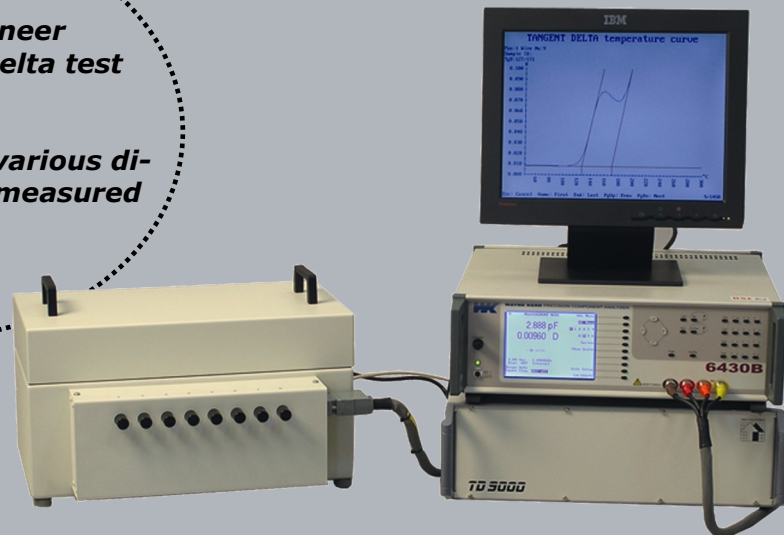


TD9000 Tangent Delta Tester

TD9000 is the pioneer among Tangent Delta test systems.

Eight samples of various dimensions can be measured simultaneously.



Description

The TD9000 Tangent Delta Tester is the most advanced and accurate tool for any type of enamel or enamelled wire.

With the TD9000 it is possible to analyse parameters such as curing of the enamel, residual solvent, additives, etc. These parameters are all essential for obtaining the right quality and economy.

The TD9000 offers:

- High-position laboratory tester for achieving precise measurements
- Flexible measuring setup, e.g. eight samples with different dimensions can be measured simultaneously
- Selectable test frequencies for optimising the measurement of different types of wires
- Documentation of all significant parameters



Documentation



Features

Eight precise individual measurements

The TD9000 Tangent Delta Tester can perform precise individual measurements of up to eight samples at a time, and in less than one hour.

Maximum flexibility

The TD 9000 offers maximum flexibility, as it is possible to simultaneously measure various diameters and types of enamelled wire.

Documentation of production quality

It is possible to add the following information to each individual sample to secure measurement documentation: enamel type, supplier name, and machine no. Furthermore, all information can be stored on either hard drive or disk.

High temperature range

The TD 9000 is capable of making a precise determination of the Tangent Delta Value up to 350°C. This means that almost any type of enamelled wire can be tested, thus securing the quality of the production.

Ease of operation and information access

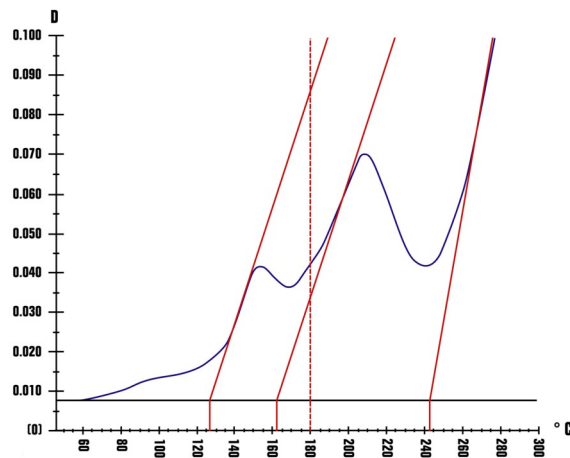
To facilitate operational ease no operator attendance is required during the measuring process. The display will show the development of the individual curves as well as the oven temperature. The process can be stopped and stored at any time. After completion, all measurements and curves of each sample are printed automatically, and data are calculated.

