S VLF series High Voltage Insulation Testers

Evaluate the condition of cables using VLF or DC voltage

Sonel® experience and reliability

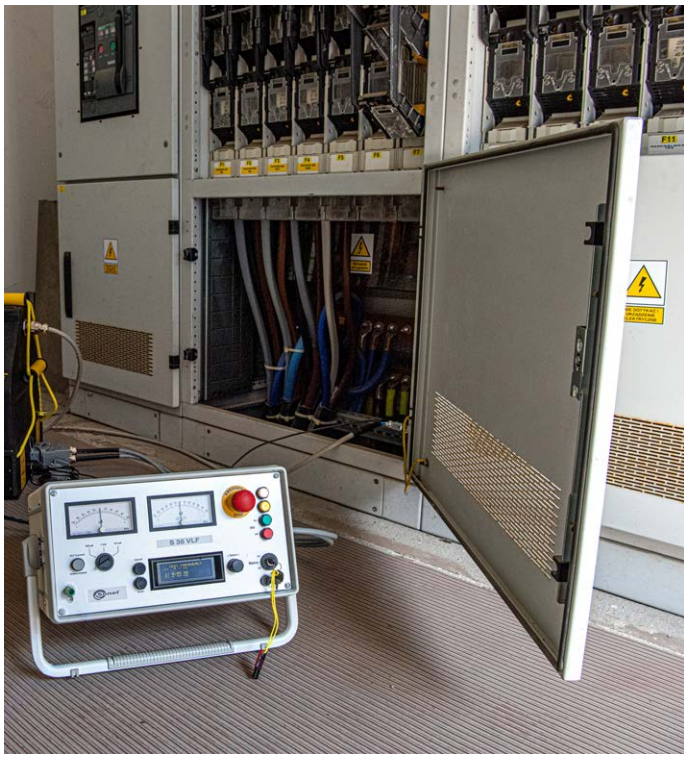
Features

- Extremely compact high-power VLF test device
- Easily portable for 1-2 people
- Simple operation: menu-assisted control with industrial class OLED display
- Fully automatic test sequence
- Integrated timer 1-300 min with automatic tripping
- Integrated breakdown detection
- Integrated fault time detection
- Voltage measurement direct at HV output
- Protective ground connection
- High voltage start key interlock
- Protective circuit / indication in accord. with EN 50191
- Leakage current measurement during VLF test

Overview

The compact, robust and portable S VLF cable test sets are used for testing of medium voltage cables in accordance to the standards IEEE400, IEC 60502-2, CENELEC HD 620 & 621 and DIN VDE 0276/620 & 621. The test is carried out with a low strain practice with VLF (very low frequency) test voltage at 0.1 Hz frequency.

VLF test enables detection of damages of the insulation within shortest test time. The S VLF series device can test cables with extruded insulation (XLPE-, PE-, EPR-insulation) as well as cables with paper-oil insulation (PILC). Cable sheath testing with direct voltage is also possible.



Optional features

- Data logging (USB stick) for VLF test sets
- Frequency extension: 0.05 + 0.02 Hz
- Customized test cables
- Transport case

