Infurider YF-770N

Infurider YF-770N Digital Multimeter User Manual

Model: YF-770N | Brand: Infurider

1. Introduction

The Infurider YF-770N is a 6000-count auto-ranging digital multimeter designed for accurate measurement of various electrical parameters. This device is suitable for professional and DIY use, offering a wide range of functions including AC/DC voltage, AC/DC current, resistance, continuity, frequency, capacitance, hFE test, diode, and temperature measurements. It incorporates safety features such as mechanical protection and overload protection to ensure reliable operation.

2. Safety Information

Always adhere to safety precautions when using the multimeter to prevent electric shock or damage to the device. This multimeter is rated CAT III 1000V and CAT IV 600V, providing high safety standards.

- Do not attempt to measure voltage or current exceeding the specified maximum limits.
- Ensure the test leads are correctly inserted into the appropriate jacks for the desired measurement function.
- Avoid switching measurement ranges while test leads are connected to a live circuit. The mechanical blocking system helps prevent incorrect lead insertion.
- Inspect test leads for damage before each use. Replace if insulation is compromised.
- Do not operate the multimeter if it appears damaged or if the protective rubber case is missing.
- Always disconnect power to the circuit under test before making resistance, capacitance, or diode measurements.
- Be cautious when working with voltages above 30V AC RMS, 42V peak, or 60V DC, as these pose a shock hazard.

Image: The Infurider YF-770N multimeter highlighting its mechanical blocking system and a safety note. This system prevents incorrect test lead insertion when switching between certain measurement ranges, enhancing user safety. Always ensure test leads are removed before changing functions to avoid accidental circuit switching.

3. Package Contents

Verify that all items are present in the package:

- 1 x Infurider YF-770N Digital Multimeter
- 1 x Pair of Test Leads (Red and Black)
- 1 x K-Type Thermocouple (for temperature measurement)
- 1 x 9V Battery (6F22)
- 1 x User Instruction Manual

4. Product Overview

The Infurider YF-770N features a robust design with a protective rubber case and a clear LCD display. Key

components and functions are detailed below.

Image: Front view of the Infurider YF-770N Digital Multimeter, illustrating its various measurement functions and controls. The display shows 'hFE' indicating the hFE test mode. The rotary dial allows selection of different measurement types.

4.1. Controls and Display

- **LCD Display:** 6000 counts display with auto backlight for clear readings in various lighting conditions.
- **Rotary Switch:** Selects the desired measurement function.
- **SELECT Button:** Toggles between different measurement types within a single rotary switch position (e.g., AC/DC voltage, diode/continuity).
- **RANGE Button:** Switches between auto-ranging and manual ranging modes.
- **HOLD Button:** Freezes the current reading on the display.
- **REL/Hz/Duty Button:** Activates relative measurement mode, frequency, or duty cycle measurement.
- **MAX/MIN Button:** Records and displays the maximum and minimum measured values.
- **NCV (Non-Contact Voltage) Indicator:** Detects AC voltage without direct contact.
- **Input Jacks:** COM (common), VΩHz+ (Voltage, Resistance, Frequency, Diode, Capacitance, Temperature), mA (milliampere current), 20A (high current).

4.2. Features

- **Auto Ranging:** Automatically selects the appropriate measurement range.
- **Mechanical Blocking System:** Prevents incorrect test lead insertion for certain functions.
- **Overload Protection:** Protects the meter across all ranges.
- **Auto Power Off:** Conserves battery life.
- **Low Battery Indicator:** Alerts when battery replacement is needed.
- **180° Rotating Stand:** Allows for convenient viewing angles.
- **Protective Rubber Case:** Provides durability and drop protection.

Image: The Infurider YF-770N multimeter demonstrating its Non-Contact Voltage (NCV) detection, the adjustable 180-degree rotating stand for ergonomic use, and the durable protective rubber case designed to withstand impacts.

5. Setup

5.1. Battery Installation

The multimeter requires one 9V (6F22) battery. A battery is included in the package.

1. Ensure the multimeter is turned off.
2. Locate the battery compartment cover on the back of the unit.
3. Use a screwdriver to remove the screw securing the cover.
4. Carefully remove the cover.
5. Connect the 9V battery to the battery clips, observing correct polarity.
6. Place the battery inside the compartment and replace the cover, securing it with the screw.

5.2. Connecting Test Leads

Always connect the black test lead to the COM jack. Connect the red test lead to the appropriate input jack based on the measurement type:

- **VΩHz+:** For voltage, resistance, frequency, diode, capacitance, and temperature measurements.
- **mA:** For current measurements up to 600mA.
- **20A:** For current measurements up to 20A.

Image: The internal view of the Infurider YF-770N multimeter, showing the battery compartment with a 9V battery installed and the fuse location. This illustrates the 'Intelligence Prevent Burn' feature with full gear protection for safer measurements.

6. Operating Instructions

Follow these steps for various measurement functions. Always ensure the multimeter is set to the correct function and range before connecting to a circuit.

6.1. Measuring AC/DC Voltage

1. Set the rotary switch to the 'V~' (AC Voltage) or 'V-' (DC Voltage) position.
2. Connect the black test lead to the COM jack and the red test lead to the VΩHz+ jack.
3. Connect the test probes in parallel across the component or circuit to be measured.
4. Read the voltage value on the LCD display.

6.2. Measuring AC/DC Current

Caution: Never connect the multimeter in parallel with a voltage source when measuring current, as this can blow the fuse or damage the meter.

