HVA90
VLF high voltage test set

Datasheet

The HVA90 is a compact and portable VLF test set designed for assessing the condition of medium-voltage cables up to 46 kV (in accordance with IEEE 400.2). Its robust design and excellent power-to-weight ratio make it a reliable choice for routine cable testing in the field. In addition to VLF testing (sine and square wave) and DC testing, the HVA90 also supports sheath testing and sheath fault location*.

Performance: Outstanding performance considering size and weight vs. output load. Devices under test up to 4 km in length** can be tested at 64 kV_{rms} with 0.1 Hz.

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

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

Flexible connection options: Robust HV connectors allow use of various HV test lead lengths, quick replacement, and easy upgrades for diagnostic system integration.

Output voltage	max. 90 kV_{peak}, 64 kV_{rms}
Output load	1.0 µF @ 0.1 Hz @ 64 kV_{rms}
Weight	127 kg | 280 lbs

YOUR BENEFITS

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

DRY SYSTEM
HVA test sets are constructed with non-arcing contacts and no need to change oil. This eliminates routine servicing and makes the test sets almost maintenance-free.

COMPACT AND PORTABLE
Our HVA test sets are designed for maximum portability, resulting in widely applicable devices for any type of on-site use.

TRUE MODULARITY
All our HVA test sets can be easily extended to a complete diagnostics system by adding our PD, TD or PDTD series products at a later point of time. This keeps the initial investment low.

- Pure sinusoidal output voltage (load-independent) over the entire power range
- Easily exchangeable HV test lead
- 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 1.0 µF load

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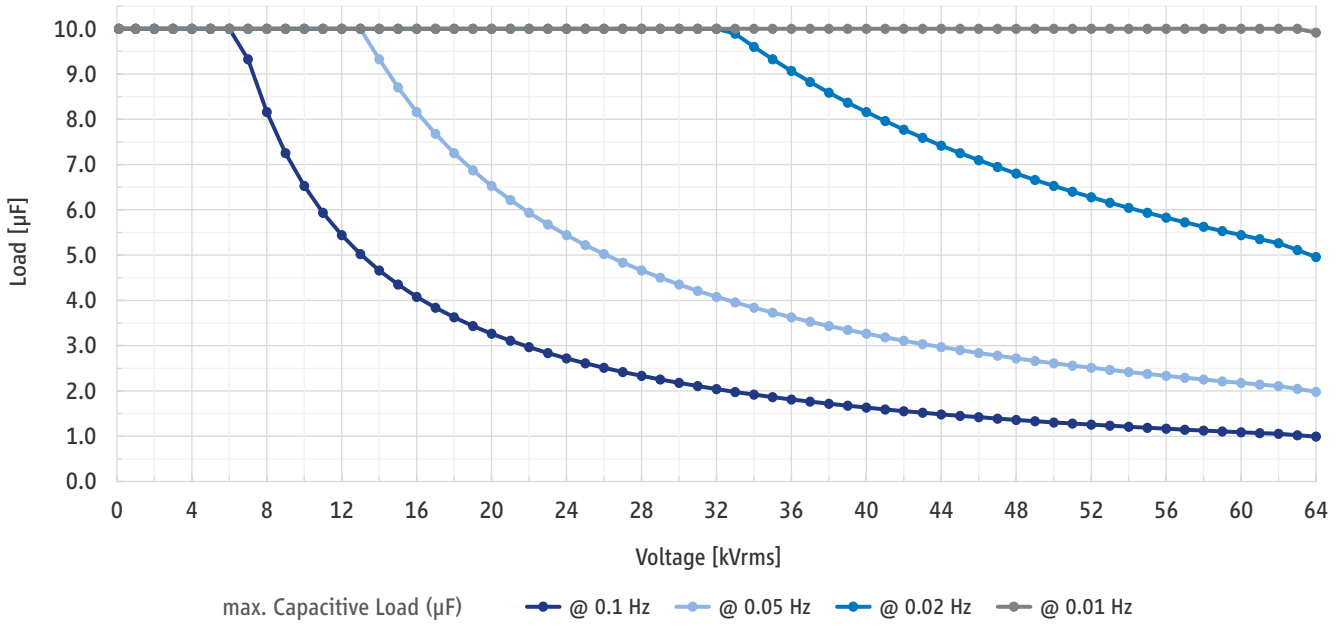
TECHNICAL DATA

