

DIGITAL EARTH RESISTANCE TESTER



INSTRUCTION MANUAL

Index	Page
1. INTRODUCTION	1
2. SAFETY NOTES.....	2
3. FEATURES.....	3
4. SPECIFICATIONS.....	4
5. LAYOUT.....	5
6. MEASURING METHODS.....	6-7
7. MAINTENANCE.....	8

1.INTRODUCTION

This meter has been designed and tested according to CE safety requirements for Electronic Measuring Apparatus, EN61010-1 and other safety standards. Follow all warnings to ensure safe operation.

●Application:

Earth Resistance Tester is used to measure the ohms(Ω) of an earth grounding installation for buildings (residential, office, labs, hospitals), computer server rooms, military installations, cellular sites, radio and cable towers, etc. It is used to determine if the earth (or ground) is a good conductor of electricity.

●Purpose of Earth Grounding:

- (1) Avoid human and animal electrical shock.
- (2) Avoid unnecessary property and equipment damage.
- (3) Prevent fire or explosion.
- (4) Integrate electrical signal to attain proper operation or measuring purpose.
- (5) Provide a means of dissipation for power surges caused by lightning strikes, static charges, and other types of electrical interference.

2.SAFETY NOTES

- Read the following safety information carefully before attempting to operate or service the meter.
- Use the meter only as specified in this manual. otherwise, the protection provided by this meter may be impaired.
- Rated environmental conditions:
 - (1) Indoor Use.
 - (2) Installation Category III.
 - (3) Pollution Degree 2.
 - (4) Altitude up to 2000 meter.
 - (5) Relative humidity 80% max.
 - (6) Ambient temperature 0~40°C.
- Observe the International Electrical Symbols listed Below:



Meter is protected throughout by double insulation or reinforced insulation.



Warning! Risk of electric shock.



Caution! Refer to this manual before using the Meter.

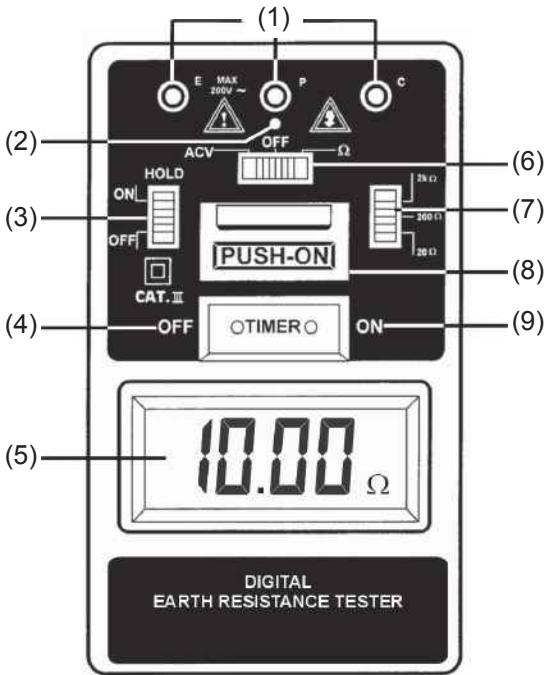
3.FEATURES

- Capable of measuring earth voltage.
- 2mA measuring current permits earth resistance tests without tripping earth leakage current breakers in the circuit under test.
- Battery operated.
- Auto power off function. The timer operates automatically about 3~6 minutes when the "PUSH BUTTON SWITCH" and "TIMER ON BUTTON" are pressed at the same time to keep the tester power on.
- Data hold function.
- Small and light weight.
- Designed to meet EN61010-1 CAT III 200V.

4.SPECIFICATIONS

Measurement Ranges	Earth Resistance 0-20 Ω /0-200 Ω /0-2000 Ω Earth Voltage 0-200V AC (40-500Hz)
Accuracy	Earth Resistance \pm (2% rdg+2dgt) or \pm 0.1 Ω . which is greater. Earth Voltage \pm (1% rdg+2dgt)
Earth Resistance Resolution	0-20 Ω (0.01 Ω) 0-200 Ω (0.1 Ω) 0-2000 Ω (1 Ω)
Measurement System	Earth resistance by constant current inverter 820Hz approx. 2mA.
Low Battery Indication	"B" symbol appears on the display
Data Hold Indication	"DH" symbol appears on the display
Over Range Indication	"1"(MSD)
Open Circuit Indication	LED will be unlit
Display LCD	3½ digit (2000 counts)
Power Source	1.5V(AA) \times 6.
Dimensions	163(L) \times 100(W) \times 50(D)mm
Weight	480g approx. (battery included)
Accessories	Test leads(red-15m, yellow-10m, green-5m) Auxiliary earth bars Carry case Instruction manual Batteries


