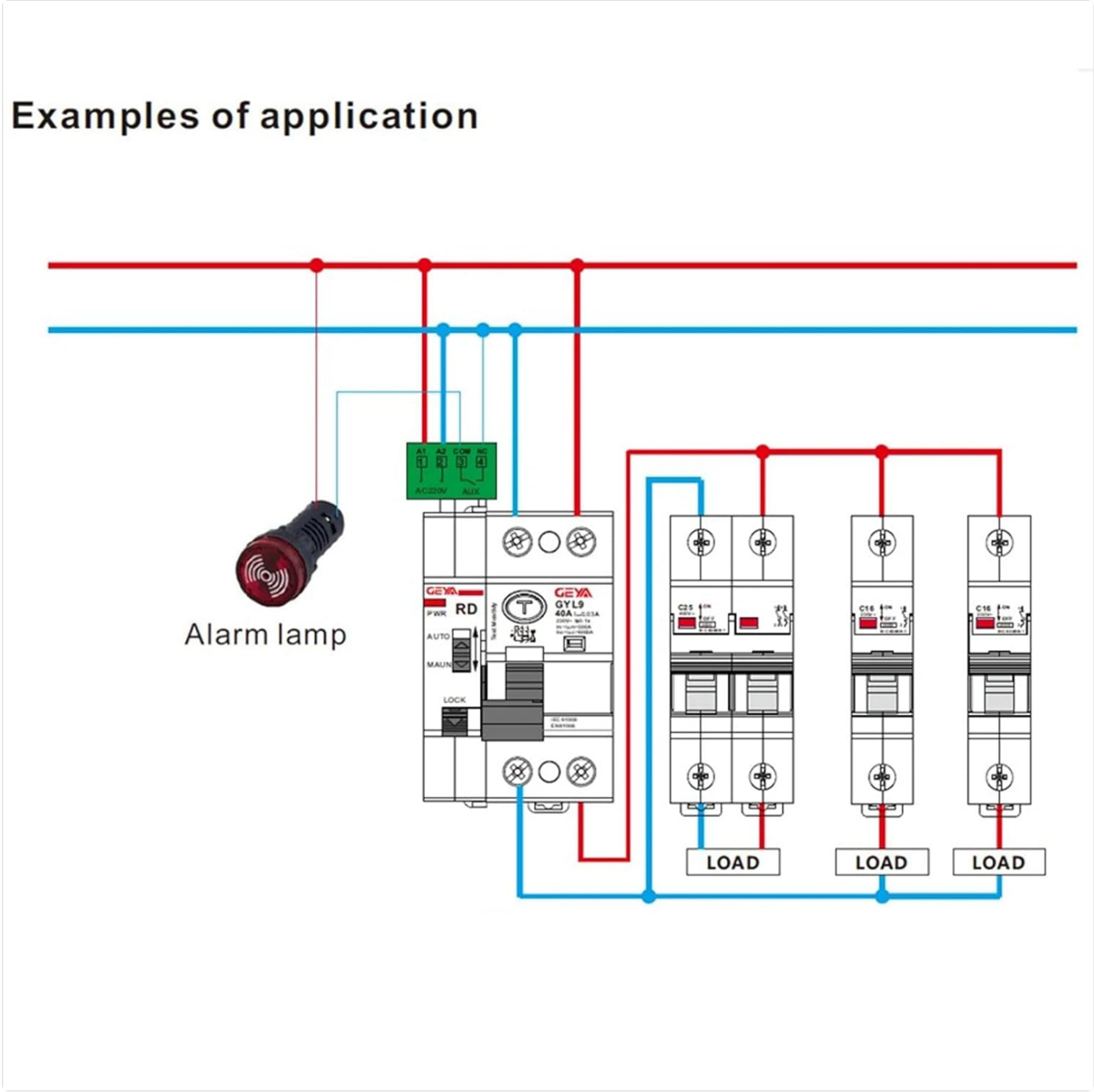

Figure 4.2: Example application wiring diagram. This diagram illustrates how the GRD9L-R (labeled RD) integrates with an alarm lamp, an RCCB, and multiple Miniature Circuit Breakers (MCBs) protecting various loads. Red lines represent live connections, and blue lines represent neutral connections.

Important: Verify all connections before restoring power. Incorrect wiring can lead to malfunction or electrical hazards.

5. Operating Instructions

5.1 Manual/Automatic Selector

The GRD9L-R device features a selector switch for choosing between manual and automatic operation modes.

