Irfora AN113D

AN113D Digital Multimeter User Manual

Model: AN113D | Brand: Irfora

Introduction

The Irfora AN113D is a compact and versatile digital multimeter designed for accurate measurement of various electrical parameters. Featuring 6000 counts, True RMS capability, and auto-ranging, it is suitable for both professional and DIY electrical tasks. This meter can measure DC/AC voltage, DC/AC current, resistance, capacitance, frequency, duty cycle, diode, continuity, and temperature.
This manual provides detailed instructions for the safe and effective use of your AN113D Digital Multimeter. Please read it thoroughly before operation and retain it for future reference.

Setup

1. Unpacking

Carefully remove the multimeter and all accessories from the packaging. Verify that all components are present:

- AN113D Digital Multimeter
- Test Leads (Red and Black)
- Thermocouple (K-type)
- User Manual

Inspect the device for any signs of damage. If any damage is found, do not use the device and contact your supplier.

2. Battery Installation

The AN113D multimeter typically requires 2x AAA batteries (not always included). To install or replace batteries:

1. Ensure the multimeter is turned off and test leads are disconnected.
2. Locate the battery compartment cover on the rear of the device.
3. Use a screwdriver to open the battery compartment.
4. Insert the batteries, observing the correct polarity (+ and -) as indicated inside the compartment.
5. Replace the battery compartment cover and secure it with the screw.

Note: Remove batteries if the meter is not to be used for an extended period to prevent leakage.

3. Connecting Test Leads

Always connect the test leads correctly for accurate and safe measurements:

- Insert the **black** test lead into the "COM" (Common) jack.
- Insert the **red** test lead into the "VΩmA" jack for voltage, resistance, continuity, diode, capacitance, frequency, and small current measurements.
- For large current measurements (e.g., 10A), insert the **red** test lead into the "10A" jack (if available on your model).

Warning: Ensure test leads are fully inserted before taking measurements.

Operating Instructions

The AN113D features an intuitive rotary switch for selecting measurement functions and an LCD display for reading values.

Figure 1: Front view of the AN113D Digital Multimeter, illustrating the LCD display, rotary function switch, and input terminals for test leads.

1. Power On/Off

Turn the rotary switch from the "OFF" position to any desired measurement function to power on the multimeter. To power off, turn the rotary switch back to the "OFF" position.

2. Auto-Ranging Function

The AN113D is an auto-ranging multimeter, meaning it automatically selects the appropriate measurement range for the input signal. This simplifies operation as you do not need to manually select ranges.

3. Basic Measurements

a. DC Voltage Measurement (V–)

1. Turn the rotary switch to the "V–" position.
2. Connect the red test lead to the positive (+) side of the circuit and the black test lead to the negative (-) side.
3. Read the voltage value on the LCD display.

b. AC Voltage Measurement (V~)

1. Turn the rotary switch to the "V~" position.
2. Connect the test leads across the AC voltage source.
3. Read the voltage value on the LCD display.

c. Resistance Measurement (Ω)

1. Turn the rotary switch to the "Ω" position.

2. Ensure the circuit or component is de-energized before measuring resistance.
3. Connect the test leads across the component to be measured.
4. Read the resistance value on the LCD display.

d. Continuity Test (♫)

1. Turn the rotary switch to the "♫" (Continuity/Diode) position.
2. Connect the test leads across the circuit or component.
3. If the resistance is below a certain threshold (typically 50Ω), the meter will emit an audible beep, indicating continuity.

e. Diode Test (▲)

1. Turn the rotary switch to the "▲" (Continuity/Diode) position.
2. Connect the red test lead to the anode and the black test lead to the cathode of the diode.
3. The display will show the forward voltage drop. Reverse the leads to check for open circuit (OL) in reverse bias.

f. Temperature Measurement (°C/°F)

1. Turn the rotary switch to the "TEMP" position.
2. Connect the K-type thermocouple to the appropriate input jacks (usually marked for temperature).
3. Place the thermocouple tip on or near the object whose temperature is to be measured.
4. Read the temperature value on the LCD display.

