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› **TONGOU** /

› **TONGOU TOSAR-RD4A-2-40-003 Type A 1P+N 230V 40A 30mA Auto-Reclosing Residual Current Device User Manual**

TONGOU TOSAR-RD4A-2-40-003

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1. PRODUCT OVERVIEW

The TONGOU TOSAR-RD4A-2-40-003 is a Type A 1P+N 230V 40A 30mA auto-reclosing residual current device (RCD). It is engineered for stable operation in 230V AC 50Hz/60Hz electrical networks, providing enhanced electrical safety for a variety of applications including residential homes, commercial buildings, and smart home systems. This device incorporates an advanced triple automatic reclosing function with staggered delays, designed to ensure continuous power supply while maintaining critical safety standards.



Figure 1: Front view of the TONGOU TOSAR-RD4A-2-40-003 auto-reclosing residual current device, showcasing its compact design and clear labeling.

2. KEY FEATURES

- **Automatic Triple Reclosing:** The device attempts to reclose three times with delays of 10 seconds, 60 seconds, and 300 seconds after a trip. If a successful reclosure occurs (stable operation for over 15 minutes), the fault is considered cleared, and the reclosing counter resets. Three consecutive reclosing failures result in a permanent lockout, requiring manual intervention.
- **Type A Protection:** Provides comprehensive protection against both AC sinusoidal residual currents and pulsating DC residual currents, enhancing safety in modern electrical installations.
- **Manual and Automatic Mode Switching:** Supports easy switching between automatic and manual recloser modes, offering flexibility in operation and maintenance.
- **Manual Lockout Function:** Allows for manual locking of the recloser function, which is crucial for safety during maintenance or when a persistent fault requires investigation.
- **LED Display:** An integrated LED display provides real-time visual feedback on the device's operational status, including countdowns during reclosing attempts and fault indicators.

- **Dry Contact Control:** Features 6 contacts for external control, including Normally Closed (CLOSE), Normally Open (OPEN), Common (COM), L pole, and N pole connections. These contacts support a nominal voltage of AC 100-240V.
- **Wide Application:** Specifically designed for diverse environments, making it suitable for use in residential homes, commercial establishments, specialized industrial settings, and integrated smart home systems.

RCCB

type A



with reclosing auto

30mA/ 40 amp/ Inc:6KA



Figure 2: An image highlighting the key specifications of the TONGOU RCD: RCCB Type A, with reclosing auto, 30mA, 40 Amp, and an Inc (short-circuit current) of 6KA. Below are illustrative images of typical applications.



Dry contact control

Figure 3: A close-up view of the TONGOU RCD showing the dry contact control terminals, labeled 1 to 6, indicating external control capabilities.

Temperatura Ambiente

Cumplir con los requisitos de aplicación en diversas ocasiones



TEMPERATURA MÁXIMA
+85°C





TEMPERATURA MÍNIMA
-40°C

Figure 4: Detailed product features including ergonomic design, fire-retardant casing, convenient design for distribution boxes, and quick installation on DIN rails.

