

# A NEW GENERATION

## TD30 - High Voltage VLF Tan Delta Test System • Cable Diagnostics

The Tan Delta (TD) measurement systems are used in conjunction with our HVA VLF generators to perform extremely accurate measurements of the dielectric responses from the device under test. Tan Delta (loss angle) measurements are a valuable diagnostic tool used to sensitively and repeatably measure the condition of a high voltage dielectric; enabling asset owners to grade the health of their assets. The test engineer can now detect insulation defects before the cable fails in service.

Tan Delta tests are easy to perform and don't require highly trained operators. The measured data is safely transmitted to a nearby personal computer using Bluetooth™ technologies.

The tan delta of the test object can be measured quickly and the results stored, thus providing a "signature" of the cable being tested. The software graphs the data to enable easy analysis of the data.

This enables the cable engineer to make tan delta a routine test and combine this diagnostic test with the normal over voltage pressure "testing" to provide a smart VLF test.

### BENEFITS

- Tan Delta and Capacitance measurement
- Accurate and repeatable
- Detects water ingress
- Detects PD
- Measures at DUT - no probe or cable compensation necessary
- Lightweight
- Wireless Connection
- Simple and Easy to connect
- Automatic Report Writer



### OPERATIONAL FEATURES

- Excellent predictor of overall dielectric condition
- Repeatability and sensitive measurement
- Easy installation and setup
- Simple test procedure and automated data capture
- Direct high side measurements at DUT
- Bluetooth™ communications to PC
- Automatic data recording
- Simple analysis of measured data
- Bundled software to record, store, graph and report measured data

#### Applications TD Series

• Cables: XLPE, PE, EPR, PILC etc. • Capacitors • Switchgear • Transformers • Rotating Machines (IEEE 433) • Insulators • Bushings

#### TD Standards

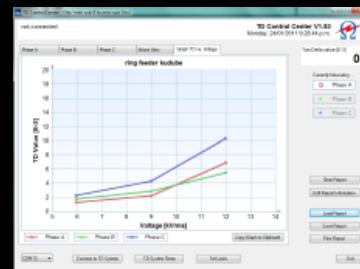
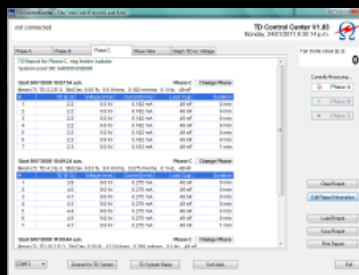
• IEEE400-2 • IEC6100-4-2 • IEC6100-4-4 • EN55011 • EN60950 • EN50191 • EN61010-1

# DESIGN

- H.V. Diagnostic SARL produces the TD30 for the TD measurements up to max voltage of 23kVrms (33KV peak).
- The TD30 is a battery powered system that is directly connected to the HVA30 series of VLF test systems.
- The TD30 uses standard C Type alkaline batteries which last for 10 hours thus providing the capacity for many tests.
- The TD30 is supplied with 5 / 7 metres of output cable which is terminated to suit the HVA30 / 60 test system.
- The TD30 is supplied complete with operating software which gives a complete picture of the tan delta measurement together with a real time wave form of the output voltage and current.
- The data transmission to a laptop PC is via Bluetooth™ wireless communication thus eliminating hardwires or fibre optic cables to minimise the hookup time and operator errors.

## SOFTWARE

- The test report screen gives all the details of the measurements taken during a test sequence. The results are based on individual measurements per cycle of voltage and current. From these results the Tan Delta is calculated and displayed
- In the wave form screen both the output voltage and output current are displayed simultaneously in real time. In addition to the status of the voltage and current wave forms, the Tan Delta value is also displayed
- At the click of your mouse the full Tan Delta report is printed.



# TECHNICAL DATA

|                            |  |
|----------------------------|--|
| Supply Voltage             | 2 type "C" alkaline cells (typically 10 hours measurement)   |
| Operating/Measured Voltage | Sinusoidal: 1– 23 kV RMS<br>Frequency: 0.1Hz   |
| Voltage Measurement        | Resolution: 0.1 kV RMS<br>Accuracy: 1% of reading  |
| Current Measurement        | Resolution: 1 uA RMS<br>Accuracy: 1% of reading  |
| Tan Delta Measurement      | Resolution: $1 \times 10^{-5}$<br>Accuracy: $\pm 1 \times 10^{-4}$ (load > 15nF)<br>$\pm 3 \times 10^{-4}$ (load < 15nF) |
| Load range                 | Standard: 15nF to 5µF<br>Lower Accuracy: 1nF to 15nF   |
| Computer interface         | Bluetooth™   |
| Temperature                | Storage: -25° C to +70° C<br>Operating: -5° C to +45° C<br>Humidity Max 80% RH not condensing                            |
| Dimensions                 | 240mm long x 80mm in diameter  |
| Weight                     | 3kg  |

# ORDER CODES

| PRODUCT DESCRIPTION        | PART NO. |
|----------------------------|----------|
| *Standard TD30             | SH0207   |
| OPTIONAL ADD-ONS           |          |
| Adapter plug TD30 to HVA60 | GH0613   |

**\*STANDARD DELIVERY INCLUDES:**

- TD30 test system
- HV connection cable, transit case
- Bluetooth™ Dongle
- Earth cable
- TD Control Center Software
- Operating manual

GLOBAL THINKING, LOCAL ACTION

**HV Diagnostics**  
www.hvdsa.com