- **AUTO Mode:** In this mode, the device will automatically attempt to reclose the coupled RCCB after a trip, following the programmed reclosing logic.
- **MANU Mode:** In this mode, the automatic reclosing function is disabled. The RCCB must be manually reclosed after a trip.

Function Description

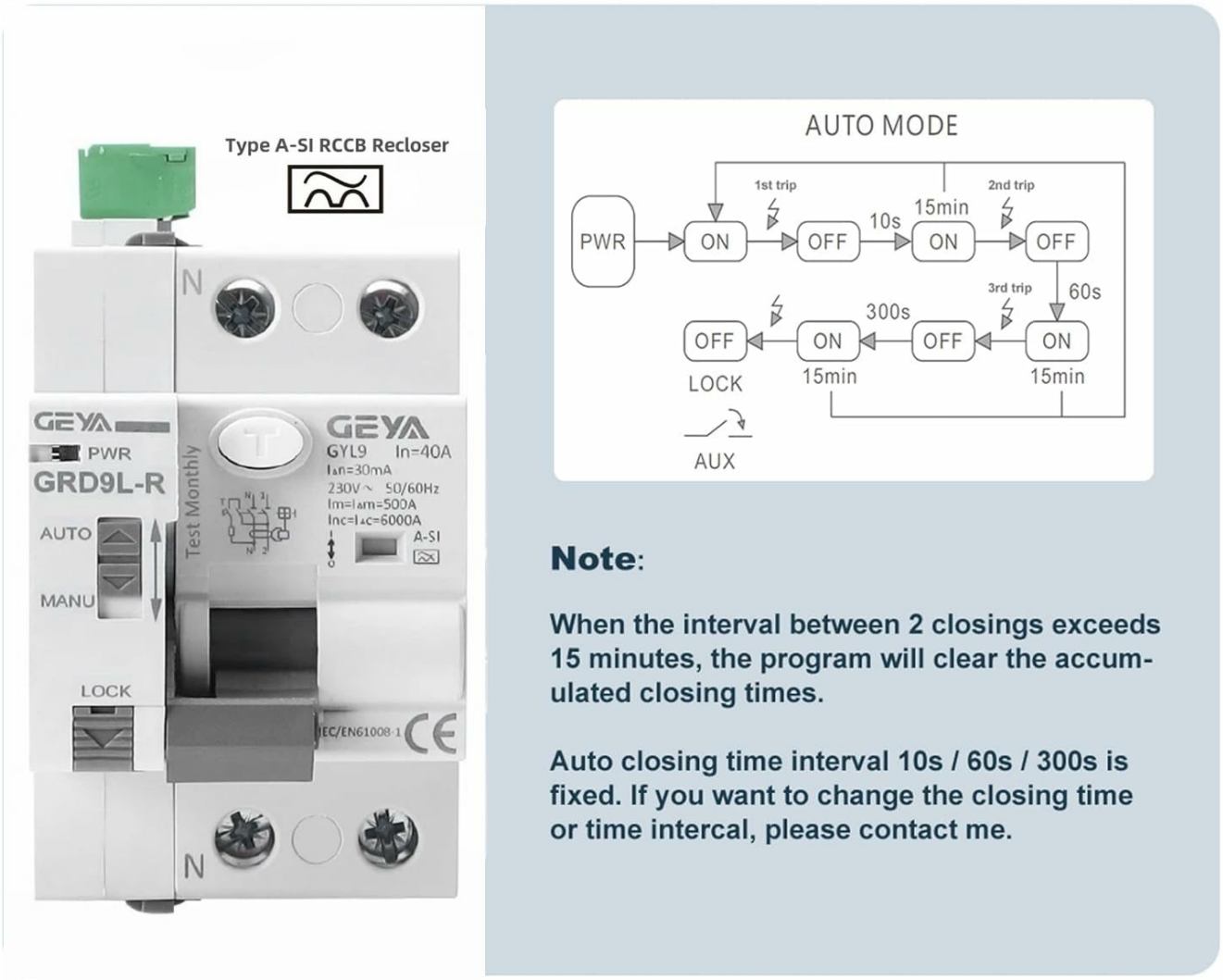

Figure 5.1: The GEYA GRD9L-R device with its AUTO/MANU selector switch clearly visible. The diagram illustrates the automatic reclosing logic, showing the sequence of ON/OFF states and delay times for the 1st, 2nd, and 3rd trip attempts. It also indicates the PWR (Power) and AUX (Auxiliary) connections.

