

SG4003

Partial Discharge Measuring System



The SG4003 partial discharge detector comes from the very successful family of SG series. It is the ideal solution for pass/fail partial discharge testing; incorporating all the basic functions of an analog detector and meets all IEC and IEEE/ANSI standards for PD testing. We've eliminated the costly advanced features associated with fully computerized PD detectors. It's designed to help you modernize your facility at an affordable price, and it's simple to operate.

The SG4003 provides the most intuitive and easiest to use operator interface of any available digital PD testing system. Data analysis is fast, easy and requires little training. Its Windows™-based software allows flexible test recording and data export to Word™, Excel™ and other Windows programs. In addition, only the SG4003 provides a completely open-architecture hardware and software solution through the use of the fastest processors.

User Benefit

Easy Operation Ease of use was the mandate to our engineering and design teams. The SG4003 Detector uses the worldwide standard Windows operating system and an intuitive control and display panel to allow even inexperienced operators to learn quickly with minimal training. All the features you're used to with an analog scope, such as real-time bipolar pulse display, display

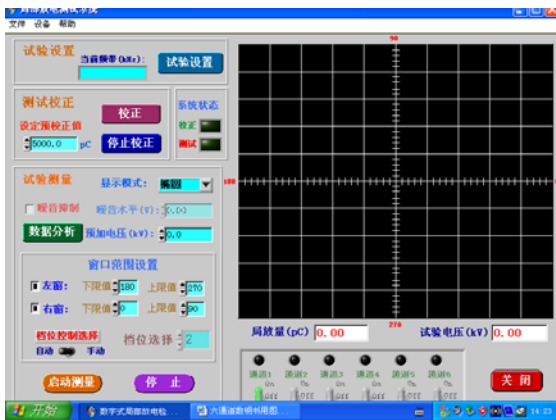
graticules, analog readout, simple adjustment, etc., are built-in. In addition, advanced features such as higher accuracy, automated calibration, data analysis, and customized test recording, are standard. Use as much or as little as you like.

Automated Testing The SG4003 Detector can automate your entire PD testing process. Automated calibration simplifies setup. The SG4003 Detector can work with any HV source. However, when interfaced with other suitably equipped control systems for AC sources, control of the entire HV source is provided through the SG4003 Detector and test reports contain complete data on all aspects of the test.

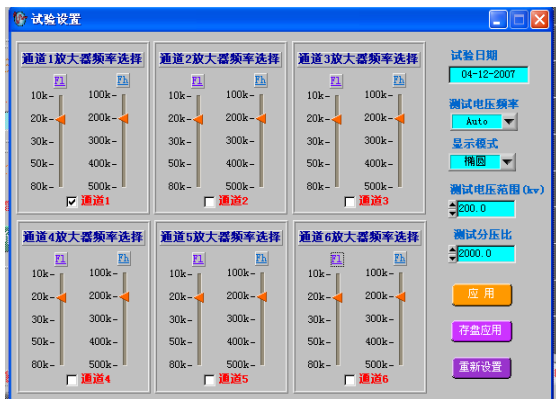
Open-Architecture Design The SG4003 Detector has intentionally been designed with an open hardware and software architecture that eliminates obsolescence. Not only is this PD measuring instrument the most advanced instrument available, it will stay the most advanced well into the future, evolving and adapting to incorporate new, emerging technology and to meet changing testing needs. Microsoft ActiveX technology even allows third party developers to write new data recording, processing, and analysis modules for the system.

Advanced Analysis Capability The SG4003 Detector possesses the most flexible analysis tools of any digital partial discharge detector. Pulse capture can be achieved against phase or time. There is full control over gating (vertical and horizontal) of pulses so that the effects of interference can be reduced. Optional software and hardware modules add capability for partial discharge site location, external pulse discrimination, noise suppression, three dimensional plots, and discharge pattern fingerprinting.

Everything you want in digital. Everything you know from analog!



Six Channels



Six Channels

Training

Is it important for your operators to learn quickly? The SG4003™ Detector imitates the look and feel of an analog detector. If your operators can use a conventional analog detector, they can use the SG4003 Detector with minimal training.

Readout

How do your operators interpret data? With the SG4003 Detector, they can read directly in PC, look at the analog bar graph, or interpret from the pulse display. All without changing windows or functions.

Help

You will probably never need it because the SG4003 Detector is so easy to use. But it's there if you need it.

Interpretation

How easily can you interpret results? The SG4003

Detector provides a color, bipolar pulse display that is easy to read and interpret. Calibration pulses and zero markers are clearly displayed and pulses are easily viewed. Display update is fast (25 times/second), so there is no guesswork.

