

MakerHawk se

MakerHawk USB Multimeter (Model SE) User Manual

Digital USB Voltmeter, Ammeter, and Power Tester

1. INTRODUCTION

This manual provides detailed instructions for the operation and maintenance of your MakerHawk USB Multimeter (Model SE). This device is designed to accurately measure voltage, current, power, and capacity for various USB-powered devices and charging protocols, including PD, QC2.0, QC3.0, QC4.0, and MTK. Please read this manual thoroughly before use to ensure proper functionality and to prevent damage.

2. PRODUCT OVERVIEW

The MakerHawk USB Multimeter features a 1.44-inch color LCD screen, 4 operation buttons, and multiple connection ports. It supports both forward and reverse charging, and includes a current direction indicator for clear understanding of power flow. The gold-plated USB contacts are designed for enhanced durability and resistance to wear.

Key Features:

- 1.44-inch color LCD display for clear readings.
- Supports Type-C, Micro USB, and USB-A connections.
- Compatible with PD, Qualcomm QC2.0/3.0/4.0, and MTK fast charge protocols.
- Measures voltage, current, power, capacity, and cable resistance.
- Features temperature, voltage, and current alarm functions.
- Screen supports 360-degree rotation for flexible viewing.
- Bi-directional measurement support with current flow direction indicator.



Figure 2.1: Front view of the MakerHawk USB Multimeter, highlighting its various input/output ports and the 1.44-inch color LCD screen. It shows Type-C Input, Micro USB, USB Input, USB Output, and Type-C Output ports, along with four function buttons.

3. SETUP

To begin using your MakerHawk USB Multimeter, follow these steps:

1. **Connect Input:** Plug the appropriate input port (USB-A, Type-C, or Micro USB) of the tester into your power source (e.g., charger, power bank, PC USB port).
2. **Connect Output:** Connect your device (e.g., mobile phone, laptop, discharge load) to the corresponding output port (USB-A or Type-C) of the tester.
3. **Power On:** The tester will automatically power on and display readings once a power source and a load are connected.

