diymore USB Tester

diymore USB C Tester User Manual

Model: USB Tester

1. Introduction

The diymore USB C Tester is a professional digital measurement device designed for comprehensive analysis of USB-C and Power Delivery (PD) chargers and cables. It provides high-precision measurements of voltage, current, power, and capacity, and can analyze fast charging protocols. Its compact and portable design makes it an essential tool for electricians, technicians, and anyone needing to verify the performance of USB-C power sources and cables.

2. Safety Information

Please read and understand all safety instructions before using the device. Failure to follow these instructions may result in electric shock, fire, or damage to the device or connected equipment.

- Do not expose the device to moisture or extreme temperatures.
- Do not attempt to disassemble or modify the device.
- Use the device only within its specified voltage and current ranges (DC 4-28V, 0-10A). Exceeding these limits may cause damage.
- Ensure proper connection to avoid short circuits.
- Keep out of reach of children.

3. Package Contents

Verify that all items are present in your package:

- diymore USB C Tester (Power Meter)
- Storage box

4. Product Overview

The diymore USB C Tester features a compact design with a 0.96-inch IPS LCD color screen for clear display of

measurement data. It is housed in a durable CNC metal casing.

Figure 4.1: diymore USB C Tester with its protective CNC metal housing and compact dimensions (31.8 x 16.1 x 8.1 mm).

The device is equipped with a USB-C input and output, allowing it to be inserted inline between a power source and a load. It features two control buttons (K- and K+) for navigating menus and adjusting settings.

5. Setup

The diymore USB C Tester is designed for plug-and-play operation. No external power supply is required for the tester itself.

1. Connect the USB-C male connector of the tester to the USB-C output port of your power source (e.g., charger, power bank).
2. Connect your USB-C device (e.g., smartphone, tablet, laptop) to the USB-C female port of the tester using a compatible USB-C cable.
3. The tester's display will automatically power on and begin showing real-time measurement data.

Figure 5.1: Example setup showing the USB C Tester connected in-line with a PD3.1 charger and a laptop.

Note:

1. The tester supports peak voltage up to 36V and peak current up to 10A.
2. When only the PD charging head is connected without a load, the device may not start. It must be connected to a useful electrical equipment in order to work.

6. Operating Instructions

The diymore USB C Tester features multiple display interfaces and functions, navigable via the K- and K+ buttons.

