StarNY HT118A

StarNY HT118A Digital Multimeter User Manual

Model: HT118A

1. Introduction

This manual provides detailed instructions for the safe and effective operation of the StarNY HT118A Digital Multimeter. The HT118A is a handheld, battery-powered instrument designed for measuring AC/DC voltage, AC/DC current, resistance, capacitance, frequency, temperature, diode, and continuity. It features a clear LCD display with backlight, a flashlight, and non-contact voltage (NCV) detection.

2. Safety Information

Read all safety warnings and operating instructions before using this instrument. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Always ensure the multimeter is in the correct function and range before making measurements.
- Do not exceed the maximum input values for any range.
- Exercise extreme caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Inspect test leads for damaged insulation or exposed metal before use. Replace if damaged.
- Do not use the multimeter if it appears damaged or if it is not operating properly.
- Remove test leads from the circuit before changing functions.
- Replace batteries when the low battery indicator appears to ensure accurate readings.
- Adhere to local and national safety codes.

3. Product Overview

The StarNY HT118A Digital Multimeter is designed for ease of use and durability. Familiarize yourself with its components:

Figure 3.1: Labeled diagram of the HT118A Multimeter showing the NCV probe, flashlight, LCD display, function keys, function knob, and input sockets.

Figure 3.2: Front view of the StarNY HT118A Digital Multimeter, displaying its robust red and black casing and clear LCD screen.

3.1. Components

- **LCD Display:** Shows measurement readings, units, and function indicators. Features dual-color backlight.
- **Function Knob:** Rotary switch to select measurement functions (e.g., V~, V-, A~, A-, Ohm, Cap, Hz,

Temp, Diode, Continuity, NCV, Live).

- **Function Keys:** Buttons for specific operations like FUNC (mode selection), HOLD (data hold), MAX/MIN (maximum/minimum value), and backlight/flashlight activation.
- **Input Sockets:**
  - **COM:** Common input for all measurements (black test lead).
  - **VΩHz:** Input for voltage, resistance, frequency, capacitance, diode, and continuity measurements (red test lead).
  - **mA/µA:** Input for milliampere and microampere current measurements (red test lead).
  - **10A:** Input for 10 Ampere current measurements (red test lead).
- **NCV Probe:** Located at the top for non-contact voltage detection.
- **Flashlight:** Integrated light for illuminating work areas.

4. Setup

4.1. Battery Installation

The HT118A Multimeter requires two (2) 1.5V AAA batteries (not included) for operation.

1. Ensure the multimeter is turned OFF.
2. Locate the battery compartment cover on the back of the unit.

Figure 4.1: Rear view of the HT118A Multimeter, showing the battery compartment cover and kickstand.

3. Use a screwdriver to loosen the screw(s) on the battery cover.
4. Remove the cover.
5. Insert two new 1.5V AAA batteries, observing the correct polarity (+ and -).
6. Replace the battery cover and secure it with the screw(s).

Note: When the low battery indicator appears on the display, replace the batteries promptly to maintain measurement accuracy.

5. Operating Instructions

Before making any measurements, ensure the test leads are properly connected and the function knob is set to the desired measurement type.

Figure 5.1: The HT118A Multimeter shown with its included test leads and temperature probe, ready for various measurements.

5.1. General Operation

- **Power ON/OFF:** Rotate the function knob from "OFF" to any desired measurement function to turn the meter ON. Rotate back to "OFF" to power OFF. The meter also features an auto power-off function after 15 minutes of inactivity.
- **Function (FUNC) Button:** Used to switch between different modes within a single knob position (e.g., AC/DC voltage, Diode/Continuity, Celsius/Fahrenheit).
- **HOLD Button:** Press to freeze the current reading on the display. Press again to release.
- **MAX/MIN Button:** Press to display the maximum or minimum measured value. Press again to cycle through MAX, MIN, and current readings.
- **Backlight/Flashlight Button:** Press briefly to turn the LCD backlight ON/OFF. Press and hold to turn the flashlight ON/OFF.

5.2. Measuring DC Voltage (V-)

1. Insert the black test lead into the **COM** jack and the red test lead into the **VΩHz** jack.
2. Rotate the function knob to the **V-** position.
3. Connect the test leads across the DC voltage source to be measured.
4. Read the voltage value on the display.