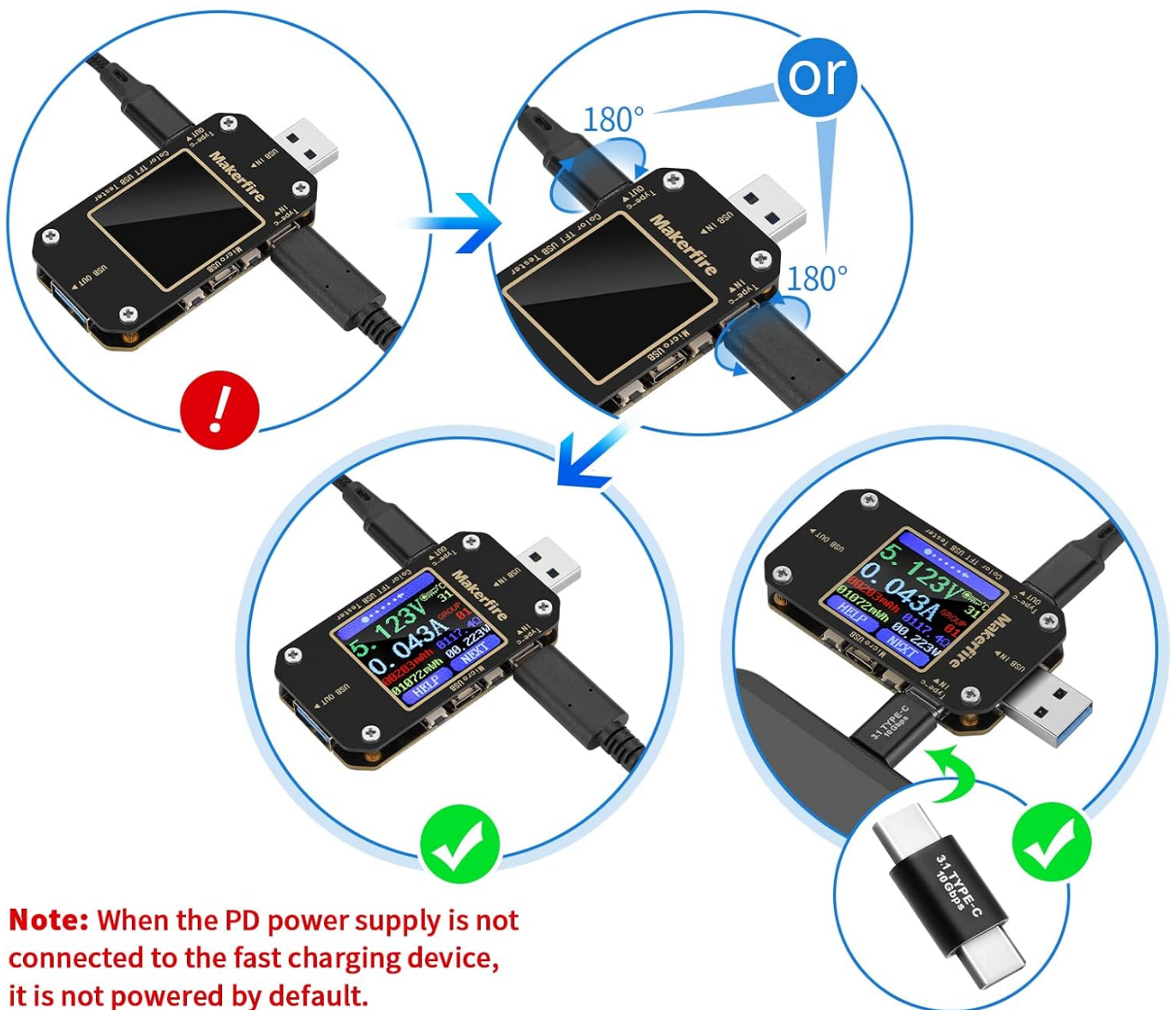
Important Note for Type-C PD Connections:

When connecting a Type-C PD power supply, ensure it is connected to a consumer device that supports the PD protocol to receive a voltage output. If only the Type-C input is connected without a load, the tester screen may not light up. This is normal operation, not a malfunction. If the screen does not light up after inserting a Type-C PD connection:

- Try flipping the Type-C connector 180 degrees.
- Ensure a device is connected to the Type-C output to draw power.

If the tester screen does not light up when the TYPE-C PD is plugged in:

1. Please try to flip the TYPE-C connector
2. Use our built-in TYPE-C interface to connect



Note: When the PD power supply is not connected to the fast charging device, it is not powered by default.

Figure 3.1: Illustration demonstrating correct Type-C connection and troubleshooting steps if the screen does not light up. It shows flipping the Type-C connector and connecting a load to the output.

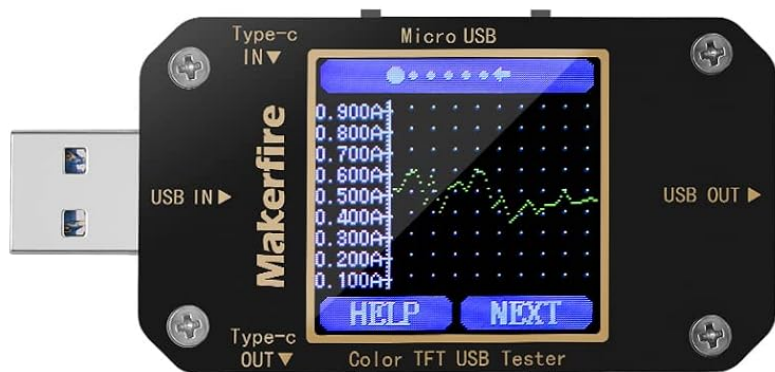
4. OPERATING INSTRUCTIONS

4.1 Basic Operation

Once connected, the device will automatically display real-time measurements on its color LCD screen. The main interface shows voltage (V), current (A), accumulated capacity (mAh), accumulated energy (mWh), and power (W).