Technical specification

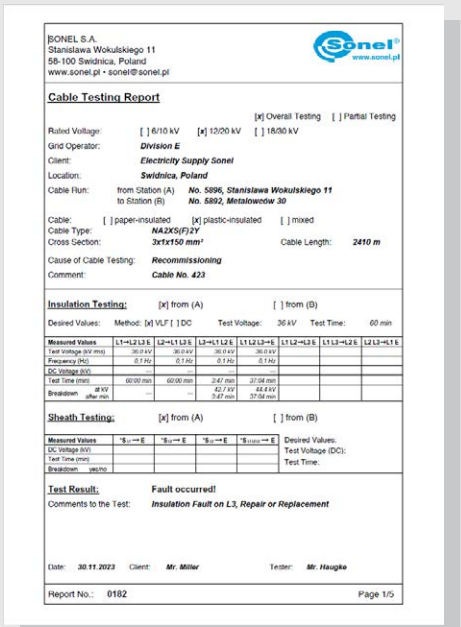
		S-24 VLF	S-36 VLF	S-44 VLF		S-57 VLF
Index		**WMUSS24VLF**	**WMUSS36VLF**	**WMUSS44VLF**	**WMPAS44VLF**	**WMUSS57VLF**
Power supply		230 V (±10%) 10 A, 50/60 Hz	230 V (±10%) 10 A, 50/60 Hz	230 V (±10%) 10 A, 50/60 Hz	110 V (100 V...127 V) 15 A, 50/60 Hz	230 V (±10%) 10 A, 50/60 Hz
Output voltage		0...24 kV_{RMS} VLF 0.1 Hz (option: 0.05 Hz + 0.02 Hz) ± 0...34 kV DC	0...36 kV_{RMS} VLF 0.1 Hz (option: 0.05 Hz + 0.02 Hz) ± 0...52 kV DC	0...44 kV_{RMS} VLF 0.1 Hz (option: 0.05 Hz + 0.02 Hz) ± 0...62 kV DC	0...44 kV_{RMS} VLF 0.1 Hz (option: 0.05 Hz + 0.02 Hz) ± 0...62 kV DC	0...57 kV_{RMS} VLF 0.1 Hz (option: 0.05 Hz + 0.02 Hz) ± 0...62 kV DC
Voltage waveshape	**VLF**	similar sine-wave, symmetrical, with True RMS measurement				
	DC	direct voltage, negative and positive polarity				
Overcurrent trip (DC)		10 mA				
Max. testable cable length, max. capacitance (VLF)		up to 60 km (15 µF at 24 kV_{RMS}, 0.02 Hz)*	up to 60 km (15 µF at 18 kV_{RMS}, 0.02 Hz)*	up to 60 km (15.0 µF at 18 kV_{RMS}, 0.02 Hz)*	up to 60 km (15.0 µF at 6 kV_{RMS}, 0.02 Hz)*	up to 60 km (15.0 µF at 18 kV_{RMS}, 0.02 Hz)*
		*at a cable capacitance of approx. 0.25 µF/km				
Max. load at max. output voltage (VLF) and 0.1 Hz		5 µF at 24 kV_{RMS}	2.4 µF at 36 kV_{RMS}	1.6 µF at 44 kV_{RMS}	1.0 µF at 44 kV_{RMS}	0.55 µF at 57 kV_{RMS}
Discharge - integrated automatic discharge device		max. 9000 J	max. 12500 J	max. 12500 J	max. 12500 J	max. 12500 J
Voltage measuring range		-40...0...40 kV accuracy ±1%	-60...0...60 kV accuracy ±1%	-70...0...70 kV accuracy ±1%	-70...0...70 kV accuracy ±1%	-70...0...70 kV accuracy ±1%
Current measuring ranges		±0...100 µA / 1 mA / 10 mA				
Operating temperature		-20...+45°C -4...+113°F				
Storage temperature		-25...+70°C -13...+158°F				
Duty		continuous operation				
PC interface		USB stick				
Construction		in two parts: operation unit and high voltage unit				
Dimensions and weight	**Operation unit**	37 x 34 x 20 cm 14.6” x 13.4” x 7.9” 17 kg 37.5 lbs				
	High voltage unit	40 x 41 x 24 cm 15.7” x 16.1” x 9.4” 38 kg 83.8 lbs	40 x 44 x 24 cm 15.7” x 17.3” x 9.4” 48 kg 108.5 lbs	40 x 44 x 24 cm 15.7” x 17.3” x 9.4” 49 kg 108 lbs	40 x 44 x 24 cm 15.7” x 17.3” x 9.4” 49 kg 108 lbs	40 x 44 x 24 cm 15.7” x 17.3” x 9.4” 49 kg 108 lbs

Sonel VLF Tester Software

The programme **Sonel VLF Tester Software** generates a test report based on the individual recorded data files.

The first page of the generated report is an overview. The following pages describe the individual tests of the power cable system. The software is easy to use, so you can quickly create a PDF report that is attractive to the end user.

Supported languages: Polish, English, Spanish, German, Czech, Italian. It is possible to generate a report in a language other than the one set for the interface.



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Cable Testing Report

[x] Overall Testing [ ] Partial Testing

Rated Voltage: [ ] 6/10 kV [x] 12/20 kV [ ] 18/30 kV
Grid Operator: *Division E*
Client: *Electricity Supply Sonel*
Location: *Swidnica, Poland*
Cable Run: from Station (A) *No. 5896, Stanislawa Wokulskiego 11*
to Station (B) *No. 5892, Metalowcow 30*
Cable: [ ] paper-insulated [x] plastic-insulated [ ] mixed
Cable Type: *NA2XS(F)2Y*
Cross Section: *3x1x150 mm²* Cable Length: *2410 m*
Cause of Cable Testing: *Recommissioning*
Comment: *Cable No. 423*

Insulation Testing: [x] from (A) [ ] from (B)
Desired Values: Method: [x] VLF [ ] DC Test Voltage: 36 kV Test Time: 60 min

Measured Values	L1→L2 L3 E	L2→L1 L3 E	L3→L1 L2 E	L1 L2 L3→E	L1 L2→L3 E	L1 L3→L2 E	L2 L3→L1 E
Test Voltage (kV rms)	36.0 kV	36.0 kV	36.0 kV	36.0 kV			
Frequency (Hz)	0.1 Hz	0.1 Hz	0.1 Hz	0.1 Hz			
DC Voltage (kV)							
Test Time (min)	60:00 min	60:00 min	2:47 min	37:04 min			
Breakdown at kV / after min	--	--	--	42.7 kV / 5:47 min	44.4 kV / 37:04 min		

Sheath Testing: [x] from (A) [ ] from (B)

Measured Values	$^{S}U \rightarrow E$	$^{S}U \rightarrow E$	$^{S}U \rightarrow E$	$^{S}U_{1min} \rightarrow E$	Desired Values:
DC Voltage (kV)					Test Voltage (DC):
Test Time (min)					Test Time:
Breakdown yes/no					

Test Result: **Fault occurred!**
Comments to the Test: ***Insulation Fault on L3, Repair or Replacement***

Date: *30.11.2023* Client: *Mr. Miller* Tester: *Mr. Haugke*

Report No.: 0182 Page 1/5

Standard accessories

High voltage connecting cable (shielded) 5 m

Bridging cables

Connecting cable between high voltage unit and station ground

Connecting cable between operation unit and protective ground

Service pack

Start keys

Case

WAWALVLF

User manual

Optional accessories

USB stick for data logging

WAADAHVVLFDL

Case with wheels

\WAWALVLF2

Sonel VLF Tester Software

WAPROVLFTS

Frequency extension 0.05 Hz + 0.02 Hz

WAADAHVVLFFE