6.1. Button Functions

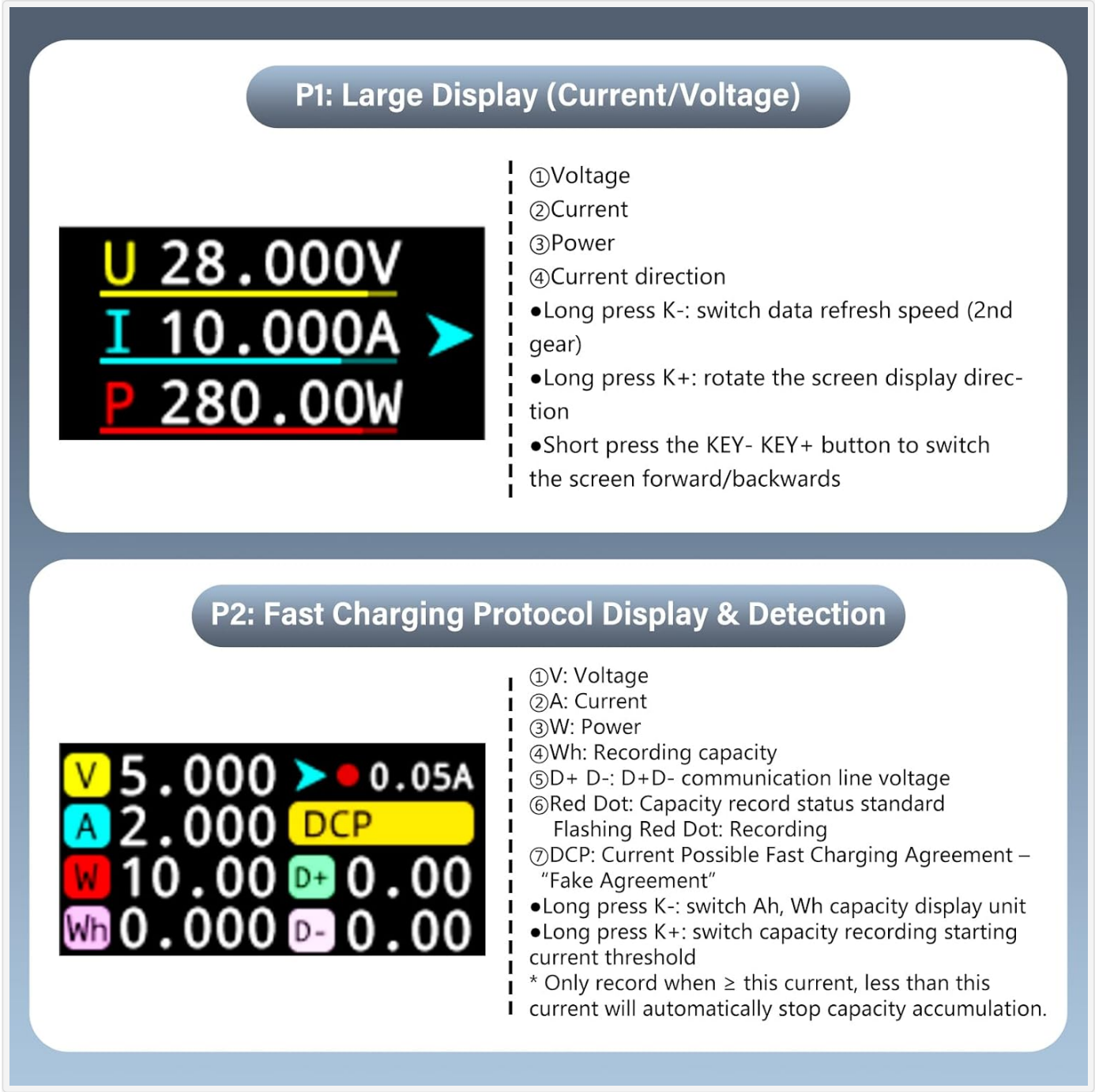

Figure 6.1: Quick explanation of button functions for navigating display pages and settings.

Use the K- and K+ buttons to switch between display pages, adjust settings, and confirm selections. A short press typically switches screens or values, while a long press activates specific functions.

6.2. Display Pages

The tester offers four main display interfaces:

P1: Large Display (Current/Voltage)

This page provides a clear, large character display of real-time voltage (U), current (I), and power (P). It also indicates the current direction.

- **Long press K-:** Switch data refresh speed (2nd gear).
- **Long press K+:** Rotate the screen display direction.
- **Short press KEY- KEY+ button:** Switch between screens forward/backwards.

