

Handheld Digital Lcr Bridge Meter With High Precision Component Impedance And Capacitance Testing

Item Number: CD06



Introduction

High precision handheld digital LCR bridge meter delivering continuous test frequencies up to 100kHz, 0.2% basic accuracy, component auto identification, versatile bias voltage output, and USB SCPI interface for laboratory research, battery development, and electronic component quality assurance testing.

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Application	Description	Key Benefit
Battery Electrode & Cell Characterization	Evaluates Equivalent Series Resistance (ESR) and contact impedance in lithium-ion and solid-state battery assemblies.	Pinpoints micro-ohm impedance shifts to evaluate electrolyte quality, current collector bonding, and cycle degradation.
Passive Component Quality Control	Performs high-speed sorting and tolerance verification on incoming batches of ceramic, electrolytic, and film capacitors.	Reduces inspection cycle times with rapid automated component identification and multi-tiered percentage tolerance sorting.
Power Electronics & Magnetic Core Analysis	Measures winding inductance, DC resistance (DCR), and quality factor (Q) across variable frequencies on transformers and inductors.	Identifies core losses, parasitic winding capacitance, and saturation vulnerability under user-defined test frequencies.
Ceramic & Piezoelectric Material R&D	Profiles impedance (Z), phase angle (θ), and dissipation factor (D) of advanced functional ceramics across a 100 Hz to 100 kHz sweep.	Yields high-resolution dielectric property data essential for tailoring advanced piezoelectric transducers and actuators.
SMD Component Manufacturing & Repair	Inspects miniature surface-mount devices (0201, 0402, 0805) directly on printed circuit boards or feeder tapes using dedicated SMD test tweezers.	Accelerates fault detection and component rework without introducing manual handling damage or stray capacitance errors.
Electrochemical & Sensor Impedance Testing	Analyzes baseline resistance and capacitive behavior of sensor electrodes, conductive coatings, and electrochemical biosensors.	Delivers stable DC bias excitation and precision low-level reactance measurements for sensitive bio-interface materials.

Specification Parameter	CD06-430B	CD06-430	CD06-431	CD06-432	CD06-433
Test Frequency Points / Range	100Hz, 120Hz, 1kHz, 10kHz, 40kHz, 100kHz	100Hz, 120Hz, 1kHz, 10kHz	100Hz, 120Hz, 1kHz, 10kHz, 40kHz, 100kHz	100Hz, 120Hz, 1kHz, 10kHz, 40kHz, 100kHz	100Hz - 100kHz Continuous (1Hz Steps)
Basic Accuracy	0.30%	0.30%	0.20%	0.20%	0.20%
Display Type	2.8-inch TFT Color LCD Screen (4.5 Digits Resolution)	2.8-inch TFT Color LCD Screen (4.5 Digits Resolution)	2.8-inch TFT Color LCD Screen (4.5 Digits Resolution)	2.8-inch TFT Color LCD Screen (4.5 Digits Resolution)	2.8-inch TFT Color LCD Screen (4.5 Digits Resolution)
Primary Display Parameters	L (Inductance), C (Capacitance), R (Resistance), Z (Impedance)	L, C, R, Z	L, C, R, Z	L, C, R, Z	L, C, R, Z
Secondary Display Parameters	X (Reactance), D (Dissipation Factor), Q (Quality Factor), θ (Phase Angle), ESR (Equivalent Series Resistance)	X, D, Q, θ , ESR	X, D, Q, θ , ESR	X, D, Q, θ , ESR	X, D, Q, θ , ESR
Electrolytic Capacitor Mode	Not Supported	Supported	Supported	Supported	Supported

