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RedMax Digital Pen Type Multimeter User Manual

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RedMax Digital Pen Type Multimeter

Overview

The REMAX digital pen type multimeter is designed and produced in accordance with the safety requirements of the international electrical safety standard IEC-61010 for electronic measuring instruments and handheld digital multimeters and meets the 600V CAT IV and 1000V CAT of IEC61010 III requirements. Before using this instrument, please read the instruction manual carefully and pay attention to the relevant safe work guidelines.

- If the meter is used near equipment with relatively large electromagnetic interference, the meter's readings will become unstable and may experience large errors
- Do not use if the meter or test lead is damaged
- When working around bare conductors or buses, you must be extremely careful. Do not use this meter near explosive gas, steam, or dust
- The input value being measured must not exceed the input limit value specified in each range to prevent damage to the meter
- When the meter is connected to the line under test, do not touch the unused input terminal. When the measured voltage exceeds 60VDC or 30VAC, please be careful to prevent electric shock
- Before changing the range, make sure that the meter is not connected to the circuit under test
- Do not measure resistance or continuity on a live circuit

General operation

Button Function

HOLD/☼ key: Short press this button to activate the value hold function. Long press this key to turn the backlight and flashlight on or off.

RANGE key: Short press this key to manually select the measurement range. Long press this key to release manual range mode and enter Auto range mode.

SELECT key: Short press to switch between modes (e.g. AC & DC in Voltage mode)

Battery

This multimeter uses 2 x AAA 1.5V batteries for power supply. The batteries must be correctly installed in the battery box of the meter. When the battery indicator appears, replace the battery immediately.

Energy Saving

The meter will automatically enter power save mode after approx. 15 minutes of not being used. You can reactivate the meter by pressing any button

Battery Replacement

If the symbol appears on the screen, the batteries must be replaced. Failure to do so will cause incorrect measurements. The meter requires 2 x AAA batteries.

1. Turn the selector dial to the OFF position
2. Remove the battery cover at the rear of the meter

3. Remove the old batteries
4. Install the new batteries
5. Re-install the battery cover and fasten it.

Measurement Guide

Measuring Voltage

1. Turn the rotary switch to the V position.
2. Connect the black test probe to the COM input socket.
3. The meter will default to DC voltage. If AC voltage is being measured, press the SELECT button once.
4. Use the test probe tip and the tip of the meter to measure the voltage value of the circuit or battery being tested.
5. Read the measured value on the liquid crystal display. When measuring DC voltage, the display will also show the polarity of the voltage.

Note: If the test probe on the meter is too short, the red insulating shield can be removed by sliding it off in the direction of the arrow shown in Fig.1

Measurement Guide

Measuring Resistance

1. Turn the rotary switch to the position.
2. Insert the black test pen into the COM input socket.
3. Use the test probe tip and the tip of the meter to measure the resistance of the circuit to be tested.
4. Read the measured resistance value on the liquid crystal display.

Diode Test

1. Turn the rotary switch to the position.
2. Insert the black test pen into the COM input socket.

3. Press the "SELECT" key once to select ▶⊦ mode.

4. The symbol indicates the diode test.

5. Connect the black test probe to the cathode and the tip of the meter to the anode of the diode being tested

6. The meter will display the forward bias value of the diode under test.

7. If the polarity of the test pen is reversed, the meter will display "OL".

Continuity Test

1. Turn the rotary switch to the [symbol] position.

2. Insert the black test pen into the COM input socket.

3. Press the "SELECT" key twice to select the mode.

4. The symbol indicates the audible continuity test which uses the built-in buzzer to to indicate continuity (if the resistance between probes is less than 30Ω± 10)

Measuring Capacitance

1. Turn the rotary switch to the [symbol] position.

2. Insert the black test pen into the COM input socket.

3. Press the "SELECT" key three times to select the capacitance mode.

4. Use the test probe tip and the tip of the meter to measure the capacitance of the circuit to be tested.

5. Read the measured capacitance value on the liquid crystal display.

Non-contact voltage detection

1. Turn the rotary switch to the NCV position.

2. Place the top of the meter close to the AC conductor. When the detected AC voltage is greater than 110V, the meter will sense the voltage.

3. The display will indicate the intensity of the induced electric field and the buzzer will also sound.

Measuring Current

1. Cut off the power supply and discharge all high voltage capacitors in the circuitunder test.

2. Turn the rotary switch to the NCV position.

3. Insert the black test pen into the COM input socket.

4. Connect the black test probe tip and the tip of the meter to the circuit under test (in series).

5. Connect the power to the circuit, and then read the displayed reading.

6. If the display only shows "OL", it means that the input exceeds the selected range. The maximum allowable current is 200mA.

General Specifications

- Display: 3-3/4 digits LCD with a maximum reading of 4000
- Measurement rate: updates 2 -3/sec
- Operating temperature: 0oC – 40oC, 0 – 75% RH
- Storage temperature: -10oC – 50oC, 0 – 75%

Electrical Specifications

DC Voltage

Range	Accuracy	Resolution
400mV	± (0.8%+5d)	100uV
4V	± (O.8%+3d)	1mV
40V		10mV
400V		100mV
600V	± (1%+3d)	1V

Input impedance: 10MΩ on all ranges

AC Voltage

Range	Accuracy	Resolution
4V	± (1%+3d)	1mV
40V		10mV
400V		100mV
600V	± (1.2%+5d)	1V

Input impedance: 10MΩ Frequency range: 40 ~ 400Hz

DC Current

Range	Accuracy	Resolution
40mA	± (1.0%+3d)	10uA
200mA	± (1.0%+3d)	100uA

Measuring voltage drop: 200mV

AC Current

Range	Accuracy	Resolution
40mA	±(1.2%+5d)	10uA
200mA	±(1.2%+5d)	100uA

Measuring voltage drop: 200mV Frequency range: 40 ~ 400Hz

Capacitance

Range	Accuracy	Resolution
4nF	±(3%+5d)	1pF
40nF	±(3%+5d)	10pF
400nF	±(3%+5d)	100pF
4uF	±(3%+5d)	1nF
40uF	±(3%+5d)	10nF
400uF	±(3%+5d)	100nF
4mF	±(5%+10d)	1uF

Measuring voltage drop: 200mV Frequency range: 40 ~ 400Hz

Resistance

Range	Accuracy	Resolution
400Ω		0.1Ω
4KΩ		1Ω
40KΩ	±(1.0%+5d)	10Ω
400KΩ		100Ω
4MΩ		1kΩ
40MΩ	±(1.2%+8d)	10KΩ

Measuring voltage drop: 200mV Frequency range: 40 ~ 400Hz

Documents / Resources

RedMax Digital Pen Type Multimeter [pdf] User Manual
Digital Pen Type Multimeter