

Pro'sKit®

CE

MT-2018

Protective Function Analog Multimeter



User's Manual

2st Edition: 2018

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INTRODUCTION

This Multi-meter is an accurate, safe, battery operated, rear tilt-stand, easy to operate handheld instrument with robust protective holster alongside and the adjustable back tilt device with hook-up design. It can offer accurate, reliable measurement of DC/AC Voltage, DC Current, Resistance and Diode, LED, Transistor, Decibels, and Capacitance with very high sensitive quality movement, and good-designed circuit, as well as mirrored Aluminum dial plate etc. It has the perfect full overload & miss-used protection via Fuses, Oxide Varactor & Diodes. It is an ideal instrument for indoor use in the laboratory, school, workshop, hobby and home applications.

SPECIFICATIONS

Safety Category: IEC61010-1, CAT II 1000V, CAT III 500V and
Pollution Degree 2.

Common Environment: $23^{\circ}\text{C}\pm 5^{\circ}\text{C}$, less than 75% RH.

Temperature Ranges:

0°C to 40°C , 32°F to 104°F for Operating condition.

-10°C to 50°C , 14°F to 122°F for Storage condition.

Humidity Scope: Operating condition less than 90% RH.

Storage condition: less than 80% RH.

Size: 160(W) x 105(D)x 40(H) MM

Weight: 390g approx. (including batteries 3pcs)

Accessories: One set of Test Leads; One Spare Fuse: 0.5A/250V,

Test Functions	Range	Accuracy	Remarks
DC V	0-0.1-0.5-2.5-10-50 -250 V -1000V	± 3% FSD. ± 4% FSD. For 1000V	Input Impedence: 20KΩ/V Overload Protection: Max. 1000V AC/DC BUT 0.1V/0.5V/ 2.5V/10V/50V /250V Max.
AC V	0-10-50-250V -1000V	± 4% FSD. ± 5% FSD. For 1000V	Input Impedence: 9KΩ/V Overload Protection: Max. 1000V AC/DC But 10V/50V only 250V Max. Band width: 40 ~10K Hz
DC mA	0-0.05-2.5-25- 250 mA,	± 3% FSD.	Drop Voltage: 250mV Overload protected by Fuses 0.5A/250V, and Oxide Varactor. <250V AC/DC(5s).
Ω	X1: 0.2 ~ 2KΩ midscale at 20Ω X10: 2~20KΩ Midscale at 200Ω X100:20~200KΩ Midscale at 2000Ω X1K: 200~ 2MΩ Midscale at 20KΩ X10K: 2K ~ 20MΩ Midscale at 200KΩ	± 4% of ARC of Scale Length	Overload protected by the Oxide Varactor & Fuse <250V AC/DC(5s).
Capacitan ce (uF)	2000uF	Approximate Value	Use the Ω X 1K range
BATT Check	0 ~ 1.5V: GOOD - ? - BAD 0 ~ 9V: GOOD - ? - BAD	± 5% of ARC of Scale Length	Load Current: 270mA for 1.5V, 25mA for 9V. Overload protected by Fuse & Oxide Varactor .<250V AC/DC(5s).

Transistor Check	hFE: 0-1000 via special hFE socket	Approximate Value	At Ω X 10 Range
LED, Diode Check	via special hFE socket	Approximate Value	At Ω X 10 Range
Decibel	-22 dB ~ + 62 dB (0dB=1mW at 600 Ω)	Approximate Value	At ACV ranges
Power Source	Internal Battery: R03, AAA, 1.5V 2pcs, 6F22, NEDA1604, 9V 1pc		

CALIBRATION

Ω Zero Adjustor located at the right side of the panel, adjusting the meter pointer to the Zero mark on the right side of Ω scale of the meter dial when the test leads are touched together.

Mechanical Adjustor Screw: located right below the center of the meter dial to set pointer to Zero mark at the left side of the scale.

(-) Jack: Plug-in connector at the lower left on the panel for Black, negative test lead.

(+) Jack: Plug-in connector at the lower right on the panel for Red, positive test lead.

OPERATING INSTRUCTIONS

CAUTION

When making voltage or current measurements, develop the habit of turning off all power to the circuit under test. Connect the test leads at the desired points in the circuit, then turn on the power while taking readings. Turn off the power before disconnecting the test leads from the circuit.

INTERNAL BATTERY CHECK

To check the battery condition, insert the black test lead into the (-) jack. Set the range switch to the Ω X1 range position and short the ends of the two sides of the test leads. If the pointer can not be brought to the zero mark, replace the 1.5V cells or 9V cell. (See battery replacement.)

BEFORE OPERATING

1. Set the range switch to the proper position before making any measurement.
2. Never apply more voltage or current than the rated value in every position.
3. When the voltage or current to be measured is not known, always start with the highest range.
4. If meter indication is in the lower half of the scale and falls within the range of a lower scale, reset selector switch to the lower range for greatest accuracy.
5. If the meter won't work at all, check the fuse located on the PCB. If it's blown, replace it. (See fuse replacement.)
6. Avoid placing the meter where extreme shock or continuous vibration is encountered and do not store in excessively hot or damp places. Although very rugged, the meter is a sensitive measuring device and should be handled carefully & properly.
7. Do not check resistance, transistor, diode, LED, or capacitance when live voltage or current input across the circuit.

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