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2nd Edition: October 2017 (YMI)  
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2017, Yokogawa Test & Measurement Corporation

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Printed in China

**YOKOGAWA** ◆  
Yokogawa Test & Measurement Corporation

IM MY40-02EN  
2nd Edition: Oct. 2017 (YMI)

This manual describes the specifications and handling precautions of the insulation resistance tester.  
Before using this product, thoroughly read this manual to understand how to use it properly.

IM MY40-E: Safety precautions, components and specifications etc.  
IM MY40-02EN: Operation manual (this manual)

Contact information of Yokogawa offices worldwide is provided on the following sheet.  
PIM 113-01Z2: Inquiries List of worldwide contacts

## 9. Display Functions



**HOLD** Lit when the measured insulation resistance is being held.

**+ -** Flashes when the battery voltage is low.

**OL** Indicates overrange (OL).

**4HV** Lit when:  
• Pressing the MEAS key in insulation resistance measurement; and  
• Residual electrical charges are present during discharging.

**COMP** Lit when the comparator is activated.

**LOW** Lit when the measured insulation resistance is lower than the comparator setting value.

**MEM** Lit when the memory feature is in use.

**~V** Indicates the unit for AC voltage measurement.

**MΩ** Indicates the unit for insulation resistances.

**Ω** Indicates the unit for conductor resistance measurement.

**•||)** Indicates the continuity mark, which is lit when the measured insulation resistance is lower than 40 Ω.

**1000V** Lit when the rating setting is 1000 V/2000 MΩ.

**500V** Lit when the rating setting is 500 V/2000 MΩ.

**250V** Lit when the rating setting is 250 V/200 MΩ.

**125V** Lit when the rating setting is 125 V/200 MΩ.

**((( )))** Indicates the extension bar graph. The extension bar graph shows how the measured value is changing (trend) as follows:  
Note that the number of **↕** marks means the degree of change.

**↗** Change toward smaller values

**↖** Change toward larger values

**↕** Stable

### Sub-display

**8888** Indicates:  
• Comparator setting value or the storage number; or  
• The storage number for memory.

**MΩ** Indicates the unit for insulation resistance for comparator.

### Overrange Display Functions

#### OL Display

The tester displays the OL mark when the measured resistance exceeds the following values.

Insulation resistance measurement:  
For 1000 V and 500 V ratings: 2000 MΩ  
For 250 V and 125 V ratings: 200 MΩ

Conductor resistance measurement: 400 Ω

#### ∞ Display

The tester displays the ∞ mark when the internal calculation exceeds the following values.

Insulation resistance measurement:  
For 1000 V and 500 V ratings: approx. 4000 MΩ  
For 250 V and 125 V ratings: approx. 400 MΩ

#### Change to Upper/Lower Ranges

• To upper range

When the digital reading exceeds 4000, the measuring range changes to the next upper range.

• To lower range

When the digital reading falls below 360, the measuring range changes to the next lower range.

#### Lower Resolution Display

If the digits below the decimal point are not stable, they can be automatically omitted to limit the resolution.

## 10. Before Measurement

### 1. Safety

- Read the handling precautions in this manual carefully.
- Make sure it is safe before starting measurement.

### 2. Battery Voltage Verification

- Make sure that the battery voltages are within the valid ratings (i.e. the **4HV** mark is not flashing).
- If the batteries are low, replace them as specified in the battery replacement section of this manual.

### NOTE

As the **4HV** mark indication depends on the load (current consumption), check that the **4HV** mark does not appear for the largest load when short-circuiting the earth probe and the line probe (0 MΩ).

### 3. Connecting the Probes

#### ⚠ WARNING

- Remove the probes from the measured object before attaching/detaching the probes to/from the tester.
- Make sure the MEAS key is off when attaching/detaching the probes to/from the tester.

- Plug the earth probe into the earth terminal.
- Plug the line probe into the line terminal.

### 4. Function Switch Verification

Be sure to confirm that the function switch is set to the desired rating.

### 5. 1000-V Rating

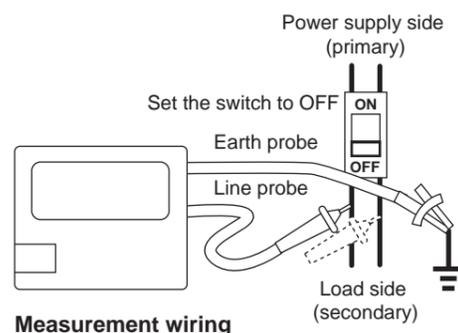
When measuring with the 1000-V rating, see section 14.1, "Double-action 1000-V Function".

## 11. Measuring the Insulation Resistance

### 11.1 Before Connecting the Probes

#### ⚠ WARNING

- Turn off the power to the measured object before connecting or measuring insulation resistance.
- Electrical charges may be present in the cables attached to or metal of the electrical equipment being tested. Verify that the equipment is free from electrical charges before connecting the testing terminals.
- Be sure to confirm that the function switch is set to the desired rating.