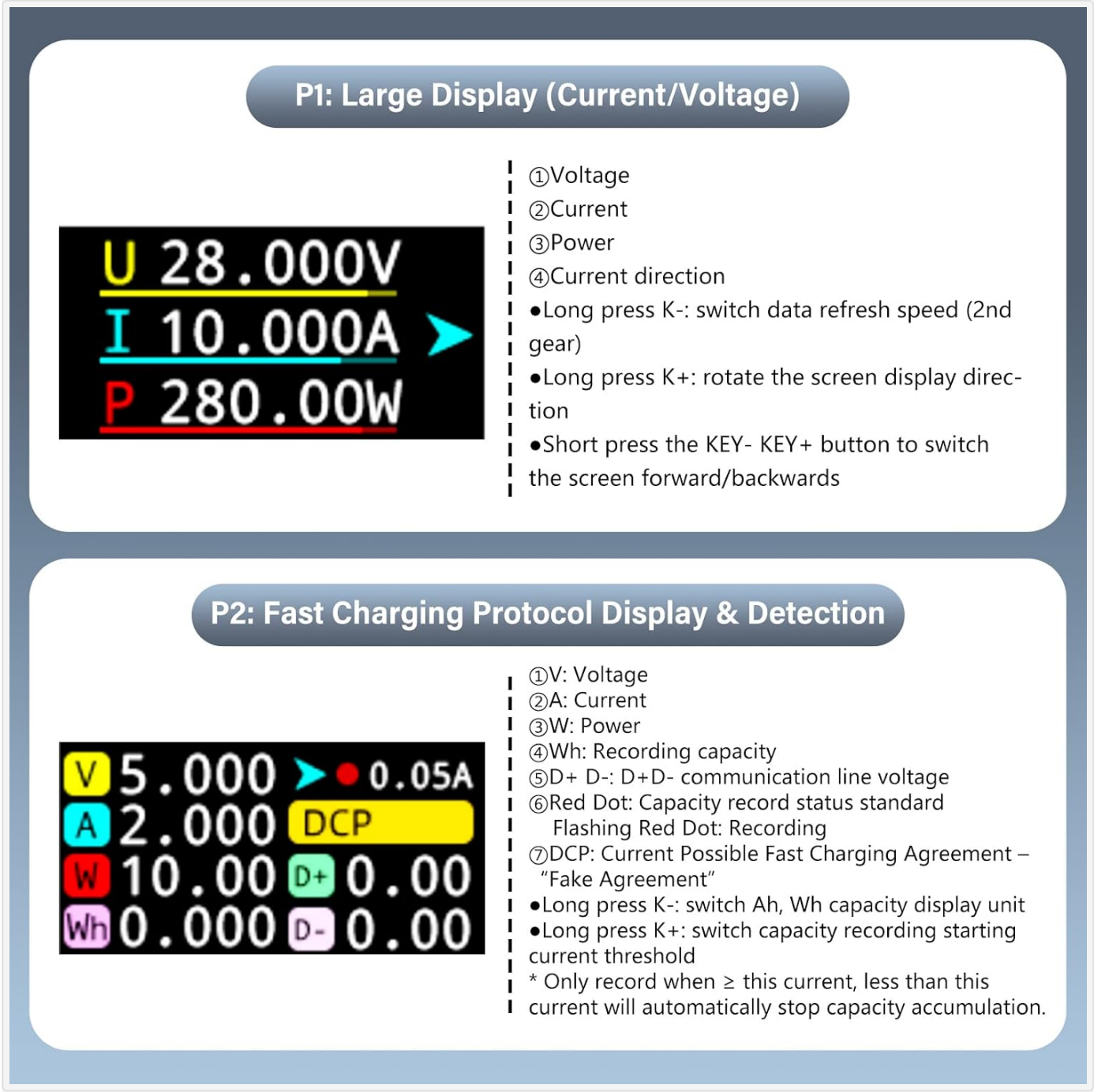

Figure 6.2: P1 interface displaying large voltage, current, and power values.

P2: Fast Charging Protocol Display & Detection

This page displays voltage (V), current (A), power (W), recording capacity (Wh), D+/D- communication line voltage, and detects fast charging protocols (PD/QC/PPS).

- **Long press K-:** Switch Ah, Wh capacity display unit.
- **Long press K+:** Switch capacity recording starting current threshold.
- *Note:* Only records when current ≥ threshold; less than this current will automatically stop capacity accumulation.

