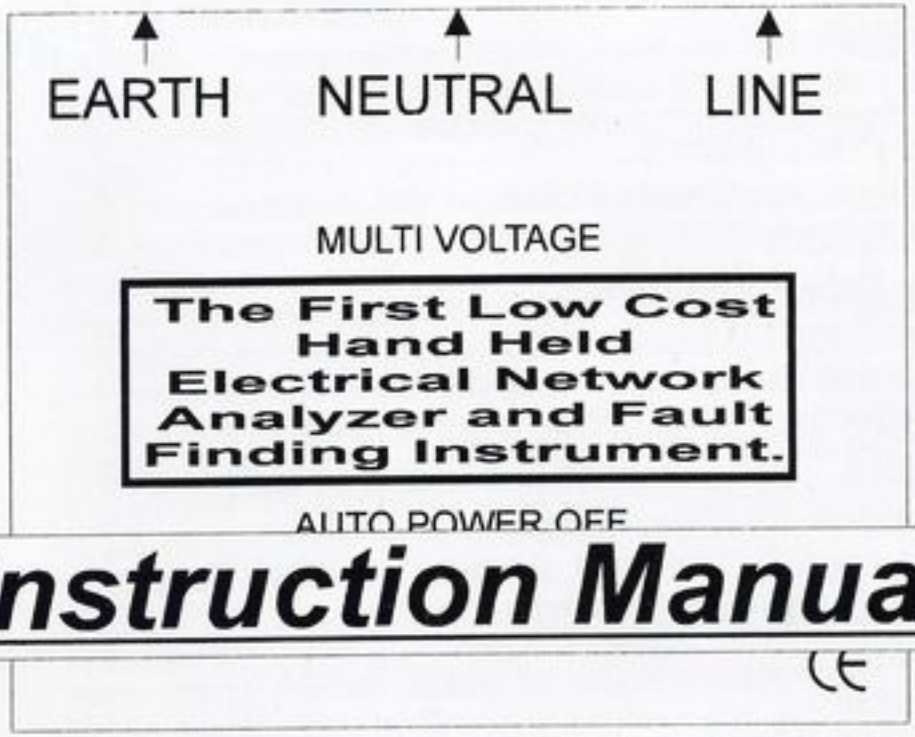
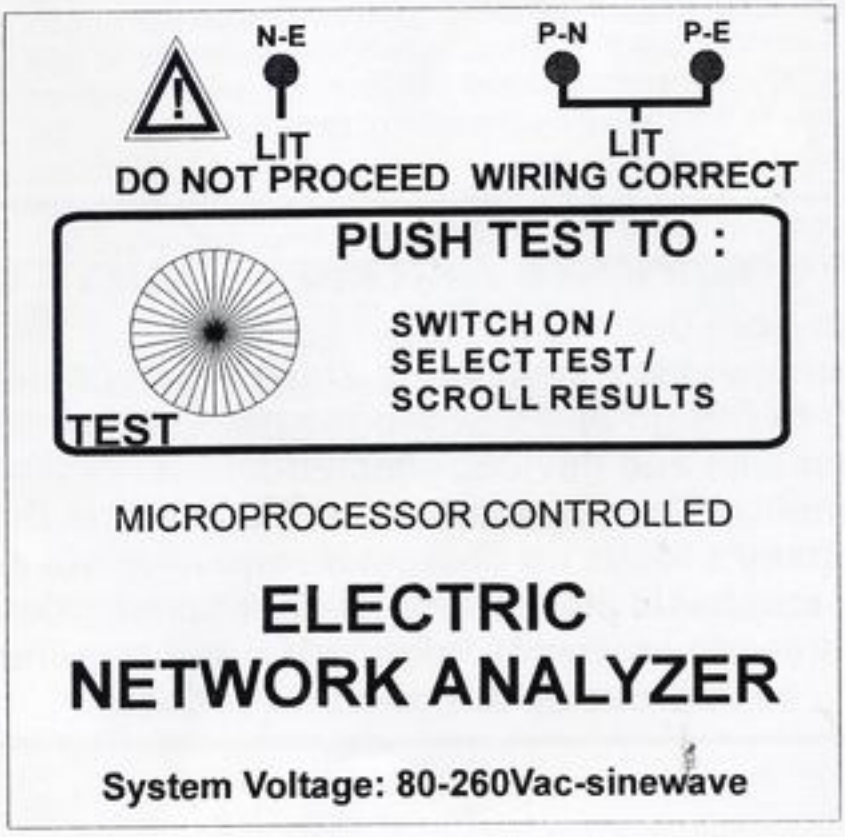


