

**SANWA**<sup>®</sup>  
TOKYO JAPAN

*3 Range Test Voltage*

# DIGITAL INSULATION RESISTANCE TESTER

[www.sanwa-meter.co.jp](http://www.sanwa-meter.co.jp)

MG1000



DIGITAL INSULATION RESISTANCE TESTER

# MG1000

# MG500 MG125

Automatic live circuit detection ( $\geq 30V$  AC/DC)

Sanwa MG series allows you to measure insulation resistance more safely by avoiding operation mistakes.



# DIGITAL INSULATION RESISTANCE TESTER MG1000, MG500, MG125

Sanwa MG series allows you to measure insulation resistance more safely by

DIGITAL INSULATION RESISTANCE TESTER

## MG1000

Automatic live circuit detection ( $\geq 30V$  AC/DC)

1000V  
4000M $\Omega$

500V  
4000M $\Omega$

250V  
4000M $\Omega$

### 3 Range Test Voltage



## Digital Insulation Resistance Tester MC

### General I

- ① In any range (M $\Omega$ ), the hot-line state (30 V minimum) can be detected through the buzzer sound and the red LED illumination. If you press the MEASURE button by mistake in this state, no test voltage will be generated. Thus, the measuring circuit and the equipment involved will not be affected adversely.
- ② During the measurement of M $\Omega$ , a large bolt mark is illuminated on the LCD with the buzzer sound, allowing you to find that voltage is generated.
- ③ To select the highest test voltage range, you need to turn the rotary switch while holding down the  $\Omega$  ADJ button. This design feature prevents the highest test voltage from being generated by an operation mistake.
- ④ An easy-to-hold body with a portrait design has been adopted to ensure stable measurements.
- ⑤ The tester comes with a strap, and uses less slippery elastomeric material for its lateral sides so that the user can grip the tester more firmly.
- ⑥ After measurements have been finished, the last measured value can be held automatically. Unlike an analog tester, you do not need to check the reading during measurements and therefore can comfortably concentrate on the object under measurement.
- ⑦ A large logarithmic bargraph is provided to enable the user to check the measured value like using an analog tester.
- ⑧ The backlight allows you to check the measured value even in a dark place. Since the rated voltage output can be checked with the green LED, you can find whether the measurement is being carried out properly.

### Standard Accessories

Test Lead: TL-112



Strap: ST-50

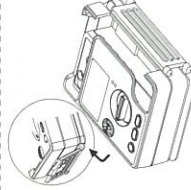
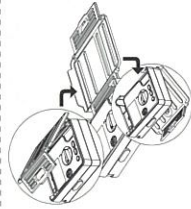
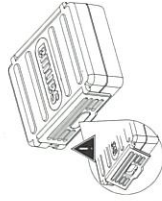


Optional Accessory

Alligator: Clip CL-16



Opening / closing the body cover



### Model: MG1000

| Nominal test voltage & Measurement Range   | Center scale  | Measurement Range  | Accuracy                                 |
|--|---|--|--|
| 250V<br>4.000M $\Omega$ /40.000M $\Omega$<br>400.0M $\Omega$ /4000M $\Omega$                         | 10M $\Omega$  | 1st effective measurement range<br>0.5~20.00M $\Omega$<br>2nd effective measurement range<br>20.01~4000M $\Omega$                      | $\pm(3\%rdg+4dgt)$<br>$\pm(5\%rdg+5dgt)$ |
| 500V<br>4.000M $\Omega$ /40.000M $\Omega$<br>400.0M $\Omega$ /4000M $\Omega$                         | 100M $\Omega$   | 1st effective measurement range<br>1.000~500M $\Omega$<br>2nd effective measurement range<br>0~0.999M $\Omega$<br>501~4000M $\Omega$   | $\pm(3\%rdg+4dgt)$<br>$\pm(5\%rdg+5dgt)$ |
| 1000V<br>4.000M $\Omega$ /40.000M $\Omega$<br>400.0M $\Omega$ /4000M $\Omega$                        | 1000M $\Omega$  | 1st effective measurement range<br>2.000~1000M $\Omega$<br>2nd effective measurement range<br>0~1.999M $\Omega$<br>1001~4000M $\Omega$ | $\pm(3\%rdg+4dgt)$<br>$\pm(5\%rdg+5dgt)$ |
| Open circuit voltage<br>Rated measurement current<br>Short-circuit current<br>Live circuit detection | 1 to 1.3 times of nominal test voltage<br>1.0-1.2 mA (250 V @ 0.25 M $\Omega$ , 500 V @ 0.5 M $\Omega$ , 1000 V @ 1 M $\Omega$ )<br>2mA or less<br>At $\geq 30V$ AC/DC or more, inhibits test, buzzer sounds and ALARM indicator lights up. |  |  |

