Instruction Manual

IRT 1900

Digital RCD Tester

EN FR IT DE ES

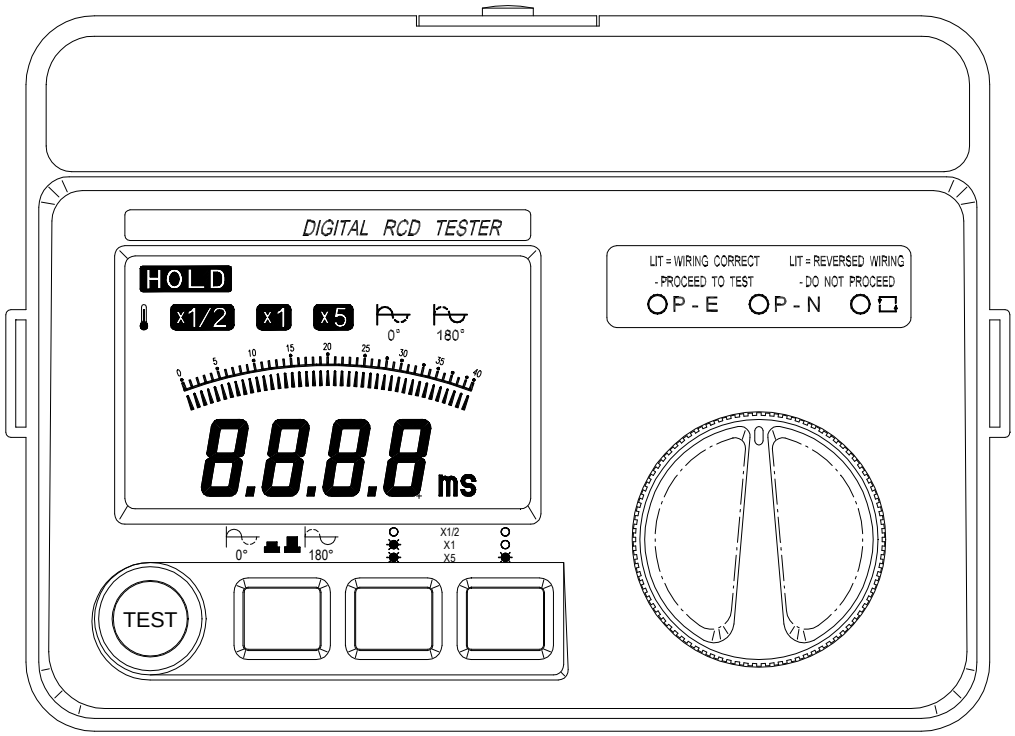


TABLE OF CONTENTS

TITLE **PAGE**

I. WARNING

- This instrument must only be used by a competent, trained person and operated in strict accordance with the instructions.
- It is essential to read and understand the safety rules contained in the instructions. They must always be observed when using the instrument.
- Read this instruction manual carefully and completely.
- This instrument is intended to be used on live installations rated at 230V AC±10%. Under No circumstances must it be connected to higher voltage or phase to phase.
- Never open the instrument case. There are no user serviceable parts inside.
- If the unit does not power up, inspect your leads for damage or a blown fuse. (NEVER ASSUME THAT THE INSTALLATION IS NOT LIVE).
- Always keep your hands and fingers behind all finger guards on test leads with this instrument.
- This instrument is primarily protected by HRC ceramic fuses and other devices.
- If the overheat symbol appears in the display (🌡) disconnect the instrument from the mains and allow to cool down.

II. FEATURES

- Custom microprocessor controlled for highest accuracy and reliability.
- 3 LED's for checking correct wiring status.
- Large custom digital display readout on all models.
- Automatic lock-out if test resistor overheats.
- Visual indication of reversed phase and neutral wiring at socket.
- Resilient case protects against everyday knocks.
- 0 and 180 degree phase angle switch permits quick tests and consistent readings.

III. SPECIFICATION

➢ Test current range :	10, 20, 30, 100, 300, 500 (mA).
➢ Test current factors :	×1/2, ×1, ×5.
➢ Fault trip time :	2000ms.
➢ Operational voltage :	230V ±10 % 50Hz / 60Hz
➢ Maximum input voltage :	370V peak.
➢ Test current: x1/2	-8% to -2%per digit
x1, x5	+2% to +8%per digit
➢ Trip time :	±(1%rdg +2d) , ×1/2, ×1 ±(1%rdg +20d) , ×5
➢ Display hold time :	Grater than 5s on loss of power.
➢ Over range indication :	" OL" in display.