Instruction Manual

CE



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YOUR COMMENTS ARE IMPORTANT TO US

We have become a market leader in test and measurement in recent years, due to the company's ability to design and bring to the market innovative instruments and devices which offer real customer benefits. The cornerstone of this ability is the company's focus on customer requirements and the emphasis placed on end-user satisfaction. We appreciate customer information and requirement to improve or design new products.

1. Safety Precautions.

Electricity can cause severe injuries, even with low voltage or current. Therefore, it is extremely important that you read the following information before using your Electrical Network Analyzer.

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. This instrument inject a High Current into the Earth.

1.2 This instrument is only intended for Single Phase operation , 230Vac ±20% with the correct wiring (Phase, Neutral and Earth). It must never be connected Phase to Phase. Damages could result. When Conducting a test, do not touch any exposed metal parts or any conducting parts.

1.3 All RCCB, GFCI and ELCB in the circuit to test must be bypassed ONLY for the duration of the test.

1.4 Never open the Tester, except for battery replacement. (See Battery replacement section).

1.5 Before use, always inspect the tester and test leads for any sign of abnormal condition 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 it to the nearest Distributor for Service.

1.6 The 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

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

2. Specifications

Loops / Earth / Wires	0.03-2000Ω Auto-ranging
Prospective Short Circuit	0 - 6KA @230Vac
Operating Voltage	50-275Vac (50 **or** 60 Hz)
Best Performance at Rated Voltage	230Vac ±20% Max10A
Operating Temperature	0°C - 40°C
Storage Temperature	20° - 60°C
Operating Humidity	85% Maximum
Storage Humidity	85% Maximum
Accuracy of Voltages	±1% (210-250V) ±3% otherwise
Accuracy Loops/Earth And Wires Impedances	±2%(0.05-50Ω)±3%500Ω ±15% (above500 Ω)
Power Source	8 x AA battery

3. Safety Notes.

Rated environmental conditions:

(1). Indoor use.
(2). Installation Category II.
(3). Pollution Degree 2.
(4). Altitude up to 2000 Meters.

(5) Relative Humidity 80% Max.
(6) Ambient Temperature 0Deg C to 40 Deg C.
Observe the International Electrical Symbols listed below:

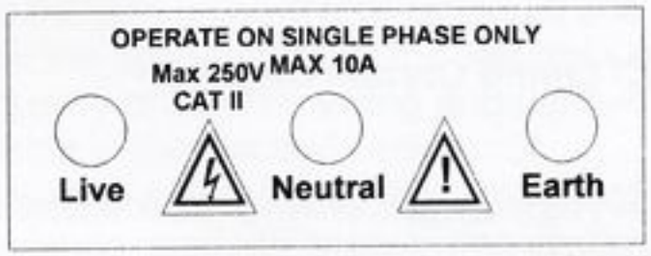

Double insulation or reinforced insulation.


Warning ! Risk of Electric Shock.
Caution ! Refer to this manual before using the meter.

