



# ACS

## AC Test Sets

*Datasheet*



# HAEFELY

Current and voltage – our passion

Designed by



# General Description

AC high voltage sources are used for dielectric proof tests on high voltage components - according to IEC and ANSI standards - such as distribution transformers, instrument transformers, switchgear, bushings, motors, cable terminations to give just a few examples.

The ACS range is our latest generation of standard dielectric test sets, they are easy and safe to use with long trouble free life cycle.

HAEFELY HVC 300 AC controls the system. This state of the art PLC based control includes all necessary components for the operation of the test

system and communicates with a standard Windows based computer running CaMS™ (Control and Measurement Studio), our universal platform for controlling test systems and measuring instruments.

The ACS test sets can be combined with our highly accurate measuring instruments to perform additional tests like partial discharges or  $\tan \delta$  (dissipation factor).

Features	Advantages
<ul style="list-style-type: none"> <li>▪ Fulfils IEC, IEEE and other relevant standards</li> </ul>	<ul style="list-style-type: none"> <li>☑ Guarantees test procedures and measurements as defined in the standards, guarantees reliable and traceable test results.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Highest industrial Safety Integrity Level SIL 3 (ISO 61508) certified.</li> </ul>	<ul style="list-style-type: none"> <li>☑ Guarantees maximum operator safety.</li> </ul>
<ul style="list-style-type: none"> <li>▪ All in one solution from a single supplier</li> </ul>	<ul style="list-style-type: none"> <li>☑ Plug and play including the source and the measuring devices</li> </ul>
<ul style="list-style-type: none"> <li>▪ HVC 300 AC control unit with HAEFELY CaMS™ user interface</li> </ul>	<ul style="list-style-type: none"> <li>☑ Windows based graphical user interface allows the operator to start using the system with minimal training.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Tank type oil isolated HV transformer with capacitive bushing, temperature indicator and dehydration breather.</li> </ul>	<ul style="list-style-type: none"> <li>☑ Reliable transformer design which guarantees a long trouble free life.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Fastest and most reliable electronic flash detection</li> </ul>	<ul style="list-style-type: none"> <li>☑ keeps the test object safe in case of failure faster than a traditional current detection based method</li> </ul>
<ul style="list-style-type: none"> <li>▪ PD free (option)</li> </ul>	<ul style="list-style-type: none"> <li>☑ The PD free option allows a PD level <math>&lt;1 \text{ pC}^{(1)}</math></li> </ul>

<sup>(1)</sup> at the end of HV filter. (Inherent PD of the system, not considering environmental noise)

## Applications

Performing dielectric test in high voltage apparatus like:

- HV components
- Instrument Transformers
- Distribution Transformers
- Switchgear
- Bushings and Arrestors
- Rotating machines
- Cable joints
- Connectors and isolators

## Scope of Supply

AC dielectric test set ACS VV<sup>(1)</sup>-PP<sup>(2)</sup> including:

- STL Regulating cabinet
- PK Tank type step up transformer
- HVC AC built-in control unit with DMI light peakvoltmeter
- CaMS™ Remote Software (windows based computer required and not included)
- Power, measuring and communications cables, 20m
- Ground Stick
- Emergency stop
- Test report
- Instruction Manuals

<sup>(3)</sup>VV = VOLTAGE (kV) ; <sup>(4)</sup>PP = POWER (kVA), For accessories and options please see the ACS brochure, can be download from [www.haefely.com](http://www.haefely.com)

# Technical Data

## General

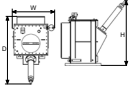
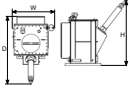
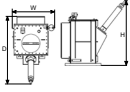





