



INSTRUCTION MANUAL
MT328
INDUSTRIAL RCD (ELCB) TESTER



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1. SAFETY

1.1 Safety notes

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 $-5^{\circ}\text{C} \sim 45^{\circ}\text{C}$

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

1.2. 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. This instrument must only be used and operated by a competent trained person and in strict accordance with the instructions.
2. Never open your digital RCCB / ELCB tester except for battery replacement. (see battery replacement section)
3. Always inspect your digital RCCB / ELCB tester and test leads before use for any sign of abnormality or damage. If any abnormal condition 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.
4. Never replace the protective fuse with any other than the specified or approved equivalent.
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 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.
6. Pay attention to cautions and warnings which will inform you of potentially dangerous procedures.

2. SPECIFICATIONS

Function	Range
Current settings	0-1000mA Selectable
Current selection	Knob
Phase start selection	
0°	YES
180°	YES
Phase polarity trip indicator	YES
Operating voltage (L-E)	100V to 450V AC
Timer resolution	1mS
Timer accuracy	1mS
Current accuracy	1% & 2mA
Current resolution	1mA
Voltmeter accuracy	5%
Voltmeter resolution	1V
Operating temperature	0°C to 40°C
Storage temperature	-10°C to 50°C
Battery	8 x AA batteries
Maximum current specified at 317V AC	

3. FEATURES

- 2 Lines x 16 Characters
- Very low consumption
- Smart microprocessor controlled
- Better than 2% accuracy (current)
- Menu driven
- Accurate digital readout of disconnection time.
- Accurate digital readout of disconnection sensitivity
- Data hold function
- Zero crossing circuitry permit testing at 0° or 180°
- Disconnection phase polarity shown on LCD display
- Auto-Off
- Polarity trip indicator (positive or negative phase)

4. CONNECTIONS

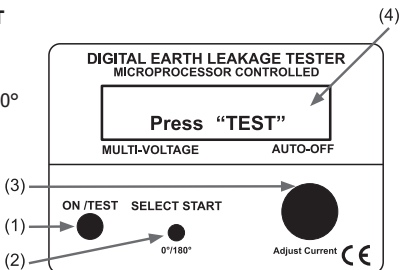
Line probe connection

Earth probe connection



5. INSTRUMENT LAYOUT

- 1 - On switch - Test button
- 2 - Selection switch - 0°-180° switch
- 3 - Current selection knob
- 4 - LCD display



6. RCCB / ELCB TESTING - SENSITIVITY

Turn instrument "ON" by pressing the "ON" button. The LCD display will come to the following screen.

*** - Instantaneous
- Time Delay**

Push select to change selection to instantaneous, than press "TEST"

**Dial starting
Current. 123mA**

Dial the starting current of the instantaneous test using the knob.

**0° Positive
Start Edge**

Select the Positive or Negative Start Edge using the select button.

**Connect Leads
to Earth & Phase**

Connect leads to earth and phase. The test will start automatically.
Test In progress. The voltage between leads is 317V and I=127mA

**V=317V
I=127mA**

TRP=Tripped, Display on Hold at 140mA, Tripped on - edge of signal.

**V=317V-
I=140mA Hold→TRP**

7. RCCB/ELCB TESTING - TIME DELAY

Turn instrument "ON" by pressing the "ON" button. The LCD display will come to the following screen.

- Instantaneous
* - Time Delay

Push select to change selection to Time Delay, then press "TEST"

Dial starting
Current. 123mA

Dial the starting current of the Time Delay test using the knob.

 **Positive
Start Edge**

Select the Positive or Negative Start Edge using the select button.

**Connect Leads
to Earth & Phase**

Connect leads to Earth and Phase. The test will start automatically.

**V=317V T=4.023s
I=127mA**

Test in progress since 4.023s. The voltage between leads is 317V and constant current is 125mA

**V=317V+ T=12.435s
I=125mA Hold→TRP**

TRP=Tripped, Display on **Hold** at 12.435s Tripped on + edge of signal.

8. PREPARATION FOR MEASUREMENT

Before testing Always Check the following:

At Power "ON", read the display to make sure the "Replace Battery" message do not appears.

There is no visual damage to the instrument or test leads.

Test lead continuity with a continuity meter.

9. BATTERY REPLACEMENT

Your digital RCCB / ELCB tester's battery is situated under the tester. Your smart-test display will indicate you when the battery need to be replaced.

Disconnect the tester leads from the instrument, remove the battery cover and the batteries.

Replace with eight 1.5V R6 or L6 batteries, taking care to observe correct

polarity.

Replace battery holder and the battery cover.

10. FUSE REPLACEMENT

The fuse is located under the battery holder. To replace the fuse, proceed as per battery replacement to open the battery cover, then remove and replace the fuse located under the battery holder.

Only replace with the same specification fuse (1A/600V, 5x20mm Fast Below).

11. 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.

12. CLEANING AND STORAGE:

WARNING: To avoid electrical shock or damage to the Multi-function tester, 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.



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