Output characteristics		
Output voltage	VLF sine wave	0 ... 90 kV_{peak} | 0 ... 64 kV_{rms}
	DC	-90 kV ... 90 kV
	VLF square wave	0 ... 90 kV
	Sheath test	0 ... 10 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	41 mA_{rms} max.
	DC	57 mA max.
	Sheath test trip current	0.1 ... 5 mA
	Sheath fault location	40 mA max.
Duty cycle		Continuous, no thermal limitation of operating time

Load diagram for sine wave



High voltage tests		
Test types	VLF withstand test	
	DC test	
	Sheath test	
	Sheath fault location	pulse / period: 1:3 / 4s, 1:5 / 4s, 1:5 / 6s, 1:9 / 6s
		(additional sheath fault locator needed)
	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 IEEE 400.2 and the test standards DIN VDE 0276-620 (CENELEC HD 620 S2), DIN VDE 0276-621 (CENELEC HD 621 S1)
	AC and sheath testing according to IEC 60502-2 / IEC 60229

Metering		
Output voltage measurement range	AC TrueRMS	
	Maximum display value	84 kV_{rms}
	Resolution	0.1 kV_{rms}
	Accuracy	± 0.1 kV_{rms} ± 1% of reading
	DC	
	Maximum display value	120 kV
	Resolution	0.1 kV
	Accuracy	± 0.1 kV ± 1% of reading
Output current measurement range	AC TrueRMS	
	Maximum display value	70 mA_{rms}
	Resolution	0.1 / 1 / 10 / 100 μA_{rms}
	Accuracy	± 1 μA_{rms} ± 1% of reading
	DC	
	Max./min. display values	± 100 mA
	Resolution	0.1 / 1 / 10 / 100 µA
	Accuracy	± 1 µA ± 1% of reading
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

Further characteristics		
AC supply		210 ... 240 V, 50/60 Hz, 3.000 VA
Product safety		Backfeed protection: 12 kV at 50/60 Hz
		DDD Dual Discharge Device (integrated electronic and mechanical discharging)
		Connector for external interlock
		Key switch (protection against unauthorized use)
Environmental conditions	Operating temp. range	-10 ... +50 °C | 14 ... 122 °F
	Storage temp. range	-25 ... +70 °C | -13 ... 158 °F
	Humidity	5 ... 85%, non condensing

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Further characteristics	
Data transfer	USB type A
	RS232
Report management	Built-in memory: up to 50 reports, 40 test sequences
	USB drive: dependent on storage capacity
PC software	b2 ControlCenter (included)
	HVA ControlCenter (included)
Dimensions L x W x H	545 mm x 445 mm x 610 mm | 21.45 in x 17.51 in x 24 in
Weight	127 kg | 280 lbs

SCOPE OF SUPPLY

	Art. No.
HVA90 VLF high voltage test set	SH5017

Included accessories	Pcs.	Art. No.
HVA94 HV test lead 7 m MC14	1	GH0540
Grounding cable 6 mm² 4 m M6/clamp transparent	1	GH0522
Spare key for key-lock switch Rafix 16	1	KEC0007
Cable serial DB9 f/f 3 m	1	KEK0017
USB to RS232 cable UC232R-10 FTDI Chip	1	KEK0049
Power chord country specific - Unit side C19	1	XKEK0002
PC software & corresponding HVA documentation on a USB drive	1	GZD5026
b2 Safety instructions for HVA series multi language	1	DHV1440

OPTIONALLY AVAILABLE

Additional accessories	Art. No.	Suggested diagnostics options	Art. No.
Discharge stick 90 kV 18 kΩ 46 kJ 1.450 mm	GH0630	TD90-MC Tan Delta diagnostics system	SH5025
Transport case with wheels	VKR0012	PDTD90-2 PD & TD diagnostics system	SH5033

VKR0012

GH0630

TD90-MC

PDTD90-2