Pro'sKit MT-2017N

Pro'sKit MT-2017N Analog Multimeter User Manual

Model: MT-2017N | Brand: Pro'sKit

1. Safety Information

Please read and understand all safety instructions before operating the Pro'sKit MT-2017N Analog Multimeter. Failure to follow these 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 rated values for the selected range.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Always disconnect power to the circuit and discharge high-voltage capacitors before measuring resistance, continuity, diodes, or capacitance.
- Ensure the correct function and range are selected before making measurements.
- Replace batteries and fuses only with the specified type and rating.
- The device complies with CE and RoHS standards.

2. Product Overview

The Pro'sKit MT-2017N is a protective function analog multimeter designed for accurate and safe electrical measurements. It features a mirrored aluminum dial, robust protective holster, built-in stand, and hook-up design for convenience.

Key Features:

- **Clear Analog Panel:** Easy-to-read mirrored aluminum dial for precise measurements.
- **Protective Functions:** Equipped with fuses (0.5A/250V & 10A/250V) and a resettable fuse for overload protection.
- **Versatile Measurements:** Capable of measuring DCV, DCA, ACV, Resistance, Capacitance, Diode, Transistor (hFE), LED test, and Battery check.
- **Buzzer Function:** For continuity testing.
- **Robust Design:** High-quality materials with a spring design for drop protection and rubber casing for anti-slip grip.
- **Convenient Features:** Foldable stand, hook-up design, and screw-on lock for easy battery/fuse changes.

- **Gilded Test Leads:** 1000V/10A gilded test leads for accurate measurements.

Figure 2.1: Front view of the Pro'sKit MT-2017N Analog Multimeter.

Figure 2.2: Detailed view of the multimeter's analog panel, showing the pointer, function selection dial, zero adjustor, COM socket, ACA 10A socket, and test lead connections.

Figure 2.3: Internal view highlighting the triple protection features: 0.5A/250V & 10A/250V fuses, double gilded circuit board, and a resettable fuse.

Figure 2.4: Back view of the multimeter, illustrating the foldable stand, hook-up design, and screw-on lock for battery/fuse access.

3. Setup

3.1 Battery Installation

The Pro'sKit MT-2017N requires 1 Lithium Polymer battery (included) for operation. To install or replace batteries:

1. Ensure the multimeter is turned OFF and disconnect all test leads.
2. Locate the battery compartment on the back of the unit.
3. Use a screwdriver to loosen the screw-on lock and open the battery cover.

4. Insert the required batteries (1 Lithium Polymer battery) according to the polarity markings inside the compartment.
5. Close the battery cover and secure it with the screw-on lock.

Note: If the pointer fails to set at the central zero position during resistance measurement, the 9V battery may be weak and should be replaced.

4. Operation

This section details the general operating procedures and specific measurement functions of the MT-2017N multimeter.

4.1 General Operating Procedures

1. **Power On:** Rotate the selector switch from the "OFF" position to the desired measurement function.
2. **Zero Adjustment (for Resistance):** Before measuring resistance, short the test leads and use the "Ω ADJ" knob to adjust the pointer to the zero position on the resistance scale.
3. **Connecting Test Leads:** Insert the black test lead into the "COM" (common) jack and the red test lead into the "VmAΩ+" jack for most measurements. For 10A current measurements, use the "10A" jack.

Your browser does not support the video tag.

Video 4.1: An instructional video demonstrating the features and various measurement functions of the Pro'sKit MT-2017N Analog Multimeter, including pointer adjustment, DCV, ACV, resistance, continuity, battery check, DCA, and transistor testing.

4.2 DC Voltage (DCV) Measurement

1. Set the selector switch to the appropriate DCV range (e.g., 10, 50, 250, 1000). Start with the highest range if the voltage is unknown.
2. Connect the red test lead to the positive pole and the black test lead to the negative pole of the circuit under test.
3. Read the voltage value from the DCV scale on the analog display.

4.3 AC Voltage (ACV) Measurement

1. Set the selector switch to the appropriate ACV range (e.g., 10, 50, 250, 1000). Start with the highest range if the voltage is unknown.
2. Connect the test leads across the AC voltage source. Polarity does not matter for AC voltage.
3. Read the voltage value from the ACV scale on the analog display.

4.4 Resistance (Ω) Measurement

1. Set the selector switch to the desired resistance range (e.g., X1, X10, X100, X1K, X10K).
2. Short the test leads together and adjust the "Ω ADJ" knob until the pointer reads zero on the resistance scale.
3. Connect the test leads across the component whose resistance is to be measured. Ensure the component is isolated from the circuit.
4. Read the resistance value from the resistance scale and multiply by the selected range multiplier.

4.5 Continuity Test

The continuity test uses the buzzer function to indicate a low-resistance path.

1. Set the selector switch to a resistance range (e.g., X1).
2. Short the test leads and adjust the "Ω ADJ" knob to zero.
3. Connect the test leads across the circuit or component. If the resistance is lower than approximately 200 Ohms, the built-in beeper will sound.

4.6 DC Current (DCA) Measurement

1. Set the selector switch to the appropriate DCA range (e.g., 2.5mA, 25mA, 250mA, 10A). For 10A measurements, move the red test lead to the "10A" jack.
2. Connect the multimeter in series with the circuit or load under measurement. The red test lead connects to the positive side, and the black test lead to the negative side.
3. Read the current value from the DCA scale.

