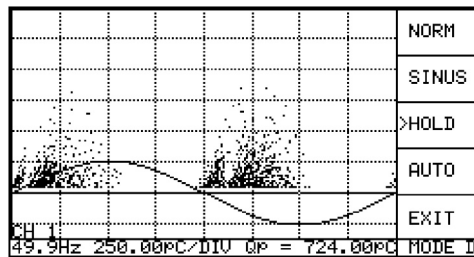


ICMmonitor



The ICMmonitor is part of the Power Diagnostix ICMseries of digital partial discharge detectors. The ICMmonitor is a compact, stand-alone instrument for evaluating the condition of medium and high voltage insulation. A built-in four-, or eight-channel multiplexer offers scanning of three-phase systems or multiple sensors. It is used principally for permanent, continuous on-line monitoring of rotating machines, cable systems, power transformers, and gas-insulated switch gear (GIS).

Partial discharge (PD) measurements are a proven method for effective, non-destructive evaluation of electrical insulation, preventing expensive unplanned outages by detecting insulation problems before they can cause breakdowns. The Power Diagnostix ICMmonitor is a non-invasive digital PD detector for permanent installation and continuous monitoring of medium and high-voltage insulation.



Monochrome PD Pattern Display

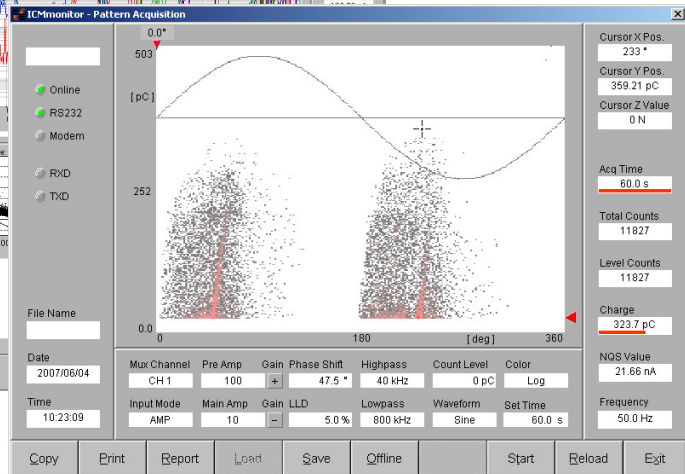
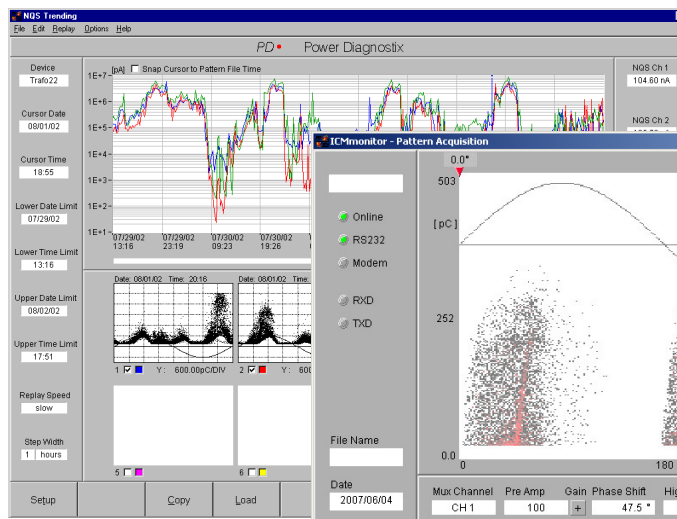
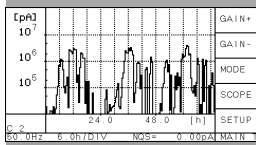
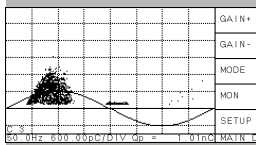
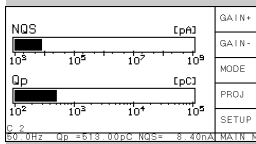
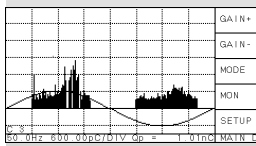
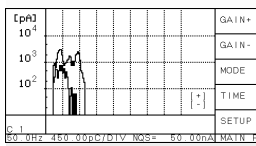
Embedded Display

The ICMmonitor has a simple push-button interface to navigate on-screen menus in an embedded LCD panel. The LCD display modes include a monochrome phase-resolved PD pattern display

for characterization of defects, a scope-like display showing phase-summed charge pulses superimposed with the applied voltage wave, a time trending display, and a monitoring display showing bar graphs of two key partial discharge quantities (Qp and NQS). Qp is the apparent charge value of the PD activity, and NQS is the absolute discharge current obtained by integrating the discharge values (summing up the total charge moved and dividing by the time interval, $Q/t = [As]/[s]$).

Noise Rejection

The ICMmonitor features various noise handling techniques. The noise gating module can be connected to an antenna or a current transformer to sense and remove noise without losing significant PD data. Another method available is simple windowing, in which phase-stable noise is blind out for certain portions of each applied high voltage wave. Additionally, appropriate choice of the external preamplifier can limit noise by detecting PD in a frequency band outside the range of the noise.



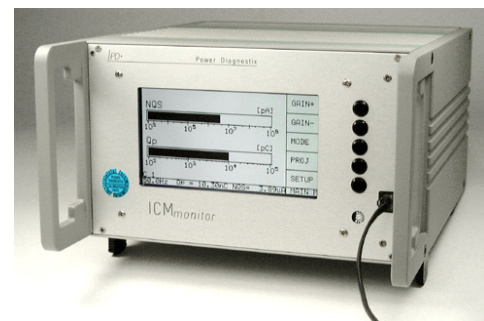
Alarms and Trending

Users can set alarm levels of NQS or Q_p that will trigger when those values are exceeded. A triggered alarm will sound, appear on the LCD display, and activate an output on the ICMmonitor that can be used to drive a relay for interfacing with a local alarm system. The ICMmonitor also collects and displays PD data over a specified time interval for easy trending and observations of changes in the Q_p and NQS levels in the monitored system. Optionally, up to eight DC signals such as temperature or load can be added to this trending.

Telemonitoring

Although the ICMmonitor is an autonomous unit, it can be connected to download data or to implement remote control of the unit. With its built-in TCP/IP interface, analog modem, or GSM modem, the ICMmonitor can be controlled and observed remotely over a telephone

or Internet connection anywhere in the world. Optionally, if a monitored system exceeds an alarm level set by the user, the ICMmonitor can place a call to a user-selected number. The ICMmonitor software automatically maintains the trending information as well as the phase-resolved pattern of a multitude of ICMmonitor units. Improved mobile access to the ICMmonitor is provided using the ICMmonitor software on a PDA with a built-in cellular telephone (GSM).



Portable ICMmonitor with Modem

The multifunctional ICMmonitor, with its embedded display, convenient trending, and settable alarms, is an ideal solution for continuous on-line monitoring of rotating machines and other electric devices in industrial and utility applications.