5.2 Automatic Reclosing Logic

The device attempts to reclose the RCCB up to three times after an unexpected trip. The reclosing intervals are fixed.

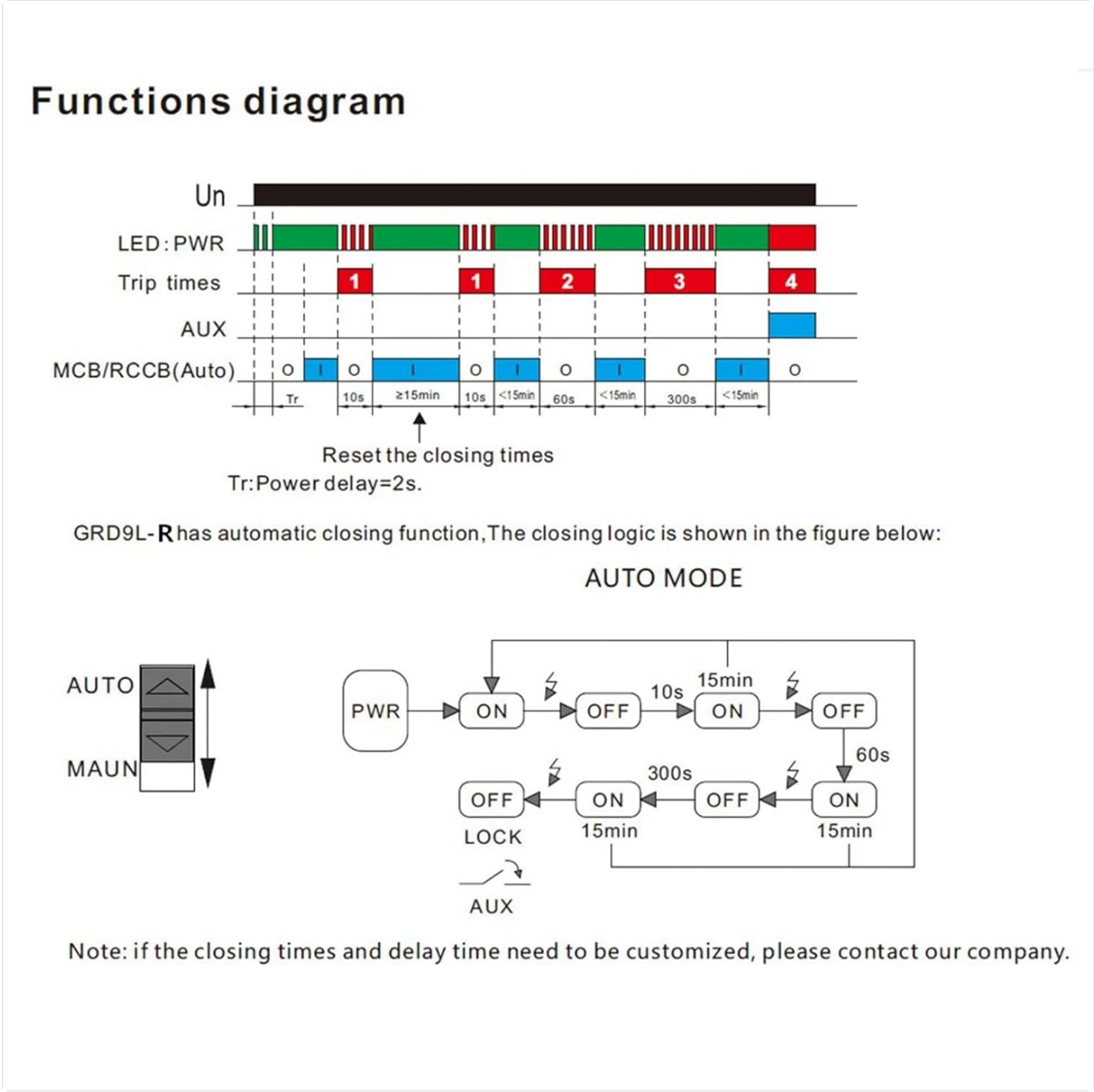

Figure 5.2: Detailed functions diagram for the GRD9L-R. This diagram shows the LED indicators (PWR), trip times (1, 2, 3, 4), and the state of the MCB/RCCB (Auto) over time. It illustrates the reclosing logic with specific delay times (10s, 15min, 60s, 300s) between attempts. The note indicates that if the interval between two closings exceeds 15 minutes, the program clears accumulated closing times. Fixed closing time intervals are 10s, 60s, and 300s.