Measurement wiring

#### Insulation resistance ratings:

125 V/200 MΩ  
250 V/200 MΩ  
500 V/2000 MΩ  
1000 V/2000 MΩ

### 11.2. Setting the Function Switch

Turn the function switch to the desired measurement rating position. The initial display is "---- MΩ".

### 11.3 Connecting the Earth Probe

- If the measured object is grounded, connect the earth probe clip to the measured object's ground line.
- If the measured object is not grounded, this process may be omitted.

### 11.4 Connecting the Line Probe

Bring the line probe into contact with the measured object, and then press the **MEAS** key. The display indicates the insulation resistance of the measured object.

### NOTE

During measurement, exercise care to prevent the leadwire of the line probe from coming into contact with the ground, floor or any other object. Not observing this precaution may result in a failure to measure the correct insulation resistance.

### 11.5 After Measurement

#### ⚠ WARNING

- Immediately after measurement, electrical charges resulting from the applied testing voltage may remain present in the probes or measured object.
- The tester, therefore, is designed to automatically begin discharging electricity upon completion of measurement. Verify that the ALARM LED turns off when discharging is complete.

## 12. Measuring AC Voltages

#### ⚠ WARNING

- Do not press the MEAS key while measuring AC voltages.
- Voltage that exceeds the specified limit (600 V) must not be applied to terminals. Doing so causes all digits of the measured voltage to flash and the buzzer to beep.

### 12.1 Setting the Function Switch

Turn the function switch to an AC voltage measurement (  $\sim$  V ) position.

### 12.2 Connecting the Earth Probe

- If the measured object is grounded, connect the earth probe clip to the measured object's ground line.
- If the measured object is not grounded, this process may be omitted.

### 12.3 Connecting the Line Probe

Bring the line probe into contact with the measured object. The display indicates the AC voltage of measured object.



## 13. Measuring Conductor Resistance (Continuity)

The tester can measure the conductor resistance of 0 to 400 Ω.  
The buzzer beeps for resistances approximately 40 Ω or lower.

### ⚠ WARNING

Turn off the power to the measured object before connecting or measuring conductor resistance.

### 13.1 Setting the Function Switch

Turn the function switch to a conductor resistance measurement ( ●/Ω ) position.

### 13.2 Connecting the Earth Probe

Securely connect the earth probe to the measured object.

### 13.3 Connecting the Line Probe

Bring the line probe into contact with the measured object.  
The display indicates the resistance of the measured object.

### NOTE

You do not have to press the MEAS key when you measure conductor resistances.

## 14. Additional Features

### 14.1 Double-action 1000-V Function

The tester is equipped with the RELEASE button to protect the measured circuit from damage due to inadvertent measurement at 1000 V.

To select the 1000 V rating, turn the function switch to the position while pressing this button.

To cancel the 1000 V rating, turn the function switch to the off position or another rating position.

### 14.2 Live-line Alarm

Always turn off the power to the measured object before connecting or measuring insulation resistance. If an AC voltage of more than 40 V is applied, the ALARM LED flashes and the buzzer beeps.

In this case, stop the measurement immediately and check the power supply voltage.

### 14.3 Locking the MEAS Key (for Continuous Measurement)

The MEAS key, when pulled up to the right, can be locked to ensure the key remains turned on. Use this mechanism when making continuous measurement over a prolonged period.

Note, however, that leaving the key turned on for an unreasonably long time will accelerate the discharge of the batteries.

### 14.4 HOLD Feature

Measured insulation resistances are automatically held for approximately five seconds. Turning off the MEAS key initiates holding.

### 14.5 Auto Power-off

The tester is automatically turned off when no key operations are performed for 10 minutes.

The buzzer sounds 9 and a half minutes after the last key operation (at 1-sec intervals).

If any measurement or key operation is not made while the buzzer sounds, the tester is turned off. However, it is not turned off when measurement is in progress or an alarm occurs.

To use the tester after the auto power-off is triggered, press the **LIGHT** key or the **COMP** key, or turn the function switch to the off position once before proceeding with the desired operation.

### 14.6 LIGHT and COMP Keys

The **COMP** key is used as the Select key for settings and storage numbers of the comparator and memory functions.

The **LIGHT** key is used as the Enter key for settings and storage numbers of the comparator and memory functions.

Pressing the Enter key while the display is flashing, confirms selection of the setting or the storage numbers.

#### <When setting the memory or comparator function>

Turn the function switch to an insulation resistance rating position while pressing and holding the **LIGHT** key or the **COMP** key until all the displayed digits stop flashing and remain on, and the buzzer sounds.

Or position the function switch to a rating of the insulation resistance first, press the **LIGHT** key or the **COMP** key when all the digits appear, and hold the key until the buzzer sounds.

#### <Backlight>

- The backlight remains off while the comparator is set.
- The backlight is lit when memory is in use.

### 14.7 Memory Feature (Data Saving)

Up to 20 measured values of the insulation resistance for each rating can be saved to memory.

#### <Displaying data>

- Turn the function switch from power-off to a measurement rating while pressing and holding the **LIGHT** key (MEM).  
"MEM" appears and "no.01" (storage number) flashes on the sub-display.
- Select a storage number.  
Press the **COMP** key (Select) to select a storage number (no.01 to no.20).

