ACA-2000

Digital Automatic Control and Measuring System

The operating terminal ACA-2000 is our state-of-the art product, which allows comfortable and flexible control of high voltage test transformer or resonance test systems.

The Industrial PC based control system is specifically designed for the needs of HV testing. This control system is supplied with a Windows based control software package of which the development is based on the experience of three generations of AC test system controls. The system's hardware has an EMC hardened design for safe use also in the most electrically noisy areas.

Active and passive safety is implemented into the system in form of independent external emergency switches, software watchdogs, graphic symbols and status information for fast understanding.

A Report File can be used for further data processing. This ASCII format File can be imported into most Data processing applications and databases.

Features

- **This system controls:** output voltage, regulating voltage and current, rise time, testing time, gap distance, resonance control, history, alarms, trips, grounding, safety, status visualization, sphere gaps, data logging, data storage, status handling, automation, system diagram visualization.
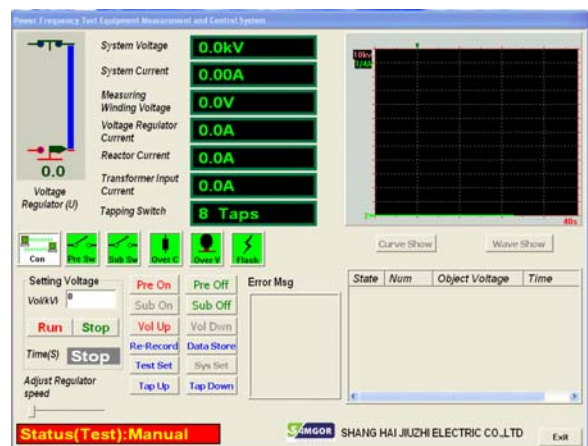
- **Manual operation mode** — with all status information, resonance control, and rise time, etc still with full operator control.
- **Free programmable Sequence mode** optimized for automated production testing. A defined test sequence can be set up by the user easily, run by the software and the results are recorded. All test sequences can be recorded and saved for later use or repetition.
- **Full visualization of test system** with measuring values, switch, positions, earthing system, alarms and warnings.
- **Over-current protection:** include two levels; one is cut current and software protection. But the hardware cut is controlled by current relay equipment; computer-separated gears commend the software protection; moreover, it can be supervised towards to the currents of different loops

- **Over-voltage protection:** the control and measuring system will automatic lower the voltage and cut the power when the voltage beyond certain limit. And whole data will be displayed
- **Short-circuit protection:** the system will send the signal of cutting power within 10 sec when the testing object is breakdown or flashover.
- **Urgent separating brake:** It can be manually to cutoff the main power when the whole system is paralysis or in an emergent status

Benefits

- **Easy**, **intuitive** understandable and useable graphic user interface (GUI)
- **Automatic test report generation** from the integrated **Reporting Tool** with user definable layout, logo insertion, etc.
- **Windows control software** with all its advantages of integration, remote control, remote supervision, LAN connection and decentral data-storage.
- **Easy adaptable to different AC test systems** for an easy system upgrade or modernization of all types of AC high voltage test systems.

Software of Measurement System

Measurement system uses the virtual instrument design. By replacing the hardware instrument panel to software panel to complete the function settings of measurement system, wave analysis, recording the voltage value, and print test reports output, etc. It is truly realize the idea of "software is instrument". By using software instead of hardware, the virtual instrument not only saves users' investment, but also changes the situation that definitions of instruments' functions are defined by manufacturers. The users can expand the use of situation, based on different requirements, to custom some individual instruments' function.

Testing operator monitors the trial process of transformation of the wave through the window. Real-time access to test the voltage value, analyze the harmonic content and waveform distortion and record the voltage value and withstanding voltage time.

Some transient waveforms are formed by in the withstanding voltage stage or flashover of the samples. We can choose to save waveforms as graphics files and data files, which is used for generation of test reports and off-line analysis.

After the test, you can generate voltage - time curve for the analysis of the test.
Some historical documents can be monitored off-line through testing voltage control window.

Test Data Analysis Functions

- **Waveforms Record:** Measurement Software can entirely record the test data, and generate data files which will be stored to the appointed directory.
- **Digital Filter:** Use multipoint smooth, digital windows, adaptive filter etc. Effectively keep the noise from outside interference and equipment down.
- **Test Voltage Analysis:** Real-time calculate the current value of the test voltage and peak voltage, and track the test curve.
- **Transient Waveform Record and Analysis:** Based on different test projects, set up certain types of transient waveform record and analysis, and calculate values such as the peak voltage, the voltage gradient, the duration, anti-peak value, and so on.
- **Test harmonic analysis:** When test voltage is low, due to the unsaturated magnetic core, harmonic content is high. National Standards for harmonic content in a test voltage is provided. Therefore to monitor the harmonic content during the test process is also very necessary.
- **Test Reports generating and Printing:** Following Test-specific templates, print test reports and test waveforms.
- **Other Data Analysis Functions:** Based on different test projects, it is convenient to add data processing functions which clients need.

Technical Data

Control console precision:

System output voltage:	16 bit
System output current:	16 bit
Excitation transformer system output voltage:	16 bit
Voltage regulator output voltage:	16 bit
Voltage regulator output current:	16 bit

Console input power:

Voltage:	110-220v±10%
Capacity:	400VA
Frequency:	50/60Hz
Insurance tube:	10A

Console internal voltage:

+24V	5A
+15V	1.5A
-15V	1.5A
+5V	3A

Console input-output switch signal

Input	24A
Output	24A

Console input-output analog signal:

Input	0-7V
Input	0-10V
Output	0-10V

Operating Conditions

Operating temperature:	0... 40° C
Storage temperature:	-20... 60° C
Humidity:	20... 80 % r.h. non-condensing
Vibration:	3g (IEC 68-2-6 xyz axis 10-150Hz)
Shock:	10g (IEC 68-2-27 11ms half sine)

System

- Computer: industrial controlled computer, 19'' LDC, P4 CPU, 160G, 512M.
- Data sampling card: 16bits, 8 channels, 100KHZ Sample-taking speed.
- Printer: chosen by customers.
- Control desk: totally shielding, provide spare power supply.
- Isolation transformer: 400VA, withstanding level ≥2KVr.m.s
- MCU model: 51 inner cores, totally shielding.
- Analog data isolated model: 8 channels, 250KHZ, 2400V/r.M.s/min
- Fiber reception, send model: double

Modernizations

For upgrading or modernization of your AC test system please contact us for an offer and further details.

For further information please contact: