Neoteck NTK017 Auto Ranging Digital Multimeter User's Manual

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Neoteck NTK017 Auto Ranging Digital Multimeter

Introduction

Neoteck instrument is a handheld and battery operated Digital Multi Meter(DMM) with multi-function. This Meter is designed to meet IEC61010-1 & CAT II 600V over voltage category and double insulation. The meter with a holster that gives the main body, though downsized, high resistance against the shock of a drop. This operating instruction covers information on safety and caution. Please read relevant information carefully and observe all the warnings and notes strictly. The DMM as a general measurement tool and is widely used in schools, laboratories, factories, and other social field.

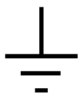
Safety note

Warning To avoid possible electric shock or personal injury and to avoid possible damage to the meter or to the equipment under test, adhere to the following rules:

- Do not apply more than the rated voltage, marked on the meter, between the input terminal and grounding terminal..
- Do not apply voltage between COM and OHM terminal, in the resistance measuring state.
- Do not measure current with test lead inserted into voltage or OHM terminal.
- Do not expose the instrument to direct sunlight, extreme temperature humidity or dew.

- Inspect the test lead for damaged insulation or exposed metal.
- Before measuring the current, check the Meter's fuses and turn off the power to the circuit before connecting the meter to the circuit.
- Disconnect circuit power and discharge all high-voltage capacitors before testing continuity, diode, resistance, capacitance or current.

Note international Electrical Symbol.

	Dangerous Voltage		Ground
	AC Alternating current		Warning see explain in manual
	DC (Direct Current)		Double insulation
	AC or DC		Fuse

Measurement category(over voltage category): This instrument is meet the safety condition of CAT II. The equipment is used for measurement in building facilities. Examples are measurements on distribution boards, circuit breaker and industrial equipment located in fixed facilities, as a fixed motor.

Explanation of controls and indicators

Meter illustration

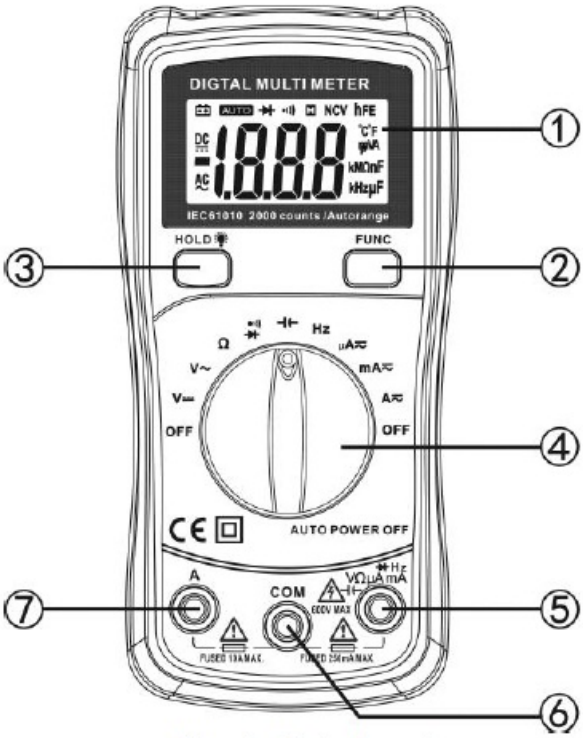


Fig. 1 Exterior view

1. LCD display
2. “FUNC” Push button
3. “BACKLIGHT” push button and ‘HOLD” push button
4. Rotary Switch (Knob)
5. “V/Ω/HZ/uA/mA” Input terminal
6. “COM” input terminal
7. “10A” input terminal

Functional push button

Push button	Function
Func	**“FUNC”** key is the function select key that acts with trigger. Use the key as a switch of DC/AC current, Diode.
HOLD	Press **“HOLD** ” to enter and exit the hold mode in any mode. That act with th e trigger. **“HOLD** ”This key is used to control Backlight. This key act with the trigger. W hen pressing and holding the key over 2 sec, will enable Backlight. Press the key again, the backlight will disabled.