4. Special Functions

a. Data Hold (HOLD)

Press the "HOLD" button to freeze the current reading on the display. Press it again to release the hold function.

b. Backlight

Press the backlight button (often combined with HOLD or a separate button) to illuminate the display for better visibility in low-light conditions. Press again to turn off.

Maintenance

Proper maintenance ensures the longevity and accuracy of your AN113D Digital Multimeter.

1. Cleaning

Wipe the case with a damp cloth and a mild detergent. Do not use abrasives or solvents. Ensure the meter is completely dry before use.

2. Battery Replacement

When the battery indicator appears on the display, replace the batteries as described in the "Battery Installation" section under Setup. Low battery can affect measurement accuracy.

3. Fuse Replacement

If the current measurement function stops working, the fuse may be blown. Refer to the specifications for the correct fuse type and rating. To replace the fuse:

1. Ensure the multimeter is off and test leads are disconnected.
2. Open the battery compartment cover.
3. Locate the fuse holder (may be near the battery compartment or require opening the main case).
4. Carefully remove the old fuse and insert a new fuse of the identical type and rating.
5. Securely close the compartment/case.

Warning: Always use fuses with the specified voltage and current ratings to prevent damage to the meter or personal injury.

4. Storage

If the meter is not to be used for a long period, remove the batteries to prevent leakage. Store the meter in a cool, dry place, away from direct sunlight and extreme temperatures.

Troubleshooting

This section addresses common issues you might encounter with your AN113D Digital Multimeter.

Problem	Possible Cause	Solution
No display or dim display	Dead or low batteries	Replace batteries.
"OL" (Overload) displayed	Input value exceeds selected range or meter's maximum capacity.	For auto-ranging, this indicates the value is too high. Ensure correct function is selected and input is within meter's limits.
Incorrect readings	• Incorrect function selected. • Poor test lead connection. • Blown fuse (for current measurements). • Low battery.	• Select the correct measurement function. • Ensure test leads are fully inserted and making good contact. • Check and replace fuse if necessary. • Replace batteries.
No continuity beep	Open circuit or resistance too high.	Verify the circuit is closed and resistance is below the continuity threshold.

If the problem persists after attempting these solutions, contact Irfora customer support.

Specifications

The following are the general specifications for the Irfora AN113D Digital Multimeter. Note that specific ranges and accuracies may vary slightly by production batch.

Parameter	Value/Range

Parameter	Value/Range
Display	6000 Counts LCD Display
True RMS	Yes
Auto Ranging	Yes
DC Voltage (V–)	Up to 1000V
AC Voltage (V~)	Up to 750V
DC Current (A–)	Up to 10A
AC Current (A~)	Up to 10A
Resistance (Ω)	Up to 60MΩ
Capacitance (F)	Up to 60mF
Frequency (Hz)	Up to 10MHz
Duty Cycle	1% to 99%
Temperature (°C/°F)	-20°C to 1000°C / -4°F to 1832°F
Diode Test	Yes
Continuity Test	Yes (with buzzer)
Power Supply	2 x 1.5V AAA Batteries
Safety Rating	CAT III 600V, CAT II 1000V
Dimensions	Approx. 130mm x 65mm x 32mm
Weight	Approx. 130g (without batteries)

Warranty and Support

Specific warranty details for the Irfora AN113D Digital Multimeter are not provided in this manual. For information regarding warranty coverage, terms, and conditions, please refer to the product packaging or contact Irfora customer support directly.

For technical assistance, troubleshooting beyond this guide, or to inquire about replacement parts, please reach out to the manufacturer:

Irfora Customer Support:

- Visit the Irfora Brand Store on Amazon (for general inquiries or to find contact information)
- Refer to the contact information provided on the product packaging or official Irfora website.