- Over temperature indication : " 🌡 " in display.
- Input protection : 250V/2A.
- Operation temperature and humidity : 0℃ to 40℃ (32℉ to 104℉) & (10 ~ 80 %RH).
- Storage temperature and humidity : -10℃ to 60℃ (14℉ to 140℉) & (10 ~ 70 %RH).
- Dimensions : 180(L) x 130(W) x 70(H)mm.
- Weight : Approx.800g.
- Accessories : Instruction Manual, IEC Test Lead, External Earth Probe.

Environmental Conditions

The product is designed for indoor use and up to a maximum altitude of 2000m.

Installation Category : 300V CAT III (single phase 230V)

Pollution Degree 2

This manual and product may use the following symbols adopted from International Safety Standards.


Equipment protected throughout by DOUBLE INSULATION or REINFORCED INSULATION.

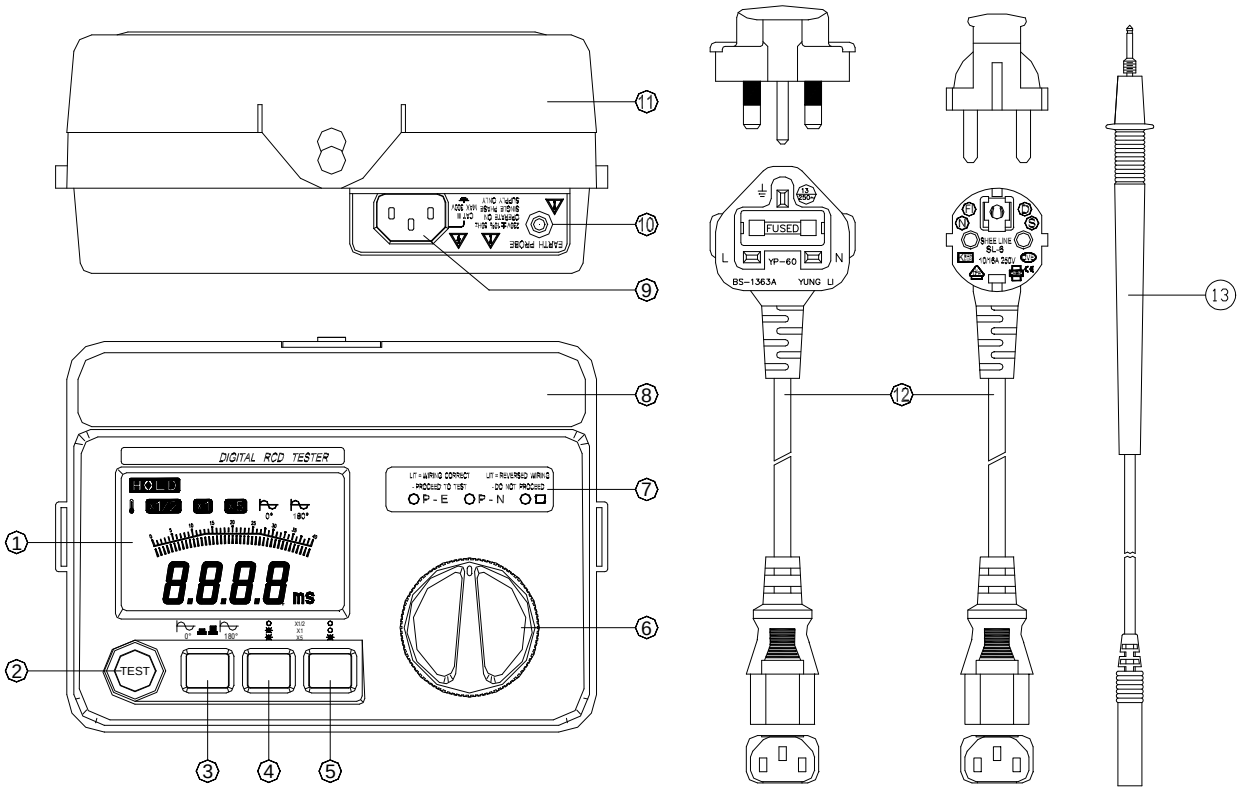

Caution, risk of electric shock.


