Liquid Dielectric Test Sets

PHENIX TECHNOLOGIES

Testing Applications

Measure the breakdown voltage of insulation fluids used in transformers, capacitors, bushings and related high voltage equipment. With the appropriate oil vessel test cell, these test sets are designed to perform tests in accordance with standards ASTM D1816, ASTM D877, IEC 60156, BS 148, VDE 0370, plus other applicable standards.

Description

Three standard models rated at 60, 75, and 100 kV are available. The operating controls are conveniently grouped on the front panel and include a large, easy-to-read digital voltmeter, on/off switch with indicator light, rate of rise selector switch, plus a start/reset switch. The test compartment is provided with a transparent cover interlocked to the test circuit with a limit switch to ensure full operating safety.

The test set is semi-automatic. The liquid to be tested is placed in the test cell and then placed in the test compartment on the cradle contacts, the rate of rise is selected, the test chamber lid closed, and the switch moved to start position.
The test set will automatically raise the voltage. When a breakdown of the liquid occurs, the test sample failure lamp will illuminate, and the meter will hold the breakdown voltage level.

Models Available

- **LD60**
- **LD75**
- **LD100**

- **Lightweight** and **ruggedly constructed** for years of field or lab use
- **Economical** liquid dielectric **testing solution**
- **Simple** set-up
- **Semi-automatic** operation

Model LD60

Model LD75

INSULATION MATERIALS | PORTABLE | RECLOSER | TRANSFORMER

Specifications are subject to change without notice.

	MODEL	LD60	LD75	LD100
INPUT	Voltage / Current	120 V, 5 A 230 V, 2.5 A	120 V, 5 A 230 V, 2.5 A	120 V, 5 A 230 V, 2.5 A
	Frequency	50 or 60 Hz (Voltage and frequency required must be specified)		
OUTPUT	Voltage	0-60 kV at 500 VA	0-75 kV at 500 VA	0-100 kV at 500 VA
	Maximum Voltage to Earth	30,000 V	37,500 V	50,000 V
RATE OF RISE	selectable	500/2000/3000 Volts per Second	2000 Volts per Second, Variable	2000 Volts per Second, Variable
DUTY CYCLE		continuous breakdown testing		
DIGITAL MEMORY VOLTMETER	Range	~0-60 kV	~0-75 kV	~0-100 kV
	Accuracy	+/-1% of Full Scale	+/-1% of Full Scale	+/-1% of Full Scale
DIMENSIONS & WEIGHTS	Length	21.25" (540 mm)	30" (762 mm)	36" (914 mm)
	Width	16.75" (426 mm)	18" (457 mm)	20" (508 mm)
	Height	13.75" (350 mm)	13" (330 mm)	16" (406 mm)
	Weight	51 lbs (23 kgs)	120 lbs (54 kgs)	135 lbs (61 kgs)
SHIPPING SIZE	Length	24" (610 mm)	40" (1016 mm)	40" (1016 mm)
	Width	21" (533 mm)	30" (762 mm)	30" (762 mm)
	Height	18" (457 mm)	32" (813 mm)	32" (813 mm)
	Weight	63 lbs (29 kgs)	220 lbs (100 kgs)	230 lbs (104 kgs)

Safety and Design Features

- Center tapped high voltage transformer.
- Safety interlock engaged when lid is open.
- Fast acting relay ensures immediate cutout at flashover.
- Lamp indicating AC power on.
- Lamp indicating test sample breakdown.
- Fuses are located on the input to the test set and on the primary of the high voltage transformer.
- Zero start interlock
- Memory voltmeter retains breakdown voltage.
- The test compartment is provided with outlet for convenient plug-in of motor driven stirrer when testing to ASTM D1816 and VDE standards.

Environmental Conditions

- 10-40°C, indoor/outdoor in fair weather
- Humidity <95% non-condensing
- Altitude <3300 ft (1000 meters)

Options

TEST CELLS

TYPE	TEST STANDARD	TEST ELECTRODES	GAP SETTING	RATE OF RISE
TC/DE (flat electrodes)	ASTM D877	Polished brass disc 1" (25 mm) diameter	.1" +/-0.0005"	3000 Volts per Second
TC/VDE (motorized with stirrer)	ASTM D1816	Spherical dome 1.4" (36 mm) diameter	.04" or .08" +/-0.001"	500 Volts per Second
TC/IEC	IEC 60156	Spherical dome 36 mm (1.4") diameter	2.5 mm +/-0.1 mm	2000 Volts per Second
TC/BS	BS 148	Spherical cap 12.5 mm (.5") diameter	2.5 mm +/-0.1 mm	2000 Volts per Second

Type TC/DE

Type TC/VDE

Type TC/IEC

Type TC/BS

Liquid Dielectric Comparison Unit

As an External Voltmeter unit for use with Phenix Technologies Liquid Dielectric (LD) test set, the LDCU may be used before testing oil or as a periodic standard to verify the voltmeter operation of the LD test set. The easy to use LDCU installs into the same position as the LD test cells.

The LDCU consists of precision voltage dividers with passive analog voltmeter. The high voltage resistors and meters are housed in a custom built composite material enclosure with brass terminals for direct connection to the LD. The voltmeter scale offers a direct read of voltage for comparison to the LD voltmeter.

PHENIX Technologies is committed to providing leadership, innovation, technology, quality, and service in all areas of our business.

Our 85,000 square-foot headquarters is a modern manufacturing facility. All aspects of electrical, mechanical, and software design and production are performed in this facility. Our engineers offer a unique blend of theoretical knowledge and practical experience. Our Service and Calibration Department assists customers during and after installation to ensure years of trouble free service.

We carry our commitment into the future as we proudly continue to provide the best in **high voltage, high current, high power test systems and components**.

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