ELCB/POLARITY TESTER

Power System ☐ 110Vac ☐ 230Vac ☐ 550Vac

INSTRUCTION MANUAL

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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 Analog 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 Analog RCCB / ELCB Tester.

1.3 Always inspect your Analog RCCB / ELCB tester and test leads before use 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 Analog 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 Analog 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 potentiality danagerous procedures.

1.7 Your Analog RCCB / ELCB tester is intermittent rated @110Vac (230Vac, 550Vac) / 50 or 60 Hz.

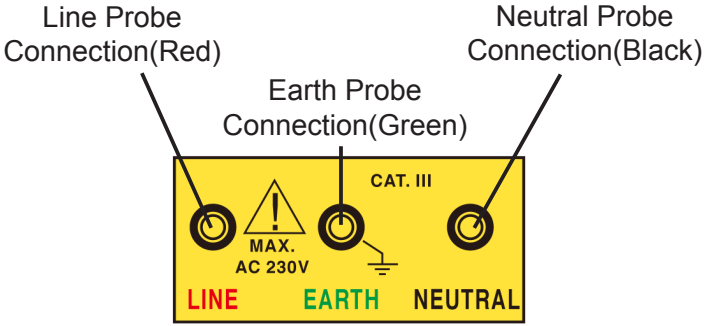
2. SPECIFICATIONS

Current Settings	10-50mA @110Vac (230Vac, 550Vac)
Current Selection	Knob
Frequency of operation	50 / 60 Hz Sinusoidal
Over-Temperature Protection	No
Operating Voltage (L-E)	110Vac (230Vac, 550Vac) +/-15%
Meter Accuracy	±1% of Full Scale
Operating Temperature	-5℃ to 45℃
Storage Temperature	-10℃ to 55℃

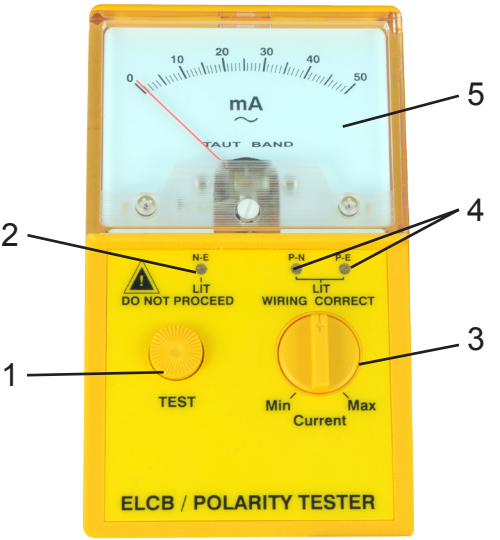
3. FEATURES

- Taut Band Movement
- Simple operation
- Wiring check
- Robust
- Can be used on 2 wires L-E (RCCB / ELCB tester)
- Can be used on 3 wires L-E-N (with wiring check)
- No batteries
- Sense automatically 50 or 60 Hz
- Current injected in phase with the voltage.

4. CONNECTIONS



5. INSTRUMENT LAYOUT



1. Test Switch
   Push to test
2. Wiring Check LEDs
   Do Not proceed if N-E LED lit
   unless for two wires testing.
3. Current Adjust Knob
4. Wiring Check LEDs
   voltage between P-N or P-E
   present.
5. Taut Band Meter

INSTRUCTIONS ANALOG ELCB (RCD) TESTER

IMPORTANT

-The Tester check the tripping sensitivity at which the ELCB (RCD) trip.
-The Tester can operate between Line and Earth (2 wires test) but when used with two wires, polarity indication must be ignored.
-The Tester is INTERMITTENT rated @110Vac (230Vac, 550Vac) / 50 or 60Hz.

SENSITIVITY TEST

1-Turn the knob anti-clockwise (Min) before connecting.
2-Plug into socket. Check that wiring is OK.
3-Press "TEST" and turn knob clockwise till ELCB (RCD) trips.
4-Note the Tripping current at which the trip occured.