Caution (refer to accompanying documents)


Comply with IEC 1010-1

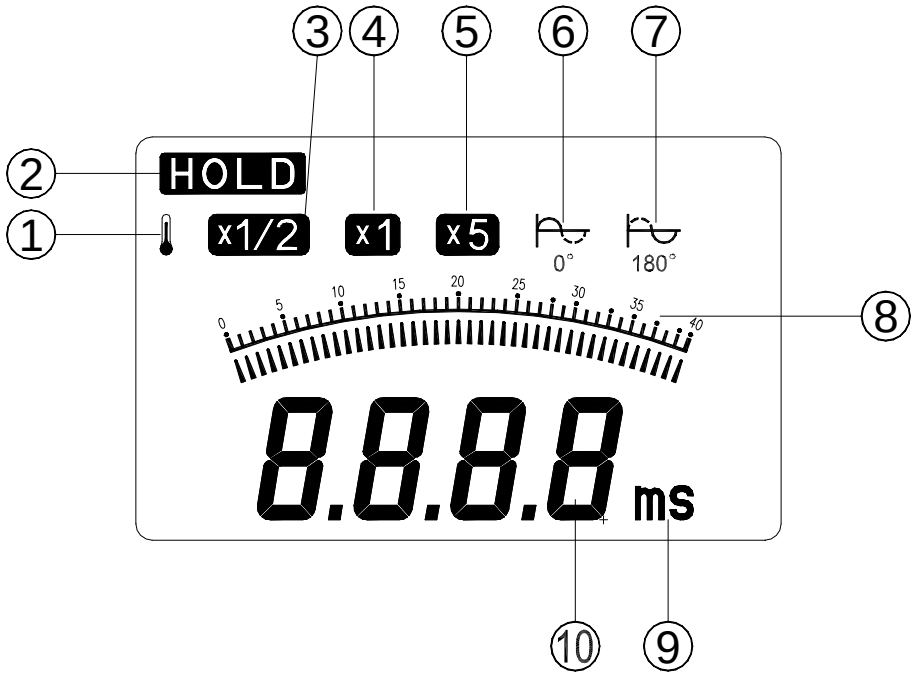
IV. PARTS & CONTROLS

4-1 Name of Parts and Positions:



(1) LCD
(2) Proceed test button.
(3) Phase angle select button.
(4) x 1/2, x 1, x 5 test current factor select button.
(5) x 1/2, x 1, x 5 test current factor select button.
(6) Trip current settings
(7) Wiring indication.
(8) Storage compartment
(9) AC voltage input.
(10) Earth probe socket.
(11) Top cover.
(12) Test lead (AC cord)
(13) External earth probe.

4-2 LCD Display :



(1) Temperature ALARM indication.

(2) Correction mode indication.

(3) x 1/2 test current factor indication.

(4) x 1 test current factor indication.

(5) x 5 test current factor indication.

(6) 0º ~180º phase angle indication.

(7) 180º ~360º angle indication.

(8) Analog indication.

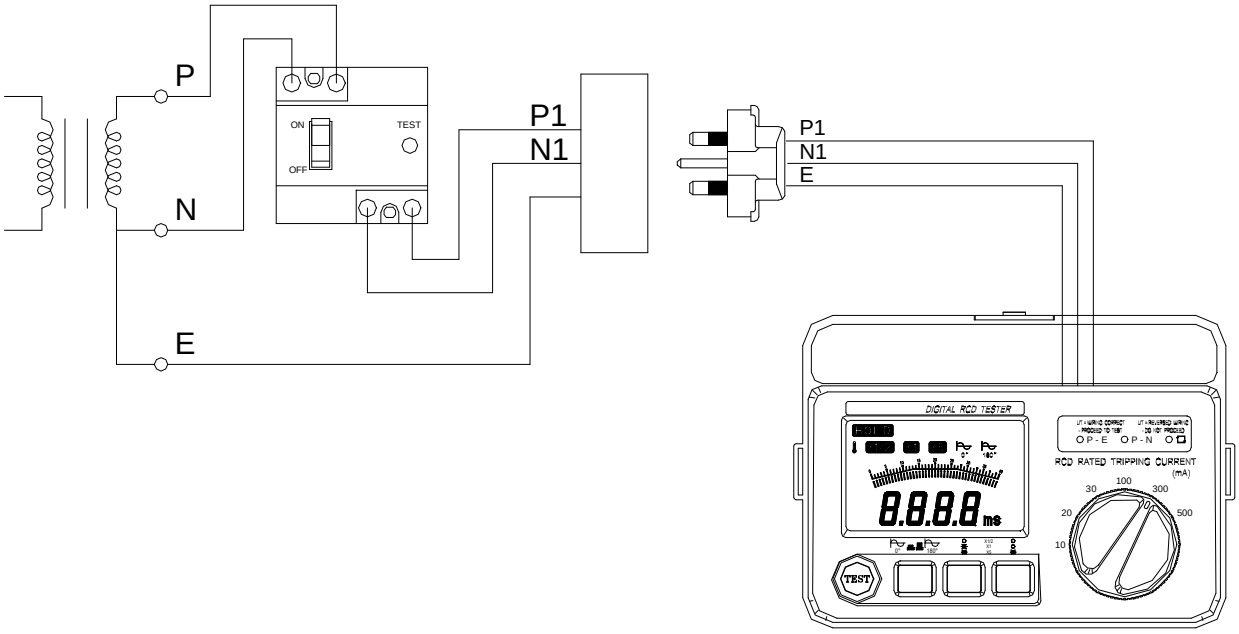
(9) Display time indication.

