

**INSTRUMENTS**



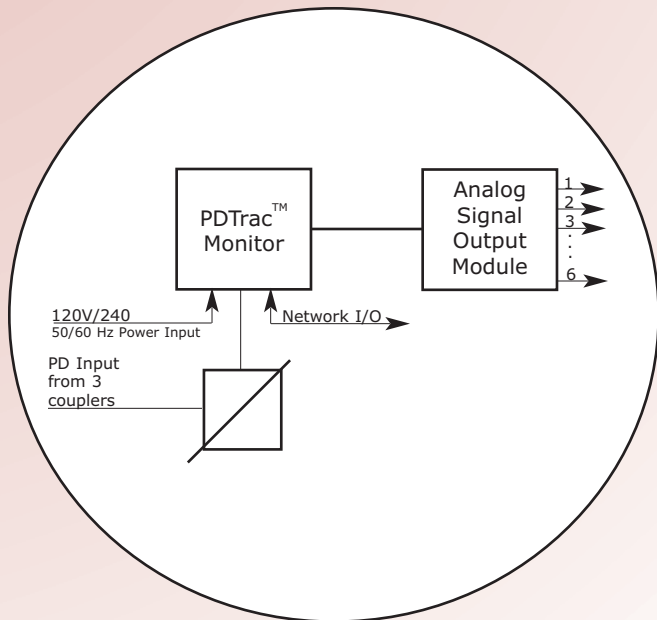
# *PDTrac™*

*Continuous Partial Discharge Monitor for  
Medium and High Voltage Electrical Equipment*