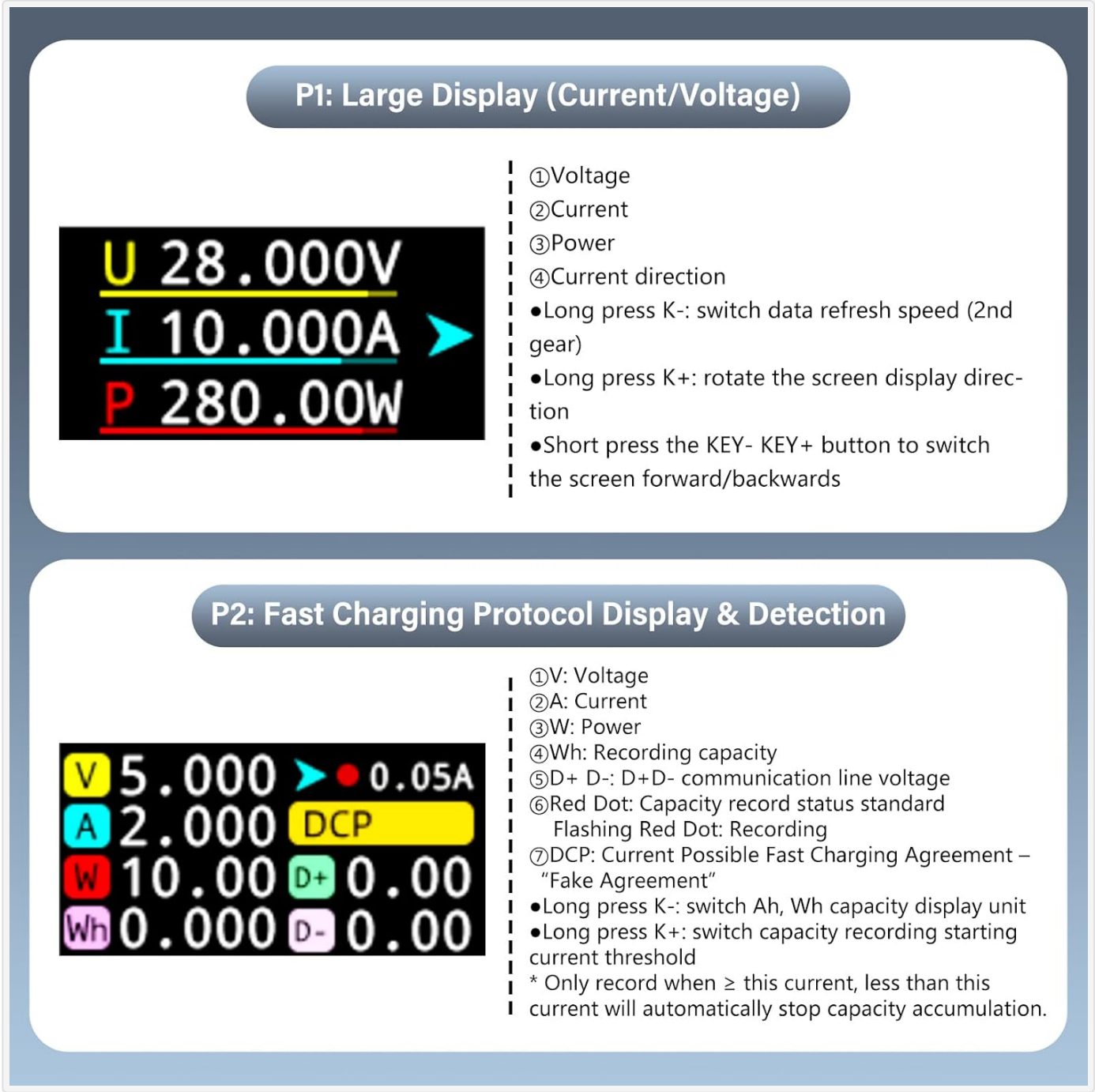

Figure 6.3: P2 interface for fast charging protocol detection and detailed charging parameters.

P3: Capacity Statistics Screen

This screen provides statistics on charging energy (Wh), recording time (R), maximum recorded values (MAX), and average values (AVG) calculated since power-on.

- **Long press K-:** Clear capacity records.
- **Long press K+:** Switch between MAX and AVG display.