If an insulation resistance data is saved with the selected (displayed) number, the insulation resistance value is displayed.

If any data is not saved with the selected (displayed) number, "----" is displayed.

#### <Saving data>

First select a storage number as in steps (1) and (2) above.  
Overwriting data is possible.

- Perform measurement with the **MEAS** key.
- Turn off the **MEAS** key.  
The measured value is held and starts flashing.  
Press the **LIGHT** key (Enter) while the measured value is flashing to save it to memory (it is held for five seconds in which time the next data cannot be saved).

### NOTE

If the data being held is invalid, "----" is displayed and it cannot be saved.  
In this case, perform measurement again and save the data.

#### <Deleting data>

Data saved can be collectively deleted.

- Turn the function switch from power-off to the continuity test position (Clr) while pressing and holding the **LIGHT** key (MEM).
- "MEM" and "CLR" appear.
- Press the **LIGHT** key (MEM). "CLR" starts flashing.
- Press the **LIGHT** key (MEM) again while "CLR" is flashing.  
The buzzer sounds and all data are deleted (do not change the position of the function dial for two seconds when "CLR" is displayed).  
The tester changes its mode to measurement of conductor resistances.

### NOTE

#### To stop deleting of data:

Do not perform any key operation and wait for 10 seconds while the "CLR" indication mentioned in step (3) is flashing; or  
Turn the function switch to another rating.

#### <Turning off the memory feature>

Turn the function switch to the off position.

### 14.8 Comparator

When a measured insulation resistance is less than the reference value setting, the **LOW** mark appears and the buzzer sounds. Also the measured value is automatically held for 5 seconds.

#### <Selecting the reference value>

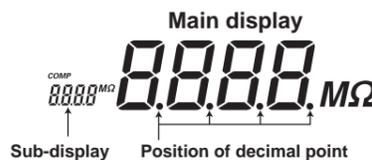
Select from three preset values for each rating.

Default values: no.01: 0.1 MΩ/ no.02: 0.2 MΩ/ no.03: 0.4 MΩ

- Turn the function switch to a measurement rating.
- Press the **COMP** key.
- "COMP" appears and the reference value appears on the subdisplay.
- Pressing the **COMP** key (Select) changes the reference value display as follows.  
0.1 MΩ → 0.2 MΩ → 0.4 MΩ → Comparator off (no display)

The reference value currently displayed is selected as the comparator setting.

#### <Setting the preset values>



	Main display	Sub-display
Insulation resistance measurement (with comparator)	Measured value	Reference value
Comparator setting	Reference value	no.

#### <Setting the preset values>

Each of the default preset values no.01 to no.03 can be changed independently.

- Turn the function switch from power-off to a desired rating while pressing and holding the **COMP** key. "no.01" on the sub-display flashes.  
Press the **COMP** key (Select) to select no.02 or no.03.
- Confirm the setting no. with the **LIGHT** key (Enter).  
The reference value on the main display can be set.
- Select the position of the decimal point with the **COMP** key (Select).
- Confirm the decimal point with the **LIGHT** key (Enter).
- Select the number for each digit sequentially.  
Pressing the **COMP** key (Select) changes the number as follows.  
0 → 1 → 2 ... 8 → 9 → 0
- Confirm the number with the **LIGHT** key (Enter).
- Set the number for the next digit.
- When settings for all the digits are complete, the reference value starts flashing.
- Confirm the reference value with the **LIGHT** key (Enter).  
The buzzer sounds and the setting ends.  
The tester changes its mode to measurement of insulation resistances.

Repeat steps (1) to (9) to change other preset values.

### NOTE

#### • To cancel the preset setting

Pressing the **COMP** key (Select) in step (8) returns the setting procedure to step (1).  
To stop the setting, turn the function switch to the off position.

#### • To set the preset values for another rating

Turn the function dial to the desired rating (insulation resistance) in step (8).

## 15. Corrective Measures in Case of Failure

If the instrument does not operate properly after taking the corrective measures shown below or any other failure that is not covered here occurs, contact the vendor from which you purchased the instrument.

### Failures

- The tester displays nothing after turning the function switch to the on position.
- The display is light in color.
- The measured values are erroneous.

### Items to Check

- The batteries are installed properly and their power levels are not low.
- The measuring probes are connected correctly and are not damaged.
- Whether the failure reoccurs after turning off the power and retrying the operation.

### Error Messages

- |       |   |
|-------|---|
| Err.0 | An internal operation failure.<br>Turn off the power and retry the operation.<br>* If the failure reoccurs, the tester needs repairing.   |
| Err.1 | Cannot save the comparator or memory settings.<br>Measurement functions other than the comparator and memory functions operate normally.<br>Settings and data saved without the error indication (Err.1) can be used.<br>* If the failure reoccurs, the tester needs repairing. |
| Err.2 | An internal operation failure.<br>Turn off the power and retry the operation.<br>* If the failure reoccurs, the tester needs repairing.   |