



# RESISTANCE METER RM3545

Component Measuring Instruments

## Super-accurate, multi-channel resistance meter

The Resistance Meter RM3545 will be available soon as the successor to the Resistance HiTester 3541.



Basic accuracy:

**0.006%**

Minimum resolution:

**0.01  $\mu\Omega$**

Maximum measurement current:

**1 A**

### Multiplexer function for multipoint measurement and overall judgments (RM3545-02)



MULTIPLEXER UNIT Z3003

HIOKI designed the Multiplexer Unit Z3003 for applications that require multipoint measurement, for example network resistors, steering switches, and 3-phase motor windings. Simply insert the Z3003 into the slot on the back of the RM3545-02 to enable scanning measurement of up to 20 locations\* using 4-terminal measurement.

(\*When using two Z3003 units. Up to 42 locations can be measured using 2-terminal measurement.)

### Super-high accuracy

With a maximum of 6½-digits (allowing it to display values of up to 1,200,000) and a minimum resolution of 0.01  $\mu\Omega$ , the RM3545 can measure resistance across a broad range at a high level of accuracy, making it ideal for use in a wide array of applications, from research and development of thin film and materials to production line work.

### Low-power resistance measurement with an open voltage of 20 mV or less

The RM3545's low-power (LP) measurement function, which uses an open voltage of 20 mV or less, makes possible measurement while minimizing effects on the state of the contact surface by using a minute current. This type of dry-circuit testing is ideal for measuring the contact resistance of signal contacts and the resistance of magnetic components.

#### Applications

- Low resistance measurements:**  
shunts, welds, circuit boards, fuses
- Windings and large windings:**  
motors, solenoids, choke coils, transformers
- Power contacts:**  
contacts, wire harnesses, relays, switches
- Signal contacts:**  
small signal contacts, wire harnesses, connectors
- Low-current resistance measurements:**  
small fuses, small magnetic components
- Multipoint resistance measurements:**  
motors, transformers, network resistors
- General resistance measurements:**  
resistors, heaters, wires, thermistors, conductive rubber, paint

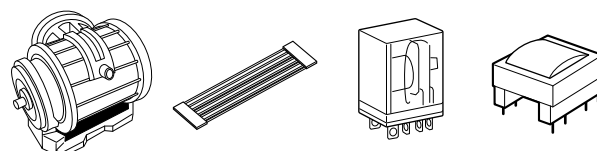


[www.hioki.com](http://www.hioki.com)

HIOKI company overview, new products, environmental considerations and other information are available on our website.

ISO 9001  
JMI-0216

ISO14001  
JQA-E-90091



## Specification Overview



		RM3545	3541 (previous model)
Measurement method		Four-terminal DC measurement, 0.00000 mΩ to 1200.0 MΩ	Four-terminal DC measurement, 0.0000 mΩ to 110.000 MΩ
Measurement ranges	Resistance measurement	12 ranges from 10 mΩ (max. display of 12.00000 mΩ, resolution of 0.01 μΩ, measurement current of 1 A) to 1,000 MΩ (max. display of 1200.0 MΩ, resolution of 100 kΩ, measurement current of 1 μA or less)	11 ranges from 20 mΩ (max. display of 20.0000 mΩ, resolution of 0.1 μΩ, measurement current of 1 A) to 100 MΩ (max. display of 110.000 MΩ, resolution of 1 kΩ, measurement current of 100 nA)
	Low-power (LP) resistance measurement	4 ranges from 1000 mΩ (max. display of 1200.00 mΩ, resolution of 10 μΩ, measurement current of 1 mA) to 1000 Ω (max. display of 1200.00 Ω, resolution of 10 mΩ, measurement current of 5 μA)	4 ranges from 2 Ω (max. display of 2.00000 Ω, resolution of 10 μΩ, measurement current of 10 mA) to 2 kΩ (max. display of 2.00000 kΩ, resolution of 10 mΩ, measurement current of 10 μA)
Measurement accuracy		Basic accuracy ± 0.006 % rdg. [Resistance measurement], ± 0.2% rdg. [low-power (LP) resistance measurement].	Basic accuracy ± 0.007 % rdg.
Sampling rate		FAST, MEDIUM, SLOW1, SLOW2, 4 settings	FAST, MEDIUM, SLOW1, SLOW2, 4 settings
Interfaces		External I/O (comparator/BCD-compatible, NPN/PNP switchable) RS-232C/Printer (RS-232C) /USB/ GP-IB <sup>1</sup> (*1 GP-IB: RM3545-01 only. The printer uses RS-232C interface.)	External I/O (comparator/BCD-compatible) RS-232C/GP-IB
Temperature compensation		With user-set reference temperature and temperature coefficient	With user-set reference temperature and temperature coefficient
Multiplexer		Insert up to two Multiplexer Unit Z3003 cards into the slots on the back of the instrument (RM3545-02). Number of measurement channels: [With one Z3003 unit] 10 locations (4-terminal measurement) or 21 locations (2-terminal measurement) [With two Z3003 units] 20 locations (4-terminal measurement) or 42 locations (2-terminal measurement)	N/A
D/A output		Resistance measurement value, output voltage (0 V to 1.5 V DC)	N/A
Other functions		Temperature measurement (-10.0 °C to 99.9 °C), temperature compensation (TC), self-calibration function, OVC <sup>2</sup> , comparator, BIN function, key lock, number of display digits selection function, auto-detect power line frequency, scaling, judgment sound setting, auto-hold, statistical calculation function, clock, panel saving and loading (40 sets), LED Comparator Attachment L2105 (option), delay, averaging	Temperature measurement (-10.0 °C to 99.9 °C), temperature compensation (TC), winding temperature rise conversion, self-calibration function, OVC <sup>2</sup> , comparator, BIN function, key lock, power line frequency setting, statistical calculation function, panel saving and loading (30 sets), delay, averaging
Power supply		100 V AC to 240 V AC, 50/60 Hz, 40 VA max.	100 V AC to 240 V AC, 50/60 Hz, 30 VA max,
Dimensions and mass		Approx. 215W × 80H × 306.5D mm (8.46"W × 3.15"H × 12.07"D), 3.5 kg (123.5 oz) (RM3545 and RM3545-01), 4.0 kg (141.1 oz) (RM3545-02)	Approx. 215W × 80H × 295D mm (8.46"W × 3.15"H × 11.61"D), 2.6 kg (91.7 oz)

