



# Liquid Dielectric Test Sets

## 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.

## ENVIRONMENTAL CONDITIONS

- 10-40°C, indoor/outdoor in fair weather
- Humidity <95% non-condensing
- Altitude <3000 ft (1000 meters)

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



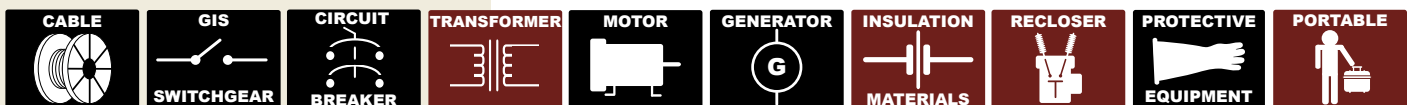
Model LD75



Model LD60

## 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.



|                          | MODEL                    | LD60                                                              | LD75                               | LD100                              |
|--------------------------|--------------------------|-------------------------------------------------------------------|------------------------------------|------------------------------------|
| INPUT                    | Voltage / Current        | 120 V, 5 A<br>230 V, 2.5 A                                        | 120 V, 5 A<br>230 V, 2.5 A         | 120 V, 5 A<br>230 V, 2.5 A         |
|                          | Frequency                | 50 or 60 Hz<br>(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<br>Volts per Second                                 | 2000 Volts per Second,<br>Variable | 2000 Volts per Second,<br>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)                  |

## OPTIONS

### TEST CELLS

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



Type TC/DE



Type TC/VDE



Type TC/IEC



Type TC/BS

### Liquid Dielectric Comparison Unit

The LDCU is an AC voltmeter which is used to make periodic performance checks of the system. See LDCU data sheet for more details.

High Voltage • High Current • High Power Test Systems and Components

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