Di-LOG
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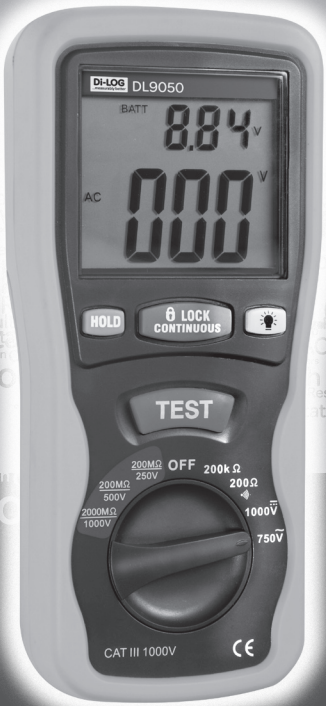
operating manual

DL9050

Digital Insulation Tester



EN 61010-1
CAT III 1000V

CE

Safety Notices

This manual contains information that must be followed for operating the meter safely and maintaining the meter in a safe operating condition. If this meter is not used in the manner specified, the protection provided may be impaired.

⚠ **Warning!** Warns of potential danger, refer to the instruction manual to avoid personal injury or damage to the meter.

⚠ **Caution!** Dangerous voltage. Danger of electrical shock

Continuous double or reinforced insulation complies with IEC536, class 11

CE Symbol of conformity, confirms conformity with relevant EU directives. The meter complies with EMC directives (89/336/EEC). Specifically standards EN 50081-1 and EN 50082-1 as well as the Low Voltage Directive (73/23/EEC) described in the standard EN 61010-1.

The meter has been designed in accordance with the safety regulations for electronic measuring instruments, EN 61010-1, IEC 61010

Voltages above 75V DC or 50V AC may constitute a serious shock hazard.

Before using the meter check for physical damage to the casing in particular around the connectors. If the case is damaged do not use the meter.

Check the test leads for damaged insulation or exposed metal. Check the leads for continuity. Replace damaged leads with identical model or specification before using the meter.

Where applicable use GS38 approved leads (not supplied) these are available from Di-Log. When using test leads keep fingers behind the finger guards.

Do not apply more than the rated voltage, as marked on the meter between the terminals or between any terminal and ground.

Before making a measurement ensure that the rotary switch is set to the appropriate range. Do not turn the rotary switch whilst making a measurement.

Use the appropriate terminals, function and range for your measurements. If the value to be measured is not known use the maximum measurement position and reduce the range step by step until a satisfactory reading is obtained.

Do not use or store the meter in an environment of high temperature, humidity, fumes, vapour, gaseous, inflammable and strong magnetic field. The performance and safety of the use may be compromised in such circumstances.

Disconnect circuit power and discharge all high voltage capacitors before testing.

Replace the battery as soon as the low battery indicator appears. If the battery is low the meter may give false readings.

Turn the meter power off when not in use. Remove the battery if the meter is in use for a long period. Constantly check the battery as it may have leaked. A leaking battery will damage the meter.

The meter may only be opened by a qualified service technician for calibration and repair.

Specifications

This instrument meets the performance requirements of BS 7671, 16 Edition, BS EN 61557 and Part P regulations.

ENVIRONMENT CONDITIONS:

1. Installation Categories II
2. Pollution Degree 2
3. Altitude up to 2000 meters
4. Indoor use only
5. Relatively humidity 80% max.
6. Operation Ambient 0~40°C

MAINTENANCE & CLEANING:

1. Repairs or servicing not covered in this manual should only be performed by qualified personnel.
2. Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instrument.

Function	
Display	Large LCD with dual display
Measurement Range	200Ω, 200kΩ, 200MΩ/250V, 200MΩ/500V, 2000MΩ/1000V, 750V/ACV, 1000V/DCV
Sampling Rate	2.5 times per second
Zero Adjustment	Automatic adjustment
Over Range Indicator	Number 1 of highest digit is displayed.
Low Battery Indication	The [− +] is displayed when the battery Voltage drop below the operating voltage
Operating Temperature	0°C to 40°C (32°F to 104°F) and Humidity below 80% RH
Storage Temperature	-10°C to 60°C (14°F to 140°F) and Humidity below 70% RH
Power source	DC9V (6x1.5V Size "AA" battery or Equivalent
Dimensions	200(L) x 92(W) x 50(H) mm
Weight	Approx 700g include battery
Accessories	Test leads ,6 pcs battery, Carrying case, manual

Electrical Specifications

Accuracies are specified as:
±(...% of reading +...digits) at 23°C ±5°C, below 80% RH.