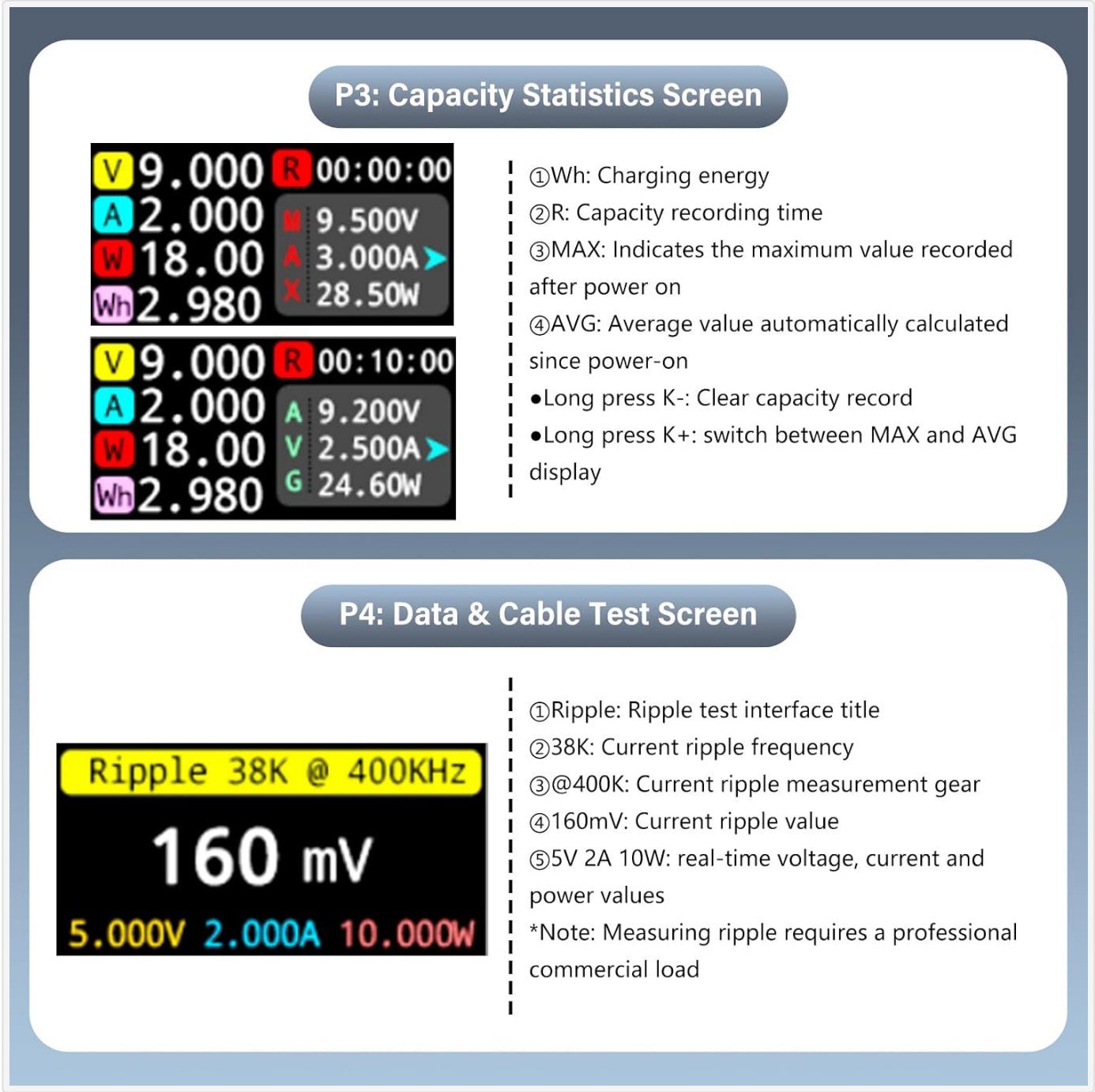

Figure 6.4: P3 interface for monitoring charging capacity statistics.

P4: Data & Cable Test Screen

This page is used for ripple testing and cable resistance measurement. It displays ripple frequency, measurement gear, ripple value, and real-time voltage, current, and power values.

- **Long press K-:** Enter Cable Submenu.
- **Long press K+:** Switch Sampling Frequency.
- *Note:* Measuring ripple requires a professional commercial load.