Specification Parameter	CD06-430B	CD06-430	CD06-431	CD06-432	CD06-433
Direct Current Resistance (DCR)	Not Supported	Not Supported	Supported	Supported	Supported
Inductance (L) Range	0.000 μ H - 2000 H	0.000 μ H - 2000 H	0.000 μ H - 2000 H	0.000 μ H - 2000 H	0.000 μ H - 2000 H
Capacitance (C) Range	0.000 pF - 20.000 mF	0.000 pF - 20.000 mF	0.000 pF - 20.000 mF	0.000 pF - 20.000 mF	0.000 pF - 20.000 mF
Resistance (R/Z) Range	0.0001 Ω - 20.00 M Ω	0.0001 Ω - 20.00 M Ω	0.0001 Ω - 20.00 M Ω	0.0001 Ω - 20.00 M Ω	0.0001 Ω - 20.00 M Ω
Measurement Speed Modes	Fast (4 times/s), Medium (2 times/s), Slow (1 time/s)	Fast (4 times/s), Medium (2 times/s), Slow (1 time/s)	Fast (4 times/s), Medium (2 times/s), Slow (1 time/s)	Fast (4 times/s), Medium (2 times/s), Slow (1 time/s)	Fast (4 times/s), Medium (2 times/s), Slow (1 time/s)
Internal DC Bias Output	Not Supported	0 - 500 mV Adjustable (1 mV Step)	0 - 500 mV Adjustable (1 mV Step)	0 - 500 mV Adjustable (1 mV Step)	0 - 500 mV Adjustable (1 mV Step)
Test Signal Level	0.6 Vrms	0.6 Vrms	0.3 Vrms, 0.6 Vrms	0.1 Vrms, 0.3 Vrms, 0.6 Vrms, 1.0 Vrms	0 - 1.1 Vrms Adjustable (1 mV Step)
Calibration Functions	Open-Circuit Calibration, Short-Circuit Calibration	Open-Circuit Calibration, Short-Circuit Calibration	Open-Circuit Calibration, Short-Circuit Calibration	Open-Circuit Calibration, Short-Circuit Calibration	Open-Circuit Calibration, Short-Circuit Calibration
Screening / Sorting Limits	1% to 50% Configurable (Fixed Presets: 1%, 5%, 10%, 20%)	1% to 50% Configurable (Fixed Presets: 1%, 5%, 10%, 20%)	1% to 50% Configurable (Fixed Presets: 1%, 5%, 10%, 20%)	1% to 50% Configurable (Fixed Presets: 1%, 5%, 10%, 20%)	1% to 50% Configurable (Fixed Presets: 1%, 5%, 10%, 20%)
Deviation Measurement	Displays Real-time Percentage Deviation from Reference Value	Displays Real-time Percentage Deviation from Reference Value	Displays Real-time Percentage Deviation from Reference Value	Displays Real-time Percentage Deviation from Reference Value	Displays Real-time Percentage Deviation from Reference Value
Range Selection Modes	Auto Range and Manual Range Selection	Auto Range and Manual Range Selection	Auto Range and Manual Range Selection	Auto Range and Manual Range Selection	Auto Range and Manual Range Selection
Component Auto-Identification	Integrated Automated Component Type Recognition	Integrated Automated Component Type Recognition	Integrated Automated Component Type Recognition	Integrated Automated Component Type Recognition	Integrated Automated Component Type Recognition
Connectivity & Protocol	Mini-USB Device Interface, SCPI Protocol Supported	Mini-USB Device Interface, SCPI Protocol Supported	Mini-USB Device Interface, SCPI Protocol Supported	Mini-USB Device Interface, SCPI Protocol Supported	Mini-USB Device Interface, SCPI Protocol Supported
Power Source	High-Capacity Rechargeable Lithium Battery / Power Adapter	High-Capacity Rechargeable Lithium Battery / Power Adapter	High-Capacity Rechargeable Lithium Battery / Power Adapter	High-Capacity Rechargeable Lithium Battery / Power Adapter	High-Capacity Rechargeable Lithium Battery / Power Adapter
System Configuration Options	Screen Backlight Adjustment, Auto Power-Off Timer, Buzzer Alerts, Bilingual UI (Chinese/English)	Screen Backlight Adjustment, Auto Power-Off Timer, Buzzer Alerts, Bilingual UI (Chinese/English)	Screen Backlight Adjustment, Auto Power-Off Timer, Buzzer Alerts, Bilingual UI (Chinese/English)	Screen Backlight Adjustment, Auto Power-Off Timer, Buzzer Alerts, Bilingual UI (Chinese/English)	Screen Backlight Adjustment, Auto Power-Off Timer, Buzzer Alerts, Bilingual UI (Chinese/English)
Standard Included Accessories	Mini-USB Cable, Power Adapter, Short-Circuit Plate, Red/Black Rubber Plugs, Lithium Battery Pack	Mini-USB Cable, Power Adapter, Short-Circuit Plate, Red/Black Rubber Plugs, Lithium Battery Pack	Mini-USB Cable, Power Adapter, Short-Circuit Plate, Red/Black Rubber Plugs, Lithium Battery Pack	Mini-USB Cable, Power Adapter, Short-Circuit Plate, Red/Black Rubber Plugs, Lithium Battery Pack	Mini-USB Cable, Power Adapter, Short-Circuit Plate, Red/Black Rubber Plugs, Lithium Battery Pack
Optional Testing Fixtures	Kelvin Test Clips, SMD Precision Test Tweezers	Kelvin Test Clips, SMD Precision Test Tweezers	Kelvin Test Clips, SMD Precision Test Tweezers	Kelvin Test Clips, SMD Precision Test Tweezers	Kelvin Test Clips, SMD Precision Test Tweezers