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Data Sheet

August 13, 2026

KEITHLEY

Keithley 503C

The 503C is the C-revision line-powered milliohmmeter documented with Model 503 in the Keithley Models 503, 503C Milliohmmeter instruction manual. It uses four-terminal Kelvin connections, an AC test-current generator, AC amplifier, and synchronous demodulator to reject thermal EMFs. An analog meter displays resistance. Two-terminal connection is possible when Kelvin fixturing is not available. Chassis-ground modifications and rack mounting are covered in the manual. Distinct from the battery-operated 502A. Bond, contact, and conductor milliohm measurements on the bench; Kelvin four-wire work in electronics, aerospace, and automotive; production analog milliohm checks; line-powered continuous use versus 502A batteries. Keithley 503C Milliohmmeter Four Terminal (Models 503 / 503C) The 503C is the C-revision line-powered milliohmmeter documented with Model 503 in the Keithley Models 503, 503C Milliohmmeter instruction manual. It uses four-terminal Kelvin connections, an AC test-current generator, AC amplifier, and synchronous demodulator to reject thermal EMFs. An analog meter displays resistance. Two-terminal connection is possible when Kelvin fixturing is not available. Chassis-ground modifications and rack mounting are covered in the manual. Distinct from the battery-operated 502A.



MODEL

Keithley 503C

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

503C

LISTING

<https://aumictechlabs.com/products/503c-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keithley 503C Instruction Manual is the authoritative reference documentation for operation and maintenance of Keithley 503 and 503C Milliohmmer instruments. This manual provides complete guidance for technicians and operators tasked with low-resistance measurements and instrument service.

Technical Specifications This instruction manual documents the specifications, operational characteristics, and electrical behavior of the Keithley 503 and 503C Milliohmmer instruments.

Key Features

- Complete specifications** of the associated milliohmmer
- Detailed operation instructions** for accurate measurement and setup
- General descriptions** of milliohmmer functions and capabilities
- Circuit descriptions** providing insight into instrument design and operation
- Comprehensive servicing information** for maintenance and repair procedures

Typical Applications This manual supports users conducting low-resistance measurements where precision and reliability are critical. Typical applications include component testing, contact resistance verification, and continuity assessment in laboratory and field environments.

Compatibility & Integration This instruction manual applies directly to Keithley 503 and 503C Milliohmmer instruments, serving as the primary reference for all operational and maintenance activities associated with these instruments.

Features & description

From manufacturer datasheet

Features

- Four-terminal Kelvin (two-terminal alternative)

503C Characteristics / Specifications

PARAMETER	VALUE
Model	503C
Manufacturer	Keithley Instruments
Instrument Type	Line powered four terminal milliohmmeter
Alias	503C; 503; 503A family manual 503/503C
Measurement method	four wire Kelvin
Excitation	AC test current generator
Detection	AC amplifier and synchronous demodulator
Display	analog meter
Connection primary	four terminal
Connection alternate	two terminal
Chassis	groundable per manual modification
Power	line powered AC (not 502A batteries)
Manual	Models 503, 503C milliohmmeter (1976 copyright, 1977 print class)
Related 502A	battery 13-range milliohmmeter, 94 Hz square wave
Related 503A	intermediate 503-family revision in combined PDF identity
Use	low resistance contacts and conductors
Thermal EMF rejection	AC excitation versus DC ohmmeter
Sections in manual	specifications, operation, circuit, servicing, parts, schematic
Front panel	range and mode controls per 503 illustrations
Leads	four-terminal Kelvin leads
Form	bench milliohmmeter with optional rack kit
Safety	observe current through inductive samples
Zero	front-panel analog zero
Repeatability	analog-meter class; confirm on the faceplate range
Not a 6.5 digit DMM	analog milliohmmeter

PARAMETER	VALUE
Not 502A	line power and 503/503C circuits
Cal	per 503/503C service section Notes Identity and architecture from Keithley Models 503, 503C milliohmmeter instruction manual. Range-by-range full-scale currents belong on the specification page of that manual and the faceplate; do not assume 502A 13-range currents. Confirm 503 versus 503C PCB.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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PARAMETER	VALUE
Model	503C
Manufacturer	Keithley Instruments
Instrument Type	Line powered four terminal milliohmmeter
Specifications	
PARAMETER	VALUE
Alias	503C; 503; 503A family manual 503/503C
Measurement method	four wire Kelvin
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PARAMETER	VALUE
Detection	AC amplifier and synchronous demodulator
Display	analog meter
Connection primary	four terminal
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PARAMETER	VALUE
Connection alternate	two terminal
Chassis	groundable per manual modification
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PARAMETER	VALUE
Manual	Models 503, 503C milliohmmeter (1976 copyright, 1977 print class)
Related 502A	battery 13-range milliohmmeter, 94 Hz square wave
Related 503A	intermediate 503-family revision in combined PDF identity

Use: low resistance contacts and conductors

Thermal EMF rejection: AC excitation versus DC ohmmeter

Sections in manual: specifications, operation, circuit, servicing, parts, schematic

Specifications

PARAMETER	VALUE
Front panel	range and mode controls per 503 illustrations
Leads	four-terminal Kelvin leads
Form	bench milliohmmeter with optional rack kit

Specifications

PARAMETER	VALUE
Safety	observe current through inductive samples
Zero	front-panel analog zero
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Specifications

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Not a 6.5 digit DMM	analog milliohmmeter
Not 502A	line power and 503/503C circuits
Cal	per 503/503C service section

Notes

Identity and architecture from Keithley Models 503, 503C milliohmmeter instruction manual. Range-by-range full-scale currents belong on the specification page of that manual and the faceplate; do not assume 502A 13-range currents. Confirm 503 versus 503C PCB.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.