

# Iris Power PDTracII 4208



**CONTINUOUS ONLINE PARTIAL DISCHARGE MONITORING  
FOR MOTORS, GENERATORS, DRY TYPE TRANSFORMERS,  
AND AIR-INSULATED SWITCHGEAR**

---

Qualitrol is the world's largest manufacturer of Online Partial Discharge (PD) Monitoring Systems. Partial discharges are small electrical sparks in electrical insulation that can warn of the impending failure of assets such as motors, generators, switchgear and dry-type transformers rated up to 35 kV. The development of Iris Power partial discharge technology was originally funded by North American utilities via CEA and EPRI to provide asset owners a method of detecting developing insulation problems to plan maintenance, independent of equipment manufacturers.

## IRIS Power PDTracII 4208 System

The Iris Power PDTracII 4208 system is an economical means of providing automated, continuous partial discharge (PD) measurement for motors, generators, switchgear, and dry type transformers rated up to 35 kV. The Iris Power PDTracII 4208 system consists of three permanently installed 80 pF capacitive couplers (one per phase), and an Iris Power PDTracII 4208 monitor, with built in networking capability. The PDTracII 4208 can operate “stand alone” with only periodic downloading of archived PD data, or it can be networked with the plant computer.

The Iris Power PDTracII 4208 is a proven product with a long heritage:

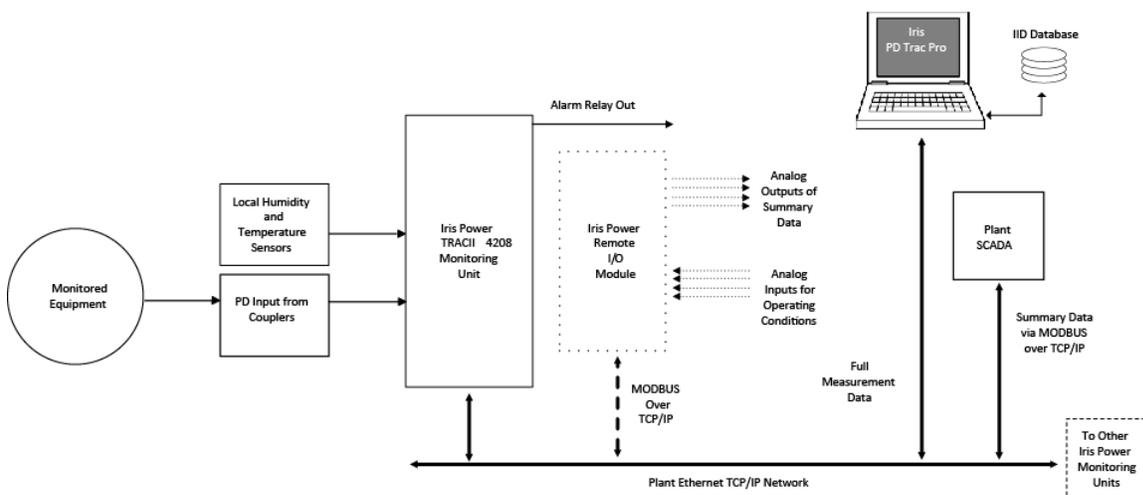
- This is our third-generation product, incorporating many improvements over the previous PDTrac
- Over 5500 continuous on-line PD monitoring systems have been installed since 1994
- Compliant with IEEE 1434:2016; IEC 60034-27-2:2012; IEC 62478.

The monitor continuously collects and archives PD data which are used to produce phase resolved PD (PRPD) plots as well as summary numbers (Qm and NQN). Qm is used for trending and comparison with similar assets to determine which assets require maintenance. Using the Windows™-based software, the archived PD data can be downloaded locally over a USB port, or remotely using Ethernet (TCP/IP) network communication.

The collected PD data can be easily interpreted by maintenance professionals after participating in a 2-day training seminar offered by Qualitrol-Iris Power’s experts. The user’s assessment of asset condition is greatly enhanced by access to Iris Power’s extensive PD database of over 640,000 test results. The collective experience and results of our clients are regularly summarized in statistical tables, available to all users. This is a service unique to Qualitrol-Iris Power and its clients and ensures objective interpretation of insulation condition.

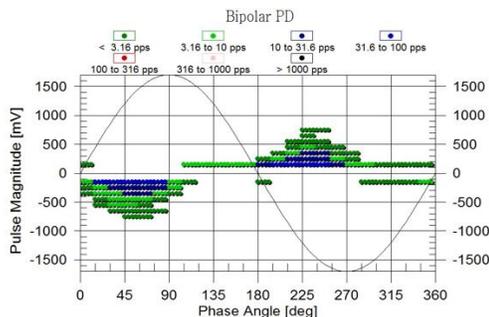
Unlike all other Online PD systems, the motor and generator owner can download their own PD results and do interpretation themselves, without being required to use expensive external experts from the PD system vendor or the machine manufacturer. This is possible due to automatic noise suppression and the clear, science-based high-PD Alert level.

Facilities that already have existing “single- ended” 80 pF PD sensors can easily install the Iris Power PDTracII 4208 monitor by connecting it to the existing sensor termination panel within the plant. This does not require an outage.