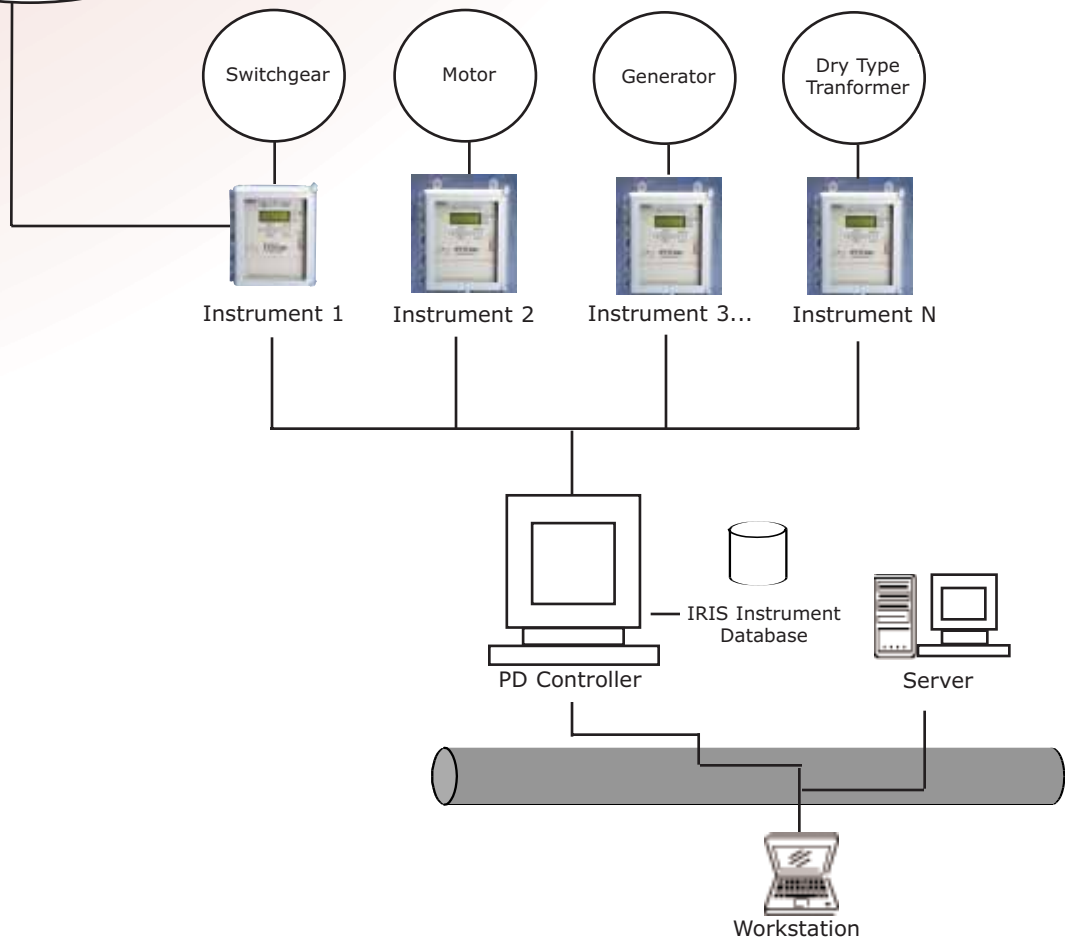


# INSTRUMENTS

## PDTrac™



Capacitive Coupler



## INTRODUCTION:

PDTrac™ is an economical instrument providing automated, continuous Partial Discharge (PD) measurement for motors, generators, switchgear, and dry type transformers. Partial discharges are small electrical sparks that warn of deteriorating high voltage electrical insulation.




The PDTrac™ continuous on-line PD monitor provides maintenance professionals with an opportunity to automate PD testing. In addition, PDTrac™ allows for the possibility of integrating important operating conditions needed for trending the PD activity, and will trigger a remote alarm, indicating the need for a more detailed analysis. The instrument

uses the same capacitive sensors that have been permanently installed on motors, generators, and switchgear (4kV and higher) over the last 10 years by most utilities and other industries around the world.

PDTrac™ incorporates all the features of the previously successful MotorTrac™ continuous on-line PD monitor. The enhancements allow for more detailed diagnostic data and superior communications options. PDTrac™ includes our unique and rigorously researched methods to overcome the electrical interference (noise) typical in most plant environments. This ensures reliable and repeatable measurements with a low probability of false alarms. The collected data can be easily interpreted by a maintenance professional that has participated in a 2-day training seminar offered by our experienced engineering staff. The user's assessment of insulation system condition using on-line PD testing is greatly enhanced by their access to Iris' extensive PD database of over 40,000 test results. The collective experience and results of our clients are summarized annually in statistical tables, available to all users. This is a service unique to Iris and its clients and ensures objective interpretation of insulation condition.

The PDTrac™ is certified to:

- UL Standards for hazardous locations - US & Canada Class 1 & 2, Division 2
- ATEX Directive 94/9/EC  II G3 EEX nC nL IIC T4
- CE Mark

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## APPLICATION:

Facilities that have existing bus coupler installations can easily install the PDTrac™ monitor by connecting the instrument to the existing sensor termination panel within the plant. This does not require an outage and the installation effort is limited to providing power to the monitor, deciding on the alarm and/or sensor options, and running a communication link to a local control room computer or an Ethernet LAN/WAN.

New users of Iris' TGA technology must first permanently install capacitive bus couplers during a suitable machine outage.

PDTrac™ continuously collects PD data and archives the pulse height (2D) and summary numbers (Qm and NQN), which are used for trending and comparison with similar machines. The archived PD data can be downloaded using our Windows™ based software locally over an RS232 port, or remotely using RS485, fibre-optic, or Ethernet (TCP/IP) network communications.

