multicomp PRO

2500V Digital Insulation Resistance Tester
Model: 72-9405

SAFETY INSTRUCTIONS:

This meter complies with IEC61010 safety measurement requirement. Pollution degree 2, CAT III 600V.
Please read the following safety information carefully before using or servicing this instrument.

- Do not apply more than 600V to the instrument
- Do not use the instrument around explosive gas, vapour, or
- dust Do not use the instrument in a wet environment
- When using test leads, keep fingers away from lead contacts and behind finger guards on the leads
- When performing insulation resistance tests, disconnect and discharge all power from the circuit to be measured
- Do not short circuit testing leads during high voltage output or test insulation resistance after high voltage output.
- Do not measure over 10 seconds when:
  Measuring resistance <2MΩ with use of 500V
  Measuring resistance <5MΩ with use of 1000V
  Measuring resistance <8MΩ with use of 1500V
  Measuring resistance <10MΩ with use of 2500V
- At any output voltage, when tested resistance is less than 10MΩ, continuous testing time cannot exceed 10 seconds.
- Operating the meter must be done very carefully as it outputs dangerous voltages during measurement. Test object must be firmly clamped, and hand must be away from measurement clips before pressing TEST button to output high voltage.
- Be careful when working above 33Vrms, 46.7V AC rms or 70V DC, such voltages pose shock hazard
- Discharge all loading of circuit under test after measuring high voltage
- Place test leads in proper input terminals, make sure all test leads are firmly connected to the meter's input terminals
- When performing resistance tests, remove all power from the circuit to be measured and discharge all remaining power
- Do not use the instrument with any parts or cover removed
- When carrying out insulation measurement, do not contact the circuit under test.
- Do not use the instrument if it is damaged or if metal parts are
- exposed. Check to make sure no cracks or missing plastic parts before using the instrument
- Do not change battery in wet environments
- Make sure the meter is turn off when opening battery compartment.
- When servicing the meter, use only test leads and power adaptor with the same electrical specification as the original parts.

- Take the battery out from the meter if it is not used for a long time
- Do not use or store meter in high temperature, humid, inflammable, and strong magnetic field environments
- Soft cloth and mild detergent should be used to clean the surface of the meter when servicing. No abrasive and solvent should be used on the meter
- Make sure the meter is dry before storing away
- Do not attempt to repair or service the meter unless you are qualified to do so and have the relevant calibration, performance test, and service information

WHAT'S INCLUDED

- Test Meter
- 3 x test leads (red, black & green) – plug to alligator clip
- Instruction Manual
- Tool Box
- USB interface cable
- Software

MEASUREMENT OPERATIONS

This section explains how to make measurements.

- Press and hold **ON/OFF** to turn on, and press it again to turn off the meter.
- After turning on the meter, it defaults at 500V range and continuous measurement of insulation resistance.

Measuring Voltage

To measure voltage, set up the meter as in Figure 4 and perform the steps below,

- Press DC V or AC V button to select DC or AC voltage measurement.
- Insert the red and green test leads into EARTH and two LINE terminals.
- When measuring DC voltage, if negative voltage is present on the red test lead, "-" will show on the display.
- To avoid harm to you or damage to the meter, please do not attempt to measure voltage higher than 600V or 600V rms, although the reading may be obtained.
- Special care should be taken when measuring high voltage.

Note: When voltage measurement has been completed, disconnect the test leads from the circuit under test and remove them away from the meter input terminals.

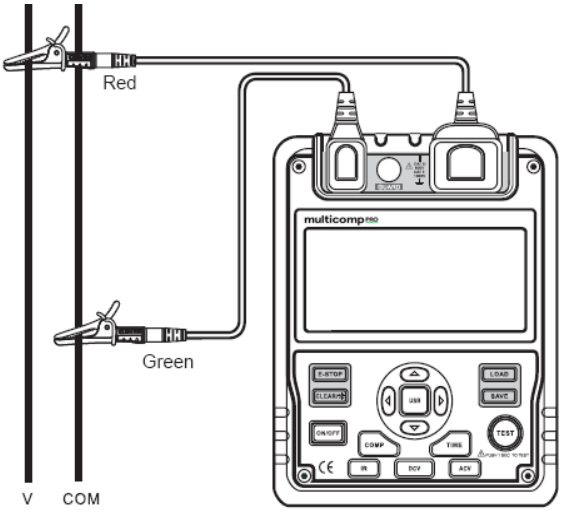

Figure 4. Voltage Measurement

Measuring Insulation Resistance

To measure insulation resistance, set up the meter as Figure 5 and perform the steps below.