1. Turn off power to the circuit.
2. Set the rotary switch to the 'A~' (AC Current) or 'A-' (DC Current) position.
3. Connect the black test lead to the COM jack. Connect the red test lead to the 'mA' jack for currents up to 600mA, or to the '20A' jack for currents up to 20A.
4. Break the circuit and connect the multimeter in series with the circuit.
5. Restore power to the circuit and read the current value.

6.3. Measuring Resistance (Ω)

1. Ensure the circuit is de-energized.
2. Set the rotary switch to the 'Ω' position.
3. Connect the black test lead to the COM jack and the red test lead to the VΩHz+ jack.
4. Connect the test probes across the resistor or component.
5. Read the resistance value.

6.4. Continuity Test

1. Ensure the circuit is de-energized.
2. Set the rotary switch to the 'Ω' position and press the SELECT button until the continuity symbol (speaker icon) appears.
3. Connect the black test lead to the COM jack and the red test lead to the VΩHz+ jack.
4. Connect the test probes across the component or wire. A continuous beep indicates a low resistance path (continuity).

6.5. Diode Test

1. Ensure the circuit is de-energized.
2. Set the rotary switch to the 'Ω' position and press the SELECT button until the diode symbol appears.
3. Connect the black test lead to the COM jack and the red test lead to the VΩHz+ jack.
4. Connect the red probe to the anode and the black probe to the cathode of the diode. A forward voltage drop (e.g., 0.5V to 0.8V for silicon diodes) will be displayed. Reverse the probes; the display should show 'OL' (open loop).

6.6. Measuring Capacitance (F)

1. Ensure the capacitor is fully discharged before testing.
2. Set the rotary switch to the 'F' (Capacitance) position.
3. Connect the black test lead to the COM jack and the red test lead to the VΩHz+ jack.
4. Connect the test probes across the capacitor.
5. Read the capacitance value on the display.

6.7. Measuring Temperature (°C/°F)

1. Set the rotary switch to the '°C/°F' position.
2. Connect the K-type thermocouple to the VΩHz+ and COM jacks, observing polarity.
3. Place the thermocouple tip on or near the object whose temperature is to be measured.

4. Read the temperature on the display. Use the SELECT button to switch between Celsius and Fahrenheit.

6.8. Non-Contact Voltage (NCV) Detection

1. Set the rotary switch to the 'NCV' position.
2. Move the top end of the multimeter close to the AC voltage source (e.g., a live wire or outlet).
3. The NCV indicator light will illuminate and a buzzer will sound, with increasing frequency as the meter gets closer to the voltage source.

Image: A collage demonstrating the Infurider YF-770N multimeter in action, performing various tests including Diode Test, Resistance Measurement, Continuity Test, and AC/DC Voltage Measurement. Each image shows the multimeter connected to different components or circuits.

7. Maintenance

7.1. Cleaning

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the input jacks free of

dust and debris.

7.2. Fuse Replacement

If the current measurement function stops working, the fuse may be blown. Replace it with a fuse of the specified type and rating.

1. Ensure the multimeter is turned off and all test leads are disconnected.
2. Remove the battery compartment cover as described in Section 5.1.
3. Carefully remove the blown fuse(s). There are two fuses: one for mA range (600mA/250V) and one for 20A range (20A/250V).
4. Replace with new fuses of the exact same type and rating.
5. Replace the battery compartment cover and secure it with the screw.

8. Troubleshooting

- **No display or dim display:** Check battery installation. Replace the 9V battery if low.
- **Incorrect readings:** Ensure test leads are properly connected and the rotary switch is set to the correct function and range. Check for damaged test leads.
- **Current measurement not working:** Check and replace the appropriate fuse(s) as described in Section 7.2.
- **Continuity buzzer not sounding:** Ensure the function is selected correctly and the resistance is below the continuity threshold.
- **'OL' displayed:** Indicates an open circuit, out-of-range measurement, or incorrect connection.

9. Specifications

Image: Detailed diagram of the Infurider YF-770N multimeter, showing its physical dimensions (length, width, height) and the specifications of the included test probes, including their length and tip size.

Parameter	Specification
Model	YF-770N
Display	6000 Counts
DC Voltage	600mV / 6V / 60V / 600V / 1000V (±0.5%+2)
AC Voltage	6V / 60V / 600V / 750V (±1.0%+3)
DC Current	60uA / 600uA / 6mA / 60mA / 600mA / 20A (±1.5%+3)
AC Current	6mA / 600mA / 20A (±1.5%+3)
Resistance	600Ω / 6kΩ / 60kΩ / 600kΩ / 6MΩ / 60MΩ (±1.0%+3)

Parameter	Specification
Capacitance	9.999nF / 99.99nF / 999.9nF / 9.999uF (±3%+10) 99.99uF (±5%+10) 999.9uF / 9.999mF / 99.99mF (±10%+20)
Temperature	-20°C to 1000°C (±3°C)
Frequency	9.999Hz to 9.999MHz (±0.1%+5 digits)
Duty Cycle	0.1% - 99.9% (±2%+2)
Sample Rate	3 times/second
Power Source	9V Battery (6F22)
Dimensions (L×W×H)	19.5 x 22 x 4 cm
Weight	610 g
Safety Rating	CAT III 1000V, CAT IV 600V
Material	Rubber (protective case)
UPC	782910431845

10. Warranty and Support

Infurider provides a 365-day quality warranty for the YF-770N Digital Multimeter. In case of any quality issues, a replacement will be provided.
Additionally, Infurider offers lifetime technical support for its products. If you have any questions, concerns, or require assistance with your multimeter, please do not hesitate to contact us.

Contact Email: Infraredcs@hotmail.com