HAEFELY EMC
TECHNOLOGY

PSURGE 8000

MODULAR EXPANDABLE SURGE SYSTEM

SURGE

www.haefelyemc.com

SUMMARY

The PSURGE 8000 test system meets all your current and future surge testing requirements! A modular expandable system that grows with your application needs.

The modular concept is built around a PC based host controller (the PSURGE 8000 controller) with physically and functionally independent modules for impulses (PIM #X) and coupling/decoupling (PCD #X). The system uses distributed intelligence and each module has its own application-specific program, runs internal routines and communicates with the host controller.

System modules are automatically detected by the host controller, providing true plug & play functionality.

Whether you test according to the IEC 61000 series "CE mark" standards, the IEC 60601 medical device standards, or any number of telecom and product specific standards, the surge platform is your one stop test station for everything from pre-compliance to full-compliance to product development testing.

A wide range of cost-efficient coupling / decoupling networks for symmetrical and asymmetrical data- and signal lines are available optionally.

With a 100 year history of innovation, service centers on three continents and a full staff of development and support engineers, HAEFELY is the clear choice for all your transient immunity test needs.

OVERVIEW

BENEFITS

Hardware concept – We are using the latest technology; ultra fast high power semiconductor switches for the highest waveform integrity. High quality HV connectors with integrated safety circuit.

Plug & play philosophy – Turn on the system and after the auto scan is finished, your newly connected module will be ready to use.

Single connect solution – No reconfiguration during testing, no reconnection errors. Reduces test time and operator interventions.

Safety – A fully integrated hardware safety circuit links EVERY high voltage connector and cable. Safety features like external emergency stop or warning lamp protect the user from hazardous and dangerous situations.

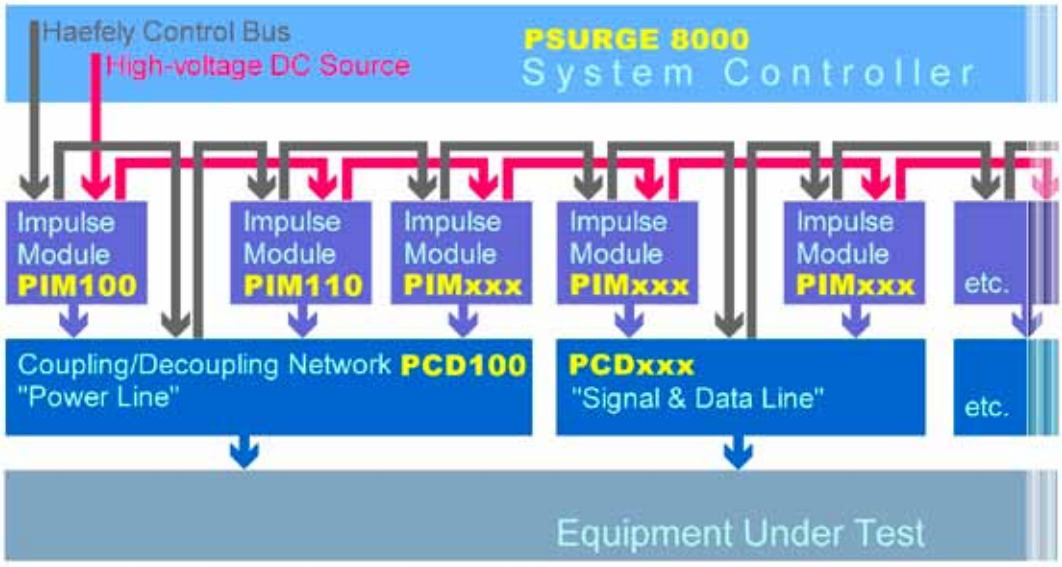
Test reporting – The WinFEAT'R software automatically documents test parameters and results.

Reliable and economical – World renowned HAEFELY quality, reliability, service and support in a flexible and modular surge system.