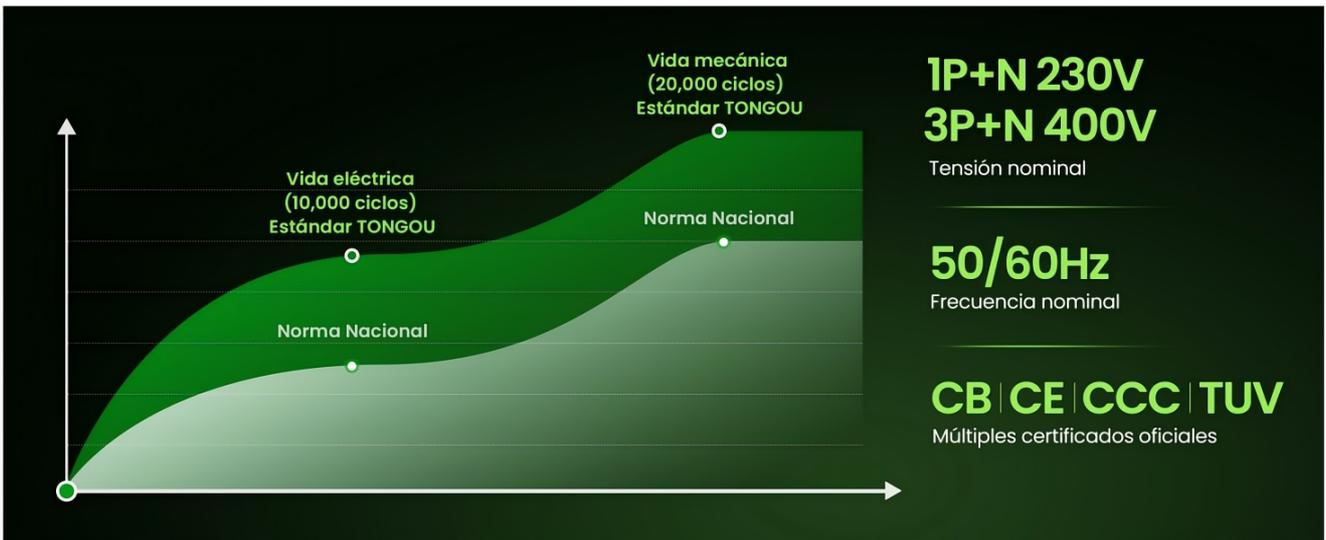


Figure 5: A graph comparing the mechanical and electrical life cycles of TONGOU products against national standards, along with key electrical specifications and certifications.



Figure 6: An illustration of the wide operating temperature range of the TONGOU RCD, from -40°C to +85°C, ensuring reliability in diverse environmental conditions.

3. SETUP AND INSTALLATION

WARNING: Installation must be performed by a qualified electrician in accordance with local electrical codes and regulations. Ensure power is disconnected before installation to prevent electric shock or damage to the device.

3.1 Mounting

The TONGOU TOSAR-RD4A-2-40-003 is designed for DIN rail mounting. Securely attach the device to a standard 35mm DIN rail within your electrical panel. Ensure it is firmly clipped into place.

3.2 Wiring

Connect the device according to the provided wiring diagram. Ensure correct connection of Line (L) and Neutral (N) conductors. The device is 1P+N, meaning it provides protection for one phase and the neutral conductor.