5.3. Measuring AC Voltage (V~)

1. Insert the black test lead into the **COM** jack and the red test lead into the **VΩHz** jack.
2. Rotate the function knob to the **V~** position.
3. Connect the test leads across the AC voltage source to be measured.
4. Read the voltage value on the display.

5.4. Measuring DC Current (A-, mA-, µA-)

Caution: Never connect the test leads in parallel to a voltage source when measuring current. This can damage the meter and the circuit.

1. Determine the expected current range. For currents up to 600mA, use the mA/µA jack. For currents up to 10A, use the 10A jack.
2. Insert the black test lead into the **COM** jack. Insert the red test lead into the appropriate current jack (**mA/µA** or **10A**).
3. Rotate the function knob to the corresponding **A-**, **mA-**, or **µA-** position.
4. Open the circuit where current is to be measured and connect the multimeter in series with the load.
5. Read the current value on the display.

5.5. Measuring AC Current (A~, mA~, µA~)

Caution: Never connect the test leads in parallel to a voltage source when measuring current. This can damage the meter and the circuit.

1. Determine the expected current range. For currents up to 600mA, use the mA/µA jack. For currents up to 10A, use the 10A jack.
2. Insert the black test lead into the **COM** jack. Insert the red test lead into the appropriate current jack (**mA/µA** or **10A**).
3. Rotate the function knob to the corresponding **A~**, **mA~**, or **µA~** position.
4. Open the circuit where current is to be measured and connect the multimeter in series with the load.
5. Read the current value on the display.

5.6. Measuring Resistance (Ω)

1. Insert the black test lead into the **COM** jack and the red test lead into the **VΩHz** jack.
2. Rotate the function knob to the **Ω** position.
3. Ensure the circuit or component to be measured is de-energized.
4. Connect the test leads across the component.
5. Read the resistance value on the display.

5.7. Measuring Capacitance (F)

1. Insert the black test lead into the **COM** jack and the red test lead into the **VΩHz** jack.
2. Rotate the function knob to the **Capacitance** position (often shared with Hz). Press **FUNC** if necessary to select capacitance.
3. Ensure the capacitor is fully discharged before measurement to prevent damage to the meter.
4. Connect the test leads across the capacitor terminals.
5. Read the capacitance value on the display.

5.8. Measuring Frequency/Duty Cycle (Hz/%)

1. Insert the black test lead into the **COM** jack and the red test lead into the **VΩHz** jack.
2. Rotate the function knob to the **Hz/%** position (often shared with Capacitance). Press **FUNC** if necessary to select frequency or duty cycle.
3. Connect the test leads across the signal source.

4. Read the frequency or duty cycle value on the display.

5.9. Measuring Temperature (°C/°F)

1. Insert the temperature probe into the **COM** and **VΩHz** jacks, observing polarity.
2. Rotate the function knob to the **Temp** position. Press **FUNC** to switch between Celsius and Fahrenheit.
3. Place the tip of the temperature probe on or near the object whose temperature is to be measured.
4. Read the temperature value on the display.

5.10. Diode Test

1. Insert the black test lead into the **COM** jack and the red test lead into the **VΩHz** jack.
2. Rotate the function knob to the **Diode/Continuity** position. Press **FUNC** to select Diode Test.
3. Connect the red test lead to the anode and the black test lead to the cathode of the diode. The display will show the forward voltage drop.
4. Reverse the test leads. The display should show "OL" (Open Line) for a good diode.

5.11. Continuity Test

1. Insert the black test lead into the **COM** jack and the red test lead into the **VΩHz** jack.
2. Rotate the function knob to the **Diode/Continuity** position. Press **FUNC** to select Continuity Test (indicated by a buzzer symbol).
3. Connect the test leads across the circuit or component to be tested.
4. If the resistance is below approximately 50Ω, the buzzer will sound, indicating continuity.

5.12. Non-Contact Voltage (NCV) Detection

1. Rotate the function knob to the **NCV** position.
2. Move the NCV probe (top of the meter) close to the conductor or outlet.
3. If AC voltage is detected, the meter will beep and the red/green light will illuminate, with the frequency of beeps and light increasing with voltage strength.

5.13. Live Wire Test

1. Rotate the function knob to the **Live** position.
2. Insert the red test lead into the **VΩHz** jack. The black test lead is not used for this function.
3. Touch the red test lead to the suspected live wire.
4. If a live wire is detected, the meter will beep and the red/green light will illuminate.

