H HOLDPEAK HP-770T

HOLDPEAK HP-770T Digital Multimeter User Manual

Introduction

Welcome to the HOLDPEAK HP-770T Digital Multimeter user manual. This instrument is a portable, professional measuring tool designed for various electrical tests, including AC/DC voltage, AC/DC current, resistance, capacitance, frequency, temperature, diode, continuity, and hFE. It features a large LCD display with backlight, auto-ranging capabilities, and non-contact voltage (NCV) detection, making it suitable for professionals, hobbyists, and household use.

Safety Information

General Safety Precautions

- Always adhere to local and national safety codes.
- Do not exceed the maximum input values specified for each function.
- Exercise extreme caution when working with live circuits.
- Ensure the test leads are in good condition, without any damage to the insulation.
- Never use the meter if it appears damaged or if the battery cover is not properly closed.
- Remove test leads from the circuit before changing functions.
- Do not operate the meter in explosive gas, vapor, or dusty environments.
- Keep fingers behind the finger guards on the test probes during measurements.
- Replace the battery immediately when the low battery indicator appears.

Product Overview

Components

The HOLDPEAK HP-770T Digital Multimeter comes with the following components:

Image: HOLDPEAK HP-770T Digital Multimeter with included accessories: test leads, temperature probe, and a 9V battery.

- Digital Multimeter Unit
- Test Leads (Red and Black)
- Temperature Probe (Thermocouple)
- 9V Battery
- Carrying Case
- Small Screwdriver (for battery compartment)
- User Manual (this document)

Key Functions and Parts

Image: Detailed diagram illustrating the key functions and parts of the HOLDPEAK HP-770T Digital Multimeter.

1. **NCV Red Light:** Indicates non-contact voltage detection.
2. **CDS Sensor:** Light sensor for auto-backlight.
3. **NCV Green Light:** Indicates non-contact voltage detection.
4. **NCV Detection Area:** Area for non-contact voltage sensing.
5. **LCD Display:** Shows measurement readings and indicators.
6. **SELECT Key:** Toggles between functions within a rotary switch position (e.g., AC/DC, Diode/Continuity).
7. **HOLD Key:** Freezes the current display reading.
8. **RANGE Key:** Toggles between auto-ranging and manual ranging.
9. **REL Key:** Activates relative measurement mode.
10. **Hz/Duty Key:** Toggles between frequency and duty cycle measurements.
11. **MAX/MIN Key:** Displays maximum or minimum recorded values.
12. **Transistor hFE Test Input Jack:** For testing transistor gain.
13. **VΩHz Input Jack:** For voltage, resistance, frequency, capacitance, and diode measurements.
14. **COM Input Jack:** Common (negative) terminal for all measurements.
15. **20A Input Jack:** For high current (up to 20A) measurements.

16. **µAmA T+ Input Jack:** For low current (microampere/milliampere) and temperature measurements.

Image: Close-up of the multimeter highlighting the function knob, input terminals, large LCD display, and the integrated 180-degree rotating kickstand for convenient viewing.

Setup

Battery Installation

The HOLDPEAK HP-770T requires one 9V battery (included). To install or replace the battery:

1. Ensure the multimeter is turned OFF and all test leads are disconnected.
2. Locate the battery compartment cover on the back of the unit.
3. Use the included small screwdriver to loosen the screw securing the battery cover.
4. Remove the cover.
5. Connect the 9V battery to the battery clip, observing correct polarity (+ and -).
6. Place the battery into the compartment.
7. Replace the battery cover and tighten the screw.

Image: The multimeter's dimensions are shown, along with the small screwdriver used for accessing the battery compartment.

Connecting Test Leads

For most measurements, connect the black test lead to the COM input jack and the red test lead to the VΩHz input jack. For current measurements, refer to the specific current measurement section.

Operating Instructions

General Measurement Steps

1. Turn the rotary switch to the desired function.
2. Connect the test leads to the appropriate input jacks and to the circuit under test.
3. Read the measurement value on the LCD display.
4. Disconnect the test leads from the circuit and then from the meter when finished.

