

# HVA68TD

## VLF high voltage test set

### Datasheet



The HVA68TD is a truly compact and portable VLF test set that determines the condition of medium voltage cables with a voltage rating up to 46 kV (according to IEEE 400.2). In addition to VLF testing (sine and square wave) and DC testing, it also supports sheath testing and sheath fault location\*.

The high output power of the HVA68TD expands greatly the load possibilities. It allows testing longer cables or multiple phases in parallel. The integrated Tan Delta (TD) diagnostics unit enables a straightforward condition assessment of the cable system.

**Performance:** Best in class output power with outstanding TD diagnostics features. Devices under test up to 7 km in length\*\* can be tested at 48 kV<sub>rms</sub> with 0.1 Hz

**Safety first:** Two simultaneous ways of discharging (electronic and mechanical) plus integrated 12 kV backfeed protection (at 50/60 Hz) ensure maximum operator safety.

**MWT:** Combination of withstand testing & Tan Delta diagnostics in compliance with guide IEEE 400.2 - Monitored Withstand Test.

**Connectivity:** On site, no laptop is required. All results can be later downloaded via USB or Bluetooth for further analysis and easy reporting using the b2 ControlCenter.

**Flexible connection options:** Robust HV test leads allow simple and safe connection between HVA and the test object. They are available in different lengths and are easily exchangeable.



|                |   |
|----------------|---|
| Output voltage | max. 68 kV <sub>peak</sub> , 48 kV <sub>rms</sub> |
| Output load    | 1.7 μF @ 0.1 Hz @ 48 kV <sub>rms</sub>            |
| Weight         | 63 kg   139 lbs                                   |

## YOUR BENEFITS



### TRUE MODULARITY

HVA68TD can be easily extended to a complete cable diagnostics system by adding products from our PD or PDTD series at any time.



### ARC PRE-LOCATION (APL)

The integrated APL function provides failure distance in case of a breakdown during VLF testing. This adds additional value to traditional VLF testing, which saves time and cost in subsequent cable fault location processes.



### UNLIMITED OPERATING TIME

HVA test sets are designed for continuous operation within the specifications.



### COMPACT AND PORTABLE

Our HVA series has been designed for maximum portability, resulting in widely applicable devices for any type of on-site use.

- Pure sinusoidal output voltage (load-independent) over the entire power range
- Non-arcing contacts eliminate routine servicing and make the HVA almost maintenance-free

- Breakdown voltage and load detection
- Real time oscilloscope of the output voltage on the HVA display
- Programmable test sequences with a tailor-made software tool

\*additional sheath fault locator needed  
\*\*at 250 pF/m cable capacitance and 1.7 μF load

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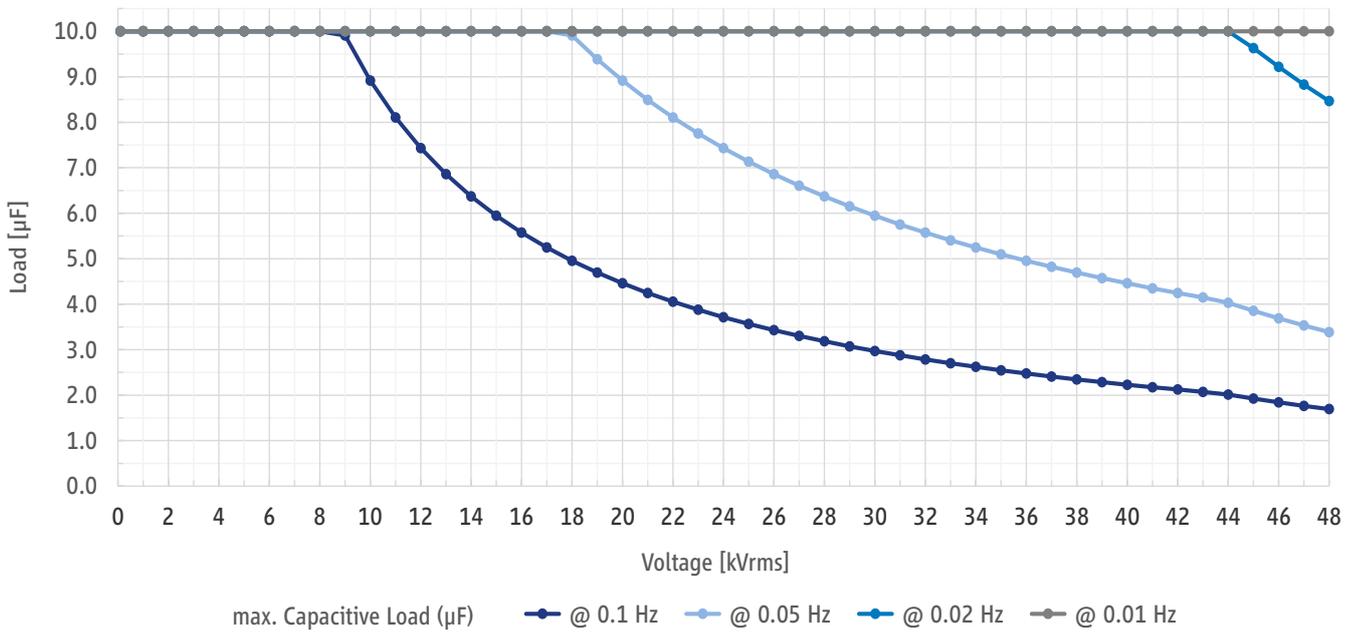
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### TECHNICAL DATA