Continuity (ohms)

Range	Resolution	Accuracy	Max. open Circuit Voltage	Overload Protection
200Ω	0.1Ω	±(1%+2)	4.5V	250Vrms

Continuity Beeper

Range	Resolution	Operation Resistance	Max. open Circuit Voltage	Overload Protection
•))	0.1Ω	≤40Ω	4.5V	250Vrms
Short circuit current		≤200mA		

DC Voltage

Range	Resolution	Accuracy	Input Impedance	Overload Protection
1000V	1V	±(0.8%+3)	10MΩ	1000Vrms

AC Voltage (40Hz~400Hz)

Range	Resolution	Accuracy	Input Impedance	Overload Protection
750V	1V	±(1.2%+10)	10MΩ	750Vrms

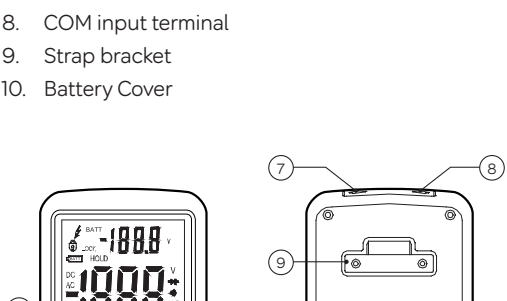
Insulation Resistance (Mohms)

Range	Resolution	Accuracy	Terminal Voltage
200MΩ/250V	0.1MΩ	±(3%+5)	250V +10%~-0%
200MΩ/500V	0.1MΩ		500V +10%~-0%
0~1000MΩ/1000V	1MΩ		1000V +10%~-0%
1000~2000MΩ/1000V		±(5%+5)	

Range	Test Current		Short circuit current
200MΩ/250V	1mA	250KΩ (load)	≤1mA
200MΩ/500V		500KΩ (load)	
0~1000MΩ/1000V		1mΩ	
1000~2000MΩ/1000V			

Instrument Layout

1. Digital Display
2. Data Hold Button
3. Lock Button
4. Backlight Button
5. Test Button
6. Rotary Function switch
7. VΩ terminal
8. COM input terminal
9. Strap bracket
10. Battery Cover



Test Lead Connection

On MΩ Range: Connect the red test lead into the "**V Ω**" terminal and the black lead into the "**COM**" terminal.

On 200Ω and ACV Range: Connect the red test lead into the "**V Ω**" terminal and the black lead into terminal "**COM**"

Test Lead Check

Set the range select switch to the 200Ω range. With the test leads connected. The indicator should read 00.0Ω. When the leads are not connected the display will read infinity indicated by "1". This will ensure that test lead are in working condition.

⚠ **WARNING: Prior to any insulation measurement ensure that the circuit to be tested is not live.**

Select the required test voltage (250/500/1000V)

Connect red lead to **VΩ** terminal and the black lead to **COM** terminal

The insulation resistance is indicated in MΩ. in the large result field and the applied voltage is shown in the small results field.

The charge stored in the circuit will be automatically discharged when the **TEST** button is released.

Do not turn the range switch whilst the **TEST** button is pressed or the instrument may be damaged.

For hands free operation a continuous power lock on feature is incorporated. Whilst holding down the **TEST** button press the **LOCK** button the lock symbol will be displayed. The unit will now continuously output the set voltage. Press the **LOCK** button to cancel.

Continuity (Low Ohms) Measurements

⚠ **WARNING: Prior to any continuity measurement ensure that the circuit to be tested is not live.**

Set the range switch to 200Ω. •)) Position

Connect the red test lead to the **V Ω** terminal and black to the **COM** terminal.

Connect the tips of the test leads to both ends of the circuit under test. read resistance in Ω on the LCD.

When the resistance on circuit is below approximately 40Ω. It will be indicate by a continuous beep.

AC/DC Voltage Measurements

Set the range switch to ACV or DCV position

Connect red test lead to "**V Ω**" terminal and black test lead to terminal "**COM**".

Connect test prods of test leads IN PARALLEL to the circuit being measured.

Read the voltage value on LCD.

Battery Replacement

If the battery symbol [- +] is displayed the batteries must be replaced. Replacement of 6 pcs new batteries, type 1.5V size "**AA**" are required.

Prior to battery replacement disconnect the instrument from all connected circuits and test leads.

Replace the battery cover with the four screws prior to using the instruments.

Ensure the rotary function switch is set to the off position.

24 Month Warranty

Di-Log instruments are subject to stringent quality controls. If in the course of normal daily use a fault occurs we will provide a 24 month warranty (only valid with invoice).

Faults in manufacture and materials defect will be rectified by us free of charge, provided the instrument has not been tampered with and returned to us unopened.

Damage due to dropping abuse or misuse is not covered by the warranty.

Outside the warranty period we offer a full repair and re-calibration service.

Maintenance

WARNING Do not attempt to repair or service your meter unless you are qualified to do so and have the relevant calibration, performance test and service information. To avoid electrical shock or damage to the meter do not get water inside the case.

Periodically wipe the case with a damp cloth and mild detergent. Do not use chemical solvent.

Clean the input terminals with cotton bud, as dirt or moisture in the terminals can affect readings.

Di-Log Test Equipment
28 Wheel Forge Way,
Trafford Park,
Manchester
M17 1EH, UK

tel: + 44 161 877 0322 **fax:** + 44 161 877 1614

email: sales@dilog.co.uk **website:** www.dilog.co.uk