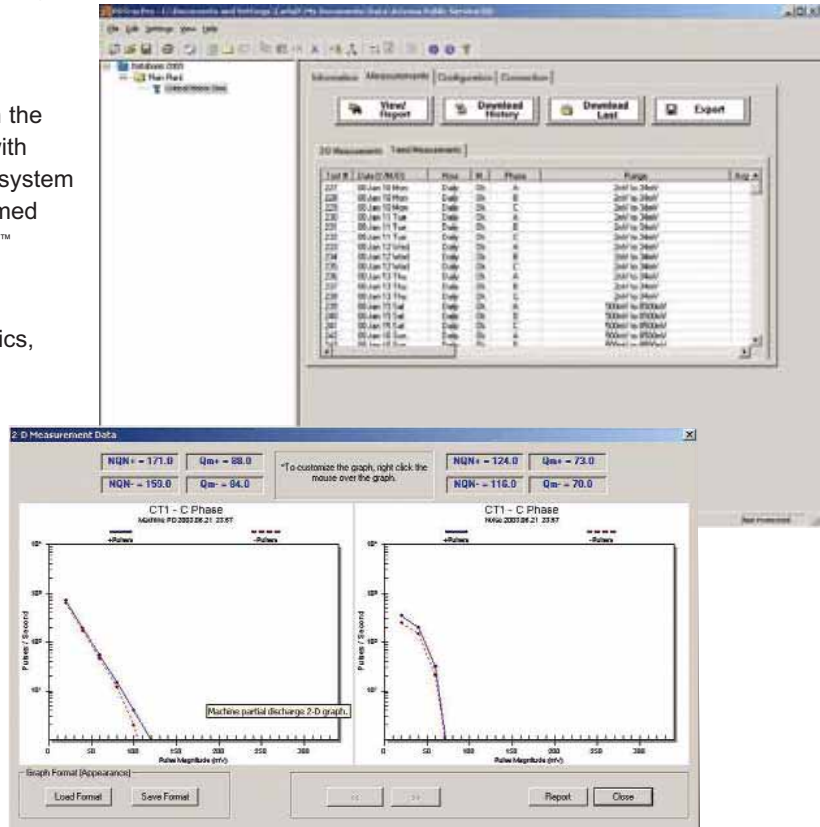
Important operating conditions such as humidity, stator winding temperature, and ambient temperature can be recorded and stored with the archived PD data. These parameters are useful for in-depth analysis and trending of the partial discharge activity.

## FEATURES:

- PDTrac™ contains superior noise separation technology based on filtering and pulse shape analysis, reliably distinguishing partial discharges from electrical interference (noise) in order to prevent false indications (alarms).
- The PDTrac™ system consists of 3 capacitive bus couplers (installed within the high voltage equipment) and a monitoring instrument (to measure the PD activity).
- Data collected by the PDTrac™ is compatible with the existing patented TGA/PDA technology. Users with existing sensor installations can commission the system without a machine outage. Data is easily confirmed and further analyzed with Iris' TGA-B™ or PDA-IV™ portable instruments.
- Remote modes of communication allow diagnostics, control and configuration from a distance.
- PDTrac™ performs continuous PD measurements with advanced alarm features, requiring minimal intervention by maintenance personnel. In response to an alarm, users can review the pulse height (2D) data using basic interpretation to confirm the cause of the alarm. Alarm levels are preset, based on the Iris database of over 40, 000 test results.
- **Alarm Output:** This dedicated relay is fitted within the monitor enclosure. The relay has an analog latching contact that can activate a remote indicator, which must be reset by the user. The alarm conditions are configurable through the operating software or using the keypad on the face of the monitor. Alternatively, the alarm output may be connected to a plant operating system.
- **Sensor Input Module:** The PDTrac™ is equipped with sensor input modules to enhance data gathering for trending and analysis. Available inputs include stator winding temperature, voltage, current or power plus ambient temperature and ambient humidity all of which impact PD readings.

## OPTIONS:

- **Analog Signal Output Module:** PDTrac™ has the ability to output anywhere from 1 to 8 analog signals proportional to the level of PD activity (Qm and/or NQN). This is applicable in situations where the user is interested in having the real time PD activity acquired by their DCS or operating system.



***Iris Power is the world's largest provider of on-line partial discharge measurement systems.***



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