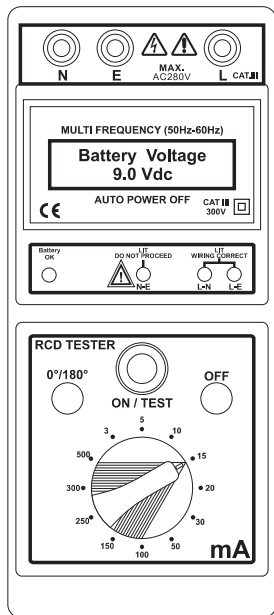


# DIGITAL RCD TESTER

---



**Version A = 240VAC    Version B = 230VAC**  
**Version C = 220VAC    Version D = 110VAC**

## INSTRUCTION MANUAL

<b>Index</b>	<b>Page</b>
1. Safety precautions .....	1-2
2. Specifications .....	3
3. Features .....	4
4. Connections .....	4
5. Instrument layout .....	5
6. RCD test - time delay .....	6-7
7. Preparation for measurement .....	8
8. Battery replacement .....	8
9. Fuse replacement .....	8
10. Servicing and calibration .....	9
11. Cleaning and storage .....	9

# **1. Safety Precautions**

Electricity can cause severe injuries even with low voltages or currents. Therefore it is extremely important that you read the following information before using your Digital RCCB / ELCB Tester.

- 1.1 This instrument must only be used and operated by a competent trained person and in strict accordance with the instructions. We will not accept liability for any damage or injury caused by misuse or non compliance with instructions and safety procedures.
- 1.2 Never open Your Digital RCCB / ELCB tester except for battery replacement. ( See Battery replacement section ).
- 1.3 Always inspect you Digital RCCB / ELCB tester and test leads before using for any sign of abnormality or damage. If any abnormal conditions exist ( broken test leads, cracked case, display faulty etc... ) do not attempt to take any measurement or use the tester.  
Return your Digital RCCB / ELCB tester to your nearest Distributor for Service.
- 1.4 Never replace the protective fuse with any other than the specified or approved equivalent.
- 1.5 Your Digital RCCB / ELCB tester has been designed with your safety in mind. However, no design can completely protect against incorrect use. Electrical circuits can be dangerous and/or lethal when a lack of caution or poor safety

practice is used. Use caution in the presence of voltage above 24V as these pose a shock hazard.

- 1.6 Pay attention to cautions and warnings which will inform you of potentially dangerous procedures.

Rated environmental conditions:

- (1) Indoor use.
- (2) Installation Category III 300V.
- (3) Pollution Degree 2.
- (4) Altitude up to 2000Meters.
- (5) Relative Humidity 80% Maximum.
- (6) Ambient Temperature 0°~40°C.

- 1.7 Observe the International Electric symbols listed below.



Meter is protected throughout by double insulation or reinforced insulation.



Caution! Refer to this manual before using the meter.



Warning! Risk of electric shock.

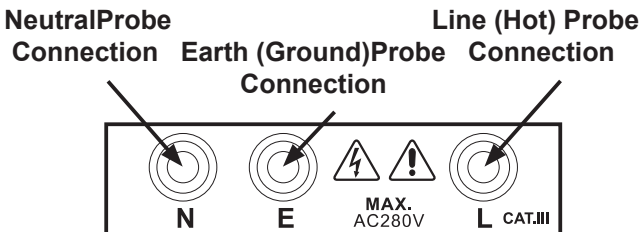
## 2. Specifications

Current Settings	3mA, 5mA, 10mA, 15mA, 20mA, 30mA, 50mA, 100mA, 150mA, 250mA, 300mA, 500mA	
Current Selection	Rotary Switch Selector	
Phase Start Selection	Referenced to Earth	
Phase Angle Setting	0° and 180°	
Over-Temperature Protection	Yes ( 3 Sensors )	
Wiring Correctness Indication	Yes ( LEDs )	
Trip Indicator	Yes ( LCD )	
Phase Polarity Trip Indicator	Yes ( LCD ) Referenced to Earth	
Operating Voltage ( L-E ) 50Hz or 60Hz	Version A Version B Version C Version D	240Vac 230Vac 220Vac 110Vac
Voltmeter (L-E)	20Vac ~ 280Vac	
Timer Resolution	1ms (Max Time = 2.999s)	
Timer Accuracy	± 2ms	
Current Accuracy	± 5% ±1mA	
Voltmeter Resolution	1Vac	
Voltmeter Accuracy	± 2% ±1Vac	
Operating Temperature	-5°C to 45°C	
Storage Temperature	-10°C to 55°C	
Power Source	1.5(AA) × 6 Batteries Bat OK Led = Vbat > 7.5V	
Measure Battery Voltage at start up Current Specified at Operating Voltage.		