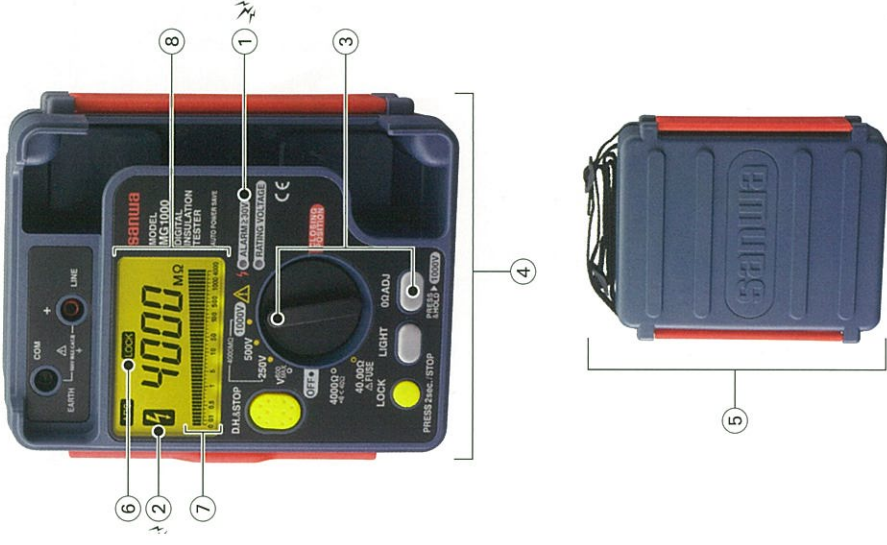


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avoiding operation mistakes.

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*3 Range Test Voltage*

DIGITAL INSULATION RESISTANCE TESTER

## MG500

Automatic live circuit detection ( $\geq 30V$  AC/DC)

**500V**  
**4000M $\Omega$**

**250V**  
**4000M $\Omega$**

**125V**  
**4000M $\Omega$**



*3 Range Test Voltage*

DIGITAL INSULATION RESISTANCE TESTER

## MG125

Automatic live circuit detection ( $\geq 30V$  AC/DC)

**125V**  
**400M $\Omega$**

**50V**  
**400M $\Omega$**

**25V**  
**400M $\Omega$**



**Model: MG500**

| Nominal test voltage & Measurement Range   | Center scale  | Measurement Range  | Accuracy                                 |
|--|---------------|--|--|
| 125V<br>400.0k $\Omega$<br>4.000M $\Omega$ /40.000M $\Omega$<br>400.0M $\Omega$ /4000M $\Omega$                        | 10M $\Omega$  | 1st effective measurement range<br>20.0k $\Omega$ ~10.000M $\Omega$<br>2nd effective measurement range<br>0~19.9k $\Omega$<br>10.01~4000M $\Omega$ | $\pm(3\%rdg+4dgt)$<br>$\pm(5\%rdg+5dgt)$ |
| 250V<br>400.0k $\Omega$<br>4.000M $\Omega$ /40.000M $\Omega$<br>400.0M $\Omega$ /4000M $\Omega$                        | 100M $\Omega$ | 1st effective measurement range<br>50.0k $\Omega$ ~20.000M $\Omega$<br>2nd effective measurement range<br>0~49.9k $\Omega$<br>20.01~4000M $\Omega$ | $\pm(3\%rdg+4dgt)$<br>$\pm(5\%rdg+5dgt)$ |
| 500V<br>400.0k $\Omega$<br>4.000M $\Omega$ /40.000M $\Omega$<br>400.0M $\Omega$ /4000M $\Omega$                        | 100M $\Omega$ | 1st effective measurement range<br>1~500M $\Omega$<br>2nd effective measurement range<br>0~0.999M $\Omega$<br>501~4000M $\Omega$                   | $\pm(3\%rdg+4dgt)$<br>$\pm(5\%rdg+5dgt)$ |
| Open circuit voltage<br>1 to 1.3 times of nominal test voltage   |               |  |  |
| Rated measurement current<br>1.0-1.2 mA (125 V @ 0.125 M $\Omega$ , 250 V @ 0.25 M $\Omega$ , 500 V @ 0.5 M $\Omega$ ) |               |  |  |
| Short-circuit current<br>2mA or less   |               |  |  |
| Live circuit detection<br>At $\geq 30V$ AC/DC or more, inhibits test, buzzer sounds and ALARM indicator lights up.     |               |  |  |