FEATURES

- Our standard PIM #X modules cover the most common surge standards, such as EN, ETSI, IEC, Telcordia (Bellcore),FCC (TIA) 68, UL, ITU, ANSI, IEEE & more.
- Any customized waveform can be easily realized and integrated in a new or existing PSURGE 8000 system.
- Various coupling / decoupling networks for power lines 1-phase and 3-phase up to 690 V / 100 A are available.
- A selection of coupling networks for data & signal lines up to 24 outputs are on-hand.
- Test routine storage and recall, up to 36 tests & programs.
- WinFEAT'R is a drag & drop control, measuring and reporting software for your full automated test procedure and test report.
- WinFEAT'R is fully compatible with Windows XP/Vista/7.

MODULARITY



The surge platform hardware comprises a control unit with access to maximum 99 modules interconnected on the HAEFELY bus.

An innovative platform concept can help reducing time-to-market and providing a high degree of future proofing against changing standards or new applications.

Also included in the host controller is the system's high voltage DC supply which is distributed between impulse modules (PIMxxx) using a safety interlocked bus system. Up to 99 modules in any combination can be controlled from just one PSURGE 8000 control unit, ranging from a stand-alone single impulse generator to a complete and fully automated test system.

Modules are application-specific and can include impulse units or coupling units in any combination. This is possible by using distributed intelligence. Each module contains information stored in non-volatile memory which the control unit interprets and uses as the basis for test templates. This concept leaves an opening for future expansions of the system without having to modify the controller, a true PLATFORM concept. Flexibility can be enhanced by using the REMOTE USER INTERFACE software. This opens opportunities for integration into manufacturing and quality systems. Access to process interfaces means that the system can also make measurements on the EUT and control other remote applications either based on EUT function or status.

SINGLE CONNECT SOLUTIONS

Eliminate reconnection errors, reduce down time. The single connect solution performs tests to AC/DC power, telecom and 1/0 ports simultaneously without having to power down or reboot the EUT. Switching between all required impulse types and coupling paths - without having to reconnect or reconfigure hardware. Reduced operator intervention increases throughput. Fully automatic coupling path selection through the power, tip & ring telecom and I/0 line couplers plus waveform selection can all be programmed either from the PSURGE 8000 front panel controls or from the WinFEAT'R PC based software package.

APPLICATIONS

- Industrial
- CE marking
- Safety
- Household
- Component
- Telecommunication

PLUG & PLAY

High quality HV connectors with integrated safety circuit ensure total system security.

Surge platform system uses the latest circuit design techniques and high voltage technology by using ultra fast high power semiconductor switches. This ensures highest waveform integrity, unprecedented phase angle synchronisation, reliability and total test repeatability.

Integrated voltage and current monitors with BNC outputs allow fast waveform verification using an oscilloscope without high voltage probes.

Plug & play is implemented by the HAEFELY control bus connected in daisy chain fashion between all system modules and the host controller.
Testing with new modules is as simple as connecting to the host controller through the Haefely bus and restarting the system controller. Once an auto scan has been performed, the modules are available for testing. No software upgrade or reconfiguration is necessary any more. That's what we call REAL plug & play! This feature also provides the freedom to configure a test lab layout in any way. Systems can be tailored to application or user specifications and then simply expanded by the addition of further modules.

SAFE & EASY

SAFETY

A fully integrated hardware safety circuit links EVERY high voltage connector and cable ensuring high voltage system integrity. Using safety circuit connectors on the PSURGE 8000 controller, test cabinets or protective barriers can be integrated in the test system. A clear system of red and green lamps indicate the system status (safe/testing) and further enhances operator safety.

EASY FRONT PANEL OPERATION

The BOOSTER START function enables tests or complete programs to be started with a minimum number of keystrokes. The front panel layout and software structure are both intuitive and powerful.

