

# HVA60 Universal HV test system



## Features

- Lightweight portable unit
- Solid state air insulated design
- True sine wave low frequency output
- Suitable for VLF, DC and Jacket/sheath testing
- Fault conditioning capability
- Test result storage capability
- Full short circuit protection with arc management regulation
- Provides compliance with CENELEC, IEEE 400.2, VDE 0296 and other international standards
- Manual or fully automatic test sequence selection
- Real-time display of actual output waveform

## Applications

The HVA60 provides the testing and commissioning engineer with a versatile high voltage power source suitable for testing electrical plant including cables: XLPE, PE, EPR, PILC etc, capacitors, switchgear, transformers, rotating machines, insulators and bushings.

## Description

It is well known that DC testing of aged extruded cable such as XLPE and EPR is potentially damaging to the cable insulation causing premature failure of the cable under service conditions. Any form of DC testing has been found to be ineffective in detecting even serious faults in such cables. It is because of these limitations that International and National bodies such as CENELEC, VDE, SABS and the IEEE now recommend testing utilising low frequency AC test systems. VLF testing enables the cable test engineer to detect insulation defects before the cable fails in service.

## Product design

The **HVA60** has a very advantageous power / weight ratio. At 59.8 kgs the **HVA60** is one the lightest VLF test systems available today. Apart from the VLF output the **HVA60** can also produce either polarity DC together with a cable sheath /jacket testing modes. The output test sequences, which are easily set by the operator, can be either set manual or fully automatic operation. In the VLF mode the **HVA60** will output 60kV peak into a 1 $\mu$ F at 0.1Hz. However, as the VLF frequency can be adjusted, loads of up to 5 $\mu$ F can be tested with an output frequency of 0.02Hz. The output VLF waveform is load independent and symmetrical thus avoiding destructive space charge effects caused by DC polarisation. To further assist the operator the **HVA60** will automatically calculate the optimum output frequency for larger loads. All test results are stored on a non-volatile memory for downloading to a PC for review and analysis.



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## HVA front panel

The HVA front panel controls are simple and very easy to use. The backlit LCD display keeps the operator fully informed during the testing procedure.

All testing modes and operations are continually updated on the LCD screen.



## Setup Screen

The initial screen giving the operator the test options. Selection is made by utilising the front panel digital control wheel.



## 0.1Hz sinusoid screen

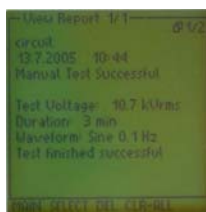
In the testing screen all measured parameters are displayed. In addition the status of the VLF waveform is also shown together with the exact position in the cycle.

The screen shown is displaying a 0.1Hz sinusoidal waveform.



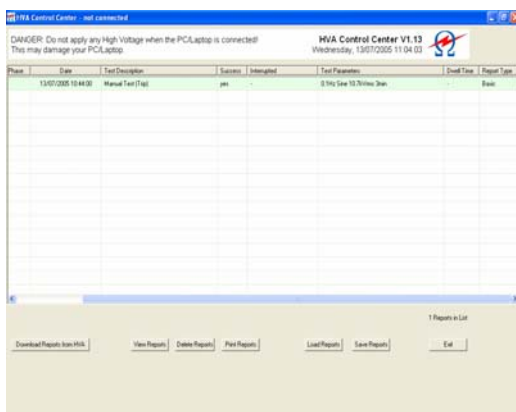
## 0.1Hz square wave screen

The LCD screen will also show all the other output voltage conditions. Shown here is the square wave output. The like the above screen the status of the waveform is also shown together with the exact position in the cycle.



## The reporting screen

The report screen gives the operator all the test results which can then be downloaded to a laptop or PC.



## The HVA results software

The results screen gives all the test data including cable type, location and all the test parameters measured during the testing process.



## Technical Data

<b>Input voltage</b>	88 — 264 V 50 / 60Hz single phase
<b>Output voltage</b>	Sinusoidal: 0 — 60kV peak DC: ±0 — 60kV Square wave: 0 — 60kV peak Accuracy: ± 1%
<b>Output current</b>	0 — 50mA. Resolution 1µA Accuracy: ± 1%
<b>Resistance range</b>	0.1MΩ - 20GΩ
<b>Output frequency</b>	0.02 - 0.1 Hz. In steps of 0.01 Hz
<b>Output load</b>	1.0µF at 0.1Hz at 43kV rms (approx 3km of cable)* 2.0µF at 0.05Hz at 43kV rms (approx 6km of cable)* 5.0µF at 0.02Hz at 43kV rms (approx 15km of cable)* 50µF at reduced voltage and/or frequency  * based on a cable capacitance 330pF/metre
<b>Output mode</b>	AC (VLF) Symmetrical and load independent over full range DC positive and negative polarity Burn / Fault condition or Fault trip mode Jacket / Sheath testing
<b>Memory</b>	Up to 50 test records stored in a non-volatile memory
<b>Metering</b>	Output voltage and current (true RMS and Peak) Capacitance, Resistance, Time, Flashover voltage
<b>Weight</b>	59.8kgs (132lbs)
<b>Dimensions</b>	450 L x 350 W x 510 H mm (18" L x 14" W x 20" H)
<b>Computer interface</b>	RS232. Results download software is included
<b>Accessories supplied</b>	Mains cable, HV output cable earth cable, RS232 cable Operating manual
<b>Standards</b>	Shock : IEC68-2-27 (15g/11ms half sinus) Vibration: IEC68-2-6 (10.....150Hz : 2g) EMC: IEC6100-4-2, IEC6100-4-4, EN55011 Safety: EN60950, EN50191, EN61010-1
<b>Temperature</b>	Storage: -25° C to +70°C Operating: -5°C to +45°C Auto shut down will occur when the internal temperature of the HVA exceeds +65°C
<b>Safety</b>	Short circuit protection Display indicates all important function and messages Emergency OFF and operator lockout key Automatic discharge and earthing of load Zero output voltage interlock Zero voltage switching



## Options

<i>Part Number</i>	<i>Description</i>
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700 604	HV Test lead with quick coupling connector (4.5m/ 15ft)
700 605	Transport case housing the HVA60 together with all required cables
700 010	Vacuum circuit breaker testing feature upgrade

**NOTE:** *Due to Company's continuous development program the information detailed in this document may change without previous notification.*



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## HV Diagnostics International

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