Automated Dielectric Breakdown Test Set for Insulating Materials

Testing Applications

Designed to measure dielectric breakdown and dielectric strength of a wide range of solid electrical insulating materials, at commercial power frequencies, within the ASTM D149 and IEC 60243-1 standards as well as other comparable international standards.

Models Available

- 6CC20-0.8/D149
- 6CC50-2/D149
- 6CC100-5/D149
- 6TC4100-10/50-2/D149
- 4TC40-10/D149
- 4TC100-10/D149

➤ Standard output voltages up to 100 kV AC and DC
➤ Rugged, mobile steel cabinet
➤ Integrated test chamber

AC, 100 kV
Safety and Design Features

- Programmable Logic Controller and Operator Terminal utilized to control all aspects of test sequences
- Selectable automatic or manual operating modes
- Programmable rate of rise
- Over-voltage preset
- Peak-reading memory voltmeter
- Circuit breaker protection
- Test chamber with safety interlock, stress relief shielding, and transparent door
- Fast-acting as well as thermal overload protection
- Over-current trip point is adjustable from 10% to 110% of rated output current
- Rugged steel cabinet with durable painted finish
- Casters for ease of mobility
- Writing shelf on front of cabinet
- Fork lifting provisions
- Two copies of operation/maintenance manual

600C Series Controls

- Auto-ranging display of voltage and current. Accuracy of ±0.8% of reading + 0.2% of range +LSD.
- Failure memory voltmeter function
- Auto-voltage, over-voltage, and over-current setpoint
- Stop watch, duration, dwell timer functions
- Auto-step and auto-cycle functions
- Motorized regulator
- Variable ramp rate (desired rate of rise may be entered)
- Ethernet port
- Graphic display

Software Package

Specific test parameters can be entered or previous test files or “recipes” can be recalled for easy test duplication.

Test results are graphically displayed to pin-point real-time voltage, current, dwell, and duration characteristics.

Results can be stored in a variety of configurations. (Computer is not included.)
The most common are:

**TF1**: Opposing cylinders 2” (51 mm) in diameter, 1” (25 mm) thick with edges rounded to 0.25” (6.44 mm) radius.

**TF2**: Opposing cylinders 1” (25 mm) in diameter, 1” (25 mm) thick with (3.2 mm) radius.

**TF3**: Opposing cylinder rods 0.25” (6.4 mm) in diameter, with edges rounded to 0.0313” (0.8 mm) radius.

**TF4**: Flat plates 0.25” (6.4 mm) thick and 4.25” (108 mm) wide with edges square and ends rounded to 0.125” (3.2 mm) radius.

**TF5**: Hemispherical electrodes 0.5” (12.7 mm) in diameter.

**TF6**: Opposing cylinders: the lower one 3” (75 mm) in diameter, 0.6” (15 mm) thick; the upper one 1” (25 mm) in diameter, 1” (25 mm) thick; with edges of both rounded to 0.12” (3 mm) radius.

**Options**

- Non-heated oil bath for test fixtures
- Heated oil bath for test fixtures
- Combination AC/DC supplies or DC only units
- Ground Stick, 2-piece design, with a 25’ (8 m) ground lead
- Discharge Stick (100 kV, 100 kΩ, 50 kJ), 2-piece design with a 25’ (8m) ground lead

A wide variety of test fixtures with electrodes are available.
### AC/DC UNITS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>6TC4100-10/50-2/D149</th>
<th>6TC40-10/D149</th>
<th>4TC100-10/D149</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INPUT</strong></td>
<td>120 V, 25 A</td>
<td>120 V, 8 A</td>
<td>120 V, 14 A</td>
</tr>
<tr>
<td>Voltage / Current</td>
<td>230 V, 13 A</td>
<td>230 V, 5 A</td>
<td>230 V, 8 A</td>
</tr>
<tr>
<td>single phase</td>
<td></td>
<td>single phase</td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>50 or 60 Hz (one must be specified)</td>
<td>50 or 60 Hz (one must be specified)</td>
<td>50 or 60 Hz (one must be specified)</td>
</tr>
<tr>
<td><strong>OUTPUT</strong></td>
<td>≈0-50 kVDC, 40 mA</td>
<td>≈0-40 kVDC, 10 mA</td>
<td>≈0-100 kVDC, 10 mA</td>
</tr>
<tr>
<td>Voltage / Current</td>
<td>≈0-100 kVDC, 10 mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DUTY CYCLES</strong></td>
<td>Continuous</td>
<td>for breakdown testing</td>
<td>for breakdown testing</td>
</tr>
<tr>
<td>1 hr ON/1 hr Off</td>
<td>2.0 kVA</td>
<td>400 W</td>
<td>1000 W</td>
</tr>
<tr>
<td><strong>DIMENSIONS &amp; WEIGHTS</strong></td>
<td>consult factory</td>
<td>consult factory</td>
<td>consult factory</td>
</tr>
<tr>
<td>Overall Length</td>
<td>52” (1321 mm)</td>
<td>62” (1575 mm)</td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>30” (762 mm)</td>
<td>35” (889 mm)</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>68” (1727 mm)</td>
<td>68” (1727 mm)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>550 lbs (249 kgs)</td>
<td>600 lbs (272 kgs)</td>
<td>1050 lbs (476 kgs)</td>
</tr>
<tr>
<td>Test Chamber Length</td>
<td>29” (737 mm)</td>
<td>34” (864 mm)</td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>26” (660 mm)</td>
<td>31” (787 mm)</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>22” (559 mm)</td>
<td>22” (559 mm)</td>
<td></td>
</tr>
</tbody>
</table>