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HANMATEK DM20

HANMATEK DM20 Digital Multimeter User Manual

Model: DM20 | Brand: HANMATEK

1. Introduction

The HANMATEK DM20 is a smart, portable digital multimeter designed for accurate and efficient electrical measurements. It features stable performance, high accuracy, and low power consumption, making it an ideal tool for electronic enthusiasts, DIY users, and professionals. This manual provides detailed instructions for safe and effective operation of your DM20 multimeter.



Image: The HANMATEK DM20 Digital Multimeter with its included red and black test leads.

2. Safety Information

Always adhere to safety precautions when using electrical testing equipment. Failure to do so may result in electric shock, injury, or damage to the meter or equipment under test.

- Do not exceed the maximum input values for any function.
- Ensure test leads are properly connected and in good condition before each use.
- Do not use the meter if it appears damaged or is not operating correctly.
- Always turn off power to the circuit before connecting or disconnecting test leads for current measurements.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC, as they pose a shock hazard.
- Replace batteries promptly when the low battery indicator appears to ensure accurate readings.

3. Product Overview and Components

Familiarize yourself with the various parts of your HANMATEK DM20 Digital Multimeter:



Image: Front view of the DM20 multimeter with key components labeled.

1. NCV detection induction area
2. Soft rubber cover
3. LCD screen
4. NCV / flashlight button
5. Power button / function selection button (SEL)
6. Current input end (A mA)
7. Voltage resistor input end (INPUT)
8. Public end (COM)
9. Backlight / data hold button (H/*)
10. NCV detection indicator
11. Flashlight



Image: The DM20 multimeter shown with its stable holder (kickstand) extended for hands-free use.

4. Setup

4.1. Battery Installation

The HANMATEK DM20 requires 3 AAA batteries (included). To install or replace batteries:

1. Ensure the multimeter is powered off.
2. Locate the battery compartment on the back of the device.
3. Use a screwdriver to open the battery cover.
4. Insert the 3 AAA batteries, observing the correct polarity (+/-) as indicated inside the compartment.
5. Securely close the battery cover.



Image: The HANMATEK DM20 package contents, including the multimeter, test leads, AAA batteries, and instruction manual.

5. Operating Instructions

5.1. Power On/Off and Mode Selection

- To power on the device, long press the **SEL** button. The meter will default to Smart Measurement Mode.
- To switch between test modes (e.g., resistance, continuity, voltage, current), short press the **SEL** button.
- To power off, long press the **SEL** button again. The device also features auto power-off.

The DM20 features a Smart Measurement Mode that automatically identifies the type of signal (voltage, resistance, continuity) and selects the optimal range for quick and accurate results.

5.2. Measuring Voltage (AC/DC)

To measure voltage:

1. Switch to the desired voltage mode (AC or DC) if not in Smart Mode.
2. Connect the black test lead to the **"COM"** terminal.
3. Connect the red test lead to the **"INPUT"** terminal.
4. Touch the tip of the red wire to the positive pole and the black wire to the negative pole of the circuit or component.
5. Read the measurement data after the value stabilizes on the display.

Please note the difference between AC voltage and DC voltage measurements.



Image: Visual representation of the multimeter performing various tests, including voltage measurement on a battery.

5.3. Measuring Current (AC/DC)

To measure current:

1. Switch to the desired current mode (A mA) if not in Smart Mode.
2. Connect the black test lead to the **"COM"** terminal.
3. Connect the red test lead to the **"A mA"** terminal.

4. Break the circuit and connect the multimeter in series with the load.
5. Touch the tip of the red wire to the positive side and the black wire to the negative side of the break.
6. Read the measurement data after the value stabilizes.

Please note the difference between AC current and DC current measurements.

5.4. Measuring Resistance

To measure resistance:

1. Switch to the resistance mode (Ω) if not in Smart Mode.
2. Connect the black test lead to the **"COM"** terminal.
3. Connect the red test lead to the **"INPUT"** terminal.
4. Ensure the circuit is de-energized. Touch the test leads across the component to be measured.
5. Read the measurement data after the value stabilizes.



Image: The multimeter performing a continuity test on a component and a diode measurement on a circuit board.

5.5. Continuity Test

To perform a continuity test:

1. Switch to the continuity mode (sound wave icon) if not in Smart Mode.
2. Connect the black test lead to the **"COM"** terminal.
3. Connect the red test lead to the **"INPUT"** terminal.
4. Touch the test leads across the circuit or component. A continuous beep indicates continuity (low resistance).

5.6. Non-Contact Voltage (NCV) Detection

The NCV function allows for voltage detection without direct contact, enhancing safety.

1. Short press the **NCV** button on the upper left.

2. Confirm that "EF" is displayed on the screen.
3. Move the NCV detection area (top of the meter) close to the area where you want to detect voltage.
4. Read the measurement data after hearing the beep and observing the NCV indicator.



Image: The DM20 multimeter performing non-contact voltage detection, showing the difference between a null line and a live line.

5.7. Backlight and Flashlight Functions

- To turn on/off the backlight, long press the **H/*** button on the upper right.
- To turn on/off the flashlight, long press the **NCV** button on the upper left.



Image: A close-up view of the multimeter's built-in flashlight in use, illuminating a power outlet for better visibility.

5.8. Official Product Video: How to Use

Your browser does not support the video tag.

Video: A comprehensive guide demonstrating how to use the HANMATEK digital multimeter for various measurements and functions.

6. Maintenance

- Keep the multimeter clean and dry. Use a soft, damp cloth for cleaning; do not use abrasives or solvents.
- Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- Remove batteries if the meter is not used for an extended period to prevent leakage.
- Regularly inspect test leads for any damage or fraying. Replace if necessary.

7. Troubleshooting

Problem	Possible Cause	Solution
Meter does not power on.	Dead or incorrectly installed batteries.	Check battery polarity; replace batteries.
"OL" displayed on screen.	Overload or out of range measurement.	Ensure the measurement is within the meter's specified range. Check if the correct mode is selected.
Inaccurate readings.	Low battery, damaged test leads, or incorrect mode/connection.	Replace batteries, inspect/replace test leads, verify correct mode and connections.
No NCV detection.	NCV function not activated or no voltage present.	Short press NCV button to activate; ensure voltage is present in the area.

8. Specifications

Feature	Detail
Model Number	DM20
Display Counts	6000 Counts

Feature	Detail
Measurement Type	TRMS (True RMS)
Auto-Ranging	Yes (Smart Measurement Mode)
Non-Contact Voltage (NCV)	Yes
Functions	AC/DC Voltage, AC/DC Current, Resistance, Continuity
Additional Features	Data Hold, Backlight, Flashlight, Low Battery Indication, Continuity Buzzer
Power Source	3 x 1.5V AAA Batteries (included)
Product Dimensions	2.8 x 1.77 x 5.79 inches
Item Weight	7.76 ounces (220 Grams)
Safety Rating	CAT III 600V

9. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the contact information provided with your product packaging or visit the official HANMATEK website. Keep your purchase receipt as proof of purchase for warranty claims.

You can also visit the HANMATEK Store on Amazon for more product information and support resources.

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