HIOKI

RM3545

The Hioki RM3545 is a high-precision, 6.5-digit DC resistance meter designed for measuring a wide range of resistive components. Supporting measurements from 10 nΩ to 1.2 GΩ with a basic accuracy of 0.006%, it is highly suited for quality testing of motors, transformers, power inductors, and contact resistance.

SPECIFICATIONS

General

Interfaces	RS-232C, USB (Type B, USB 2.0 Full Speed), EXT I/O (handler) [GP-IB is standard on RM3545-01]
Guaranteed Accuracy Period	1 year
Product Variations	RM3545 (standard), RM3545-01 (with GP-IB), RM3545-02 (with multiplexer slots)

Physical

Power Supply	100 to 240 V AC (±10%), 50 Hz/60 Hz, 40 VA max.
Operating Temperature	0 to 40 °C °C
Dimensions (W×H×D)	215 mm W × 80 mm H × 329 mm D mm
Weight	2.5 kg
Form Factor	Benchtop

Electrical Performance

Measurement Range	10 mΩ to 1000 MΩ (12 ranges)
Maximum Resolution	10 nΩ (on 10 mΩ range)
Basic Accuracy	±0.006% rdg. ±0.001% f.s.
Maximum Measurement Current	1 A DC
Measurement Current Ranges	1 A to 100 nA DC
Open-circuit Voltage	20 V DC max. (20 mV max. when LP is ON)

Low Power Measurement

Low Power Resistance Measurement Range	1000 mΩ to 1000 Ω (4 ranges)
Low Power Measurement Max Current	1 mA DC
Low Power Open-circuit Voltage	20 mV DC max.

Timing & Speed

Integration Time (50 Hz)	FAST: 2.2 ms, MED: 20 ms, SLOW1: 102 ms, SLOW2: 202 ms
Integration Time (60 Hz)	FAST: 2.2 ms, MED: 17 ms, SLOW1: 85 ms, SLOW2: 168 ms
Trigger Modes	Internal trigger, External trigger

Temperature Measurement

Temperature Measurement Range	-10.0 °C to 99.9 °C
Temperature Measurement Accuracy	±0.50 °C (with Temperature Sensor Z2001)
Compatible Temperature Sensors	Platinum resistance thermometer Pt100, Temperature Sensor Z2001

Functions

Temperature Correction (ATC)	Reference temperature range: -10.0 °C to 99.9 °C
Temperature Conversion (Δt)	Calculates temperature rise from resistance and temperature coefficient
Offset Voltage Compensation (OVC)	Yes (removes thermal EMF errors)
Contact Check Function	Checks probe contact state before and during measurement
Comparator Settings	Upper/lower limits, or reference value and deviation (%)
Comparator Outputs	Hi, IN, Lo (via LED display and EXT I/O)
Statistical Calculations	Average, max, min, population standard deviation, sample standard deviation, process capability index
Key-lock Function	Yes

User Interface & Memory

Internal Data Memory	Up to 30,000 data points

Connectivity

EXT I/O Handler Interface	37-pin D-sub connector (optocoupler isolated inputs/outputs)
USB Interface Mode	Virtual COM port, USB-TMC class
RS-232C Interface Speed	Transmission speed up to 115,200 bps

Configurations

Multiplexer Support	Supported on RM3545-02 only (accepts up to two Z3003 multiplexer units)

Environmental

Operating Humidity Limit	80% rh or less (non-condensing)
Storage Temperature Range	-10 °C to 50 °C
Storage Humidity Limit	80% rh or less (non-condensing)
Maximum Operating Altitude	2000 m (6562 ft)

Safety & Input Limits

Maximum Rated Voltage to Earth	60 V DC
Withstand Voltage	1.62 kV AC for 1 minute (between power terminals and protective ground)

Compliance

Safety Compliance	EN 61010-1
EMC Compliance	EN 61326-1 Class A
Calibration Interval	1 year

Accessories

Standard Accessories	Power cord, Clip Lead L2101, Instruction Manual, Extra Fuse

Measurement Features

Measurement Method	4-terminal resistance measurement
Averaging Function	Off, 2 to 100 times
Scaling Function	0.001 × 10^-9 to 9.999 × 10^9 (with user-defined unit)
Panel Save/Load	Up to 30 settings can be saved

Interfaces

GP-IB Interface	Standard on RM3545-01 (IEEE-488.2 compliant)

D/A Output

D/A Output Voltage	0 V to 2.0 V DC (RM3545 and RM3545-01 only)
D/A Output Resolution	12-bit (RM3545 and RM3545-01 only)

Multiplexer Expansion

Multiplexer Slots	2 slots, compatible with Z3003 Multiplexer Unit (RM3545-02 only)
Maximum Multiplexer Channels	20 channels (4-terminal) or 42 channels (2-terminal) (RM3545-02 only)

Operating Conditions

Warm-up Time	60 minutes
Guaranteed Accuracy Temperature	23 °C ± 5 °C
Guaranteed Accuracy Humidity	80% RH or less (no condensation)

Accessories & Options

Compatible Multiplexer Unit	Z3003 (up to 2 units, RM3545-02 only)

Performance

Measurement Speed (FAST, 50 Hz)	21 ms
Measurement Speed (FAST, 60 Hz)	18 ms

Power Supply

Maximum Power Consumption	40 VA

TECHNOLOGY

DC Resistance Measurement

APPLICATIONS

High-precision resistance measurements on electronic components, motor/transformer windings, and contact resistance

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.