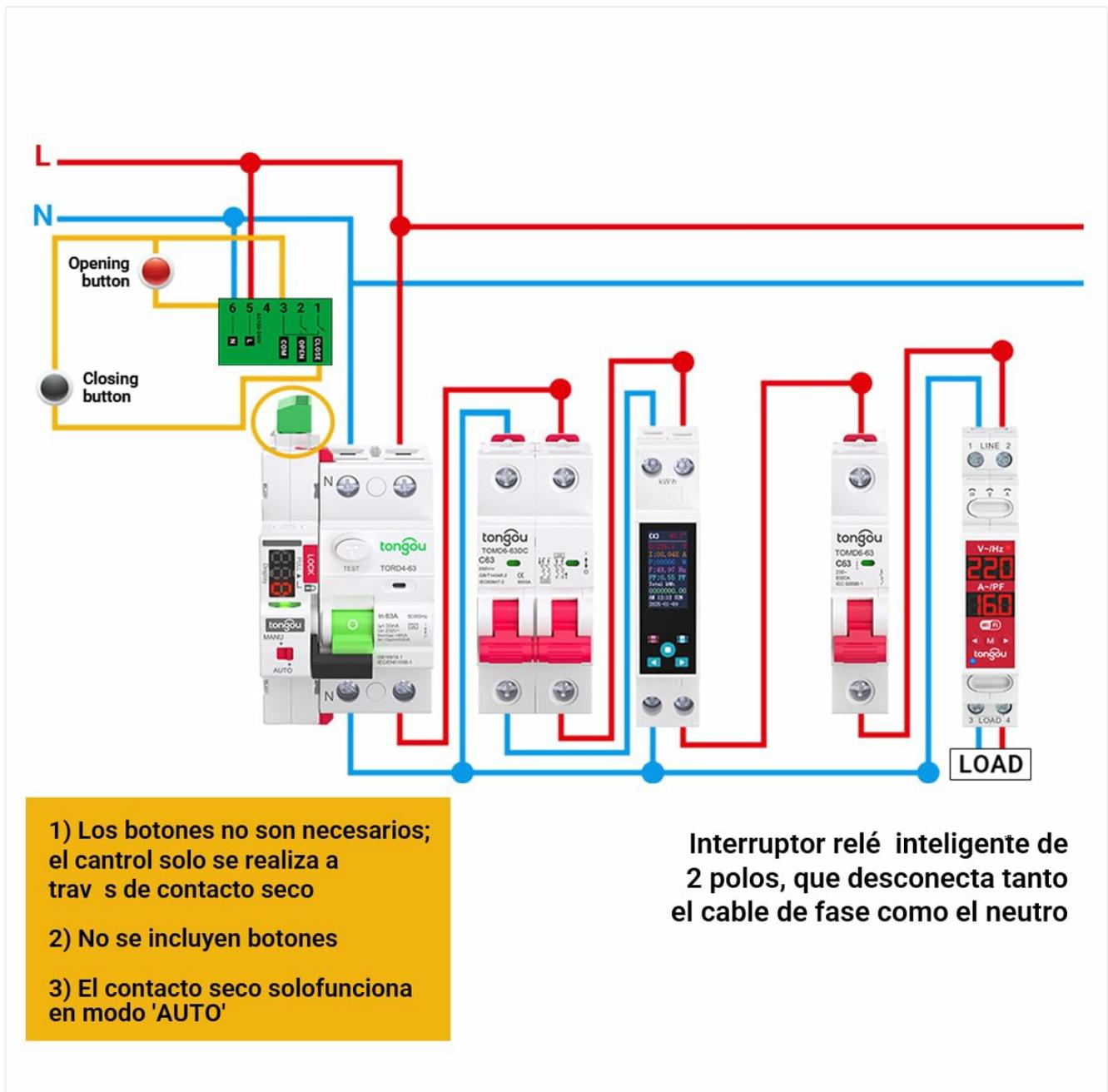


Figure 7: A detailed wiring diagram illustrating the connection of the TONGOU RCD within an electrical circuit, including input/output and dry contact control wiring.