Display indicators

Fig. 2 LCD

Indicator	Meaning
	DC voltage or current
	AC voltage or current
	Diode
HOLD	Data hold

	Low battery indicator
MKΩ	Ω KΩ MΩ is the unit of resistance
µmVA	mV,V is the unit of voltage µA, mA, A is a unit of current
	Indicate negative reading

Specification

General Specification

- Auto-ranging DMM, that full scale is 2000 counts
- **Display :** 3 1/2 digit LCD display..
- **Overload protection:** Used the PTC protection circuit for Resistance, and frequency measurement.
- DATA HOLD function
- Back Light
- Low battery indication
- **Auto Power- OFF. :** If the meter is idle for 15 minutes (idle time), the meter automatically turns the power off. After auto power-off, pushing any of the push buttons or changing the rotary switch can turn on the meter again.
  NOTE:
  1. After auto power off in the AC mode, if changing the rotary switch to the DC mode, the Repower on if disabled.
  2. The meter enters sleep mode after powering off. If press the HOLD push button to re-power on in sleep mode, the auto power-off function is disabled.
- **Operating temperature & Humidity:** 0 ~ 40 (32 ~10 4 ℉℉) & < 80% RH
- **Storage temperature & Humidity:** 10 ~ 50 (14 ~ 122 ℉℉) & <70%RH
- **Power Supply:** 9V Battery(6F22 or 1604A Type) x 1pc.

- **Safety Class:** IEC 61010 1, CAT II 600V.
- **Dimension(L x W x H) & Weight:** 138 × 68 × 30mm , Approx. 1 75 g

Accessory:

- User’s Manual 1pc
- Test lead 1set
- 9V Battery 1pc

Electrical Specification (at 2 3 5 °C°C; <75%)

DC Voltage

Range	Resolution	Accuracy
200mV	0.1mV	± 0.5% rdg + 2dgt
2V	0.001V	
20V	0.01V	
200V	0.1V	
600V	1V	± 0.8% rdg + 2dgt

AC Voltage

Range	Resolution	Accuracy
2V (40Hz-400Hz)	0.001V	
20V (40Hz-400Hz)	0.01V	± 0.9% rdg + 3dgt
200V (40Hz-400Hz)	0.1V	
600V (40Hz-200Hz)	1V	± 1.2% rdg + 3dgt

Resistance

Range	Resolution	Accuracy
200Ω	0.1Ω	± 0.8% rdg + 2dgt
2kΩ	0.001kΩ	
20kΩ	0.01kΩ	
200kΩ	0.1kΩ	
2MΩ	0.001MΩ	± 1.0% rdg + 2dgt
20MΩ	0.01MΩ	

Diode check

Range	Resolution	Function
	0.001V	Will display the forward drop voltage.

- **Operating current** about 1mA
- **Open circuit voltage** about 1.48V

Continuity

Range	Function
	If measured resistance less than 100Ω, will buzzer is sounded.

- **Open voltage:** about 0.5V 4.2.6

DC Current

Range	Resolution	Accuracy
200μA	0.1μA	± 1.5% rdg + 3dgt
2000μA	1μA	
20mA	0.01mA	
200mA	0.1mA	
10A	0.01A	

- **Over Load protection** use the fuse(F250mA/250V) at μA /mA range, and use the fuse(F10A/250V) at 10A range.
- **Max input current:** 250mA at the ‘mA’ input terminal and 10A at the ‘10A’ input terminal.

capacitance

Range	Resolution	Accuracy
0-100μF	1μF	± 5.0% rdg + 3dgt
100-500μF	1μF	± 5.0% rdg + 5dgt
500-1000μF	1μF	± 5.0% rdg + 20dgt
1000-2000μF	1μF	± 5.0% rdg + 40dgt

- **Over Load protection** use the fuse(F250mA/250V)

AC Current [40Hz-400Hz]

Range	Resolution	Accuracy
200μA	0.1μA	1.5% rdg + 4dgt
2000μA	1μA	
20mA	0.01mA	
200mA	0.1mA	
10A	0.01A	

- **Over Load protection** use the fuse(F250mA/250V) at μA /mA range, and use the fuse(F10A/250V) at 10A range.
- **Max input current:** 250mA at the 'mA' input terminal and 10A at the '10A' input terminal…
- **Frequency response** 40 400Hz

Frequency

Range	Resolution	Accuracy
200kHz	0.1KHz	± 1.5%rdg+5dgt

- **Sensitivity** 0.8V

Measurement operation

DC & AC voltage measurement

Warning: To avoid harms to you or damage to the meter from electric shock. Please do not attempt to measure voltage higher than DC/AC 1000V although readings may be obtained. The DC voltage range are 200.0mV, 2.000V, 20.00V , 200.0V and 600V and then. The AC voltage ranges are 2.000V, 20.00V, 200.0V and 600V.

To measure DC or AC voltage:

- Insert the red test lead into the "VΩ" input terminal and the black test lead into the COM terminal.
- Set the rotary switch to DC or AC range.
- Connect the test lead across with the object under testing.

The measured value will be show on the LCD display.

Note: When DC or AC voltage measurement has been completed, disconnect the connection between the testing lead and the circuit under testing.