INTERFACING

EUT fail input
Connect pass/fail detection hardware to this BNC input and the EUT condition, as determined by specific EUT supervision hardware, is added to the database of test information and finally the log file. EUT condition can also be used to determine the test course.

Start / stop
This feature can be used to create a semi-automatic test environment where multiple samples must be tested using the same routines. A test cabinet cover or other safety device connected to the start/stop input is used to start or stop the same test routine. When the safety device is open, the test system is rendered safe and test samples can be exchanged. Close and the system pulses.

Synchronisation input
Impulses can be synchronised to any external cyclic signal with a high degree of accuracy.

Trigger input
External signals can be used to trigger impulse generation to a particular event.

Trigger output
BNC socket to trigger an oscilloscope or other device coincident with the impulse. The trigger signal is a negative edge transition. Level +5 Vdc.

SOFTWARE

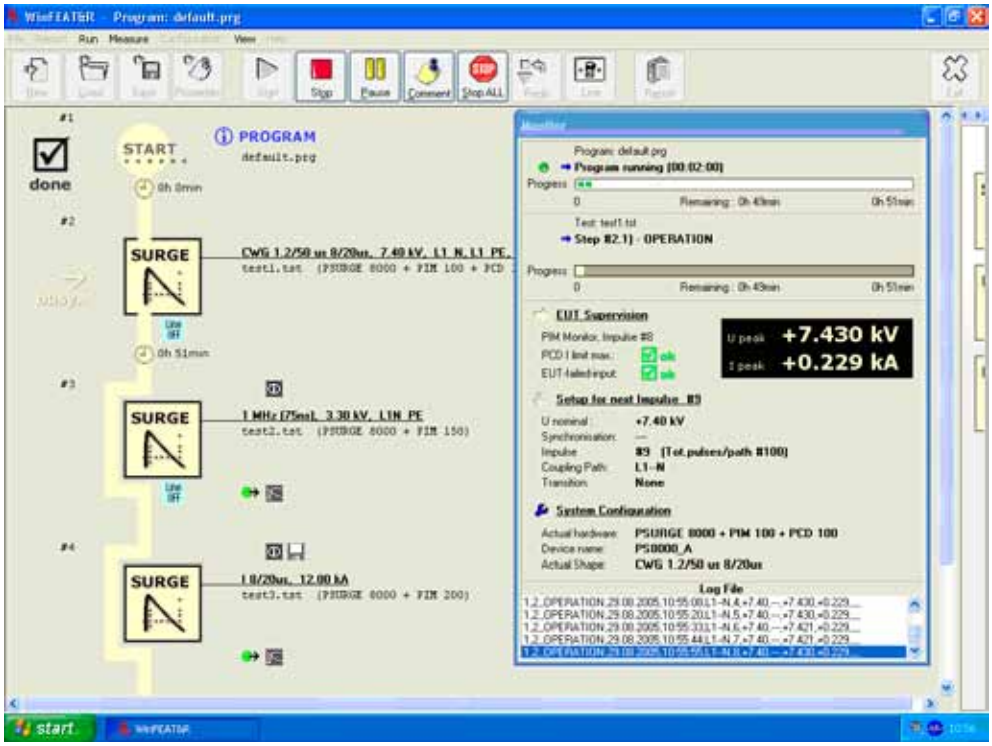
WinFEAT'R is the software package that is designed from the outset to run under Windows XP, Windows Vista and Windows 7 systems.

HAEFELY EFT, LINE and SURGE platform systems are all integrated for fully automated control of a complete test suite.

WinFEAT'R is the product of market feedback and experience gained over many years in the EMC testing world. The acronym stands for **F**ast **E**asy **A**ccurate **T**esting & **R**eporting, in WinFEAT'R we have achieved all these things.

Particular care was taken in designing the GUI (Graphical User Interface), which incorporates many new and innovative features aimed at simplifying user interactions. Drag and drop techniques combined with on screen graphics make WinFEAT'R truly intuitive.