AC/DC Voltage Measurement

To measure voltage (up to 1000V DC, 750V AC):

1. Set the rotary switch to the "V" position (AC or DC). Use the SELECT button to toggle between AC and DC if necessary.
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 display.

Image: A person using the HOLDPEAK HP-770T Digital Multimeter to measure voltage from an electrical outlet, demonstrating a common application.

AC/DC Current Measurement

To measure current (up to 20A):

1. Turn the rotary switch to the "µA", "mA", or "A" position (AC or DC). Use the SELECT button to toggle between AC and DC if necessary.
2. For µA/mA measurements, connect the black test lead to the COM jack and the red test lead to the µAmA T+ jack.
3. For 20A measurements, connect the black test lead to the COM jack and the red test lead to the 20A jack.
4. Connect the test probes in series with the circuit to be measured.

5. Read the current value on the display.

Resistance Measurement

To measure resistance (up to 60MΩ):

1. Set the rotary switch to the "Ω" 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 across the resistor or component. Ensure the circuit is de-energized.
4. Read the resistance value on the display.

Capacitance Measurement

To measure capacitance (up to 99.99mF):

1. Set the rotary switch to the "Cap" 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 across the capacitor. Ensure the capacitor is discharged before testing.
4. Read the capacitance value on the display.

Frequency and Duty Cycle Measurement

To measure frequency (Hz) or duty cycle (%):

1. Set the rotary switch to the "Hz" 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 to the signal source.
4. Press the Hz/Duty key to toggle between frequency and duty cycle.
5. Read the value on the display.

Temperature Measurement

To measure temperature (-4°F to 1832°F):

1. Set the rotary switch to the "Temp" position.
2. Connect the temperature probe to the µAmA T+ and COM jacks, observing polarity.
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.

Diode Test and Continuity

To perform a diode test or continuity check:

1. Set the rotary switch to the "Diode/Continuity" position.
2. Connect the black test lead to the COM jack and the red test lead to the VΩHz jack.
3. Press the SELECT key to toggle between diode test and continuity.
4. For diode test, connect the red probe to the anode and the black probe to the cathode. The forward voltage drop will be displayed. Reverse the probes; the display should show "OL" (Open Loop).
5. For continuity, connect the probes across the circuit. A continuous beep indicates continuity (low resistance).

hFE Test (Transistor Gain)

To measure the hFE (DC current gain) of a transistor:

1. Set the rotary switch to the "hFE" position.
2. Identify if the transistor is NPN or PNP.
3. Insert the transistor leads (Emitter, Base, Collector) into the corresponding holes in the hFE test input jack.
4. Read the hFE value on the display.

Non-Contact Voltage (NCV) Detection

The NCV function allows for detection of AC voltage without direct contact with conductors.

1. Set the rotary switch to the "NCV" position.
2. Move the NCV detection area (top of the meter) close to the conductor.
3. If AC voltage ≥ 90V RMS is detected, the NCV red and green LED lights will flash alternately, and an audible buzzer will sound.

Image: The HOLDPEAK HP-770T Multimeter demonstrating its Non-Contact Voltage (NCV) function, indicating the presence of a live wire near an electrical outlet.

Image: The NCV function of the multimeter in use, detecting voltage near a power strip without requiring test lead connections.

Special Functions

- **Data Hold (HOLD)**: Press the HOLD button to freeze the current reading on the display. Press again to release.
- **Relative Value (REL)**: Press the REL button to store the current reading as a reference. Subsequent measurements will be displayed as the difference from this reference value. Press again to exit.
- **Maximum/Minimum (MAX/MIN)**: Press the MAX/MIN button to record and display the maximum or minimum measured value. Press again to cycle through MAX, MIN, and current readings.
- **Auto Backlight**: The meter features an auto-backlight function for improved visibility in low-light conditions.
- **Auto Power Off**: To conserve battery life, the meter will automatically power off after a period of inactivity.

Maintenance

Battery Replacement

Refer to the "Battery Installation" section under Setup for instructions on replacing the 9V battery.