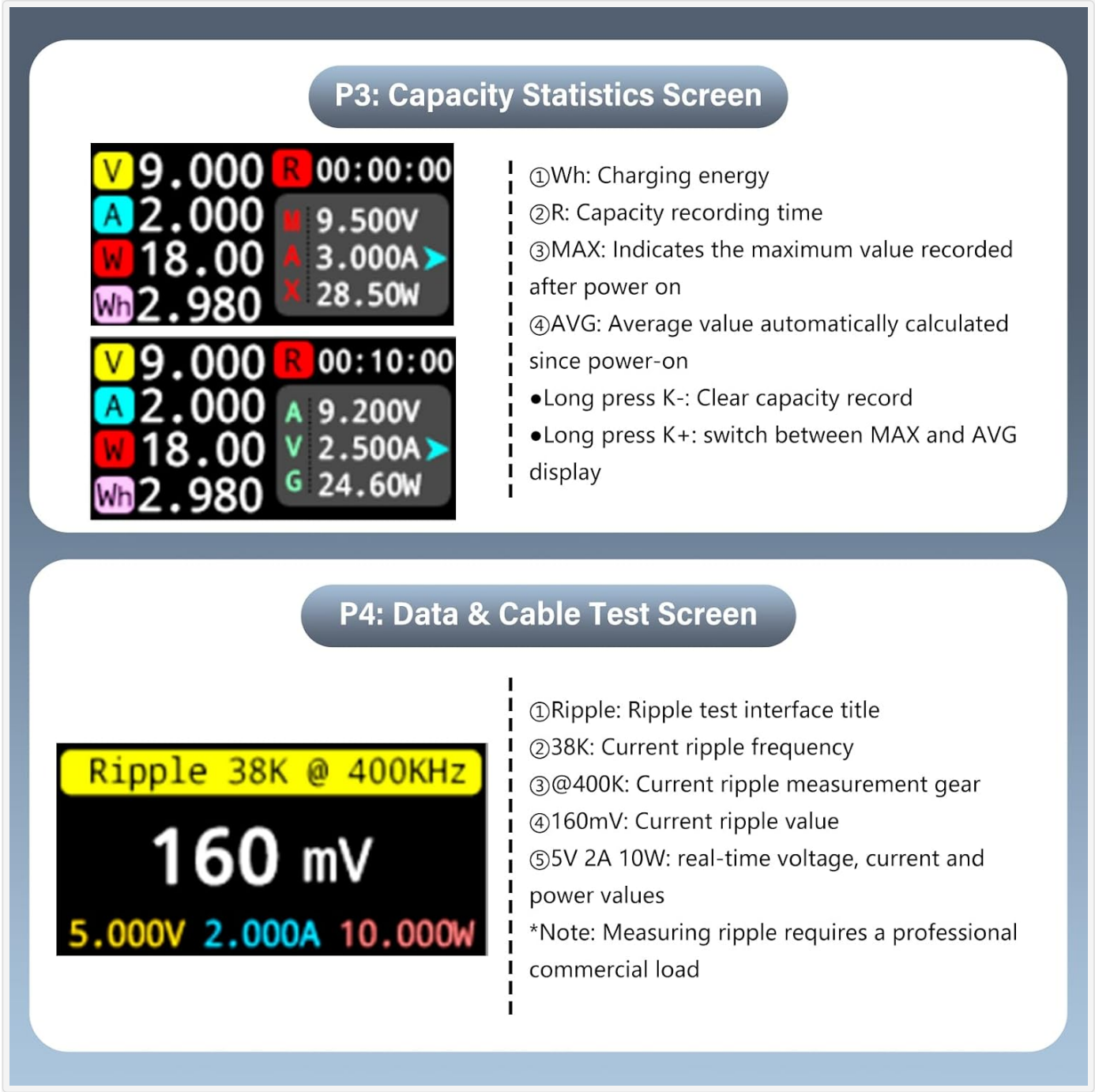

Figure 6.5: P4 interface for data and cable testing, including ripple measurement.

7. Maintenance

To ensure the longevity and accuracy of your diymore USB C Tester, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the tester in its provided storage box when not in use to protect it from dust and physical damage. Avoid storing in areas with high humidity or extreme temperatures.
- **Handling:** Handle the device with care. Avoid dropping it or subjecting it to strong impacts.

8. Troubleshooting

If you encounter issues with your diymore USB C Tester, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Display does not turn on.	No power source or no load connected.	Ensure the tester is connected between a working power source and a device drawing power. The tester requires a load to activate.
Inaccurate readings.	Faulty cable, unstable power source, or device malfunction.	Try using a different USB-C cable. Test with a known good power source and load. If issues persist, the device may require service.
Buttons are unresponsive.	Temporary software glitch.	Disconnect and reconnect the tester to reset it.
Cannot detect fast charging protocol.	Connected device/charger does not support fast charging, or cable is not compatible.	Ensure both the charger and the device support the desired fast charging protocol (e.g., PD, QC, PPS) and that the cable is rated for it.

9. Specifications

Detailed technical specifications for the diymore USB C Tester:

- **Model:** USB Tester
- **Voltage Measurement Range:** DC 4-28V (supports peak up to 36V)
- **Current Measurement Range:** 0-10A (supports peak up to 10A)
- **Power Measurement Range:** Up to 360W (peak)
- **Display:** 0.96-inch IPS LCD Color Screen
- **ADC Chip:** 16-bit Independent ADC Chip (for accurate data line resistance measurement)
- **Fast Charging Protocol Support:** PD/QC/PPS detection
- **Dimensions:** 31.8 x 16.1 x 8.1 mm (approx. 7 x 1 x 2 cm)
- **Weight:** 20 Grams
- **Housing:** CNC Metal
- **Manufacturer Part Number:** KBAI0051-AAC

Figure 9.1: Key technical features including the 16-bit ADC chip and measurement capabilities.

10. Warranty and Support

For warranty information and technical support, please refer to the retailer's return policy or contact diymore directly through their official channels. Specific warranty terms may vary by region and retailer.

- **Return Policy:** Typically 30 days for refund/replacement (as per Amazon buybox winner info).
- **Manufacturer:** diymore
- **Seller:** diymore® (fulfilled by Amazon)

For further assistance, please visit the diymore official website or contact their customer service.