

Mastech YX360-TRD

Sunwa YX360-TRD Analog Multimeter User Manual

Model: YX360-TRD

Brand: Mastech

INTRODUCTION

The Sunwa YX-360TRD is a versatile analog multimeter designed for a wide range of electrical measurements. This instrument allows for precise measurement of AC/DC voltage, DC current, resistance, capacitance, and diode functionality. Its analog display provides a clear, real-time indication of readings, making it suitable for various applications from hobbyist electronics to professional diagnostics.

This manual provides detailed instructions for the safe and effective operation, maintenance, and troubleshooting of your Sunwa YX-360TRD Analog Multimeter. Please read this manual thoroughly before using the device to ensure proper functionality and safety.

SAFETY INFORMATION

Always observe the following safety precautions to prevent personal injury and damage to the multimeter or equipment under test:

- **Read all instructions:** Before using the multimeter, carefully read and understand all operating instructions and safety warnings.
- **Voltage Limits:** Do not exceed the maximum input limits for any measurement range. Refer to the specifications section for detailed limits.
- **Insulation:** Ensure your hands are dry and that you are standing on an insulated surface when making measurements.
- **Test Leads:** Use only the test leads supplied with the multimeter. Inspect test leads for damage before each use. Do not use if insulation is damaged or if metal is exposed.
- **Fuses:** The multimeter is all range fused. If a fuse blows, replace it only with a fuse of the specified type and rating.
- **Circuit De-energization:** Always de-energize the circuit and discharge all high-voltage capacitors before making resistance, capacitance, or diode measurements.
- **Environmental Conditions:** Do not use the multimeter in wet or explosive atmospheres.
- **Servicing:** Refer all servicing to qualified service personnel. Do not attempt to repair the multimeter yourself.

PRODUCT OVERVIEW

The Sunwa YX-360TRD Analog Multimeter features a clear analog display and intuitive controls for various measurement functions.



Figure 1: Front View of Multimeter. This image shows the front of the Sunwa YX360-TRD analog multimeter, highlighting its large analog scale, function selector dial, and integrated test leads. The scale displays ranges for DCV, ACV, DCA, Resistance, and Capacitance. The selector dial is prominently positioned for easy function and range selection.



Figure 2: Multimeter with Back Stand. This image displays the Sunwa YX360-TRD multimeter from an angled perspective, showing its integrated back stand extended. The stand allows the multimeter to be propped up for easier viewing of the analog display during operation.

Key Components:

1. **Analog Display:** Large, easy-to-read scale for various measurements. Features a mirrored scale for accurate readings by reducing parallax error.
2. **Function/Range Selector Dial:** Used to select the desired measurement function (DCV, ACV, DCA, Resistance, Capacitance) and the appropriate range.
3. **Test Leads:** Permanently attached red (positive) and black (negative) test leads for connecting to the circuit under test.
4. **Ω -ADJ Knob:** Used to zero the ohmmeter before making resistance measurements.
5. **Back Stand:** Integrated stand for convenient upright positioning.
6. **Test Leads Compartment:** Built-in storage for test leads when not in use.

SETUP

Battery Installation:

The Sunwa YX-360TRD requires two AA batteries for operation. These are typically pre-installed. If replacement is needed:

1. Locate the battery compartment on the back of the multimeter.
2. Carefully open the battery cover.
3. Insert two AA batteries, ensuring correct polarity (+ and -).
4. Close the battery cover securely.



Figure 3: Rear View and Battery Compartment. This image shows the back of the Sunwa YX360-TRD multimeter, illustrating the robust plastic case and the location of the battery compartment. The design emphasizes durability and ease of access for battery replacement.

Initial Inspection:

Before first use, inspect the multimeter for any signs of physical damage. Ensure the test leads are securely attached and free from cuts or abrasions.

OPERATING INSTRUCTIONS

Before taking any measurement, ensure the multimeter is set to the correct function and range. Always start with a higher range if the approximate value is unknown to prevent damage to the meter.