Notes:
Min fault current for Model without batteries = 10mA (quiescent current between Line and Earth).
Model with batteries has no quiescent current.
Wiring Test only valid when used with 3 wires (Line, Neutral and Earth).

WIRING TEST

P=Phase=Line
N=Neutral
E=Earth
Wiring Test table only valid for 3 wires system (Line, Neutral and Earth) with Neutral and Earth connected together.
LAMP KEY: ● = ON ○ = OFF

N-E	P-N	P-E	CONDITION
○	●	●	OK
●	●	●	NO EARTH
○	○	○	NO LINE
●	●	○	REVERSED LINE/NEUTRAL
○	○	●	REVERSED LINE/EARTH
●	●	●	NO NEUTRAL

7. CHECKING WIRING INTEGRITY

The Wiring Integrity Check has three low current LEDs (1mA with series resistor) which are connected between:
Line and Neutral
Line and Earth
Earth and Neutral
The LED between Earth and Neutral must no lit

Choice of Test Leads:
The Tester is supplied with two set of test leads, one with plug built-in (you can use directly by plugging into a wall socket) and one with alligators (you can use on connections, bus bars, circuit breaker connections, etc.).
Both sets are color coded.
Testing must take place on the load side of the circuit breaker. For your own safety, while connecting the alligators, the circuit must be open (no voltage on the load side). Close the circuit again only when the alligators are secured properly.

Testing at a plug point:
You need to use the set of test leads which have a plug. Insert the color coded side of the test lead into the tester and insert the plug into the wall socket. The tester will show you the wiring status on the LEDs.

Testing at the board:
You need to use the set of test leads which have the alligators.
The Circuit Breaker must insulate the load side during the connection of the alligators. Once connections are secured, close the circuit breaker, the tester will show you the wiring status on the LEDs.

Testing at connections or bus bars:
The Circuit Breaker must insulate the load side during the connection of the alligators. Proceed as per testing at the board.

Two wires:
In the case of a two wire system, using Line and Earth for the checking of the wiring integrity will show all LEDs lit. (same as no neutral)

8. RCCB/ELCB TESTING-CHECKING SENSITIVITY

The tester injects a current to test the disconnection sensitivity of the Earth Leakage Circuit Breaker (mA).The tester injects a sinusoidal current from the Line wire through the Earth wire, so that a current unbalance is created between the Line and the Neutral wire. That current unbalance is leaked through to the Earth via the Earth wire.
The tester is intermittent rated. DO NOT INJECT FOR MORE THAN 20 SECONDS.

Two wire operation
Connect the Line lead to the Line wire and the Earth lead to the Earth wire.
Turn the knob anti-clockwise to the minimum.
Depress the test button and turn the knob slowly clockwise so that the current is increasing on the Taut Band Panel Meter until the RCCB/ELCB trips.
Note the maximum mA at which the breaker tripped.

Three wire operation

Three wire operation is not necessary for the testing of RCCB / ELCB but if wiring has been checked with the three wires, you need not to change the connections and can proceed as per the above two wire operation.

On a three wire system, please make sure that wiring is correct and use the method shown in Section 6.

9. PREPARATION FOR MEASUREMENT

Before Testing Always Check the Following.

- There is no visual damage to the instrument or test leads.
- Test leads continuity with a continuity meter

10. FUSE REPLACEMENT

The fuse is located in the battery compartment. For fuse replacement, open the battery cover, then remove and replace the fuse.

Make sure to place the fuse protection cover. (small rubberized fuse cover)

Only replace with the same specification fuse. (0.2A/250V Fast Blow)

11. SERVICING AND CALIBRATION

Your Analog 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 a professional workshop.

12. CLEANING AND STORAGE

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.

Due to our policy of constant improvement and development, we reserve the right to change specifications without notice.