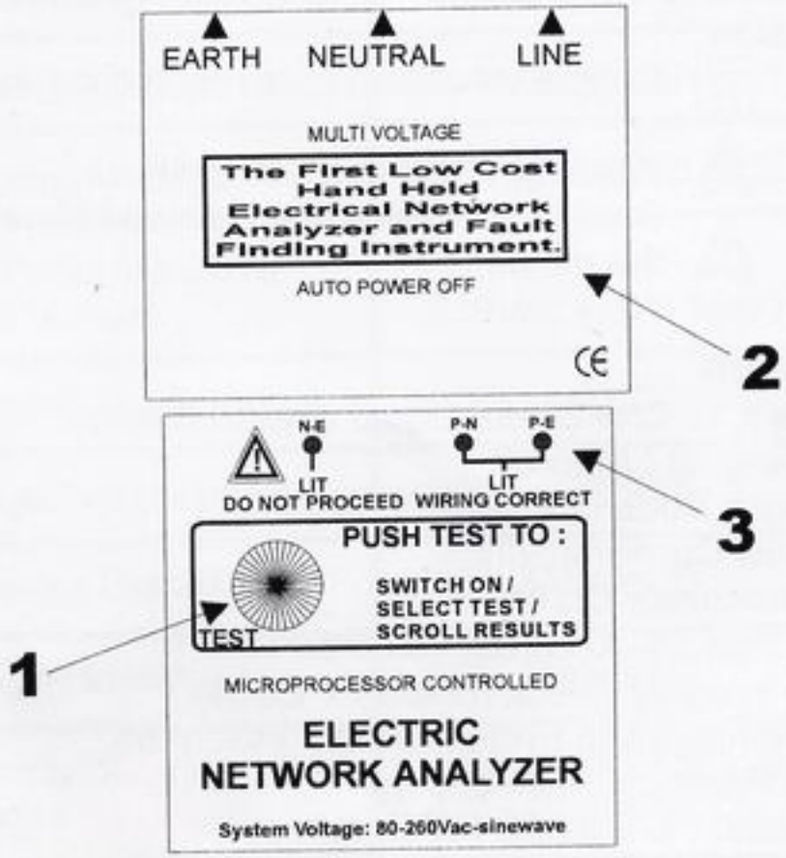
4. Features

- 2 Lines x 16 Characters Liquid Crystal Display.
- Auto-ranging / Auto-off.
- One Push Button Operation.
- Very Low Consumption.
- Microprocessor Controlled.
- Better than 3% Accuracy (0.05-50 Ω)
- Wiring Integrity Check (display + LEDs).
- Over Temperature Protection and Indication.
- Stores Previous readings.
- Measures: L-E and L-N AC voltages.
  L-E and L-N Loop Impedance.
  Prospective Short Circuits L-E and L-N.
  Earth Spike, Line and Neutral Impedances.

5. Connections



6. Instrument Layout.

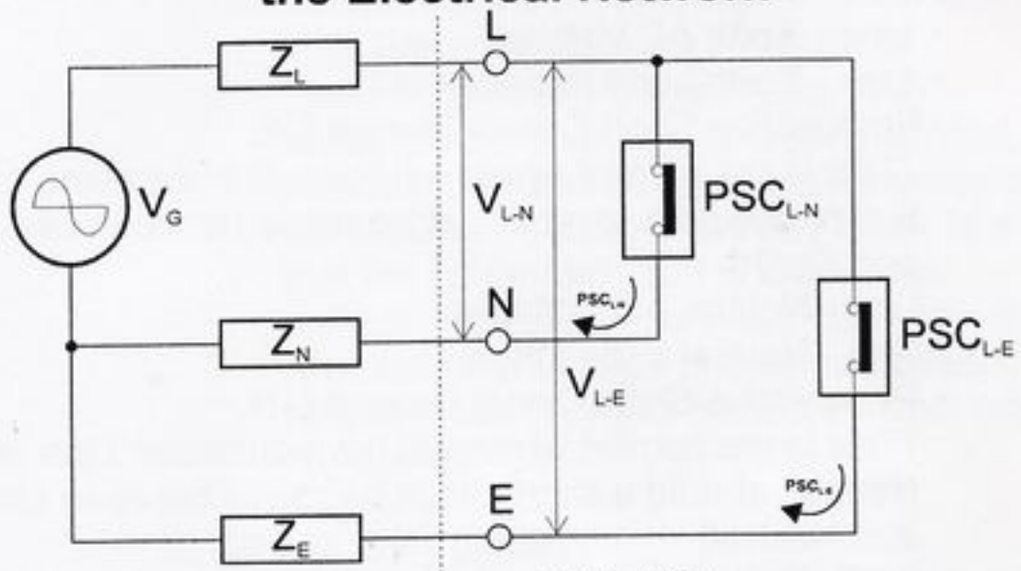


1- On .
Test
Scroll / Menu Select

2- Liquid Crystal Display.

