

2914

Test Cell for Solid Insulants

The test cell is used for dielectric tests on solid test samples. It determines dissipation factor $\tan \delta$ and relative permittivity (dielectric constant) ϵ_r on solid insulates such as paper and plastic foils, as well as specific resistivity.

The test cell is equipped with a shielded measuring electrode which eliminates stray capacitances that influence test results (guard ring).

The design is the result of longstanding experience in the field of test cell building. It has been designed in accordance with ASTM (USA), IEC and ISO standards and conforms to recommendations of CIGRE.

DESIGN

The 2914 test cell consists of a shielded measuring plate electrode (with guard), and a insulated HV electrode mounted on the base plate, both electrodes can be heated.

A manual and external hydraulic system moves the upper electrode vertically. Once test object surface is reached, pressure between electrode and test object can also be increased. The embedded manometer indicates the specific pressure of the electrodes against the test object.

The electrodes are protected by a protective cover and can be vacuum and filled with protective gas through the available connections.

The test cell is equipped with a safety switch in the cover, ready to be connected to a Tettex power supply.

The base plate includes sockets for the measuring bridge, power supply as well as a temperature indication output.



FEATURES

- Shielded measurement electrode for high precision measurements of samples with low $\tan \delta$
- In accordance with international standards and specifications
- High power (1.3 kW) heating system (temp. regulator optional) allows short heating-up times
- Temperature range up to 200°C and adjustable with optional Tettex test system 2830/2831.
- Protective cover ensures safe operation (electric shock protection) and allows measurements under vacuum or protective gas
- Fine adjustment of electrodes distance and pressure (with pressure indicator)
- Test cell allows impregnation of paper
- Two different types of electrodes supplied: Flat ones and raised ones (for impregnation)

APPLICATIONS

Capacitance, $\tan \delta$ (dissipation /power factor) and relative permittivity ϵ_r measurements on solid insulating materials.

- Paper
- Silicone
- Rubber
- Other solid materials

COMPLETE TEST SYSTEM

For most efficient dielectric measurement the test cell is combined with a Tettex measuring bridge (type 2830) and a power supply with temperature regulator (type 2831). A test cell for liquid insulating material is also available (type 2903).

SCOPE OF SUPPLY

- Test cell for solid insulates type 2914.
- Connecting cables set (power cable, temperature control, high voltage connection and measuring cable).
- Accessories set.
- Operating Manual.

Note: Input voltage (230 V / 130V) and Measuring bridge to be specified at time of ordering.

OPTIONAL SUPPLY

- **2830/2831** Precision oil and solid dielectric analyzer including measuring bridge, power supply and temperature heater
- **2903** Test cell for liquid insulants



2830/2831



2903 Liquid Test Cell

TECHNICAL SPECIFICATIONS

Electrode surface	20 cm ²
Diameter of measuring electrode	49.5 mm
Electrode material and finish	stainless steel, hardened, lapped
Heating capacity	2 heating plates of 630 W each, 1260 W together
Electrode temperature	Ambient to +200° C
Heating-up time	approx. 15 min (for $\Delta T = 100$ K)
Temperature control	with temperature controller built in 2831
Electrode pressure	0...10 N / cm ² , adjustable
Max. test voltage	2000 V RMS, 50/60 Hz
Frequency	50 and 60 Hz (together with 2831), up to 100 kHz typically
Test cell evacuation up to	0.15 mbar
Dimensions d x h x w	380 x 430 x 450 mm (15 x 16.9 x 17.7 in)
Weight	19.4 kg (42.8 lbs)