<sup>2</sup>OVC : Offset Voltage Compensation

## Product Configurations and Options

### RESISTANCE METER RM3545

### RESISTANCE METER RM3545-01 (with GP-IB)

### RESISTANCE METER RM3545-02

(supports use of the MULTIPLEXER UNIT Z3003)

(Accessories: Power cord, Clip Type Lead L2101, Temperature Sensor Z2001, External I/O Male Connector, Instruction Manual, Application disc, USB cable (A-B type), Spare fuse)

RM3545 series comparison chart		(Base model)	-01	-02
Resistance measurement / LP resistance measurement		✓	✓	✓
External I/O		✓	✓	✓
Communication interfaces	RS-232C/Printer/USB	✓	✓	✓
	GP-IB	N/A	✓	N/A
Multiplexer* (scanner function)		N/A	N/A	✓ (Max. 20 channels)


\*When using 4-terminal measurement with two MULTIPLEXER UNIT Z3003 (option) cards.

#### Caution when considering using probes without guard terminals

Proper operation of the RM3545 is not guaranteed when using test leads (test probes) that lack guard terminals, for example test leads used with models such as the Resistance HiTester 3541 or mΩ HiTester 3540. Please use the test leads indicated in the RM3545 accessory and option documentation.

## Options


**Multiplexer Unit**




**MULTIPLEXER UNIT Z3003**

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**Temperature Sensor/LED Comparator Attachment**



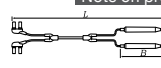
**TEMPERATURE SENSOR Z2001 (Bundled accessory)**  
1.75 m (5.74 ft)



**LED COMPARATOR ATTACHMENT L2105**  
2 m (6.56 ft)

**Test Leads**

Note on probe length



B: Probe length  
L: Overall length


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**PC Communication**


**RS-232C CABLE 9637**  
for PC connection, 9pin - 9pin, cross, 1.8 m (5.91 ft)

**RS-232C CABLE 9638**  
for PC connection, 9pin - 25pin, cross, 1.8 m (5.91 ft)


**GP-IB CONNECTOR CABLE 9151-02**  
2 m (6.56 ft)



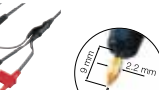
**CLIP TYPE LEAD L2101 (Whole image)**



**4-TERMINAL LEAD L2104 (Bundled accessory)**  
B: 83 mm (3.27 in), L: 1.5 m (4.92 ft)



**PIN TYPE LEAD L2102**  
B: 140 mm (5.51 in), L: 1.5 m (4.92 ft)



**PIN TYPE LEAD L2103**  
B: 138 mm (5.43 in), L: 1.5 m (4.92 ft)

Note: Company names and Product names appearing in this catalog are trademarks or registered trademarks of various companies.

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