| Output characteristics       |  |
|------------------------------|--|
| VLF sine wave                | 0 ... 68 kV <sub>peak</sub>   0 ... 48 kV <sub>rms</sub> |
| DC                           | -68 kV ... 68 kV   |
| VLF square wave              | 0 ... 68 kV  |
| <b>Output voltage</b>        |  |
| Sheath test                  | 0 ... 15 kV (negative polarity)                          |
| Voltage setting resolution   | 0.1 kV   |
| AC frequency range           | 0.01 Hz ... 0.1 Hz                                       |
| Frequency setting resolution | 0.01 Hz  |
| <b>Output current</b>        |  |
| AC                           | 56 mA <sub>rms</sub> max.                                |
| DC                           | 100 mA max.  |
| Sheath test trip current     | 0.1 ... 10 mA  |
| Sheath fault location        | 25 mA max.   |
| <b>Duty cycle</b>            | Continuous, no thermal limitation of operating time      |

### Load diagram for sine wave



| High voltage tests |                          |  |
|--------------------|--------------------------|--|
| <b>Test types</b>  | VLF withstand test       |  |
|                    | VLF Tan Delta test       |  |
|                    | Monitored withstand test |  |
|                    | DC test                  |  |
|                    | Sheath test              |  |
|                    | Sheath fault location    | pulse - period: 1:3 - 4s, 1:5 - 4s, 1:5 - 6s, 1:9 - 6s<br>(additional sheath fault locator needed) |
|                    | Vacuum bottle test       |  |

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| High voltage tests (continued)          |   |  |
|---|---|--|
| <b>Test modes</b>                       | Manual mode   |  |
|   | Automatic test sequences (user definable)   |  |
| <b>Arc management modes</b>             | Burn on arc   |  |
|   | Trip out on arc   |  |
| <b>Compliance</b>                       | VLF withstand testing according to guide IEEE 400.2 and test standards DIN VDE 0276-620 (CENELEC HD 620 S2), DIN VDE 0276-621 (CENELEC HD 621 S1) |  |
|   | AC and sheath testing according to test standard IEC 60502-2 / IEC 60229  |  |
| Metering                                |   |  |
| <b>Output voltage measurement range</b> | AC TrueRMS  |  |
|   | Maximum display value   | 65 kV <sub>rms</sub>                         |
|   | Resolution  | 0.1 kV <sub>rms</sub>                        |
|   | Accuracy  | ± 0.1 kV <sub>rms</sub> ± 1% of reading      |
|   | DC  |  |
|   | Max./min. display values  | 93 kV  |
|   | Resolution  | 0.1 kV                                       |
|   | Accuracy  | ± 0.1 kV ± 1% of reading                     |
| <b>Output current measurement range</b> | AC TrueRMS  |  |
|   | Maximum display value   | 69 mA <sub>rms</sub>                         |
|   | Resolution  | 0.1 / 1 / 10 / 100 μA <sub>rms</sub>         |
|   | Accuracy  | ± 1 μA <sub>rms</sub> ± 1% of reading        |
|   | DC  |  |
|   | Max./min. display values  | ± 98 mA                                      |
|   | Resolution  | 0.1 / 1 / 10 / 100 μA                        |
|   | Accuracy  | ± 1 μA ± 1% of reading                       |
| <b>Tan Delta</b>                        | Load 10 nF ... 10 μF  |  |
|   | TD range  | 0.1 ... 999 E-3                              |
|   | Resolution  | single: 0.1 E-3   mean: 0.01 E-3             |
|   | Accuracy  | ± 0.1 E-3                                    |
|   | Load 1 nF ... 10 nF   |  |
|   | TD range  | 0.1 ... 999 E-3                              |
|   | Resolution  | single: 0.1 E-3   mean: 0.01 E-3             |
|   | Accuracy  | ± 0.3 E-3                                    |
| <b>Arc Pre-Location</b>                 | Measurement range   | 80.0 m ... 10.0 km   262.5 ft ... 6.2 mi.    |
|   | Velocity range (v)  | 100.0 ... 300.0 m/μs   328.1 ... 984.3 ft/μs |
|   | Resolution  | 0.1 m   0.3 ft                               |
| <b>Resistance</b>                       | Range   | 0.1 MΩ ... 5 GΩ                              |
|   | Resolution  | 0.1 / 1 / 10 / 100 MΩ                        |
|   | Accuracy  | typ. 10%                                     |
| <b>Capacitance</b>                      | Range   | 0 ... 30 μF                                  |
|   | Resolution  | 0.01 / 0.1 / 1 nF and 0.01 / 0.1 μF          |
|   | Accuracy  | typ. 20%                                     |
| <b>Flashover voltage</b>                | Full output voltage range   |  |