1. Measuring DC Voltage (DCV):

- Set the function/range selector dial to the desired DCV range (e.g., 0.25V, 2.5V, 10V, 50V, 250V, 1000V).
- Connect the red test lead to the positive (+) side of the circuit and the black test lead to the negative (-) side.
- Read the voltage value on the DCV scale of the analog display.

Note: The DCV ranges include 0 - 0.1V $\pm 1\%$ and 0.25V/2.5/10V/50V/250/1000V $\pm 3\%$.

2. Measuring AC Voltage (ACV):

- Set the function/range selector dial to the desired ACV range (e.g., 10V, 50V, 250V, 1000V).
- Connect the test leads across the AC voltage source.
- Read the voltage value on the ACV scale of the analog display.

Note: The ACV ranges are 0 - 10/50/250/1000V $\pm 4\%$.

3. Measuring DC Current (DCA):

- **WARNING:** Never connect the multimeter in parallel with a voltage source when measuring current. Always connect in series with the load.
- Set the function/range selector dial to the desired DCA range (e.g., 50 μ A, 2.5mA, 25mA, 250mA).
- Break the circuit and connect the multimeter in series with the load. The red lead connects to the higher potential side, and the black lead to the lower potential side.
- Read the current value on the DCA scale.

Note: The DCA ranges are 0 - 50 μ A/2.5mA/25mA/250mA $\pm 3\%$. This meter can measure currents as low as 10 micro amps.

4. Measuring Resistance (Ω):

- **WARNING:** Ensure the circuit is de-energized and all capacitors are discharged before measuring resistance.
- Set the function/range selector dial to the desired Resistance range (e.g., x1, x10, x100, x1K, x10K, x100K).
- Short the test leads together (touch red to black).
- Adjust the Ω -ADJ knob until the needle points to '0' on the Ohms scale. This zeros the ohmmeter.
- Connect the test leads across the component whose resistance you wish to measure.
- Read the value on the Ohms scale and multiply by the selected range multiplier.

Note: The Resistance ranges are 0 - 2K/20K/2MKohm $\pm 3\%$ and 200M $\pm 5\%$.

5. Capacitance Estimation (C):

- **WARNING:** Ensure the capacitor is fully discharged before connecting the multimeter.
- Set the function/range selector dial to the 'C' (Capacitance) range.
- Connect the test leads across the capacitor.
- Observe the needle's deflection. The scale provides an estimation of capacitance.

Note: The Capacitance range is 0 - 10 μ F.

6. Diode Check:

- Set the function/range selector dial to the Diode check position.
- Connect the red test lead to the anode and the black test lead to the cathode of the diode. The meter should show a low resistance reading (forward bias).
- Reverse the test leads. The meter should show a very high or infinite resistance reading (reverse bias).

- This function can also be used to check LEDs.

MAINTENANCE

Cleaning:

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the display clean for optimal readability.

Battery Replacement:

Replace batteries when the meter's readings become erratic or the needle does not zero correctly in resistance mode. Refer to the "Setup" section for battery installation instructions.

Storage:

When not in use for extended periods, remove the batteries to prevent leakage. Store the multimeter in a cool, dry place, away from direct sunlight and extreme temperatures.

Fuse Replacement:

The Sunwa YX-360TRD features all-range fusing for protection. If the meter stops functioning on a particular range, a fuse may have blown. Fuse replacement should only be performed by qualified personnel using the correct fuse type and rating as specified in the product's internal documentation or by the manufacturer.

