Hantek CC-65

Hantek CC-65 AC/DC Current Clamp Meter User Manual

Model: CC-65

Introduction

The Hantek CC-65 is an AC/DC Current Clamp Meter designed to measure current data and enable oscilloscopes to measure current waveforms. It features a current transducer composed of permalloy and a Hall element, allowing for linear transformation of AC or DC current to AC or DC current voltage. This device is suitable for various applications including power circuit measurement, malfunction analysis, motor drive frequency converter measurement, and power electronics equipment measurement.



Figure 1: The Hantek CC-65 AC/DC Current Clamp Meter alongside its product packaging.

Key Features

- **Broad Application:** Ideal for power circuit measurement, malfunction analysis, motor drive frequency converter measurement, and power electronics equipment measurement.
- **Current Measurement:** Allows multimeters to measure current data.
- **Waveform Analysis:** Enables oscilloscopes to measure current waveforms.
- **Advanced Transducer:** Utilizes permalloy and Hall element for linear AC/DC current to voltage transformation.
- **Wide Bandwidth:** Up to 20 kHz.
- **Measurement Range:** 20mA to 65A DC.
- **Conductor Size:** Maximum captured conductor diameter of 9mm.



Figure 2: Overview of the Hantek CC-65 AC/DC Current Clamp highlighting its key specifications and capabilities.

Product Components and Controls

Familiarize yourself with the various parts and controls of the Hantek CC-65 Current Clamp Meter for proper operation.



Figure 3: Detailed view of the Hantek CC-65, indicating the BNC connector, range switch, and zero adjustment button.

- **Clamp Jaws:** Used to encircle the conductor for current measurement. Maximum conductor diameter is 9mm.
- **Range Switch:** Selects the measurement sensitivity (e.g., 1mV/10mA or 1mV/100mA).
- **Zero Button:** Used to zero the DC current reading before measurement to eliminate offset.
- **Power Switch:** Turns the device ON or OFF.
- **LO BAT Indicator:** Illuminates when the battery level is low and requires replacement.
- **BNC Connector:** Output connector for connecting the clamp meter to an oscilloscope or multimeter.

Setup

Before using your Hantek CC-65 Current Clamp Meter, follow these steps for initial setup.

1. **Unpacking:** Carefully remove the Hantek CC-65 from its packaging. Verify that all components listed in the "What's in the Box" section are present. The package typically includes the current clamp meter and a connection cable.
2. **Battery Installation:**

The Hantek CC-65 is battery-powered. Locate the battery compartment on the back of the device. Open the compartment cover and insert a 9V battery (not included) ensuring correct polarity. Close the battery compartment securely.



Figure 4: View of the Hantek CC-65 with the battery compartment open, showing where to insert the 9V battery.

3. **Connecting to a Device:**

   Connect the BNC connector of the Hantek CC-65 to the input of your oscilloscope or multimeter. Ensure a secure connection.



Figure 5: The Hantek CC-65 Current Clamp Meter with its cable coiled, demonstrating the BNC connector and its connection capability.

Operating Instructions

Follow these steps to accurately measure current using your Hantek CC-65 Current Clamp Meter.

1. **Power On:** Turn on the Hantek CC-65 using the power switch.
2. **Select Range:** Choose the appropriate measurement range using the range switch.
    - **1mV/100mA (x100):** For measuring currents up to 65A.
    - **1mV/10mA (x10):** For measuring smaller currents, typically up to 2A, with higher sensitivity.
3. **Zero Adjustment (for DC Current):** Before measuring DC current, press the "Zero" button to eliminate any DC offset. This ensures accurate readings. For AC current, zero adjustment is generally not required.
4. **Clamp the Conductor:** Open the clamp jaws and encircle the single conductor through which the current you wish to measure is flowing. Ensure the jaws are fully closed around the conductor. Do not clamp multiple conductors simultaneously if you intend to measure the current in a single line.

5. **Read Measurement:**
    - **With an Oscilloscope:** Observe the current waveform on the oscilloscope screen. The voltage displayed on the oscilloscope corresponds to the current based on the selected range (e.g., 1V on oscilloscope = 10A if 1mV/100mA range is selected).
    - **With a Multimeter:** Read the voltage value on your multimeter. Convert this voltage to current based on the selected range.
        - For 1mV/100mA (x100) range: 10mV = 1A. To convert voltage to current, divide the voltage reading by 0.01 (or multiply by 100).
        - For 1mV/10mA (x10) range: 100mV = 1A. To convert voltage to current, divide the voltage reading by 0.1 (or multiply by 10).



Figure 6: The Hantek CC-65 connected to an oscilloscope, demonstrating its capability to display current waveforms for detailed analysis.

6. **Power Off:** After use, turn off the Hantek CC-65 to conserve battery life.

MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your Hantek CC-65 Current Clamp Meter.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Battery Replacement:** When the "LO BAT" indicator illuminates, replace the 9V battery promptly to ensure continued accurate operation. Refer to the "Battery Installation" section under Setup for instructions.
- **Handle with Care:** Avoid dropping the device or subjecting it to strong impacts, as this can damage internal components.

Troubleshooting

This section addresses common issues you might encounter with your Hantek CC-65 Current Clamp Meter.

Problem	Possible Cause	Solution
Device does not power on.	Dead or improperly installed battery.	Check battery polarity. Replace the 9V battery.
Inaccurate or fluctuating readings.	• Improper zero adjustment (for DC). • Conductor not properly clamped. • Interference from nearby magnetic fields. • Battery low.	• Perform zero adjustment before DC measurement. • Ensure jaws are fully closed around a single conductor. • Move away from strong magnetic sources. • Replace battery.
"LO BAT" indicator is on.	Battery is low.	Replace the 9V battery immediately.
No signal output to oscilloscope/multimeter.	• Loose BNC connection. • Incorrect input selection on oscilloscope/multimeter. • Device not powered on.	• Secure the BNC cable connection. • Verify oscilloscope/multimeter input settings (e.g., voltage input). • Ensure the Hantek CC-65 is powered on.

Specifications

Detailed technical specifications for the Hantek CC-65 AC/DC Current Clamp Meter.

Specification	Value
Model Number	CC-65
Measurement Range (DC)	20mA to 65A DC
Bandwidth	Up to 20 kHz
Sensitivity (x100 range)	1mV/100mA
Sensitivity (x10 range)	1mV/10mA
Max Conductor Diameter	9mm

Specification	Value
Power Source	Battery Powered (9V battery, not included)
Product Dimensions	7.68 x 1.3 x 2.76 inches (195 x 33 x 70 mm)
Item Weight	6.49 ounces (184 Grams)
Color	Black and Blue
Manufacturer	HATTRICK
Country of Origin	China



Figure 7: Dimensions of the Hantek CC-65 Current Clamp Meter.

Warranty and Support

For warranty information and technical support, please refer to the official Hantek website or contact their customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.

Manufacturer: HATTRICK

Brand: Hantek

For further assistance, you may visit the Hantek Store on Amazon.

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