

5 and 15 kV DC Dielectric Test Sets



- **Continuously variable test voltage**
- **Rugged field construction**
- **Compact and portable**

DESCRIPTION

Dielectric test sets measure leakage current while applying a dc voltage at or above the insulation system's operating level. This measurement aids in determining the insulation system's ability to withstand overvoltages such as lightning strikes and switching surges.

APPLICATIONS

Megger portable dc dielectric test sets check the electrical insulation quality of motors, power cables, switchgear, insulators, transformers and capacitors. Typical applications include acceptance and maintenance testing of critical equipment used by electrical utility substations and industrial plant distribution systems. Power apparatus manufacturers may also use the equipment to perform QA/QC production tests.

The test sets can be used to perform step-voltage and proof tests which, when incorporated into a routine maintenance program, can aid in predicting potential failure before breakdown occurs.

Two models are available; a 5-kV unit for testing equipment rated 2.5 kV and below, and a 15-kV model for use on equipment rated 7.5 kV and below. Both are suitable for testing power cable, switchgear and rotating machinery in accordance with IEEE, ICEA, NEMA and ANSI guidelines.

Because Megger dc dielectric test sets act like full-wave rectified units, they also are suitable for applications involving vacuum bottles.

DC vs AC High-Potential Testing

Direct current high-potential testing provides several advantages over alternating current. Direct current test equipment uses far less power, provides fast charging of highly capacitive test samples, can be easily transported to the test site and costs less. Additionally, the dc test can detect incipient breakdown without the possibility of damage to good insulation.

FEATURES AND BENEFITS

- Compact and portable
- Air insulated, uses no oil
- $\pm 2\%$ accuracy
- Leakage current measurement as low as 0.1 mA
- Continuously variable test voltage with zero-start safety interlock
- Fast charging of high-capacitance samples
- Current guard circuit for highly accurate measurements
- Strip chart recorder for hard copies (optionally available)

Safety and Reliability

- Input and output line circuit breaker
- Output current overload relay
- Zero-start interlock for high-voltage output
- Pushbutton controls and indicating lights for high voltage ON/OFF
- Full circuit breaker protection
- Connection for external permissive and safety interlocks

SPECIFICATIONS

Input

120 Vac, 50/60 Hz

Output

Cat. No. 220005

Voltage (maximum): 0 to 5 kVdc,
negative with respect to ground

Current (maximum): 5 mA continuous

Metering

Kilovoltmeter: 4-in. (102-mm) taut band with two ranges, 0 to 2.5 and 0 to 5 kV

Current Meter: 4-in. (102-mm) taut band with four ranges, 0 to 5/50/500 μ A and 5 mA

Cat. No. 220015

Voltage: 0 to 15 kVdc, negative with respect to ground

Current: 2 mA continuous

Short Circuit: 12 mA max., limited by circuit breaker

Metering

Kilovoltmeter: 4-in. (102-mm) taut band with two ranges, 0 to 7.5 and 0 to 15.0 kV

Current Meter: 4-in. (102-mm) taut band with four ranges, 0 to 5/50/500 μ A and 5 mA

Accuracy

$\pm 2\%$ of full scale

Temperature Range

0 to 122° F (–17.7 to +50° C) operating



5 kV model

CAT. NO.	Model	Test Voltage Range*	Max. Power System Voltage	Output Current (120-Vac input)	Dimensions	Weight
220005	5 kV	0 to 2.5 kVdc 0 to 5 kVdc	2.5 kVac (phase-to-phase)	5 mA continuous	9.4 H x 13.5 W x 10 D in. 24.8 H x 34.3 W x 25.4 D cm	20.5 lb (9.3 kg)
220015	15 kV	0 to 7.5 kVdc 0 to 15 kVdc	7.5 kVac (phase-to-phase)	5 mA for 12 min; 2 mA continuous	12 H x 20.5 W x 13 D in. 30.5 H x 52 W x 33 D cm	35.2 lb (16 kg)

* Negative polarity with respect to ground

ORDERING INFORMATION

Item (Qty)	Cat. No.	Item	Cat. No.
DC Dielectric Test Sets			
5 kV	220005		
15 kV	220015		
Included Accessories		Optional Accessories	
Ground connection cable, 10 ft [3 m]	4702	Strip chart recorder	220003
kV/M Ω test record graph paper (100-sheet pad)	220000	High-voltage resistance discharge stick	222070-62
Power cord, Cat. No. 220015	17032	Overcurrent meter relay trip	Add –42
Instruction manual, Cat. No. 220005	AVTM22-5JB	Overvoltage meter relay trip	Add –43
Instruction manual, Cat. No. 220015	AVTM22-15JA	Internal voltage stabilizer, Cat. No. 220015 only	Add –50
		Special cable lengths	Add –56
		"The Lowdown on High-Voltage DC Testing"	AVTM22P-1