TROUBLESHOOTING

| Problem | Possible Cause | Solution |
|---|--|---|
| Meter does not power on / No needle movement. | Dead or incorrectly installed batteries. | Check battery polarity and replace batteries if necessary. |
| Incorrect or erratic readings. | Low battery, incorrect range selection, damaged test leads, or blown fuse. | Replace batteries, select appropriate range, inspect and replace test leads if damaged, check and replace fuses if blown. |
| Cannot zero ohmmeter (Ω -ADJ). | Low battery or internal issue. | Replace batteries. If problem persists, seek professional service. |
| No reading on a specific function. | Blown fuse for that specific range/function. | Have a qualified technician check and replace the fuse. |

SPECIFICATIONS

DC Voltage (DCV):

- 0 - 0.1V $\pm 1\%$
- 0.25V / 2.5V / 10V / 50V / 250V / 1000V $\pm 3\%$

AC Voltage (ACV):

- 0 - 10V / 50V / 250V / 1000V $\pm 4\%$

DC Current (DCA):

- 0 - 50 μ A / 2.5mA / 25mA / 250mA $\pm 3\%$

Resistance (Ω):

- 0 - 2KΩ / 20KΩ / 2MΩ ±3%
- 200MΩ ±5%

Capacitance (C): 0 - 10 μF

dB: -10 dB - 22 dB

Diode Check: Yes (including LED)

DC Sensitivity: 20kΩ/V

Power Source: 2 x AA Batteries (installed)

Features: All range fused, Back stand, Plastic case with cover, Test leads compartment, Compact size, Mirrored scale.

Product Dimensions: 6.75 x 1 x 4.75 inches

Item Weight: 7.05 ounces (200 Grams)

Model Number: YX360-TRD

WARRANTY AND SUPPORT

Warranty Information:


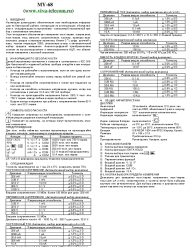
The Sunwa YX360-TRD Analog Multimeter comes with a **1 Year Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage resulting from misuse, abuse, accident, unauthorized alteration or repair, or natural causes.




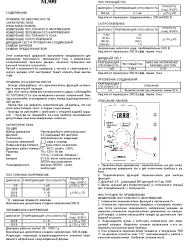
Customer Support:

For technical assistance, warranty claims, or general inquiries, please contact Mastech customer support. Refer to the contact information provided with your purchase documentation or visit the official Mastech website for the most current support details.

Online Resources: For additional information and resources, you may visit the [Mastech Store on Amazon](#).

Related Documents - YX360-TRD

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|---|--|
|  | <p>MASTECH MY74 Digital Multimeter Quick Start Guide Accurate Measurements</p> <p>Get started quickly with the MASTECH MY74 Digital Multimeter. This guide covers setup, safety, and specifications for accurate voltage, current, resistance, capacitance, frequency, and temperature measurements.</p> |
|  | <p>MASTECH MY-68 Digital Multimeter User Manual</p> <p>Comprehensive user manual for the MASTECH MY-68 digital multimeter, covering specifications, safety instructions, operation, and maintenance.</p> |

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|---|--|
|  | <p>MASTECH MS8211D Pen-type Digital Multimeter Quick Start Guide</p> <p>A quick start guide for the MASTECH MS8211D pen-type digital multimeter, providing essential safety information, technical specifications, and basic operational instructions for voltage, current, resistance, and logic testing.</p> |
|  | <p>MASTECH MS2016A Leakage Clamp Meter Operation Manual</p> <p>Comprehensive operation manual for the MASTECH MS2016A AC Leakage Clamp Meter, covering safety information, specifications, operating guidance, maintenance, and accessories. Features include AC/DC voltage, resistance, capacitance, continuity, diode, and temperature measurements.</p> |
|  | <p>MASTECH MS8250D Digital Multimeter Quick Start Guide</p> <p>A concise and SEO-optimized guide for the MASTECH MS8250D Digital Multimeter, providing essential information on safety, specifications, and basic operation.</p> |
|  | <p>MASTECH M300 Digital Multimeter User Manual</p> <p>User manual for the MASTECH M300 digital multimeter, detailing its features, specifications, safety precautions, and operating instructions for measuring DC/AC voltage, DC current, resistance, continuity, and diode testing.</p> |