System configuration is an extension of the plug & play philosophy. Hardware attached to the system bus is auto-detected. Individual test instrument specifications are displayed and made available. Individual test and program execution times are displayed giving a detailed preview of the complete process.



OPTIONS OF MODULARITY

IMPULSE MODULES

PIM 100
2499020

Combination wave impulse module

- Built according to IEC/EN 61000-4-5 Ed. 1 & 2 and ANSI C62.41/45
- 1.2/50 µs open circuit up to 7.4 kV
- 8/20 µs short circuit up to 3.7 kA
- Impulse voltage and current monitors
- ± 1° phase synchronization
- Reliable semiconductor HV-switch
- Positive, negative and alternating polarity
- Up to 12 pulses per minute

PIM 110
2499030

Ring wave impulse module

- Built according to IEC/EN 61000-4-12 and ANSI C62.41/45
- 100 kHz frequency, 0.5 µs rise time
- Imp. voltage up to 7.8 kV / 12 Ω, 30 Ω and 200 Ω
- Impulse voltage and current monitors
- ± 1° phase synchronization
- Positive, negative and alternating polarity
- Up to 12 pulses per minute
- Reliable semiconductor HV-switch

PIM 120
2499400

Telecom wave impulse module

- Built according to IEC/EN 61000-4-5 Ed. 1 & 2, ITU K-series and IEC 60950
- 10/700 µs open circuit voltage
- 5/320 µs short circuit current
- Imp. voltage up to 7.4 kV / 15 Ω and 40 Ω
- Impulse voltage & current monitors
- Reliable semiconductor HV-switch
- Positive, negative and alternating polarity
- Up to 12 pulses per minute

PCD 120
2499410

Four-wire coupling unit for telecom wave

- 4 wire coupling unit for unshielded symmetrical operated lines
- Compliant with IEC 61000-4-5 (10/700 µs impulse only), ITU K.20 / K.21 / K.44 / K.45
- Fully automated operation

For more available PSURGE 8000 impulse modules and accessories please visit www.haefelyemc.com or see our product overview 2012.

PIM 150
2499390

Oscillating wave impulse module

- Built according to IEC/EN 61000-4-12 Ed.1, IEC 61000-4-18 Ed.1, IEC 60255-22-1 and ANSI C37.90
- 100 kHz and 1 MHz burst frequencies
- 75 ns rise time
- Impulse voltage up to 3.3 kV / 200 Ω
- Integrated, fully automatic CDN for three-phase AC and DC power lines
- EUT mains voltage up to 480 V / 277 V 16 A
- Impulse voltage monitor
- Capacitive coupling clamp available optionally (IP 4 A)
- Data line CDN available optionally (PCD 150)

COUPLING / DECOUPLING NETWORKS

PCD 100
2499040

Single-phase CDN for combination wave and ring wave

- Built according to IEC/EN 61000-4-5 Edition 1 & 2 ANSI C62.41/45, TIA-968A (FCC part 68/47 CFR), Telcordia (Bellcore) GR 1089 CORE
- Fully automated test routines
- Coupling of up to two different wave-shapes without any rewiring
- For combination wave, ring wave and others (PIM 100, PIM 110)
- Up to 8 kV impulse voltage
- EUT mains up to 264 V / 16 A

PCD 130
2499640

Three-phase CDN for combination wave and ring wave

- Built according to IEC/EN 61000-4-5 Edition 1 & 2 ANSI C62.41/45, TIA-968A (FCC part 68/47 CFR), Telcordia (Bellcore) GR 1089 CORE
- Fully automated test routines
- Coupling of up to three different wave- shapes without any rewiring
- For combination wave, ring wave and others
- Up to 8 kV impulse voltage
- EUT mains voltage up to 690 V / 400 V
- EUT mains current up to 32 A per phase
- Correct phase angle synchronization for each coupling path

For more available CDN's and accessories please visit www.haefelyemc.com or see our product overview 2012.

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