Resistance measurement

The resistance range are: 200.0Ω, 2.000KΩ,20.00KΩ, 200.0KΩ , 2.000M Ω.20.00MΩ.

To measure resistance, connect the meter as follows:

- Insert the red test lead into the ”VΩ” terminal and the black test lead into the COM terminal.
- Set the rotary switch to proper resistance range..
- Connect the test lead across with the object under testing.

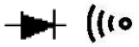
The measured value will be show on the LCD display.

Note:

- The te st lead can add 0.1 Ω to 0.2 Ω of error to resistance measurement. To obtain precision reading in low resistance measurement, that is the range of 200.0 Ω , short the input terminal before measuring. In this time, the contact resistance displayed on the LCD. Y ou can subtract the contact resistance value from the
- measured value.
- For high resistance measurement (>10M Ω), it is normal taking several second to obtain stable reading.
- The LCD display OL indicating open circuit for the tested resistor or the resi stor value is higher than the maximum range of the meter.

Diode/Continuity check

Diode

- Set the rotary switch to  ” position. First time, default mode is diode check mode. You can enter the continuity check mode by the FUNC Key.
- insert the red test lead into the V Ω terminal and the black test lead into the COM terminal.
- Use the diode test mode to check diodes, transistors and other semiconductor device. In the diode test mode send s a current through the semiconductor junction, and the measure the voltage drop across the junction. A good silicon junction drop between 0.5V and 0.8V.
- For forward voltage drop reading on any semiconductor component,place the red test l ead on the component anode and place the black test lead on the component cathode. The measured value show on the display
- Reverse the test lead and measure the voltage across the diode again.
    - If diode is good, the display shows OL
    - If diode is shorted, the display shows 0 (zero) in both direction.
    - If display shows OL in both direction, the diode is open.

Continuity Check:

- Press the FUNC key to enter to the continuity mode.
- The buzzer sound if the resistance of a circuit under test is less than 100 Ω

Frequency measurement

- Set the rotary switch to Hz position.
- Insert the red test lead into the “ V Ω Hz input terminal and the black test lead into the COM terminal.
- Connect the test leads across with the circuit under test ing . The measured value shown.on the LCD display.

NOTE: Input signal level must be higher than 0. 5V (it is sensitivit y).

DC/AC µ A or mA measurement

DC Current range is 200.0 µ A/2000 µ A and 20.00mA,/200.0mA and then 10A range.

AC Current range is 200.0 µ A/2000 µ A and 20.00mA,/200.0mA and then 10A range.

- Turn off power to the circuit. Set the rotary switch to the properDC/AC µ A or DC/AC mA position.
- Break the current path to be tested. Connect the red test lead to the more positive side of the break and the black test lead to the more negative side of the break.
- Turn on power to the circuit. The measured value show on the display.

DC/AC 1 0A measurement

- Insert the red test lead into the input terminal marked as “10A”.
- The measuring procedure is same as that of 5 5 section.

Note:

- For safety s sake, the measuring time for high current should be 10 second for each measurement and the interval time between two measurement should be greater than 5 minutes.
- When current measurement has been completed, disconnect the connection between the testing lead and the circuit under test.

Capacitance measurement

Note: To avoid damage to the instrument or device under test to measure capacitance previously, should cut off all power of the circuit to be measured and all high voltage capacitors discharge. DC voltage function determines the capacitor has been discharged.

- Capacitance is component’s ability to store charge.
- The unit of capacitance is ferrari (F). Most of the value of the capac itor is in thelaw (nF) between micro method (F). Instrument is through the capacitor charging (with a known current and time), then measure the voltage, then calculate capacitance value. 1000 mu F measuring takes about eight seconds, the faster the smaller capacitance measurement. Instrument test more than 500 mu F, there will be a slight jumps phenomenon.

Measurement of capacitance

- The rotary switch to gear.
- Respectively connects black test pens and a red pen to COM input socket and input socket.

- Use the test pen on both ends of the other measuring capacitance of the capacitor under test value and measured value read from the LCD display.
- When the meter measuring large capacitance, it takes time to stable reading.

Maintenance

- **Replacing t he battery**

When meter display  the battery must be replace to maintain normal operation.

- Disconnect and remove all test probes from any live source and meter.
- Open the battery cover on the bottom case by screwdriver.
- Remove old batt ery and snap new one into battery holder

Fuse replacement

Replacing the defective fuse should the done according to the following procedure.

- To avoid electrical shock, remove the test lead and any input signal before opening the bottom case.
- Open the botton case and then remove the defective fuse and insert a new fuse of the same size and rating.
- Replace the bottom case and reinstall all the screw.

