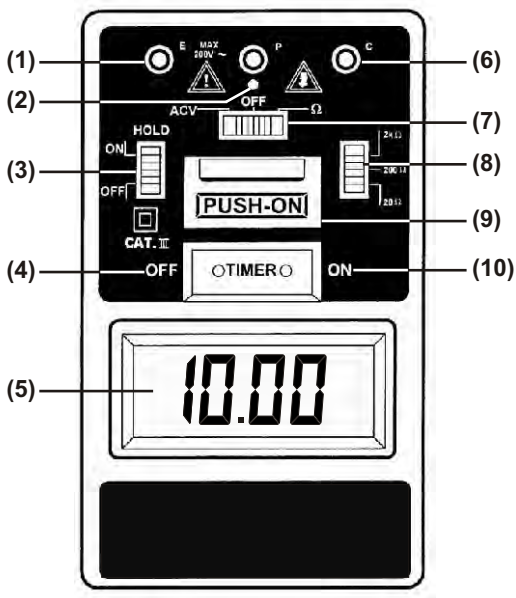




Instruction Manual

Model 309 Digital Earth Resistance Meter



(1) Jack For "EARTH" Lead Connection

(2) Operation Indicator

(3) Data Hold Switch

(4) Timer Off Button

(5) LCD Display

(6) Jack For "LINE" Lead Connections

(7) Function Switch

(8) Ohm Range Switch

(9) Pushbutton Operation

(10) Timer On Button

1.INTRODUCTION

NOTE

This meter has been designed and tested according to IEC Publication 348, safety Requirements for Electronic Measuring Apparatus, IEC-1010 (EN 61010) and other safety standards. Follow all warnings to ensure safe operation.

WARNING

**READ "SAFETY NOTES" (NEXT PAGE)
BEFORE USING THE METER.**

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 IEC-1010-1 (EN61010-1) CAT III 200V.

4.SPECIFICATIONS

Measurement system :	Earth resistance by constant Current inverter. 820Hz, 2mA approx.
Earth voltage :	0~200Vac, 40~500Hz.
Earth resistance range and resolution :	0~20 (0.01). 0~200 (0.1). 0~2000 (1).
Accuracy :	Earth voltage $\pm (1\%rdg+2dgt)$ Earth resistance $\pm (2\%rdg+2dgt)$ or ± 0.1 , which is greater.
Safety standard :	IEC 1010-1 (EN61010-1) CAT III 200V.
Low battery indication :	"B" symbol appears on the display.
Data hold indication :	"DH" symbol appears on the display.
Over range indication :	"1" (MSD).
Timer (auto power off) :	About 3~6 minutes.
Display :	LCD 3½ digit (2000 counts).
Power source :	1.5V(R6P)*6 pieces dry batteries.
Dimensions :	163(L)*100(W)*50(D)mm.
Wight :	Approx. 410g (battery included).
Accessories :	Test leads (Red-15m,yellow-10m, green-5m), Auxiliary earth bars, Heavy case, Instruction manual.

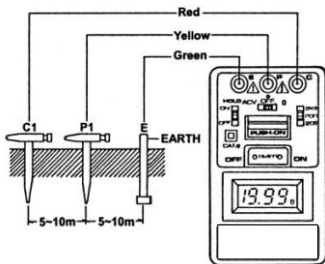
5. MEASURING METHODS

BEFORE PROCEEDING WITH MEASUREMENT, READ THE SAFETY NOTES ON PAGE 2.

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.1)

2. Set the function switch to ACV position and make certain that the voltage reading is LESS THAN 10V AC, otherwise accurate earth resistance measurement may not be made.



3. Set the Range Switch to suitable range and set the function switch to position then press the PUSH-ON BUTTON and TIMER ON BUTTON at the same time and take the reading on the display.

When none of E, P and C terminals connected with test leads, the display shows "1" at function.

Follow the proper connection such as Fig. 1, the LED (red) indicator will lit. This proves a correct current circulation is under its operation.

6.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.

Periodically wipe the case with a damp cloth and detergent ; do not use abrasives or solvents.

If the meter is not to be used for periods of longer than 60 days, remove the batteries and store them separately.