High Definition Display

The N10 adopts a 1.44 inch LCD display with a 160-degree wide view, high brightness and long service life. Let you see from any angle to appreciate the color bright, exquisite and natural display picture.



• 1.44-inch LCD screen

• 3.80V-30.00V

• 0-3.000A



Measurement Main Interface



Quick Charge Charging Recording Interface



Charging Recording Interface



Wire Impedance Measurement Interface



Measurement Graphing Interface



System Parameter Setting Interface

Figure 4.1: The high-definition display of the multimeter, illustrating the main measurement interface, quick charge recording interface, charging recording interface, wire impedance measurement interface, measurement graphing interface, and system parameter setting interface.

4.2 Navigation and Settings

The device features four operation buttons (labeled 1, 2, 3, 4 or HELP, NEXT) for navigating through different display interfaces and adjusting settings.

- **Switching Interfaces:** Press the "NEXT" button to cycle through various measurement interfaces, including the main

interface, quick charge recording, charging recording, wire impedance, measurement graphing, and system settings.

- **Screen Rotation:** To rotate the screen display 360 degrees for optimal viewing angle, press the button corresponding to the horizontal menu bar (usually one of the function buttons).
- **Help/Information:** Press the "HELP" button for on-screen information or context-specific assistance.

4.3 Reminder Functions

The multimeter includes alarm functions to alert you to out-of-range conditions:

- **Temperature Alarm:** If the internal temperature exceeds 45°C, the temperature display will flash.
- **Voltage Alarm:** If the voltage drops below 3.8V or exceeds 30V, the voltage display will flash.
- **Current Alarm:** If the current exceeds 3A, the current display will flash.