### 3. Features

- 2 Lines x 16 Characters LCD.
- Very Low Power Consumption.
- Microprocessor Controlled.
- Menu-driven.
- Accurate Digital Readout of Disconnection Time.
- Automatic Data Hold Function.
- Zero Crossing Circuitry Permit Testing at 0° or 180°.
- Disconnection Phase Polarity Shown on LCD Display.
- Auto-Off and Off Override.
- Polarity Trip Indicator (Positive or Negative Phase)
- Wiring Polarity Indicator.
- Measures Voltage and Frequency Between Line and Earth Before Testing.
- Frequency Measurement Indication.

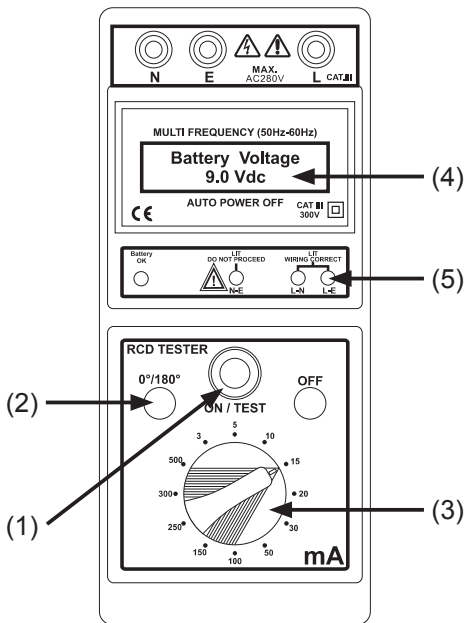
### 4. Connections



apply only

Operating Voltage  $\pm 10\%$  / 50Hz or 60 Hz.

## 5. Instrument Layout



- (1) On Switch.-  
Test Button Switch.
- (2) Selection Switch.  
0° - 180°
- (3) Current Selection Rotary Switch.
- (4) Intelligent L.C.D.
- (5) Wiring Check / Indicator.

## 6. RCD Test - Time Delay

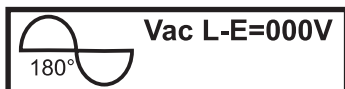
Turn Instrument "ON" by pressing the "TEST-ON" button. The L.C.D. display will come to the following Screen.



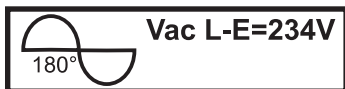
For a two to three seconds, the display will show the battery voltage.



The tester wait for voltage to be measured and phase selection can be changed.



Phase selection has been changed so that testing will start on a negative going edge.





The leads have been connected and the voltage between L-E is 234Vac (version B shown in this example).

**234V T= 04.020s**  
**Test in Progress**

“Test” button has been depressed. Test In Progress since 4.020s. The Voltage between L-E was 234V before testing started.

**234V T=06.435s**  
**180° Hold TRP <2%**

TRP= Tripped, Display on Hold  
at 6.435s Tripped on + edge of signal (180°).

## **7. Preparation for Measurement**

### **Before testing Always Check the Following.**

At Power "ON", check :

- The BAT OK led lit. If the BAT OK led does not lit, replace Batteries. Check the Battery Voltage on the LCD display.
- There is no visual damage to the Instrument or Test leads.
- Test lead Continuity with a continuity meter.

## **8. Battery Replacement**

Your Digital RCCB/ ELCB Tester's batteries are situated under the tester.

The BAT OK led (if battery voltage  $>7.5V$  ) will indicate when the battery need to be replaced (if BAT OK led does not lit when tester is on).

Disconnect the Test leads from the Instrument, remove the battery cover and the batteries.

Replace with six 1.5V R6 or L6 batteries, taking care to observe correct polarity.

Replace the Battery cover.

## **9. Fuse Replacement**

The Fuse is located in the enclosure. To replace the Fuse, take the 4 screws out from the bottom case, then remove and replace the fuse . Make sure to place the fuse protection cover. (Small rubberised fuse cover). Only replace with the same specification fuse. (1A Fast Blow). Disconnect all the test leads before opening the cover to change the fuse.

## **NOTE :**

1. CAT.IV - is for measurements performed at the source of the low-voltage installation.
2. CAT.III - is for measurements performed in the building installation.
3. CAT.II - is for measurements performed on circuits directly connected to the low voltage installation.

## **10. Servicing and Calibration**

Your Digital RCCB.ELCB tester has been factory Calibrated.

However, it is of good practice to have your Instrument "CERTIFIED" by a National Calibration Facility and "CHECKED" every year by an Professional workshop.

## **11. Cleaning and Storage**

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

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

### **WARNING**

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

