

# VLF Tan Delta ( $\delta$ ) Cable Testing

Model TD-65E | 65 kVac peak @ 0.1 Hz

The latest in TD & VLF technology: only from HVI

HVI - The World's Source for VLF Technology **Made in the USA!**

*How good is my cable? Like new, slightly, moderately, or highly degraded?*

Tangent Delta, or Dissipation Factor, or Loss Angle testing is a method of determining the degree of deterioration within a cables insulation. Is it perfect, like a pure capacitor, or is it degraded, containing many resistive defects: now an RC circuit - not only C?

Tan Delta testing to learn the condition of your cables insulation helps one make a comparative analysis of many cables to prioritize replacement, insulation injection, or to determine what additional tests may be useful, possibly a **VLF Withstand** or **VLF Partial Discharge** test.

Tan Delta cable testing is a well proven, common method of evaluating the dielectric integrity of insulation. It is similar to 50/60 Hz. Power Factor testing only it **uses an off-line 0.1 Hz VLF AC voltage source**. It is a **non-destructive qualitative** test long established and defined by the IEEE and other standards. It is easily performed, economical, and it provides useful results the operator can interpret and act on.

## Why Choose the TD-65E?

Using the TD-65E with the HVI VLF-65E permits the user to **perform all TD tests possible and wirelessly communicate** the results to the **VLF memory** itself for display and data collection, to the VLF's **USB drive**, or to a **laptop with HVI custom application software** written solely for the TD-65E. **There is no better alternative.** **Another reason:** HVI has supplied the world with VLF and Tan Delta since 1998, with more models, greater voltage range, higher power capability, and the **HVI sales and service care and support that is well known and unmatched.**

## Tests for MV Cable & Rotating Machinery

VLF Withstand      VLF Tan Delta  
VLF Withstand Test with monitored TD  
VLF Partial Discharge testing, with add'l access.

## World Standards Met

IEEE 400, IEEE 400.2, IEEE 433, DIN VDE 0276, CENELEC HD620 S1, NEETRAC CDFI, & others



TD-65E Tan Delta Transducer

## Features & Operations

**Voltage Measurement**      Range  
Accuracy & Resolution

**Current Measurement**      Load Range  
Accuracy & Resolution

**TD Measurements**      Load Range  
Accuracy & Resolution

**Communications**      Type  
Range: Indoor/Outdoor

**Power Input - Battery**      Type  
Life

**Dimensions**      TD Transducer w/Tripod  
TD Carrying Case

**Weight**      TD Transducer + Tripod  
TD w/ Case

**Input Cable Connection - HV**

**Output Connection - High Voltage**

**Ground Connection**

**Environmental**      Operating Temperature  
Storage Temperature  
Humidity

## Rugged Carry Case Standard

Pelican type carrying case contains the TD-65E and all its accessories. Handle and wheel design provides easy transport.



VLF-65E & TD-65E

## Specifications

1 - 65 kV peak / 1 - 46 kV rms  
1% & 0.1 kV peak

150 mA peak / 106 mA rms  
1% & 1  $\mu$ A rms

Freq: 0.1 Hz - 0.01 Hz, 5 nF - 10  $\mu$ F  
1.0 x 10<sup>-4</sup> & 1 x 10<sup>-5</sup>

XBee 802.15.4 (2.4 GHz)  
100' (30m) / 1000' (300m)

2 "D" cells (Alkaline or NiMH)  
>16 hours

6" x 8" x 18" (152 x 203 x 457 mm)  
25" x 20" x 14" (629 x 497 x 353 mm)

10 lbs. / 4.5 kg  
40 lbs. / 18.1 kg

MC Connector ( $\varnothing$ 14mm socket)

1/4 - 20 male thread w/accessories

1/4 - 20 stud w/wingnut

- 10°C to + 50°C (14° to 122°F)  
- 25°C to + 65°C (-13° to 149°F)  
80% up to 31°C (88°F)

## Accessories Included

- Operators manual
- 4 D size alkaline batteries (2 needed)
- Xstick USB to XBee Network adapter
- 4 GB USB flash drive w/PC App Software
- Shielded HV cable w/MC connector, 20'/6m
- 18 AWG unshielded cable w/banana jack & battery clamp, connects TD to load, 10'/3m
- Ground cable 10 AWG w/battery clamp, 10'/3m
- Corona suppression spinning: 2" x 5" aluminum
- Tripod stand contains HV Divider, fixed height

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High Voltage, Inc. designs and manufactures high voltage test equipment for utility and industrial applications.  
Products include VLF AC hipots, fault locators/thumpers, AC and DC hipots, aerial lift testers, HV dividers, oil dielectric testers, and more.