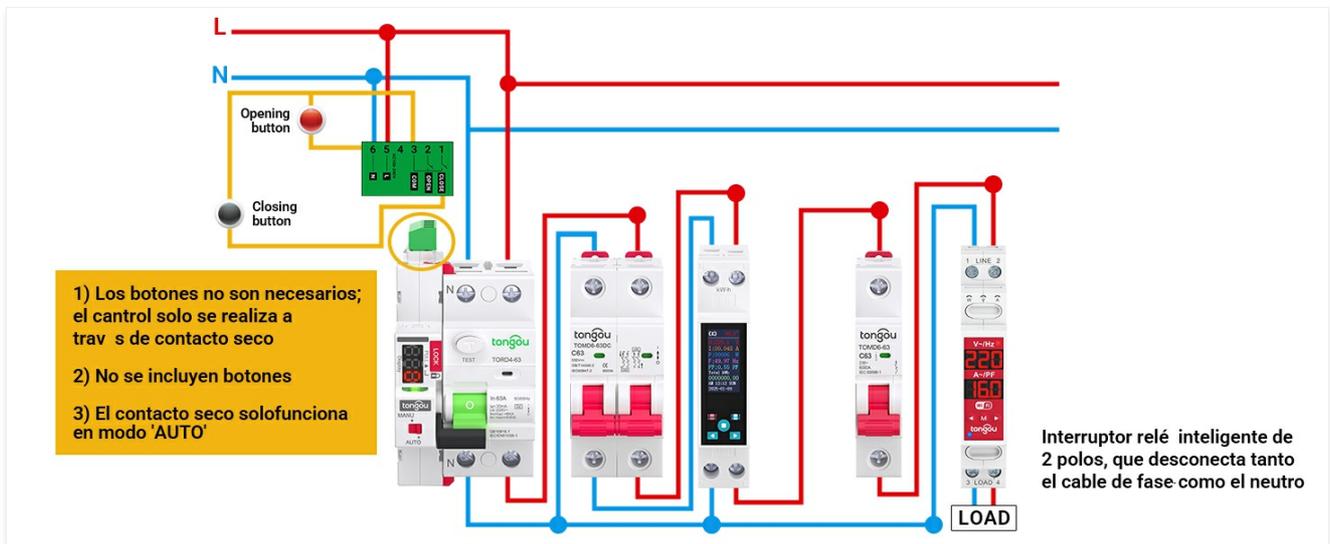


Figure 8: A technical circuit diagram showing internal components and wiring paths of the TONGOU RCD, with important safety warnings.

Mejora Tu Vida

Detalles del producto

01

Carcasas ignífugas
Carcasa resistente a altas temperaturas, segura y confiable

02

Diseño Ergonómico
Operación cómoda, diseño atractivo y agarre mejorado

03

Convenient Design
Cajas distribuidoras con ranuras MCB y conexión para barras colectoras

04

Montaje rápido
Rieles DIN estándar de 35 mm

Figure 9: A visual guide outlining four numbered steps for the correct installation of the TONGOU RCD, emphasizing proper mounting and connection procedures.

3.3 Dry Contact Connections

The automatic recloser features 6 contacts for external control. Refer to the wiring diagram (Figure 7) for specific connections and functions:

- **Contact 1:** Normally Closed (CLOSE)
- **Contact 2:** Normally Open (OPEN)
- **Contact 3:** Common (COM)
- **Contact 4:** Empty (Not used)
- **Contact 5:** L Pole
- **Contact 6:** N Pole

These contacts are rated for a nominal voltage of AC 100-240V.

4. OPERATING INSTRUCTIONS

4.1 Powering On/Off

To power on the device, ensure the main switch or lever is in the 'ON' position. To power off, move the switch or

lever to the 'OFF' position. Always ensure the load is disconnected before powering off for safety.

4.2 Automatic Reclosing Function

In automatic mode, if an electrical fault causes the device to trip, it will initiate a sequence of up to three reclosing attempts. These attempts occur with specific staggered delays:

- **First Attempt:** After 10 seconds.
- **Second Attempt:** After 60 seconds (if the first failed).
- **Third Attempt:** After 300 seconds (if the second failed).

If a reclosure is successful and the device operates stably for more than 15 minutes, the system determines that the fault has been cleared. The reclosing counter will then reset, and the device will return to its initial operational state.

If three consecutive reclosing attempts fail (either the device is unable to reclose or it trips again immediately after reclosing), the device will interpret this as a permanent fault. In this scenario, the automatic reclosing function will be locked out, and manual intervention will be required to reset the device after the fault has been addressed.

4.3 Mode Selection (Manual/Auto)

The device allows users to switch between automatic and manual recloser modes. Use the designated switch or button on the device to select the desired mode. In manual mode, the automatic reclosing function is disabled, providing direct control over the circuit breaker's state.

4.4 Manual Lockout

A manual lockout function is available to intentionally prevent automatic reclosing. This feature is particularly useful during maintenance procedures or when a persistent fault requires thorough investigation, ensuring the circuit remains open until manually reset. Consult the device's physical controls for engaging this function.

4.5 LED Display

The integrated LED display provides clear visual feedback on the device's operational status. Observe the display for indicators such as countdowns during reclosing attempts, fault codes, or the current status (e.g., 'ON' or 'OFF').