	Reg.	Transf.	Comp.	O. Volt. <sup>(1)</sup> (kV)	O. Power (kVA)	O. Current <sup>(2)</sup> (mA)	I. Power (kVA)	Duty Cycle <sup>(3)</sup>
ACS 25-20	STL 20	PK 50-1	No	25	20	800 <sup>(2)</sup>	22	1h ON, 1h OFF, 4 times/day
ACS 25-40	STL 40	PK 50-2	No	25	40	1600 <sup>(2)</sup>	42	1h ON, 1h OFF, 4 times/day
ACS 25-60	STL 80	PK 50-2	No	25	60	2400 <sup>(3)</sup>	62	15' ON, 1h OFF, 4 times/day
ACS 25-80	STL 100	PK 50-2	No	25	80	3200 <sup>(3)</sup>	82	15' ON, 1h OFF, 4 times/day
ACS 50-20	STL 20	PK 50-1	No	50	20	400 <sup>(2)</sup>	22	1h ON, 1h OFF, 4 times/day
ACS 50-40	STL 40	PK 50-1	No	50	40	800 <sup>(2)</sup>	42	1h ON, 1h OFF, 4 times/day
ACS 50-60	STL 80	PK 50-2	No	50	60	1200 <sup>(2)</sup>	62	1h ON, 1h OFF, 4 times/day
ACS 50-100	STL 100	PK 50-2	No	50	100	2000 <sup>(2)</sup>	102	1h ON, 1h OFF, 4 times/day
ACS 75-20	STL 20	PK 100-0.5	KDL-20	75	20	267 <sup>(2)</sup>	22	1h ON, 1h OFF, 4 times/day
ACS 75-40	STL 40	PK 100-1	KDL-20	75	40	533 <sup>(2)</sup>	42	1h ON, 1h OFF, 4 times/day
ACS 75-60	STL 80	PK 100-1	No	75	60	800 <sup>(2)</sup>	62	1h ON, 1h OFF, 4 times/day
ACS 75-100	STL 100	PK 100-1	KDL-60	75	100	1333 <sup>(3)</sup>	102	15' ON, 1h OFF, 4 times/day
ACS 100-20	STL 20	PK 100-0.5	No	100	20	200 <sup>(2)</sup>	22	1h ON, 1h OFF, 4 times/day
ACS 100-40	STL 40	PK 100-0.5	No	100	40	400 <sup>(2)</sup>	42	1h ON, 1h OFF, 4 times/day
ACS 100-60	STL 80	PK 100-1	No	100	60	600 <sup>(2)</sup>	62	1h ON, 1h OFF, 4 times/day
ACS 100-100	STL 100	PK 100-1	No	100	100	1000 <sup>(2)</sup>	102	1h ON, 1h OFF, 4 times/day

(1) Output voltage at continuous duty cycle, 75% of the output (rated) voltage,

(2) Output current at continuous duty cycle 75% of the output (rated) current.

(3) Ask Haefely for continuous duty

## Mechanical

	PK 50 - 1	PK 50-2	PK 100-0.5	PK 100-1
Dimen. <sup>(4)</sup> W - Width D - Depth H - Height	 925 mm 1600 mm 1525 mm	 980 mm 1600 mm 1525mm	 925 mm 1600 mm 1545 mm	 980 mm 1600 mm 1545 mm
Weight <sup>(4)</sup>	700 kg	970 kg	750 Kg	990 kg
	<b>STL 20</b>	<b>STL 40</b>	<b>STL 80</b>	<b>STL 100</b>
Dimen. <sup>(4)</sup> W - Width D - Depth H - Height	 2200 mm 600 mm 1900 mm	 2200 mm 600 mm 1900 mm	 2200 mm 600 mm 1900 mm	 2200 mm 600 mm 1900 mm
Weight <sup>(4)</sup>	500 kg	720 kg	990 kg	1250 kg
	<b>KDL 20</b>	<b>KDL 60</b>		
Dimen. <sup>(4)</sup> W - Width D - Depth H - Height	 600 mm 600 mm 1900 mm	 600 mm 600 mm 1900 mm		
Weight <sup>(4)</sup>				

(4) Dimensions and weights are approximate and can vary with the final design.

## Common specs

PD level	Standard	ACS PD FREE 10 <sup>(opt)</sup>	ACS PDFREE 1 <sup>(opt)</sup>
PD level	<25 pC	<10 pC	<1 pC
Tan δ GST mode ready	Yes		
Bushing	Resin impregnated paper, bushing tap as capacitive divider for voltage reading.		
Control	HVC 300 AC CaMS™ software on Windows based computer <sup>(opt)</sup> , ethernet or fiber optic connection <sup>(opt)</sup>		

## Measurement

Voltage meas. modes	Peak, Peak/√2, RMS.
Voltage range / accuracy	1V <sub>peak</sub> ... 200 V <sub>peak</sub> (8 ranges) / ± 1.0% RD, ± 0.01% Range. 4 digits.
Flash detection	Included, transient detection on voltage reading, response time < 20msec.
Current meas. modes	Peak, RMS
Current ranges / accuracy	100 mA .... 5A (6 ranges) / ± 1.0% RD, ± 0.01% Range – 4 digits , Overcurrent detection.

## Environmental and Power Supply

Operating temperature	0°C .... +40°C
Storage temperature	-5°C ... +50°C
Humidity	5 ... 90% r.h , non-condensing
Altitude above sea level	< 1000 m , voltage derated by 1% per 100m above
Colours	RAL 9002 (Tanks and cibles) , Aluminium (Electrodes)
Power supply Spec.	2 x 400 V ±10 % (Standard) – Other input voltages with the ACS TRANS <sup>(opt)</sup>

## PC, Screen Resolution and Operation System Requirements

PC min. configuration	Intel Core i3® / AMD Athlon II X2® or better, 4 GB RAM, Ethernet / USB 2.0
Screen resolution	1920 x 1080 (FHD)
Operation system	Windows 10™ 64 bits

## Applicable Standards

Safety	SIL III
CE conformity	Yes, EMC Directive 2014/30/EU

(opt) optional

## Global Presence

### Europe

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# HAEFELY

Current and voltage – our passion



HIGH VOLTAGE



INSTRUMENTS



EMC

precision.  
  
swiss made.