Cleaning and Decontamination

- The meter can be cleaned with soft clean cloth to remove any oil, grease or grim. Do not use liquid solvent or detergent.

Caution Please turn off the item when it is not in use in order to prolong its work ing l ife.

Warranty

Thanks for using neoteck product all neoteck product comes with **warranty of 18 months** from the day of purchase, if you need any support, please feel free to contact us.

Contact

Here is the steps for you to contact the correct seller:

Highly recommend

1. Log in your a mazon account on **www.amazon.com**
2. Find the “Your Account” on the upper right corner of this pag e, and then click “Your order”.
3. Then you will find “contact seller”

Or **Email: neoteckcs@gmail.com**

FREQUENTLY ASKED QUESTIONS

What are the primary features of the Neoteck NTK017 Auto Ranging Digital Multimeter?

The Neoteck NTK017 Auto Ranging Digital Multimeter offers auto-ranging capability, 2000 counts measurement accuracy, and an LCD display for easy reading.

What type of power source does the Neoteck NTK017 Auto Ranging Digital Multimeter use?

The Neoteck NTK017 Auto Ranging Digital Multimeter is powered by 2 AAA batteries, providing convenient and portable operation.

What are the dimensions and weight of the Neoteck NTK017 Auto Ranging Digital Multimeter?

The Neoteck NTK017 Auto Ranging Digital Multimeter measures approximately 14.4 x 7 x 3.7 inches and weighs 6.6 ounces, making it compact and lightweight for easy handling.

What specification does the Neoteck NTK017 Auto Ranging Digital Multimeter meet?

The Neoteck NTK017 Auto Ranging Digital Multimeter meets rated specifications, ensuring its quality and performance standards.

Who is the manufacturer of the Neoteck NTK017 Auto Ranging Digital Multimeter?

The Neoteck NTK017 Auto Ranging Digital Multimeter is manufactured by Neoteck, a reputable brand known for producing high-quality electronic tools and instruments.

What is the material composition of the Neoteck NTK017 Auto Ranging Digital Multimeter?

The Neoteck NTK017 Auto Ranging Digital Multimeter is made of rubber, plastic, and other materials, ensuring durability and longevity.

What is the measurement accuracy of the Neoteck NTK017 Auto Ranging Digital Multimeter?

The Neoteck NTK017 Auto Ranging Digital Multimeter offers a measurement accuracy of 2000 counts, providing reliable and precise readings.

What type of display does the Neoteck NTK017 Auto Ranging Digital Multimeter feature?

The Neoteck NTK017 Auto Ranging Digital Multimeter features an LCD display, offering clear and easy-to-read measurement results.

What is the battery cell type required for the Neoteck NTK017 Auto Ranging Digital Multimeter?

The Neoteck NTK017 Auto Ranging Digital Multimeter requires zinc carbon batteries for power.

What warranty is provided with the Neoteck NTK017 Auto Ranging Digital Multimeter?

Neoteck provides an 18-month warranty for the NTK017 Auto Ranging Digital Multimeter, ensuring peace of mind for the user against any manufacturing defects or issues.

How can I troubleshoot issues with the auto-ranging function on my Neoteck NTK017 Digital Multimeter?

If the auto-ranging function is not working properly, ensure that the test leads are properly connected and that the measurement range is suitable for the signal being measured.

What should I do if the LCD display on my Neoteck NTK017 Digital Multimeter is not functioning correctly?

Check the battery level and connections first, as a low battery can affect the display. If the issue persists, contact Neoteck customer support for further assistance with troubleshooting and potential resolution options for the NTK017 model.

How do I address issues with the rotary dial selector on my Neoteck NTK017 Digital Multimeter?

Ensure that the rotary dial selector is not obstructed and that it moves freely between positions. Gently

rotate the dial through its entire range to check for any sticking points.

What steps should I take if the input jacks on my Neoteck NTK017 Digital Multimeter are not making proper contact?

Ensure that the test leads are inserted fully into the correct input jacks and that there is no debris or damage obstructing the connections. Try cleaning the jacks with compressed air or a gentle brush.

How do I troubleshoot issues with the measurement accuracy of my Neoteck NTK017 Digital Multimeter?

If you suspect inaccuracies in measurements, ensure that the multimeter is calibrated correctly and that the test leads are making good contact with the test points. Test against known standards or reference values to verify the accuracy of measurements.

VIDEO – PRODUCT OVERVIEW

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DOWNLOAD THE PDF LINK:

https://manualsplus.com/wp-content/uploads/2024/05/Neoteck-NTK017-Auto-Ranging-Digital-Multimeter-User's-Manual-Ranging-Digital-Multimeter-Users-Manual.mp4

References

- User Manual