- Press IR button to select insulation resistance measurement.
- When there is no testing voltage output, ▲ and ▼ to select 500V, 1000V, 2500V range.
- When performing insulation resistance tests, discharge all the power of the circuit to be measured, and keep it away from power circuit.
- Insert the red test lead into two LINE terminals, the black one into GUARD and the green one into EARTH.
- Connect the red and green alligator clips to the circuit to be measured. Negative voltage outputs from LINE terminal.
- Choose one of the insulation resistance measurement modes shown as below,

Continuous Measurement

- Press TIME button to select continuous mode. No timer icon shows on the LCD.
- Press and hold TEST button for 1s to begin and output insulation resistance testing voltage. TEST button lights up, ⚠ blinks every 0.5s.
- Press TEST button to turn off the voltage output, when the measurement is completed. TEST button lights off, ⚠ disappears. The LCD shows the current insulation resistance measurement value.

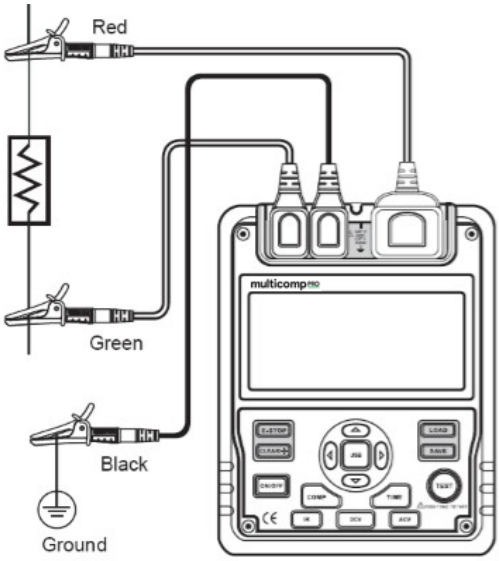

Figure 5 Insulation Resistance Measurement

Timed Measurement

- Press TIME button to select the timed mode, the LCD displays TIME 1 and ⏲ symbol.
- Press ◀ and ▶ buttons to set the time (00:10~15:00). Within 1 minute, the time increment or decrement by every 5s. Afterward, the time increment or decrement by every 30s.
- Then press and hold TEST button for 2s to carry out timed measurement. TIME 1 and ⚠ display and blink on the LCD every 0.5s.
- When the set time is reached, the test voltage output will be turned off, and the measurement will be automatically stopped. The LCD displays the insulation resistance reading.

Polarization Index (PI) Measurement

- Press TIME button to select the timed mode, the LCD displays TIME 1 and ⏲ symbol.
- Press ◀ and ▶ buttons to set the time (00:10~15:00). Within 1 minute, the time increment or decrement by every 5s. Afterward, the time increment or decrement by every 30s.
- Press TIME button again. TIME 2, PI and ⏲ symbol appear on the LCD.
- Press ◀ and ▶ buttons to set the time (00:15~15:30). Within 1 minute, the time increment or decrement by every 10s. Afterward, the time increment or decrement by every 30s.
- Then press and hold TEST button for 2s to carry out the measurement.
- TIME 1 and ⚠ display and blink on the LCD every 0.5s before TIME 1 set time is reached.
- TIME 2 and ⚠ display and blink on the LCD every 0.5s before TIME 2 set time is reached.
- When the set time of TIME 1 & 2 is reached, the test voltage output will be turned off, and the measurement will be automatically stopped. The LCD displays the polarization index reading.
- Press ◀ ▶ to step through the polarization index, TIME 2 and TIME 1 insulation resistance readings.

Calculation tips:

PI=3-minute~10- minute resistance / 30-second~1-minute resistance

PI	4 or more	4~2	2.0~1.0	1.0 or less
Standard	Best	Good	Warning	Bad

Compare Function

- Press COMP button to select compare feature. COMP displays on the LCD.
- Press ◀ and ▶ buttons to set the compare value.
- You can choose the compare value from 10MΩ, 20MΩ, 30MΩ, 40MΩ, 50MΩ, 60MΩ, 70MΩ, 80MΩ, 90MΩ, 100MΩ, 200MΩ, 300MΩ, 400MΩ, 500MΩ, 600MΩ, 700MΩ, 800MΩ, 900MΩ, 1GΩ, 2GΩ, 3GΩ, 4GΩ, 5GΩ, 6GΩ, 7GΩ, 8GΩ, 9GΩ, 10GΩ, 20GΩ, 330GΩ, 40GΩ, 50GΩ, 60GΩ, 70GΩ, 80GΩ, 90GΩ, 100GΩ.
- Press and hold TEST button for 2 secs to carry out the measurement.
- NG will display if the insulation resistance value is smaller than the compare value. Otherwise, GOOD will display.

INFORMATION ON WASTE DISPOSAL FOR CONSUMERS OF ELECTRICAL & ELECTRONIC EQUIPMENT.

This symbol indicate that separate collection of Waste Electrical and Electronic Equipment (WEEE) or waste batteries is required. Do not dispose of these items with general household waste. Separate for the treatment, recovery and recycling of the materials used. Waste batteries can be returned to any waste battery recycling point which are provided by most battery retailers. Contact your local authority for details of the battery and WEEE recycling schemes available in your area.

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