Three Reminder Functions

• Voltage 3.80V-30.00V

• Current 0-3.000A

• Values outside the corresponding range will flash

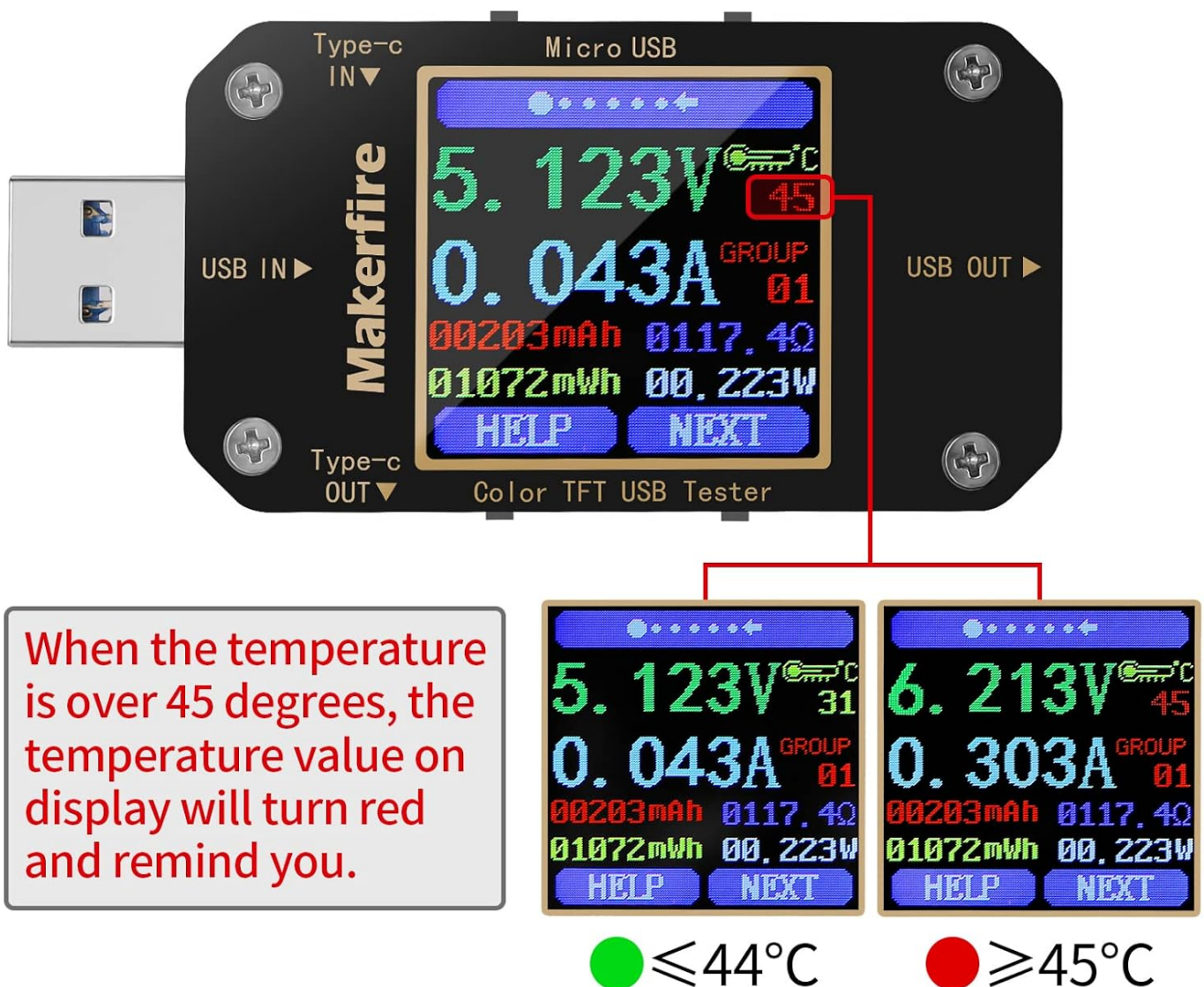


Figure 4.2: The multimeter display indicating the temperature alarm. When the temperature exceeds 45 degrees Celsius, the temperature value on the display turns red and flashes.

5. APPLICATIONS

The MakerHawk USB Multimeter is versatile and can be used to test a wide range of USB-powered devices and charging setups:

- Measuring output from various USB chargers.
- Monitoring power consumption of PCs, laptops, and desktop computers.
- Testing charging performance of mobile phones and power banks.
- Evaluating car chargers and USB cables for resistance and efficiency.
- Analyzing discharge loads.

New upgrade:

The product supports forward and reverse charging, and the current flow direction indicator is added.