## FEATURES

- The Iris Power PDTraII 4208 monitor contains superior noise separation technology based on filtering and pulse shape analysis, distinguishing partial discharges from electrical interference (noise) in order to prevent false indications when the monitored equipment is connected to the power system by >30m of shielded power cable.
- Robust continuous monitor tested to withstand harsh plant conditions. Modular hardware and easy connections to facilitate field repairs and upgrades.
- Data collected by the Iris Power PDTraII 4208 monitor is compatible with the existing TGA/PDA technology. Users with existing sensor installations can commission the system without a machine outage. Data is easily confirmed and further analyzed with the high-resolution Iris Power TGA-B™ or Iris Power PDA-IV™ portable instruments.
- The Iris Power PDTraII 4208 is continuously collecting and periodically archiving PD data for download on 3 sensitivity ranges – a User Specified range, a range that Automatically adjusts to current PD levels, and a range suitable for evaluating PD Alert conditions.
- The Alert testing range ensures minimal intervention by maintenance personnel. In response to a PD alert, users can review the pulse height analysis plots, and the 24-window phase resolved PD plots using basic interpretation to confirm the cause of the alert.
- Alert Output is a dedicated relay fitted within the monitor enclosure that can activate a remote indicator of high PD alert conditions. The alert conditions are configurable through the operating software. The alert output may be connected to a plant monitoring system.
- The Iris Power PDTraII 4208 monitor is equipped with ambient sensor input modules to enhance data gathering for trending and analysis. Using an optional sensor, ambient temperature and ambient humidity can be recorded along with the PD data readings.
- USB memory stick port for downloading stored data without a laptop computer.
- Networking with an Ethernet port for remote diagnostics, downloading, configuration with Iris Power software. Modbus over Ethernet protocol included for interfacing to third party applications to obtain machine operating state and provide summary PD data.



EPOXY MICA  
CAPACITIVE  
SENSOR



## Global Acceptance of Online Partial Discharge Monitoring

Partial discharges in degrading high voltage equipment give rise to small current pulses that can be detected at the terminals of rotating machines, dry-type transformers, etc. The magnitude and number of these pulses depend on the degree of insulation deterioration. As the magnitude and number of partial discharge current pulses increase, the amount of electrical insulation deterioration, and thus the risk of failure, is also increasing.

Partial Discharge monitoring has won worldwide acceptance across utilities, major industrial companies and equipment manufacturers. Iris Power has provided products for partial discharge monitoring on over 18,000 assets globally in addition to partial discharge monitoring being recommended in industry standards such as IEEE Standard 1434-2014, IEC TS 60034-27-2:2012 and IEC 62478-2016.

SPECIFICATIONS	
Frequency Bandwidth	0.1 MHz - 350 MHz
Phase Windows	24 phase windows per cycle
Pulse Amplitude	2 mV - 34,000 mV 10 Sensitivity Range Settings
Data Acquisition Time	5 s per magnitude window
Ambient Sensors	Ambient Humidity Sensor Ambient Temperature Sensor
Recommended PD Sensors	80 pF EMC (6.9 kV - 35 kV) 3 Sensor Inputs, IEC 60034-27-2 and IEEE 1434 Compliant
Synchronization Frequency	20 Hz to 120 Hz
Operating Temperature	0°C to 55°C (32°F to 131°F)
Relative Humidity	Up to 95% non-condensing
Dimensions	56 cm x 45 cm x 23 cm 22" x 17.75" x 9"
Networking Capability	Modbus over Ethernet (TCP/IP)
Manual Data Download	USB Memory Stick
Dimensions Hazardous Location PDTracII 4208	55 cm W x 74 cm H x 26 cm D 21.5' W x 29.13" H x 10.29" D

## OPTIONS

- Remote inputs with 8 analog points proportional to operating conditions such as equipment temperature, voltage, current, or power. These conditions are recorded for trending and analysis.
- Remote outputs with 6 analog outputs proportional to the level of PD activity (+Qm and -Qm) in each phase. This is applicable in situations where the user is interested in having the real-time PD activity acquired by their DCS or control system.
- Local ambient humidity and temperature sensor.
- C-UL-US Hazardous location, with stainless steel IP66 enclosure. For use in North American markets. PDTracII has markings Class 1, Division 2, Groups A, B, C, D based on ISA 12.12.01-2010 and CSA C22.2 NO. 213.
- ATEX/IECEX Hazardous location, with stainless steel IP66 enclosure. For use in Global markets. PDTracII with markings II 3 G Ex nA nC IIC T5 Gc in compliance with EN 60079-0:2009, EN 60079-15:2010, IEC 60079-0:2010 Edition 5 and IEC 60079-15:2010 Edition 4.
- INMETRO Hazardous location, with stainless steel IP66 enclosure. For use in Brazilian markets. PDTracII with markings BR-ExnA nC IIC T5 according to Portaria 179-2010
- Other country certification may be available

## GET IN TOUCH

Iris Power  
3110 American Drive  
Mississauga, Ontario  
Canada, L4V 1T2

+1 905 677 4824  
sales.iris@qualitrolcorp.com  
www.irispower.com  
www.qualitrolcorp.com