(10) Display value and point.

OL : Overload indication.

NE : Wiring error indication.

4-3 Connections For RCD Testing



V. OPERATING INSTRUCTIONS

To ensure safe and proper use of this instrument, the following instruction must be followed :

5-1 Warning-initial checks to be carried out before any testing

a). Always inspect your instrument before use for abnormality or damage. If abnormal conditions exist, do not proceed.

b). Before pressing the test button, always check the mains status LED's for the following sequence :

P-E Green LED must be NO

P-N Green LED must be NO

 Red LED must be OFF

If the above sequence is not displayed or the Red LED is ON for any reason, do not proceed as there may be incorrect wiring. The cause must be rectified before proceeding.

c). If other loads are connected to the test circuit, these may cause erroneous readings. To make the most accurate readings, loads on the circuit should be disconnected.

d). Use only the leads supplied with instrument.

5-2 Preparation :

a). Connect the instrument to the circuit to be tested (see following sections for procedure). Make sure the LED's are lit as per the initial checks.

b). If the sequence is not correct, disconnect the instrument and check the installation wiring for a possible fault.

5-3 Testing

No Trip Test (x1/2) (0 x 1/2 0, buttons 3 and 4 not illuminated)

a). The No Trip Test is designed to ensure that the circuit breaker is operating within its specifications and is not too sensitive.

b). Set test tripping current to ×1/2 position and the RCD rated tripping current to the rated trip current of the breaker under test.

c). Press and release the “Press to Test” button. Half the rated tripping current selected will pass through the breaker. The breaker will not trip if it is functioning correctly and “OL” will be displayed.

d). While the test is being conducted the units displayed will be “ms” for milliseconds.

e). If the “Press to Test” button is released the result will be displayed for 3s before reverting to zero. If the button is held down, the result will be displayed until the button is released.

f). If the breaker trips, the display will read the trip time. The display will be held for approx. 5s.

h). Reverse the phase angle switch and repeat above.

After repeated testing the unit may overheat.

This is indicated by the over temperature symbol.

If this happens disconnect the unit from the mains and allow to cool down.

(This applies to the No Trip Test, Trip Test, Fast Trip Test.)

5-4 Trip Test (x1) (☀ x 1 0, only button 4 illuminated)

a). Select the ×1 test tripping current.

b). Press the test button. The RCD should trip and the tripping time will be displayed on the instrument LCD in mS. While the test is being conducted the display will indicate “ms”.

c). Reset the breaker and push the phase angle switch. Press the “Press to Test” button and the breaker should trip.

d). Reset the breaker and push the phase angle switch again. Press the “Press to Test” button the breaker should trip.

e). The readings obtained in 5-4-d and 5-4-c should both be within the trip time specified for the breaker at its rated tripping current.

f). If the breaker does not trip there is a fault.

5-5 Fast Trip Test (☀ x5 ☀, both buttons 3 and 4 illuminated)

a). This is a special test required for a circuit breaker that is installed to reduce the risk associated with direct contact for breakers rated up to 30 mA.

b). Set the test tripping current function switch to the x 5 position.

c). Set the RCD rated tripping current switch to 30 mA.

d). Set the phase angle switch to the 0 position.

e). Press and release the Test button. The breaker should trip.

f). Reset the breaker. Change the phase angle switch to the 180 position and press the Test button.

g). The trip times of the last two measurements should both be less than 40 ms. If the tripping times are greater than 40 ms the RCD may be faulty and must be re-checked.

TO AVOID OVERHEATING EFFECTS, THE METER HAS A CURRENT LIMITER ON THE 5×300mA AND 5×500mA RANGES.