

RM3542A

RESISTANCE METER

Operation Guide

EN

Feb. 2019 Revised edition 1 RM3542D963-01 19-02H



Thank you for purchasing the Hioki RM3542A (RM3542-50, RM3542-51) Resistance Meter. This guide describes basic screen operations and comparator setting procedures. Before using the instrument the first time, please read the manual.

Power On/Off

- Unlit: power off (while power is not supplied)
- Red light: power off (while power is supplied)
- Green light: power on

Absolute or relative value

Judgment criteria

Measurement judgment criteria settings (Comparator function)

REF% Decide by reference value and tolerance (%)

ABS Decide by specified threshold values

Comparator Results (COMP indicator LEDs)

Hi Measured value is above the upper limit

IN Pass (meets criteria)

Lo Measured value is below the lower limit

Numerical value input and related settings

Measurement cable jacks

Select and change display screens and settings

Screen Organization

Measurement Screen

Measurement screen operations are shown on the back of this sheet.

Basic Settings Screen

TRG	Change trigger source (INT/EXT)
RANGE	Change range (100 mΩ to 100 MΩ)
SPEED	Change measurement speed (FAST/MED/SLOW)
0ADJ	Turn zero-adjust on/off
COMP	Turn comparator on/off
LOCK	Enable/disable key lock (OFF/FULL/MENU)

Detailed Settings Screens

(MISC > MEAS **F2** > MEAS SETTINGS) **Measurement Settings**

DELAY1	Adjust the delay from probing to trigger input
DELAY2	Adjust measurement object electrical response
SCALING	Configure scaling function settings
INT(FAST/ MED/ SLOW)	Make fine adjustment of integration time
CONT CHECK	Contact check on/off
CONT IMP	Contact Improver function settings
VOLT MONITOR	Voltage level monitor function settings
CURRENT MODE	Current mode setting (CONT/ PULSE)

(MISC > DATA **F3** > DATA SETTINGS) **Data Memory Settings**

AUTO MEMORY	Turn Auto-Memory on/off
STATISTICS	Statistical calculation on/off
DATA OUT	Automatically output measured value

(MISC > SYSTEM **F4** > SYSTEM) **System Settings**

SET MONITOR	Setting monitor function on/off
PROBE CHECK	Probe short-circuit detection function on/off
RETRY	Retry function on/off
VOLT LIMIT	Applied voltage limiter function on/off
TRIG EDGE	(External I/O) Set trigger rising/falling edge
EOM	(External I/O) Set EOM (end-of-measurement) signal
SHIFT OUTPUT	Judgment output shift function on/off
INTERFACE	Communications interface settings
% OUTPUT	Percentage output function on/off
PRINT MODE	Set printing method
LOW POWER	Low-power resistance measurement on/off
JUDGE BEEP	Comparator beeper settings
KEY BEEP	Key beeper on/off
CLOCK(Y-M-D)	Set internal clock
LINE FREQ	Set power source frequency
CONTRAST	Adjust screen contrast
BACKLIGHT	Adjust screen backlight

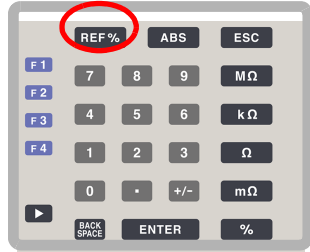
Setting Comparator Judgment Criteria for Measured Values

Decide According to Reference Value and Tolerance

1 REF% Mode

2 Setting screen

Select item



3 Change numerical value: [BACK SPACE] / Change sign: [+/-] / Cancel: [ESC]

4 ENTER

Return to Measurement screen

Set reference value (example 10.5Ω)

Set upper tolerance (example +4.5%)

Set lower tolerance (example -4.5%)

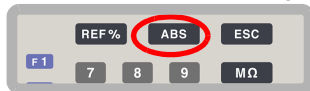
When setting the upper tolerance, the lower tolerance is automatically set to its negative equivalent. Change the setting as needed.

Decide According to Upper/Lower Thresholds

1 ABS Mode

2 Setting screen

Select item



3 Change numerical value: [BACK SPACE] / Cancel: [ESC]

4 ENTER

Return to Measurement screen

Set upper thresholds (example 150 mΩ)

Set lower thresholds (example 50 mΩ)

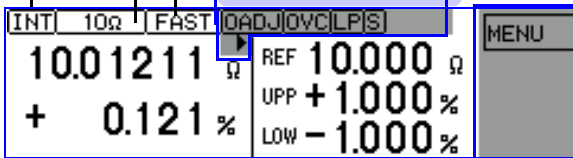
Measurement Screen Indicators

Measurement speed
FAST/MED/SLOW

Measurement range
100 mΩ to 100MΩ

Trigger Source
INT: Internal trigger
EXT: External trigger

0ADJ	Appears only when Zero adjustment enabled (not recommended)
OVC	Appears only when OVC is enabled
LP	Appears only when Low-power resistance measurement enabled
VL	Appears only when Applied Voltage Limiter function enabled
S	Appears only when the scaling function is enabled
▶	Appears only when Judgment output shift function enabled
NUM	Appears only when numeric input enabled
F.LOCK	Appears when all key operations including comparator disabled
M.LOCK	Appears when all key operations except comparator disabled
RMT	Appears only when under remote control



Measurement Fault (Error) Indicators

+OvrRng

Out of Range (over- or under-range)

The measured value is above or below the measurement range, or open state.

-OvrRng

C.E. Hi

Contact Check Fault

Indicates possible contact fault or broken cable.

C.E. Lo

C.E. Volt

Voltage Level Monitor Fault

Probe contact may be unstable, or electrical noise ingress may be present.

No Measurement Data

No measurement value is present immediately after power on or after changing range. Errors with other causes can prevent display of measured values.

UNLOCK	F 1	Cancel key-lock(hold 1s) (Enabled when FULL/MENU is selected as the LOCK setting on the MENU screen)
LOCAL	F 1	Cancel the Remote Status See:Instruction manual (9.5 Communication Methods (p.118))
PRINT	F 2	Prints measured value (Enabled when PRINT is selected as the INTERFACE setting on the SYSTEM screen)
STAT	F 3	Displays statistical calculation results (Enabled when the STATISTICS is set to ON on the DATA screen)
NUMBER	F 4	Sets the number of measurements for Auto-Memory mode (Enabled when the AUTO MEMORY is set to ON on the DATA screen)

PRINT	F 2	Prints statistical data (Enabled when PRINT is selected as the INTERFACE setting on the SYSTEM screen)
UNDO	F 3	Deletes the last stored measurement and calculation result (executes only once)
ALLCLR	F 4	Clears all memory and calculations