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| Further characteristics         |  |                                 |
|---------------------------------|--|---------------------------------|
| <b>AC supply</b>                | 190 ... 240V, 50/60 Hz, 3.000 VA   120 V operation: 1.500 VA                 |                                 |
| <b>Product safety</b>           | Backfeed protection: 12 kV at 50/60 Hz                                       |                                 |
|                                 | DDD Dual Discharge Device (integrated electronic and mechanical discharging) |                                 |
|                                 | Connector for external interlock   |                                 |
| <b>Data transfer</b>            | Key switch (protection against unauthorized use)                             |                                 |
|                                 | USB type A   |                                 |
| <b>Report management</b>        | Bluetooth  |                                 |
|                                 | Built-in memory: up to 50 reports, 50 test sequences                         |                                 |
| <b>PC software</b>              | USB drive: dependent on storage capacity                                     |                                 |
|                                 | b2 ControlCenter (included)  |                                 |
| <b>Environmental conditions</b> | Operating temp. range  | -10 ... +55 °C   14 ... 131 °F  |
|                                 | Storage temp. range  | -25 ... +70 °C   -13 ... 158 °F |
|                                 | Humidity   | 5 ... 85%, non condensing       |
|                                 | Altitude   | up to 3.500 m   11.483 ft       |
|                                 | Protection class   | IP42 (with a closed lid)        |
| <b>Dimensions L x W x H</b>     | 593 mm x 340 mm x 513 mm   23.3 in x 13.4 in x 20.2 in                       |                                 |
| <b>Weight</b>                   | 63 kg   139 lbs  |                                 |

## SCOPE OF SUPPLY

|   | Art. No. |          |
|---|----------|----------|
| HVA68TD VLF high voltage test set                                 | SH5250   |          |
| Included accessories  | Pcs.     | Art. No. |
| HVA68TD HV test lead PDTD 7 m                                     | 1        | GH0938   |
| Grounding cable 6 mm <sup>2</sup> 4 m M6/clamp transparent        | 1        | GH0522   |
| Corona sphere 2-part, min. clearance distance = 10 mm             | 2        | KMD0081  |
| HVA Guard connection cable  | 2        | KEK0126  |
| HVA Guard connection DUT  | 2        | KMS00064 |
| Test lead with 4 mm plugs 1.5 m                                   | 1        | KEK0127  |
| Dolphin clip 32 A 4 mm socket black                               | 2        | KES0021  |
| G-clamp 6 - 16 mm <sup>2</sup> with M8 wing screw                 | 1        | KES0274  |
| MC plug S14AR-N with thread shortened                             | 1        | KES0282  |
| Straight ring terminal, M14x10 mm                                 | 1        | KES0384  |
| 45° ring terminal, M14x10 mm                                      | 1        | KES0385  |
| Thread adapting spacer M14 to M10 35 mm                           | 1        | KES0386  |
| Corona sphere spacer M10 35 mm                                    | 1        | KES0387  |
| Spare key for key-lock switch Rafix 16                            | 1        | KEC0007  |
| PC software & corresponding smartVLF documentation on a USB drive | 1        | GZD5028  |
| Bluetooth USB adapter   | 1        | KDG0013  |
| b2 Safety instructions for HVA series multi language              | 1        | DHV1440  |
| Power cord country-specific with C19 connector                    | 1        | XKEK0002 |
| Optionally available  |          |          |
| Discharge stick 60 kV 12 kΩ 8 kJ 1.100 mm                         | 1        | GH0629   |