Fuse Replacement

If the current measurement functions stop working, the fuse may need replacement. This meter uses two fuses:

- F1: F 20A / 250V (for 20A input)
- F2: F 800mA / 250V (for µA/mA input)

To replace a fuse:

1. Ensure the multimeter is turned OFF and all test leads are disconnected.
2. Loosen the screws on the back cover and carefully open the casing.
3. Locate the blown fuse and replace it with a fuse of the identical type and rating.
4. Carefully close the casing and tighten the screws.

Cleaning

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

Storage

If the meter is not used for an extended period, remove the battery to prevent leakage. Store the meter in a cool, dry place, away from direct sunlight.

Image: The HOLDPEAK HP-770T Multimeter showcasing its magnetic hanging capability and the durable rubber case that provides protection and grip.

Troubleshooting

If you encounter issues with your HOLDPEAK HP-770T Digital Multimeter, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No display or dim display	Low or dead battery	Replace the 9V battery.
Incorrect readings	Incorrect function selected, poor test lead connection, or damaged test leads.	Ensure the correct function is selected. Check test lead connections and condition.
Current measurement not working	Blown fuse.	Replace the appropriate fuse (refer to Fuse Replacement section).

Problem	Possible Cause	Solution
Meter does not turn on	Battery not installed or dead, or internal fault.	Check battery installation and charge. If problem persists, contact support.

Specifications

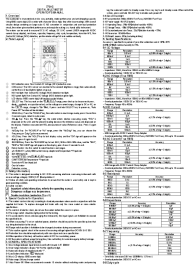
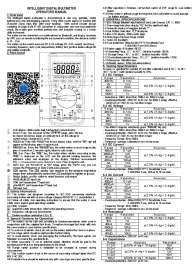
Parameter	Value
DC Voltage	Up to 1000V
AC Voltage	Up to 750V
DC Current	Up to 20A
AC Current	Up to 20A
Resistance	Up to 60MΩ
Capacitance	Up to 99.99mF
Frequency	Yes
Temperature	-4°F to 1832°F (-20°C to 1000°C)
Diode Test	Yes
Continuity Test	Yes (with buzzer)
hFE Test	Yes
Display	6000 Counts LCD with Backlight
Auto-Ranging	Yes
True RMS	Yes
NCV (Non-Contact Voltage)	Yes
Data Hold	Yes
Auto Power Off	Yes
Power Source	1 x 9V Battery
Dimensions	Approximately 7.87 x 3.54 x 1.57 inches (20 x 9 x 4 cm)
Weight	Approximately 1.1 Pounds (0.5 kg)

Warranty and Support

The HOLDPEAK HP-770T Digital Multimeter comes with a 2-year guarantee and lifetime technical support.

For any questions, technical assistance, or warranty claims, please contact HOLDPEAK customer service.

Related Documents - HP-770T

	HOLDPEAK 770HC Digital Multimeter Operator's Manual Operator's manual for the HOLDPEAK 770HC Digital Multimeter, detailing its features, specifications, operating instructions, safety precautions, and maintenance.
	HoldPeak HP-770HC-APP Digital Multimeter User Manual Comprehensive user manual for the HoldPeak HP-770HC-APP digital multimeter, detailing its features, specifications, operating instructions, safety precautions, and mobile app connectivity.
	Intelligent Digital Multimeter Operator's Manual - BTMETER BT-90EPD Comprehensive operator's manual for the BTMETER BT-90EPD Intelligent Digital Multimeter. Covers detailed specifications, safety guidelines, operating instructions for measuring voltage, current, resistance, capacitance, frequency, duty cycle, temperature, and battery testing. Features include a 4000-count LCD, auto/manual ranging, auto backlight, and Bluetooth connectivity for mobile app data logging and analysis.
	HoldPeak 866B Digital Anemometer Instruction Manual Comprehensive instruction manual for the HoldPeak 866B Digital Anemometer, detailing its functions, operation, specifications, and safety guidelines for measuring wind speed and temperature.
	Trumeter ADM Series Graphical Panel Meters - Versatile Programmable Features Explore the Trumeter ADM Series Graphical Panel Meters, offering versatile programmable features, user-configurable alarms, and flexible metering solutions for voltage, current, and frequency measurement. Learn about specifications, dimensions, and wiring.

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