6. Maintenance

6.1. Cleaning

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

6.2. Battery Replacement

Refer to Section 4.1 for instructions on replacing the batteries. Always replace both batteries at the same

time with new ones of the same type (2 x 1.5V AAA).

6.3. Fuse Replacement

The HT118A Multimeter is equipped with internal fuses to protect against overcurrent. If the current measurement function stops working, the fuse may need replacement. Fuse replacement should only be performed by qualified personnel. Refer to the specifications for fuse ratings.

7. Troubleshooting

- **Meter does not power on:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **"OL" (Overload) displayed:** The measured value exceeds the selected range. Select a higher range or ensure the circuit is within the meter's capabilities.
- **Inaccurate readings:** Check battery level. Ensure test leads are properly connected and not damaged. Verify the correct function and range are selected.
- **No continuity beep:** Ensure the continuity function is selected. Check test leads for open circuits.
- **No current measurement:** Check if the fuse is blown. Ensure the meter is connected in series with the load.

8. Specifications

Measurement	Range	Resolution	Accuracy
DC Voltage			
	600mV	0.1mV	(0.5% reading+3)
	6V	0.001V	
	60V	0.01V	
	600V	0.1V	
	1000V	1V	
AC Voltage			
	600mV	0.1mV	(0.8% reading+5)
	6V	0.001V	
	60V	0.01V	
	600V	0.1V	
	750V	1V	
DC Current			
	600µA	0.1µA	(1.2% reading+3)

Measurement	Range	Resolution	Accuracy
	6000μA	1μA	
	60mA	0.01mA	
	600mA	0.1mA	
	10A	0.01A	
AC Current			
	600μA	0.1μA	(1.5% reading+3)
	6000μA	1μA	
	60mA	0.01mA	
	600mA	0.1mA	
	10A	0.01A	
Resistance			
	600Ω	0.1Ω	(1.0% reading+3)
	6kΩ	0.001kΩ	
	60kΩ	0.01kΩ	
	600kΩ	0.1kΩ	
	6MΩ	0.001MΩ	(1.5% reading+3)
	60MΩ	0.01MΩ	
Capacitance			
	10nF	0.001nF	(4.0% reading+5)
	100nF	0.01nF	
	1000nF	0.1nF	
	10μF	0.001μF	
	100μF	0.01μF	
	1000μF	0.1μF	
	10mF	0.001mF	(5.0% reading+5)
	100mF	0.01mF	
Frequency/Duty Cycle			

Measurement	Range	Resolution	Accuracy
	10Hz	0.001Hz	(1.0% reading+3)
	100Hz	0.01Hz	
	1000Hz	0.1Hz	
	10kHz	0.001kHz	
	100kHz	0.01kHz	
	1000kHz	0.1kHz	
	10MHz	0.001MHz	(3.0% reading+3)
Duty Cycle	1~99%	0.1%	
Temperature			
Celsius	-20~0°C	1°C	5.0% reading or 3°C
	0~400°C	1°C	1.0% reading or 2°C
	400~1000°C	1°C	2.0% reading
Fahrenheit	-4~32°F	1°F	5.0% reading or 6°F
	32~752°F	1°F	1.0% reading or 4°F
	752~1832°F	1°F	2.0% reading
General Parameters			
Model	HT118A		
Material	Plastic		
Color	Red + Black		
Sampling Rate	About 3 times/second		
Battery Type	2 x 1.5V AAA batteries (NOT included)		
Working Environment	0~40°C, <80% RH		
Storage Environment	-10~60°C, <70% RH		
Display	6000 counts		
Auto Power Off	15min		
Over Range Indication	"OL"		
Low Battery Indication	Yes		

Measurement	Range	Resolution	Accuracy
Diode Test	Yes		
Continuity Test	Yes		
NCV	Yes		
Live Test	Yes		
High Voltage Prompt	>80V or >1A		
Data Hold	Yes		
Max/Min	Yes		
Backlight	Yes		
Flashlight	Yes		

9. Warranty and Support

For warranty information and technical support, please contact the seller or manufacturer directly. Keep your purchase receipt as proof of purchase.
Manufacturer: StarNY
UPC: 765083463172