Figure 10: An image showing the visual window of the TONGOU RCD. A white indicator signifies 'CLOSED' (in use), while a red indicator signifies 'TRIPPED' (fault detected).

5. MAINTENANCE

The TONGOU TOSAR-RD4A-2-40-003 is engineered for reliable operation with minimal maintenance requirements. However, periodic checks are highly recommended to ensure optimal performance and continued safety.

- **Visual Inspection:** Regularly inspect the device for any signs of physical damage, such as cracks, discoloration, or loose connections. Ensure all wiring terminals are secure.
- **Test Button:** Periodically press the 'TEST' button (usually labeled 'T' or 'TEST') to verify the RCD's tripping mechanism. The device should trip immediately upon pressing the button. If it does not, the device may be faulty and requires professional inspection or replacement.
- **Cleaning:** Keep the device free from dust and debris. Use a dry, soft cloth for cleaning. Do not use liquid cleaners, solvents, or abrasive materials, as these can damage the device.

Always disconnect power to the circuit before performing any maintenance, inspection, or cleaning to prevent electric shock.

6. TROUBLESHOOTING

If the TONGOU TOSAR-RD4A-2-40-003 trips frequently or fails to reclose as expected, consider the following troubleshooting steps:

- **Frequent Tripping:**
 - *Temporary Faults:* The auto-reclosing function is specifically designed to manage temporary or transient faults. If the device recloses successfully after a short delay, the fault was likely momentary and has cleared itself.
 - *Persistent Faults:* If the device trips and fails to reclose after three attempts (leading to a lockout), this strongly indicates a persistent electrical fault. This situation requires immediate investigation by a qualified electrician to identify and rectify the underlying cause, such as a faulty appliance, damaged wiring, or insulation breakdown.
- **Failure to Reclose:**
 - Check the LED display for any error codes or specific indicators that might provide clues about the failure.
 - Ensure the device is not inadvertently in manual lockout mode.
 - If the device is locked out after three reclosing failures, a manual reset will be required once the electrical fault has been completely cleared and verified safe.
- **No Power:**
 - Verify that the main power supply to the RCD is active and not interrupted.
 - Check any upstream circuit breakers or fuses in your electrical panel to ensure they have not tripped.

Do not attempt to repair the device yourself. For any issues beyond basic troubleshooting, or if you are unsure about the cause of a fault, contact a qualified electrician for professional assistance.

7. TECHNICAL SPECIFICATIONS

Feature	Specification
Model Number	TOSAR-RD4A-2-40-003
Brand	TONGOU
Rated Current	40 Amperes
Rated Residual Current	30 mA

Feature	Specification
Type	Type A (AC sinusoidal and pulsating DC residual currents)
Number of Poles	1P+N (1 Phase + Neutral)
Rated Voltage	230V AC
Frequency	50Hz/60Hz
Short-Circuit Current (Inc)	6KA
Reclosing Attempts	3 times
Reclosing Delays	10s / 60s / 300s
Mounting Type	DIN Rail Mount
Operating Temperature	-40°C to +85°C
Dimensions (approx.)	9.5 x 5.4 x 5 cm
Product Weight (approx.)	260 g
Certifications	CB, CE, CCC, TUV
Included Components	1 smart circuit breaker and user manual
Manufacturer	Changyou Technology (Zhejiang) Co., Ltd.
First Available Date	24 May 2025



Figure 11: A diagram illustrating the physical dimensions of the TONGOU RCD for both 1P+N and 3P+N variants, showing height, width, and depth measurements.

8. WARRANTY AND SUPPORT

For detailed warranty information, technical support, or service inquiries regarding your TONGOU TOSAR-RD4A-2-40-003 device, please contact the seller or manufacturer directly. It is recommended to retain your purchase receipt as proof of purchase for any warranty claims.

Manufacturer: Changyou Technology (Zhejiang) Co., Ltd.