3- High Bright Wiring Check Led's

Fault Finding and Analyzing the Electrical Network



V_G = Voltage of the generator (supply transformer) (internal impedance of transformer = X-Form)

Z_L = Impedance of the Line wire from the transformer, up to the test point (Z_L displayed by Instrument also include X-Form). If this impedance is too high, check the connections of the Line wiring, check the quality of the line wiring and the switches / contacts in the line circuit.

Z_N = Impedance of the Neutral wire from the transformer, up to the test point. If this impedance is too high, check the connections of the Neutral wiring, check the quality of the line wiring and the switches or contacts in the Neutral circuit.

Z_E = Impedance of the Earth wire, including the Earth Impedance itself, as seen by the protection system. Similar checking, specially at the bounding points should be done is this path impedance is too high.

7. Functions.

The tester Measures :

- Line - Earth AC Voltage.
- Line - Earth Loop Impedance.
- Prospective Short Circuit Current L-E.
  (This is the current which will flows between Line and Earth, should a short circuit be made between Line and Earth)
- Line - Neutral AC Voltage.
- Line - Neutral Impedance.
- Prospective Short Circuit Current L-N.
  (This is the current which will flows between Line and Neutral, should a short circuit be made between Line and Neutral)
- Earth Spike Impedance (Earth Wire).
- Line + Transformer Impedance (X-Form).
- Neutral Wire Impedance.
- Wiring Integrity.

The tester report :

- Low battery indication.
- Bad wiring.
- No line.
- Over-Temperature.

8. Preparation for Measurement.

8.1 Before testing Always check the following.

- System Voltage .
  Your Electrical Network Analyzer is best intended to work with 230 Vac. However, if the voltage is lower than that, the test could still be done but accuracy of the PSC could deteriorate due to the fact that the current injected is lower than optimal. However, your tester can work on a wide range of voltage and compute results so that those changes have a minimal effect on Results.

- ELCB / RCCB / GFCI .
  It is necessary to bypass the ELCB / RCCB / GFCI for the duration of the Earth / Loop / Psc test . Use the Leads provided with your tester .

- Unplug all Loads.
  In order not to affect the measurement, it is advised to unplug all loads from the installation under test .

- Make a Clear Sketch of measurement to be able to Interpret results.

- Check leads before using Tester.
  The Leads Quality and Resistance is a factor influencing the accuracy of the results make sure they are always in good conditions .

9. Loop / PSC / Earth testing.

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

NETWORK ANALYZER
PRESS "TEST"

Pressing "ON / Test" now will start the test. This Testing procedure is fully Automatic and Controlled by the Micro Processor

----- TESTING!-----

Main Voltage is indicating the voltage between L-N

V-> LINE-NEUTRAL
230.65V

Disconnect the Tester from the circuit under Test. From this first results, you can scroll trough the test results using the Test button.

V-> LINE-EARTH
228.93V

Z-> LINE-EARTH
0.89Ω

Z-> LINE-NEUTRAL
0.43Ω

PSC->LINE-NEUTRAL
536A

PSC->LINE-EARTH
257A

Scroll trough the results again, if the tester is not connected to the circuit under test or do a new test by connecting the tester to the circuit under test.

Z-> NEUTRAL WIRE
0.22Ω

Z-> EARTH WIRE
0.68Ω

Z-> LINE+XFORM
COIL 0.21Ω

10. Battery

10.1 Battery Replacement.

- The Tester continuously monitors the battery voltage. and indicates when the battery need to be replaced.
- The tester's batteries are situated under the tester.
- Disconnect the test leads from the Instrument, remove the battery cover and the batteries.
- Replace with eight 1.5V AA pen light batteries, taking care to observe correct polarity.
- Replace the battery cover.

11. Calibration & Servicing

Both, calibration and servicing must be performed by a competent trainned and approved person.
Contact your nearest authorized distributor about Calibration Certificate and Servicing .
Before returning the Instrument, ensure that :

- the leads have been checked for continuity and signs of damage.
- the batteries are in good condition.

12. Cleaning & 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 long periods or 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.

Distributed by:

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