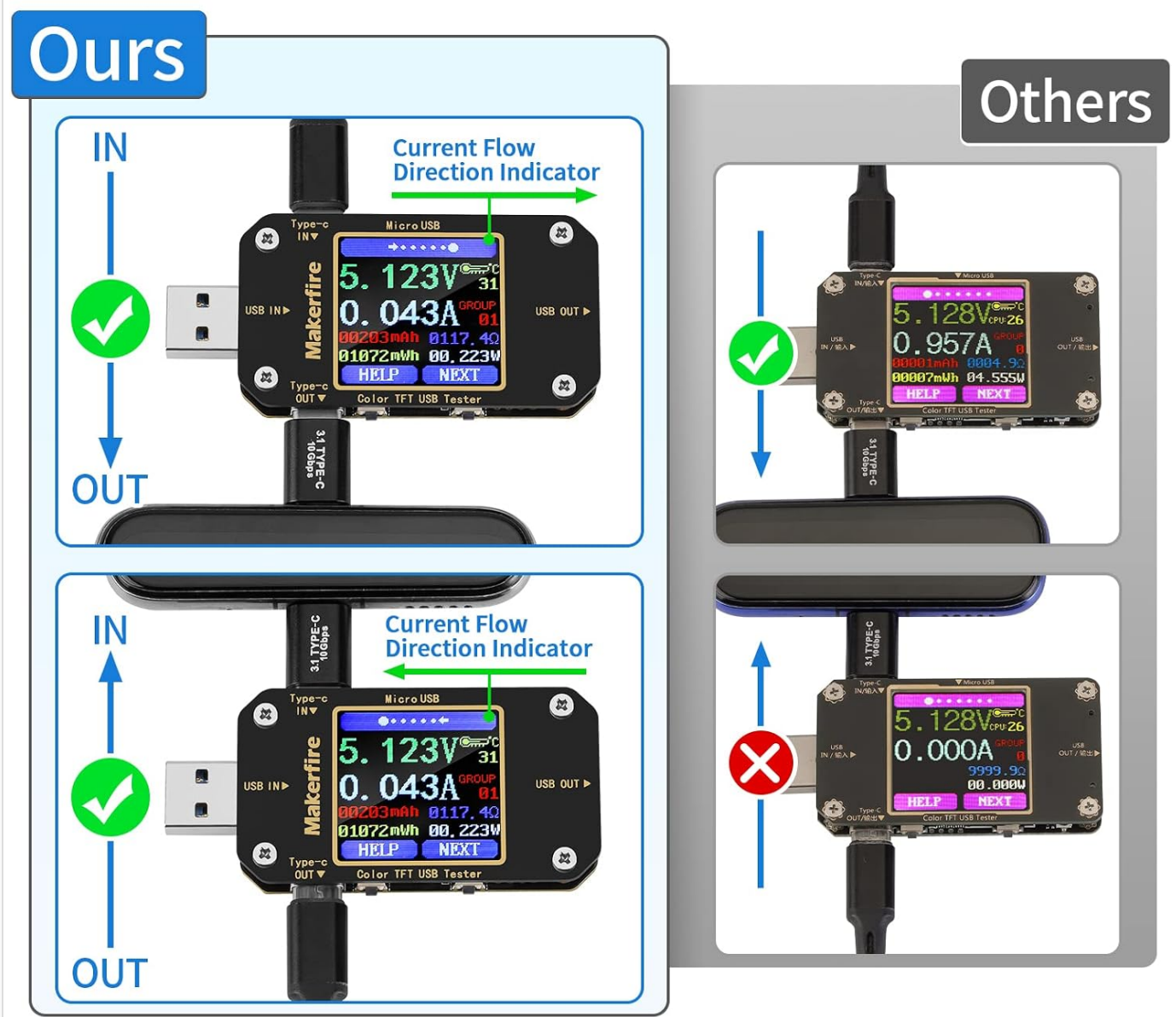


Figure 5.1: Examples of the USB Multimeter in use, demonstrating its application with wall chargers, laptops, and mobile phones to monitor charging parameters.

6. MAINTENANCE

To ensure the longevity and accuracy of your MakerHawk USB Multimeter, follow these maintenance guidelines:

- Keep the device clean and dry. Wipe with a soft, dry cloth.
- Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.
- Do not drop or subject the device to strong impacts.
- Store in a safe place when not in use.