**Model: MG125**

| Nominal test voltage & Measurement Range  | Center scale | Measurement Range   | Accuracy                                 |
|---|--------------|---|--|
| 25V<br>400.0k $\Omega$ /4.000M $\Omega$<br>40.00M $\Omega$ /400.0M $\Omega$   | 1M $\Omega$  | 1st effective measurement range<br>10.0k $\Omega$ ~5.000M $\Omega$<br>2nd effective measurement range<br>0~9.9k $\Omega$<br>5.01~400.0M $\Omega$    | $\pm(3\%rdg+4dgt)$<br>$\pm(5\%rdg+5dgt)$ |
| 50V<br>400.0k $\Omega$ /4.000M $\Omega$<br>40.00M $\Omega$ /400.0M $\Omega$   | 1M $\Omega$  | 1st effective measurement range<br>10.0k $\Omega$ ~5.000M $\Omega$<br>2nd effective measurement range<br>0~9.9k $\Omega$<br>5.01~400.0M $\Omega$    | $\pm(3\%rdg+4dgt)$<br>$\pm(5\%rdg+5dgt)$ |
| 125V<br>400.0k $\Omega$ /4.000M $\Omega$<br>40.00M $\Omega$ /400.0M $\Omega$  | 1M $\Omega$  | 1st effective measurement range<br>20.0k $\Omega$ ~10.000M $\Omega$<br>2nd effective measurement range<br>0~19.9k $\Omega$<br>10.01~400.0M $\Omega$ | $\pm(3\%rdg+4dgt)$<br>$\pm(5\%rdg+5dgt)$ |
| Open circuit voltage<br>1 to 1.3 times of nominal test voltage  |              |   |  |
| Rated measurement current<br>1.0-1.2 mA (25V @ 0.025M $\Omega$ , 50V @ 0.05M $\Omega$ , 125V @ 0.125M $\Omega$ )    |              |   |  |
| Short-circuit current<br>2mA or less  |              |   |  |
| Live circuit detection<br>At $\geq 30V$ AC/DC or more, inhibits test, buzzer sounds and ALARM indicator lights up.* |              |   |  |

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## General Specifications

|                                  |  |
|----------------------------------|--|
| AC Sensing                       | Average value  |
| LCD                              | 4200 count with analog bargraph  |
| Sampling rate                    | Approx. 2 times / sec.   |
| Range selection                  | Auto only<br>Range up: approx. 4200 count or over,<br>Range down: approx. 380 count or below   |
| Over-range indication            | "OL" indication on LCD<br>V function: 780V or over<br>M $\Omega$ , 4000 $\Omega$ , 40 $\Omega$ function: Approx. 4200 count or over<br>"—" indication only when negative input |
| Polarity indication              | "—" indication only when negative input  |
| Low battery indication           | "  " lights or flickers at about 7.7V-7.2V or below   |
| Environmental condition          | Altitude 2000m or below, pollution degree II   |
| Operating temperature / humidity | 0°C to 40°C and maximum relative humidity 90% (No condensation)  |
| Storage temperature / humidity   | -10°C ~ 50°C, 70%RH or below (with battery removed).   |
| Power supply                     | R6 1.5V x 6 pcs (MG125, MG500) ; LR6 1.5V x 6 pcs (MG1000)   |
| Time of measurement              | MG125, MG500 : Approx. 5 hours<br>MG1000 : Approx. 2 hours 30 minutes  |
| Safety / EMC                     | IEC61010-1 CAT.III 600V, IEC61557-1/2/4, IEC61326 (EMC), IEC60529-IP54, IEC61010-031 (TL-112)  |
| Dimensions                       | 170 (L) X 142 (W) X 57 (H)   |
| Weight                           | Approx. 600g (battery included)  |
| Power consumption                | Approx. 7mA at V function  |
| Accessories                      | Battery (built-in), test leads (TL-112), Strap (ST-50), instruction manual   |
| Optional accessories             | Alligator clip CL-16   |

※: Temperature 23 ± 5 °C, humidity 45% to 75% RH.

MG125



MG500



# SANWA®

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