5.LAYOUT



- | | |
|----------------------------|--------------------------|
| (1) "E", "P", "C" Terminal | (6) Function Switch |
| (2) Operation Indicator | (7) Ohm Range Switch |
| (3) Data Hold Switch | (8) Pushbutton Operation |
| (4) Timer Off Button | (9) Timer On Button |
| (5) LCD Display | |

6.MEASURING METHODS

BEFORE PROCEEDING MEASUREMENT, READ SAFETY NOTES ON PAGE 2.

 In proceeding with measurement, if "B" symbol appears on the display, replace with new batteries.

●Earth Voltage Measurement:

(1) Connection with test leads:

Connect green, yellow test leads to instrument terminals E, P with auxiliary earth bars P1, driven into earth " IN A STRAIGHT LINE".(Fig.1)

(2) Set the function switch to ACV position and Press the"PUSH-ON" button and "TIME ON" button at the same time make certain that the voltage reading is LESS THAN 10V AC, otherwise accurate earth resistance measurement may not be made.

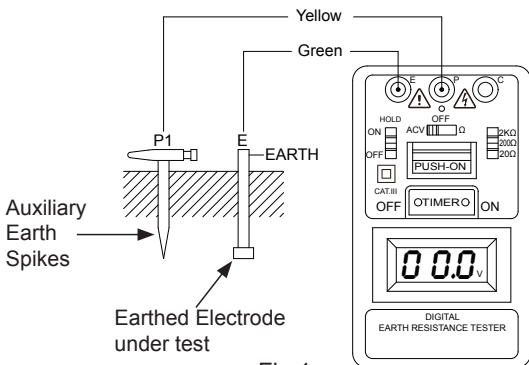
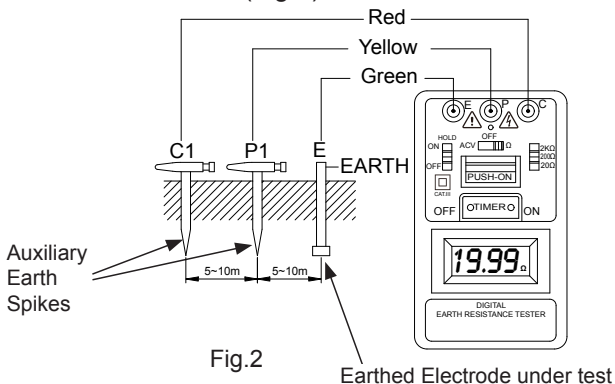


Fig.1

●Earth Resistance Measurement:

(1) Connection with test leads:

Connect green, yellow and red test leads to instrument terminals E, P and C with auxiliary earth bars P1, C1 driven into earth "IN A STRAIGHT LINE".(Fig.2)



- (2) Set the Range Switch to suitable range and set the function switch to Ω position then press the PUSH-ON BUTTON and TIME ON BUTTON at the same time and take the reading on the display.



WARNING

- When none of E, P and C terminals connected with test leads, the display shows "1" at Ω function.
- Follow the proper connection such as Fig.2, the LED(red) indicator will lit. This proves a correct current circulation is under its operation.

7.MAINTENANCE

- Battery Replacement:

When the symbol "B" appears on the display, replace the batteries as follows :

- (1) Disconnect the test leads from the instrument and turn off the power.
- (2) Use a screwdriver to unscrew the screw on back cover then slide the cover, take out the batteries and replace with new batteries Type SUM-3.
- (3) Place back cover and secure by a screw.

- Cleaning and storage:



WARNING

To avoid electrical shock or damage to the meter, do not get water inside the case.

- (1) Periodically wipe the case with a damp cloth and detergent ; do not use abrasives or solvents.
- (2) If the meter is not to be used for periods of longer than 60 days, remove the batteries and store them separately.