7. TROUBLESHOOTING

7.1 Screen Does Not Light Up with Type-C PD

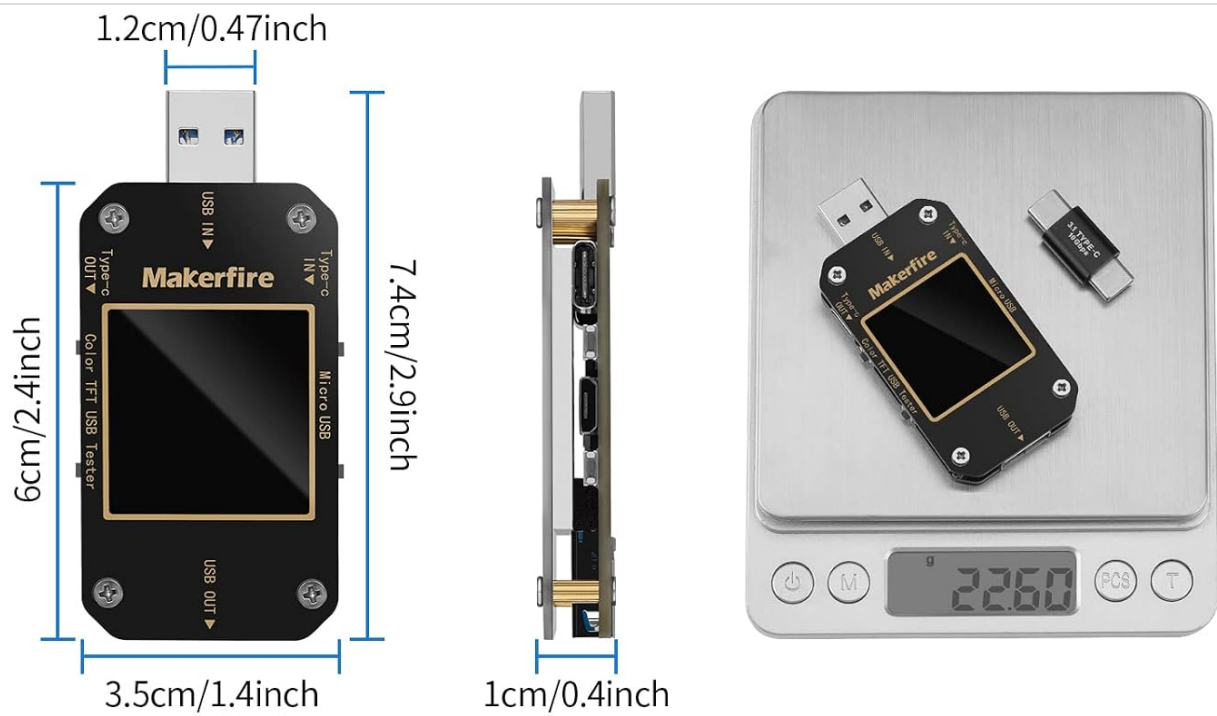
As mentioned in the setup section, if the tester screen does not light up when connected to a Type-C PD power supply:

- **Check Connection Orientation:** Try flipping the Type-C connector 180 degrees.
- **Ensure a Load is Connected:** The PD power supply will not provide power by default unless a device (load) is connected to the tester's output. Connect a device to the Type-C output.

If the issue persists after trying these steps, please refer to the support section.

8. SPECIFICATIONS

Feature	Detail
Brand	MakerHawk
Model Number	SE
Display	1.44-inch Color LCD
Measurement Type	Ammeter, Multimeter, Voltmeter
Minimum Operating Voltage	4.5 volts
Maximum Operating Voltage	24 volts
Lower Temperature Rating	10 °C
Upper Temperature Rating	100 °C
Item Weight	18 g
Item Dimensions (L x W x H)	7.1 x 3.2 x 1.2 cm
Supported Protocols	PD, QC2.0, QC3.0, QC4.0, MTK
Certifications	CE, RoHS



What you get?

- 1* Tester
- 1* Product Manual
- 1* Type-C Accessories

Figure 8.1: Physical dimensions of the MakerHawk USB Multimeter (7.4cm x 3.5cm x 1cm) and its weight (22.60g), shown alongside a Type-C adapter for scale.

9. PACKAGE CONTENTS

Upon opening your package, you should find the following items:

- 1 x MakerHawk USB Multimeter (Model SE)
- 1 x Product Manual (this document)
- 1 x Type-C Adapter

Voltage accuracy



Current accuracy



Figure 9.1: The package contents, including the MakerHawk USB Multimeter, the product manual, and a Type-C accessory.

10. WARRANTY AND SUPPORT

MakerHawk provides dedicated after-sales support for its products. If you encounter any issues or have questions regarding your USB Multimeter, please contact our support team.

To contact us:

- Visit the "MakerHawk-US" store page on Amazon.
- Click on "Ask a Question" to send us an email.

Your satisfaction is our priority, and we are committed to resolving any concerns promptly.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

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