Pro'sKit MT-1710

Pro'sKit MT-1710 True RMS Digital Multimeter User Manual

Model: MT-1710

1. Introduction

This manual provides comprehensive instructions for the safe and effective use of the Pro'sKit MT-1710 True RMS Digital Multimeter (DMM). The MT-1710 is a versatile instrument designed for electrical measurements, featuring True RMS capabilities for accurate readings of non-sinusoidal waveforms.

Safety Information:
Always observe all safety precautions when using this device. Incorrect use can lead to electric shock, injury, or damage to the meter or equipment under test. Ensure the meter is in good working condition and that test leads are not damaged before use. Adhere to the CAT IV 600V safety rating.

2. Package Contents

Verify that all items are present in the package:

- Pro'sKit MT-1710 Digital Multimeter
- Test Probes

3. Product Overview

The Pro'sKit MT-1710 is a 3 3/4 digit, 3999 count True RMS Digital Multimeter. It offers both auto and manual ranging, a 0.5% best accuracy, and is CAT IV 600V safety rated. Its features include continuity with beeper, diode test, transistor test, duty cycle, relative reference, data hold, auto power off, low battery indication, and input alert.

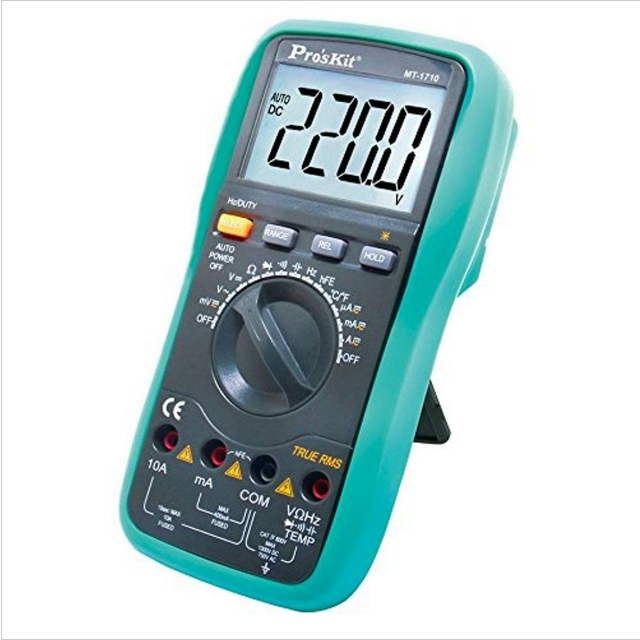

Figure 1: Pro'sKit MT-1710 True RMS Digital Multimeter

This image displays the Pro'sKit MT-1710 True RMS Digital Multimeter. The device features a large digital display, a central rotary selector switch, and multiple function buttons. Input jacks for probes are located at the bottom. The display shows '220.0 V' with 'AUTO DC' indicator. Key buttons visible include 'SELECT', 'RANGE', 'REL', and 'HOLD'. The rotary switch has positions for various measurements like voltage, resistance, frequency, capacitance, current, and temperature. The input terminals are labeled '10A', 'mA', 'COM', and 'VΩHzTEMP'.

3.1 Controls and Display

- **Digital Display:** 3 3/4 digits, 3999 counts, shows measurement values and indicators (e.g., AUTO, DC, AC, V, A, Ω, Hz, °C/°F, HOLD, REL, low battery).
- **Rotary Selector Switch:** Used to select the desired measurement function (e.g., V~, V-, Ω, Hz, °C/°F, mA, A, Diode, Continuity, hFE).
- **SELECT Button:** Toggles between different functions within a single rotary switch position (e.g., AC/DC voltage, Diode/Continuity, °C/°F).
- **RANGE Button:** Switches between auto-ranging and manual-ranging modes.
- **REL (Relative) Button:** Activates the relative measurement mode, displaying the difference between the current reading and a stored reference value.
- **HOLD Button:** Freezes the current display reading. Press again to release.
- **Input Jacks:**
  - **10A:** Input for high current measurements (up to 10A). Fused.
  - **mA:** Input for milliampere current measurements. Fused.
  - **COM:** Common (negative) input for all measurements.
  - **VΩHzTEMP:** Input for voltage, resistance, frequency, and temperature measurements.

4. Setup

4.1 Battery Installation

1. Ensure the multimeter is turned OFF.
2. Locate the battery compartment cover on the back of the unit.
3. Unscrew the retaining screw(s) and remove the cover.

4. Insert the required battery type (e.g., 9V battery) observing correct polarity.
5. Replace the battery compartment cover and secure it with the screw(s).

4.2 Test Probe Connection

1. For most measurements (voltage, resistance, frequency, temperature), connect the black test lead to the COM jack and the red test lead to the VΩHzTEMP jack.
2. For current measurements (mA), connect the black test lead to the COM jack and the red test lead to the mA jack.
3. For high current measurements (10A), connect the black test lead to the COM jack and the red test lead to the 10A jack.

5. Operating Instructions

5.1 General Operation

1. Turn the rotary selector switch to the desired measurement function.
2. If the function has multiple modes (e.g., AC/DC voltage), press the SELECT button to toggle between them.
3. Connect the test probes to the circuit or component under test.
4. Read the measurement value on the digital display.
5. The meter features Auto Power Off to conserve battery life. It will automatically turn off after a period of inactivity.