- **First Trip:** After the RCCB trips, the device waits for 10 seconds, then attempts to reclose.
- **Second Trip:** If the RCCB trips again within 15 minutes of the first reclosure, the device waits for 60 seconds, then attempts to reclose.
- **Third Trip:** If the RCCB trips a third time within 15 minutes of the second reclosure, the device waits for 300 seconds (5 minutes), then attempts to reclose.
- **Lockout:** If the RCCB trips a fourth time, or if reclosure is unsuccessful after the third attempt, the device enters a locked-out state (LOCK) and requires manual intervention.
- **Resetting Attempts:** If the interval between two consecutive trips exceeds 15 minutes, the reclosing attempt counter is reset. The counter also resets after a successful reclosure if no further trips occur within 15 minutes, or upon manual reset.

The fixed reclosing time intervals are 10 seconds, 60 seconds, and 300 seconds. For customization of closing times or intervals, please contact GEYA customer support.

5.3 Locking Function

The device includes a locking mechanism for safety during maintenance or inspection. When the lock function is activated, the RCCB cannot be closed, preventing accidental power restoration.

Figure 5.3: The GRD9L-R device demonstrating the locking function. A padlock is inserted into the designated lock slot, preventing the switch from being moved to the ON position. A note indicates that the RCCB cannot close when the lock function is activated, and the padlock diameter should be less than 3.5 mm.

To activate the locking function, insert a padlock with a shackle diameter less than 3.5 mm into the designated slot on the device. This ensures that the RCCB remains open during circuit checks or maintenance, enhancing safety.

6. Maintenance

The GEYA GRD9L-R device is designed for reliable operation with minimal maintenance. However, periodic checks are

recommended to ensure optimal performance and safety.

- **Visual Inspection:** Regularly inspect the device for any signs of physical damage, loose connections, or overheating.
- **Function Test:** Periodically test the RCCB's trip function using its test button. Ensure the GRD9L-R responds by attempting to reclose.
- **Cleaning:** Keep the device clean and free from dust and debris. Use a dry, soft cloth for cleaning. Do not use liquid cleaners.
- **Professional Check:** It is recommended to have the electrical system, including the GRD9L-R, inspected by a qualified electrician at least once a year.

Always disconnect power before performing any maintenance or inspection.

7. Troubleshooting

This section provides guidance for common issues. For problems not listed here or if issues persist, contact GEYA customer support.

Problem	Possible Cause	Solution
Device does not reclose after RCCB trip.	• Device is in MANU mode. • Device is in LOCK state (after 3 unsuccessful reclosures). • No power to the GRD9L-R device. • Fault in the device or wiring.	• Switch to AUTO mode. • Manually reset the RCCB and GRD9L-R. Investigate the persistent fault. • Check power supply and connections to the GRD9L-R. • Contact qualified personnel for inspection.
Alarm contact activated frequently.	• Frequent RCCB trips (3 trips within 15 minutes). • Persistent electrical fault in the circuit.	• Investigate and resolve the underlying electrical fault causing the RCCB trips. • Consult a qualified electrician.
RCCB cannot be closed when lock function is active.	Padlock is inserted, activating the safety lock.	Remove the padlock from the locking slot.

8. Safety Information

- **Electrical Hazard:** This device operates with high voltage. Installation, maintenance, and troubleshooting must only be performed by qualified and authorized personnel.
- **Disconnect Power:** Always ensure the main power supply is completely disconnected and locked out before working on the device or associated circuitry.
- **Proper Grounding:** Ensure all electrical installations are properly grounded according to national and local electrical codes.
- **Environmental Conditions:** Do not expose the device to moisture, extreme temperatures, or corrosive environments.
- **Intended Use:** Use the device only for its intended purpose as an automatic reclosing mechanism for RCDs. Do not modify the device.

9. Warranty and Support

GEYA products are manufactured to high-quality standards. For warranty information, please refer to the documentation provided with your purchase or contact your local GEYA distributor. For technical support, inquiries about customization, or service, please visit the official GEYA website or contact customer service.

Manufacturer: ZHEJIANG GEYA ELECTRICAL CO.,LTD