4.7 Capacitance (CμF) Measurement

1. Set the selector switch to the "X1K (CμF)" position.
2. Connect the red test lead to the positive pole and the black test lead to the negative pole of the capacitor.
3. Read the capacitance value from the CμF scale.

4.8 Transistor (hFE & LED) Test

1. Set the selector switch to the "hFE & LED" position.
2. Insert the transistor leads into the corresponding NPN or PNP sockets on the multimeter.
3. Read the hFE value from the hFE scale. For LED testing, insert the LED leads into the designated sockets; the LED should light up if functional.

4.9 Battery Check (BATT)

1. Set the selector switch to the "BATT" position (for 1.5V or 9V).
2. Connect the red test lead to the positive terminal and the black test lead to the negative terminal of the battery.
3. Observe the pointer on the battery check scale. A pointer in the green zone indicates a fully charged battery, while a pointer in the red zone indicates a low battery.

5. Maintenance

5.1 Fuse Replacement

If the multimeter fails to measure current or voltage, the fuses may need replacement. Always use fuses with the specified ratings.

1. Ensure the multimeter is turned OFF and disconnect all test leads.
2. Open the battery compartment cover on the back of the unit by loosening the screw-on lock.
3. Carefully remove the old fuses. The MT-2017N uses 0.5A/250V (5x20mm) and 10A/250V (5x20mm) fuses.
4. Insert new fuses of the correct type and rating.
5. Close the battery cover and secure it with the screw-on lock.

Note: The device also features a resettable fuse for resistance protection up to 250V / 30sec.

5.2 Cleaning

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

6. Specifications

Feature	Detail
Model Number	EC-MT-2017N-C
Brand	Pro'sKit
Package Dimensions	9.84 x 7.87 x 5.91 inches

Feature	Detail
Item Weight	1 Kilogram (2.2 Pounds)
Batteries	1 Lithium Polymer battery required (included)
Fuses	0.5A/250V (5x20mm), 10A/250V (5x20mm)
Safety Compliance	CE, RoHS
DC Voltage (DCV)	0.1/2.5/10/50/250/1000V ±3.0% FSD
AC Voltage (ACV)	10/50/250/1000V ±4.0% FSD
DC Current (DCA)	50μ/2.5m/25m/250mA ±3.0% FSD, 10A ±4.0% FSD
Resistance (Ω)	X1/X10/X100/X1K/X10K (20kΩ/V) ±3.0% ARC of scale length
Capacitance (CμF)	C(R x 1K) 2000μF (Approx.) Max
Battery Check	1.5V/9V
Diode & LED Test	Yes
Continuity with Beeper	Yes
Transistor Check	Yes (hFE)
Power Source	1.5V AAA x 2pcs and 9V NEDA 1604 x 1pcs
Dimensions	177(L) x 108(W) x 37(H) mm

7. Troubleshooting

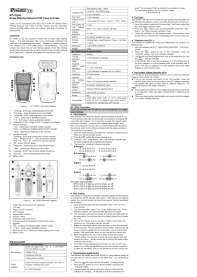
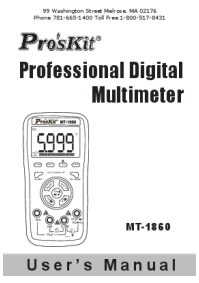
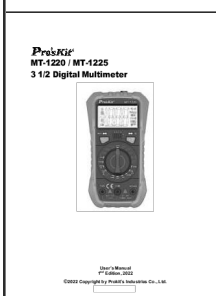
- **No Reading / Incorrect Reading:**
  - Check if the test leads are properly connected to the correct jacks.
  - Ensure the selector switch is set to the appropriate function and range.
  - Verify battery charge; replace if low (refer to Battery Check section).
  - Check fuses if current or high voltage measurements are not working (refer to Fuse Replacement section).
  - For resistance measurements, ensure the pointer is zero-adjusted.
- **Pointer Not Moving:**
  - Confirm the multimeter is powered on.
  - Check for open circuits in the component or circuit being tested.
  - Ensure the range selected is appropriate for the expected value.
- **Buzzer Not Sounding (Continuity Test):**
  - Ensure the resistance is below approximately 200 Ohms.
  - Verify the selector switch is on a resistance range.

For issues not covered here, contact Pro'sKit customer support or a qualified technician.

8. Warranty and Support

Pro'sKit products are manufactured under strict quality control. For warranty information, technical support, or service inquiries, please refer to the official Pro'sKit website or contact your local distributor.
Official Website: www.prokits.com.tw
UPC: 4711552163650

Related Documents - MT-2017N

	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-7029N Noise-Filtering Network PoE Toner & Probe: User Manual and Specifications Comprehensive user manual and technical specifications for the Pro'sKit MT-7029N Noise-Filtering Network PoE Toner & Probe, detailing its features, operation, and troubleshooting for network cable installation and maintenance.
	Pro'sKit MT-1860 Professional Digital Multimeter User Manual Comprehensive user manual for the Pro'sKit MT-1860 Professional Digital Multimeter, covering general features, safety instructions, detailed measurement procedures for DC/AC voltage, current, resistance, capacitance, frequency, temperature, and instrument 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-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-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.