Ease of Use

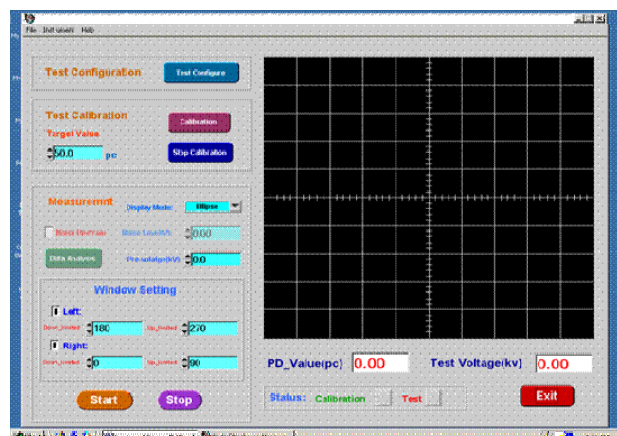
How easy does your setup calibration need to be? The SG4003 Detector allows you to automate your calibration. Just type in the value and the SG4003 Detector does the rest. Manual calibration (as with conventional, analog detectors) can also be performed.

Flexibility

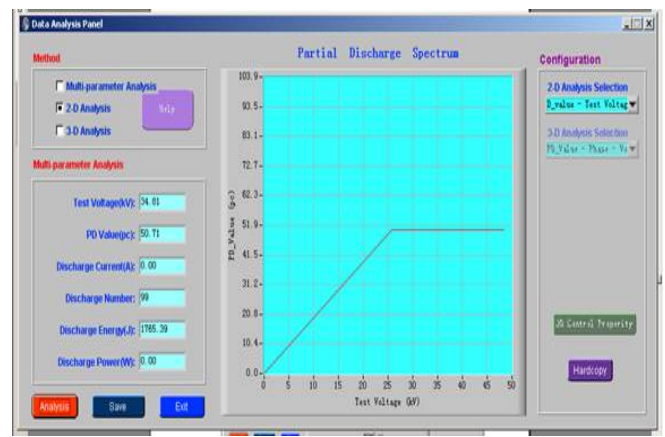
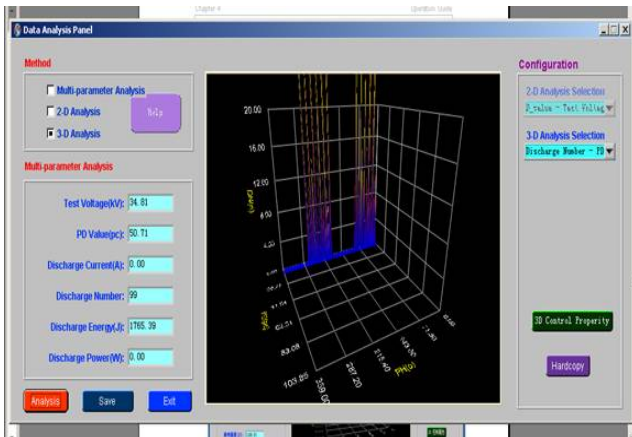
How flexible does your detector need to be? Windows makes the SG4003 Detector easy to use and makes it easy to access other parts of the SG4003 Detector program. Additional, optional programs are quickly loaded and utilized. Just open a window! No confusing function keys to remember and no moving around through layers of the program.

Noise Suppression

What gating and noise suppression features do you need? The SG4003 Detector provides complete control over horizontal and vertical gating (windowing). Make use of it when the conditions require you to.



2-D analysis



3-D analysis

Applications

- Power Cable
- Distribution and Power Transformers
- MV and HV Switchgear
- Power Circuit Breakers
- Gas Insulated Switchgear
- Bushings
- Shunt Reactors
- Potential Transformers and Current Transformers
- Power Factor Correction Capacitors
- Line Insulator Products
- Lightning Arrestors
- High Voltage Laboratories
- HV Components
- Insulating Materials of All Types

Several standard test records are provided. Data can be inserted into any other Windows application for custom report generation. When used with a AC source and 970 control system, additional data acquisition and control is possible.

Applicable Standards

IEC-60060 Part 1 & Part 2

IEC-60270

IEC-885-2 and IEC-885-3

IEEE Std. 4, 1995

Test Report Overview

Output Test Report (Word)

Technical Specifications

Amplifier

Gain:	0 dB to 120 dB
Attenuator Accuracy:	1 %
Input Impedance:	1MΩ
System Noise:	< 15 μV referred to input on highest gain range

Filters

High Pass:	-10, 20,30, 50, 80 kHz
Low Pass:	- 100, 200, 300,400, 500 kHz

PD Measurement

PD Meter Resolution:	12 bits displayed
Phase Resolution:	0.2 %
Linearity Error:	< 1 %

Voltage Measurement

Uncertainty of Scale Factor:	< 3%
Linearity (10-100% FS):	< 1 %
Resolution:	12 bits

Measurement Modes

Peak / $\sqrt{2}$, true RMS
Synchronization: Local Mains, HV source (automatic)

Environmental

Operating Temp Range:	0° C to 40° C
Storage Temp Range :	-10° C to 75 ° C
Humidity Range:	95% non-condensing
Ethernet Port:	Isolated 10 Base T (note: optically isolated cable recommended)

For further information please contact:

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