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).
It performs VLF and DC testing, as well as sheath testing with sheath fault location mode (additional fault probe needed).
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 combined with outstanding TD diagnostics features.

Safety first: Two independent discharge devices (electronic & mechanical) plus an integrated 12 kV backfeed protection system (at 50/60 Hz).

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

Connectivity: On-site, no external PC is needed. All results can be downloaded later via USB or Bluetooth for further investigation and easy reporting with the b2 ControlCenter software.

Flexible high voltage connection options: Our high voltage test leads enable a simple and safe connection between HVA and the test object. They are available in different lengths and are quickly exchangeable.

Output voltage	max. 68 kV_{peak}, 48 kV_{rms}
Output load	1.7 µF @ 0.1 Hz @ 48 kV_{rms}
Dimensions L x W x H	593 x 340 x 513 mm | 23.3 x 13.4 x 20.2 in
Weight	63 kg | 139 lbs
Order number	SH5250

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)
- Sheath fault pinpointing (additional fault probe needed)
- Non-arcing contacts eliminate routine servicing and make the HVA almost maintenance-free
- Easily exchangeable HV test lead
- Breakdown voltage and load detection
- Real time oscilloscope of the output voltage on the HVA display
- Download reports from device via USB drive or Bluetooth
- Programmable test sequences with a tailor-made software tool

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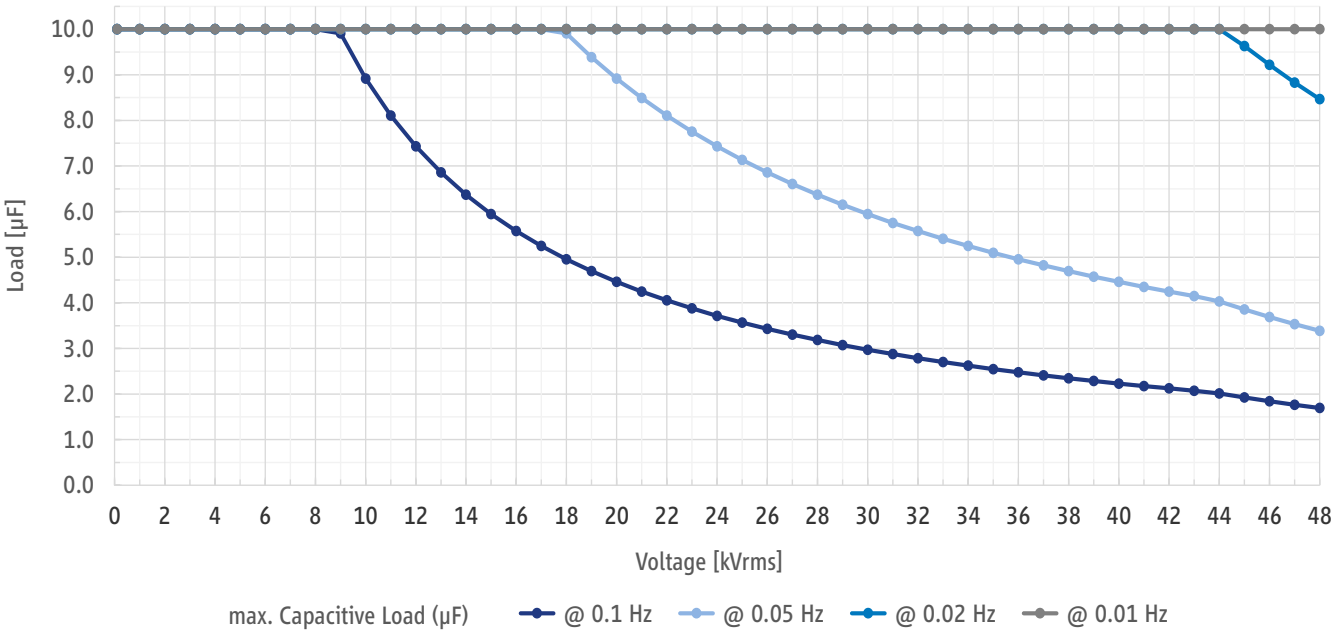
TECHNICAL DATA

Output characteristics		
Output voltage	VLF sine wave	0 ... 48 kV_{rms} | 0 ... 68 kV_{peak}
	DC	-68 kV ... 68 kV
	VLF square wave	0 ... 68 kV
	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
Output current	AC	56 mA_{rms} max.
	DC	100 mA max.
	Sheath test trip current	0.1 ... 10 mA
	Sheath fault location	25 mA max.
Duty cycle		Continuous, no thermal limitation of operating time

Load diagram for sine wave



High voltage tests		
Test types	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 (sheath fault locator not in scope of supply)
	Vacuum bottle test	

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High voltage tests (continued)	
Test modes	Manual mode
	Automatic test sequences (user definable)
Arc management modes	Burn on arc
	Trip out on arc
Compliance	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		
Output voltage measurement range	AC TrueRMS	
	Maximum display value	65 kV_{rms}
	Resolution	0.1 kV_{rms}
	Accuracy	± 0.1 kV_{rms} ± 1% of reading
	DC	
	Max./min. display values	± 93 kV
	Resolution	0.1 kV
	Accuracy	± 0.1 kV ± 1% of reading
Output current measurement range	AC TrueRMS	
	Maximum display value	69 mA_{rms}
	Resolution	0.1 / 1 / 10 / 100 μA_{rms}
	Accuracy	± 1 μA_{rms} ± 1% of reading
	DC	
	Max./min. display values	± 98 mA
	Resolution	0.1 / 1 / 10 / 100 µA
	Accuracy	± 1 µA ± 1% of reading
Tan Delta	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
Arc Pre-Location	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
Resistance	Range	0.1 MΩ ... 5 GΩ
	Resolution	0.1 / 1 / 10 / 100 MΩ
	Accuracy	typ. 10%
Capacitance	Range	0 ... 30 µF
	Resolution	0.01 / 0.1 / 1 nF and 0.01 / 0.1 µF
	Accuracy	typ. 20%
Flashover voltage		Full output voltage range

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Further characteristics		
AC supply		190 ... 240 V, 50/60 Hz, 3.000 VA
		120 V operation: 1.500 VA
Product safety		Backfeed protection: 12 kV at 50/60 Hz
		DDD Dual Discharge Device (integrated electronic and mechanical discharge device)
Data transfer		USB type A
		Bluetooth
Report management		Built-in memory: up to 50 reports, 50 test sequences
		USB drive: dependent on storage capacity
PC software		b2 ControlCenter (included)
Environmental conditions	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)
Dimensions L x W x H		593 x 340 x 513 mm | 23.3 x 13.4 x 20.2 in
Weight		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 mm² 4 m M6/clamp	1	GH0522
Corona sphere 2-part, min. clearance distance = 10 mm	2	KMD0081
HVA Guard connection cable	2	KEK0126
HVA Guard connection DUT	2	KMSO0064
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 mm² 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	1	KEC0007
PC software & corresponding smartVLF documentation on the USB drive	1	GZD5028
Bluetooth USB Adapter	1	KDG0013
b2 Safety instructions for HVA series - multi language	1	DHV1440
HVA language-specific manual (firmware v2)	1	XDHV0004
Power cord country-specific with C19 connector	1	XKEK0002
Optionally available		
Discharge stick 60 kV 12 kΩ 8 kJ 1.100 mm	1	GH0629

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