5.2 Measurement Functions

- **Voltage Measurement (V~ / V-):** Select the appropriate AC (V~) or DC (V-) voltage range. Connect probes in parallel with the circuit.
- **Current Measurement (mA / A):** Select the appropriate current range (mA or 10A). Connect probes in series with the circuit. Ensure the correct input jack is used.
- **Resistance Measurement (Ω):** Select the Ω range. Ensure the circuit is de-energized before measuring resistance.
- **Continuity Test ( ):** Select the continuity/diode range and press SELECT if needed. A beeper will sound for low resistance.
- **Diode Test ( ):** Select the continuity/diode range. Displays the forward voltage drop of a diode.
- **Transistor Test (hFE):** Use the dedicated hFE socket for transistor gain measurement.
- **Frequency Measurement (Hz):** Select the Hz range.
- **Temperature Measurement (°C/°F):** Select the °C/°F range. Requires a K-type thermocouple (not included).
- **Duty Cycle:** Available in certain frequency ranges.
- **Relative Reference (REL):** Press the REL button to store the current reading as a reference. Subsequent readings will show the difference from this reference.
- **Data Hold (HOLD):** Press the HOLD button to freeze the current display.

6. Maintenance

6.1 Cleaning

Wipe the meter with a damp cloth and mild detergent. Do not use abrasives or solvents. Ensure the meter is

dry before use.

6.2 Battery Replacement

When the low battery indicator appears on the display, replace the battery as described in Section 4.1. Use only the specified battery type.

6.3 Fuse Replacement

If the current measurement function fails, the fuse(s) may need replacement. Refer to the specifications for the correct fuse type and rating. Fuse replacement typically involves opening the meter casing, which should only be performed by qualified personnel to avoid voiding the warranty or causing damage.

7. Troubleshooting

- **Meter does not power on:** Check battery installation and charge level. Replace battery if necessary.
- **No reading or incorrect reading:** Ensure test leads are correctly connected to the meter and the circuit. Verify the rotary switch is set to the correct function and range. Check for damaged test leads.
- **Low battery indicator:** Replace the battery immediately to ensure accurate measurements.
- **Input Alert:** This indicates an improper connection or an over-range condition. Disconnect probes and re-evaluate the measurement setup.
- **Current measurement not working:** Check the fuse(s) for the current input jacks (10A, mA).

8. Specifications

Feature	Value
Display	3 3/4 digits, 3999 counts
Accuracy	0.5% best accuracy
Ranging	Auto and Manual range
Safety Rating	CAT IV 600V
AC Measurement	True-RMS
Power Source	Battery Powered
Product Dimensions (L x W x H)	3.94 x 1.97 x 7.87 inches
Item Weight	0.3 Kilograms (10.58 ounces)
Extra Functions	Continuity with beeper, Diode test, Transistor test, Duty cycle, Relative reference, Data hold, Auto power off, Low battery indication, Input alert

9. Warranty Information

Pro'sKit products are manufactured to high-quality standards. For specific warranty terms and conditions, please refer to the warranty card included with your product or contact Pro'sKit customer service. Keep your purchase receipt as proof of purchase for warranty claims.

10. Support

For technical assistance, troubleshooting, or service inquiries, please visit the official Pro'sKit website or contact their customer support department. Contact information can typically be found on the product packaging or the manufacturer's website.

Related Documents - MT-1710

	Pro'sKit MT-1820N 3 5/6 True-RMS Auto Range Digital Multimeter User Manual User manual for the Pro'sKit MT-1820N, a 3 5/6 digit True-RMS auto-range digital multimeter. Details features, specifications, operation, and safety for this versatile electrical testing tool from Prokit's Industries Co., Ltd.
	Pro'sKit MT-1236 True RMS Digital Multimeter User Manual The Pro'sKit MT-1236 is a high-quality, high-precision 3-5/6 True RMS digital multimeter designed for professional engineers, maintenance personnel, and educational use. This user manual provides comprehensive instructions for safe operation, measurement guidelines, and maintenance procedures.
	Pro'sKit MT-1220 / MT-1225 3 1/2 Digital Multimeter User Manual User manual for the Pro'sKit MT-1220 and MT-1225 3 1/2 Digital Multimeters, covering general information, safety instructions, measurement guidelines, technical parameters, and maintenance.
	Pro'sKit MT-1226 Digital Multimeter User Manual This user manual provides comprehensive instructions for the Pro'sKit MT-1226 3 1/2 Digital Multimeter, covering its features, operation, safety precautions, and troubleshooting for accurate electrical measurements.
	Pro'sKit MT-2207 Protective Multifunction Analog Multimeter User's Manual User manual for the Pro'sKit MT-2207 Protective Multifunction Analog Multimeter, detailing its features, specifications, operating procedures, maintenance, and troubleshooting.

[Pro'sKit MT-7615/MT-7616 4-in-1 Fiber Optical Power Multimeter User Manual]

User manual for Pro'sKit MT-7615 and MT-7616 4-in-1 Fiber Optical Power Multimeters, detailing device operation, safety precautions, maintenance, troubleshooting, and technical specifications.