HVEX
Driving Innovation

MEGOHMMETER

INSULATION RESISTANCE TESTER

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MEGOHMMETER

Description

Electrical insulation is designed for specified voltages and operating conditions. Aging, environmental conditions, and electrical and thermal stresses can affect its performance. Periodic testing supports the identification of changes and maintenance planning.

The HVEX insulation resistance tester, also known as a megohmmeter, is used in the laboratory and in the field to assess insulation resistance to direct current.

Diagnosis:

Low resistance may indicate deterioration, moisture or contamination and requires investigation. A single measurement does not determine remaining service life or prove that equipment is near its end of life.

Interpret results considering insulation type, temperature, test voltage and duration, environmental conditions and equipment history. Additional tests may be needed.

Operation

The operation is simplified, just connect a high-voltage line and a signal line to the test sample for the measurement to be performed automatically, and the results displayed on the equipment screen. Results can also be stored via USB for future analysis.

The measurement process involves applying a test voltage to the insulation under test and measuring the resulting current. Through these measurements and using Ohm's law (R=E/I), the insulation resistance R is automatically calculated internally by the meter.

Advantages:

- Uncomplicated operation;
- Portability;
- Precision and safety;
- Wide measurement range.

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Characteristics

The HVEX Megohmmeter is composed of high-precision integrated circuits, including a micro-current measurement system and a digital amplification system.

With high resolution and convenient operation, the meter is portable, accurate, reliable, and exhibits excellent performance. It features a rugged structure that is shockproof, dustproof, and moisture-resistant. It is widely used in various applications, including measuring the insulation resistance of various materials and electrical equipment such as transformers, motors, and cables, etc.

Measurement range:

The test voltage range varies from 250 to 5000 V, while the insulation resistance measurement range covers from 0.01 MΩ to 5.00 TΩ. Additionally, the meter allows for the measurement of DC voltages from 0 to 1000 V and AC voltages from 0 to 750 V.

Measurement Results:

Equipped with a large backlit LCD screen, data storage and review cabilities, and automatic shutdown for energy saving.

Polarization and absorption indices:

The meter automatically calculates PI and DAR and records data at time intervals.

PI = R(10 min)/R(1 min). DAR compares resistance at shorter times, for example R(60 s)/R(30 s). Confirm the times configured in the instrument.

At constant DC voltage, capacitive charging and absorption current components tend to decrease over time, increasing measured resistance. This does not represent increasing leakage current.

Interpret the indices according to insulation type, temperature, history and equipment-specific criteria. PI and DAR do not independently quantify moisture, contamination or service life.

Technical Specifications

Power Supply	Rechargable lithium battery 14.8 VDC, 2200 mAh, fully charged approx. 16.8 V	
Charging time	Approximately 4 hours	
Insulation resistance measurement range	250 VDC (15%)	0.01 MΩ ~ 2.50 GΩ ± 3%
		2.50 GΩ ~ 250 GΩ ± 15%
	500 VDC (10%)	0.01 MΩ ~ 5.00 GΩ ± 3 %
		5.00 GΩ ~ 500 GΩ ± 15%
	1000 VDC (10%)	0.01 MΩ ~ 10.00 GΩ ± 3 %
		10.00 GΩ ~ 1.00 TΩ ± 15%
	2500 VDC (10%)	0.01 MΩ ~ 25.0 GΩ ± 3 %
		25.0 GΩ ~ 2.50 TΩ ± 15%
	5000 VDC (10%)	0.01 MΩ ~ 50.0 GΩ ± 3 %
		50.0 GΩ ~ 5.00 TΩ ± 15%
AC and DC voltage measurement range	0,01 ~ 750 VAC (Accuracy: ± 2%)	
	0,01 ~ 1000 VDC (Accuracy: ± 2%)	
Short-circuit current	≥ 5 mA	
Test voltage range	250, 500, 1000, 2500 and 5000 V	
Resolution	Insulation resistance	0.01 MΩ
	Voltage AC	0.01 V
	Voltage DC	0.01 V

Technical Specifications

Standards	IEC61326(EMC)
	IEC61010-1 (CAT III 300V, CAT IV 150V, pollution degree 2)
	IEC61010-031
	IEC61557-1
	IEC61557-5
LED indications	The Red LED lights up during battery charging, and the green LED indicates when the battery is fully charged
Communication Interface	USB interface, allowing stored data to a computer, saved or printed
Operating current	Standby: Max 25 mA (Backlight off)
	Backlight: Max 25 mA (Backlight power consumption only)
	Measurement: Max 450 mA (Backlight off)
Pressure capacity	3700 VAC/rms (Between circuit and enclousure)
Insulation capacity	20 MΩ or more (500 V between circuit and instrument)
Operating temperature	-10 ～ 40 ℃
Storage temperature	- 20 ～ 60 ℃
Operating humidity	Below 80%
Storage humidity	Below 70%

Technical Specifications

Backlight	Controllable screen backlight, suitable for use in dark enviroments
Weight	2.66 kg (including the battery)

Connections terminals

L Terminal	High voltage output terminal, also referred to as line terminals
G Terminal	Shield terminal, used for measuring the resistance of insulating rods or cables using the three-electrode method
E Terminal	Ground terminal, connected to the ground and to the grounding terminal of object under test
V Terminal	AC and DC voltage measurement terminal

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