Multiple measuring frequencies available

For obtaining the best test conditions, a wide range of test frequencies are available:

50 Hz - 300 Hz, 1 KHz - 3 KHz, 10 KHz - 30 KHz, 100 KHz - 300 KHz.

Tangent Delta Curve



Non-stop measuring

DSE TD9000/322 tester with two ovens enables non-stop measuring. This will minimise the time needed to perform quality checks of enamelled wire.

How does the TD9000 work?

TD 9000 working principles are based on determining the quality of the enamel by measuring the relation between the Tangent Delta (D-value) and the wire temperature.

This method was originally developed for enamelled wire production by DSE, and we have since become a worldwide supplier of quality test equipment for the wire industry.



Software

Option A

This software tool offers complete control of the entire measuring process with a user-friendly menu in English or German, including the following main features:

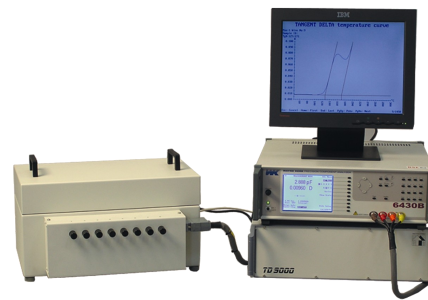
- Optional individual temperature measuring ranges between 45 and 350°C for all 8 positions in the oven
- Optional D-value between 0 and 3.0
- Up to 5 tangents
- Visibility of all curves during measurement
- Automatic pop-up warnings to prevent loss of data
- Automatic printout of the individual curves and the calculated data
- Automatic calculation of auxiliary lines and Tangent Delta temperature
- Multiple curve function with up to 10 curves in the same graph
- Automatic calibration programme
- Extended database with search features, enabling the user to search using any stored data
- Optional logarithmic or linear graphs
- Multiple measuring frequencies

Option B

This software tool evaluates the PEI base coat on self-bond wires (XWE types). A mathematical evaluation of the PEI curve lies beneath the self-bond signal and the Tangent Delta curve. This function eliminates the need for stripping the wire before testing of self-bond wire.

Option C

The software in TD9000/321/322 has optimum capacity. It includes a complete search programme with the option of searching on the basis of all input data.



Basic system

Oven

Capacity: 1-8 samples simultaneously

Temperature range: 45 - 350°C

Resolution: $\pm 0.1^\circ\text{C}$

Readout: $\pm 1^\circ\text{C}$

Wire dimensions

- Min. 10 μ
- Max. 2 mm
- Profile wire dimensions:
Max. 2 mm x 4 mm (standard)
4 mm x 6 mm (optional)

Other dimensions are available on request.



Measuring bridge

- Wayne Kerr high-precision component analyzer
- IEEE-488 interface
- Tangent Delta resolution 0.0002 at C > 60 pF
- Measuring frequencies: 50 Hz - 300 Hz - 1 KH - 3 KHz - 10 KHz - 30 KHz - 100 KHz - 300KHz
- 1V RMS

Computer

- PC
- Flat-screen monitor
- Keyboard and mouse
- Type, size, RAM and hard disc according to current standards
- Windows-7

Remark: Printer is optional and not included

Electronic module

For controlling of and interfacing with the oven. The module contains the printed circuit boards for power supply of the temperature and heating. For further information see the TD9000 technical manual.

Accessories

- TD9000 oven cooler
- All cables, plugs, and sockets
- Sample preparation kit
- User manual available in English or German, including:
- Application notes for evaluation of tangent Delta Temperature Curves

Specifications

Mains supply

- Mains supply 230/115 VAC \pm 10%, 50/60 Hz with protective ground
- Power consumption approximately 1 KW

Mechanical specifications

TD 9000 Type 321	TD 9000 Type 322
Gross weight	
140 kg	169 kg
Net weight	
110 kg	139 kg
Volume	
0.7 m ³	0.7 m ³

Further information

For further information please contact our sales office/local sales agent.

