

SEEIRIR TS-60

SEEIRIR TS-60 Sm-Art Multimeter User Manual

Model: TS-60

1. INTRODUCTION

The SEEIRIR TS-60 Sm-Art Multimeter is a versatile digital measuring instrument designed for electrical professionals and enthusiasts. It features a 6000-count color screen and Type-C rechargeable battery, offering precise measurements of various electrical parameters. This manual provides essential information for the safe and effective use of your multimeter.

2. SAFETY INFORMATION

WARNING: Failure to follow these safety instructions may result in electric shock, fire, or personal injury.

- Always ensure the multimeter is in good working condition before use. Inspect test leads for damage.
- Do not apply voltage or current that exceeds the maximum specified limits for the multimeter.
- Exercise extreme caution when working with live circuits. Avoid contact with bare wires or terminals.
- Do not use the multimeter in wet environments or when your hands are wet.
- Ensure the correct function and range are selected before making any measurements.
- Replace the battery only with the specified type and ensure correct polarity.
- Refer to local and national safety codes for proper electrical work practices.

3. PRODUCT OVERVIEW

The TS-60 Sm-Art Multimeter is designed for ease of use and accuracy. It features a clear color display for easy reading of measurements and a robust casing for durability.



Figure 3.1: Front view of the SEEIRIR TS-60 Sm-Art Multimeter, showing its color display, function buttons, and input jacks for test leads. The device is compact and designed for handheld operation.

Key Features:

- Measures DC/AC Voltage, DC/AC Current, Resistance, Capacitance, and Diodes.
- 6000 Counts Digital Display for high resolution measurements.
- Color Screen for enhanced readability.
- Type-C Rechargeable 3.7V Lithium Battery.
- VFC (Voltage Frequency Converter) measurement capability.
- Compact and lightweight design for portability.

4. SETUP

4.1. Charging the Battery

The TS-60 Multimeter is powered by a built-in 3.7V lithium battery. Before first use, or when the battery indicator shows low power, charge the device using the provided Type-C USB cable.

1. Connect the Type-C end of the USB cable to the multimeter's charging port.
2. Connect the other end of the USB cable to a standard USB power adapter (e.g., 5V/1A) or a computer's

USB port.

3. The charging indicator on the multimeter will illuminate during charging and turn off or change color when fully charged.

4.2. Initial Power-On

Press and hold the power button to turn on the multimeter. The color screen will display the default measurement mode. To turn off, press and hold the power button again.

5. OPERATING INSTRUCTIONS

Always ensure the test leads are correctly inserted into the appropriate input jacks for the desired measurement type.

5.1. Measuring DC/AC Voltage

1. Insert the red test lead into the 'VΩmA' jack and the black test lead into the 'COM' jack.
2. Select the voltage measurement mode (DC V or AC V) using the function button.
3. Connect the test leads in parallel across the component or circuit to be measured.
4. Read the voltage value on the display.

5.2. Measuring DC/AC Current

CAUTION: Never connect the multimeter in parallel with a voltage source when measuring current, as this can damage the device and cause injury.

1. For current up to 600mA, insert the red test lead into the 'VΩmA' jack. For current up to 10A, insert the red test lead into the '10A' jack. Insert the black test lead into the 'COM' jack.
2. Select the current measurement mode (DC A or AC A).
3. Connect the multimeter in series with the circuit where current is to be measured.
4. Read the current value on the display.

5.3. Measuring Resistance

1. Insert the red test lead into the 'VΩmA' jack and the black test lead into the 'COM' jack.
2. Select the resistance (Ω) measurement mode.
3. Ensure the circuit or component is de-energized before measuring resistance.
4. Connect the test leads across the component.
5. Read the resistance value on the display.

5.4. Measuring Capacitance

1. Insert the red test lead into the 'VΩmA' jack and the black test lead into the 'COM' jack.
2. Select the capacitance (F) measurement mode.
3. Ensure the capacitor is fully discharged before measurement to prevent damage to the multimeter.
4. Connect the test leads across the capacitor terminals.
5. Read the capacitance value on the display.

5.5. Diode Test

1. Insert the red test lead into the 'VΩmA' jack and the black test lead into the 'COM' jack.
2. Select the diode test mode.
3. Connect the red lead to the anode and the black lead to the cathode of the diode. The display will show

the forward voltage drop.

4. Reverse the leads. The display should show 'OL' (Open Loop) for a good diode.

5.6. VFC Measurement

The VFC (Voltage Frequency Converter) mode is used for measuring variable frequency voltage. Refer to the specific function button on your device to activate this mode and follow the AC Voltage measurement procedure.

6. MAINTENANCE

6.1. Cleaning

Wipe the multimeter casing with a damp cloth and mild detergent. Do not use abrasive cleaners or solvents. Ensure the device is off and disconnected from any power source before cleaning.

6.2. Battery Care

To prolong battery life, avoid fully discharging the battery frequently. Recharge the battery when the low battery indicator appears. If storing the multimeter for an extended period, charge it periodically to maintain battery health.

6.3. Storage

Store the multimeter in a cool, dry place, away from direct sunlight and extreme temperatures. Keep it away from strong magnetic fields and corrosive gases.

7. TROUBLESHOOTING

- **No Power:** Check if the battery is charged. If not, connect the Type-C charger.
- **Incorrect Readings:** Ensure test leads are properly connected and the correct function/range is selected. Verify the circuit is de-energized for resistance/capacitance measurements.
- **Display Shows 'OL':** This typically means 'Over Limit' or 'Open Loop'. The measured value is beyond the selected range, or there is an open circuit. Adjust the range or check connections.
- **Display is Blank or Flickering:** The battery may be critically low. Recharge the multimeter.

8. SPECIFICATIONS

| Parameter | Specification |
|-------------------|--|
| Display Type | Digital display, Color Screen, 6000 Counts |
| DC Voltage Range | 6V - 750V |
| AC Voltage Range | 60mV - 1000V |
| DC Current Range | 60mA - 10A |
| AC Current Range | 60mA - 10A |
| Resistance Range | 600Ω - 60MΩ |
| Capacitance Range | 6nF - 60mF |

| | |
|-----------------------|---|
| Operating Temperature | 0 - 40°C |
| Power Source | 3.7V Lithium Battery, Type-C Rechargeable |
| Dimensions | 13.7 x 7 x 3.2 cm |
| Item Weight | 300 Grams |

9. WARRANTY AND SUPPORT

This product is covered by a standard manufacturer's warranty against defects in materials and workmanship. For specific warranty terms, duration, or technical support, please refer to the documentation provided with your purchase or contact SEEIRIR customer service directly. Keep your purchase receipt as proof of purchase.