QUALITROL®
Defining Reliability

www.qualitrolcorp.com
www.irispower.com

IRIS POWER
A QUALITROL Company

Iris Power GuardII+ 4208 IPB

CONTINUOUS ON-LINE PARTIAL DISCHARGE MONITORING FOR BUSDUCT AND ISOLATED PHASE BUS-BAR (IPB)

The Iris Power GuardII+ 4208 IPB system is an effective and economical means of providing automated, continuous partial discharge (PD) measurement for busduct and isolated phase bus-bar (IPB) applications. It consists of multiple sets of permanently installed capacitive couplers connected at intervals to the bus-bars, an Iris Power GuardII+ 4208 monitor, plus digital communication. The GuardII+ 4208 IPB can be operated “stand alone” for periodic downloading of stored PD data. Continuous monitoring is recommended for IPB because PD in this equipment can be significantly influenced by ambient humidity, and so more frequent measurements along with logging of relative humidity will more reliably reveal any variation in activity levels due to ambient conditions. Using the networking features of the Iris Power GuardII+ 4208 IPB and implementing remote data collection, unexpected arc flash hazard and personal injury can be avoided. The system is also equipped with Modbus data exchange capability to interface with modern plant automation systems.

QUALITROL
Defining Reliability

IRIS Power GuardII+ 4208 IPB System

Low Risk of False Indications

The Iris Power GuardII+ 4208 IPB monitor 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 indications. The collected data can be easily interpreted by maintenance professionals after participating in a 2-day training seminar offered by Qualitrol-Iris Power's experienced engineering staff.

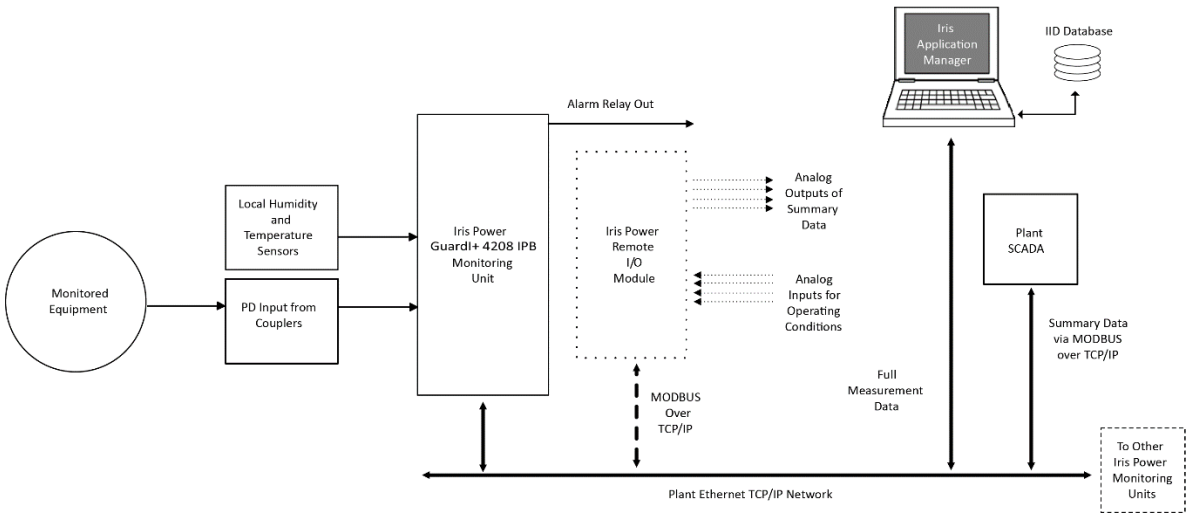
PD Sensors

Facilities that have existing 80 pF couplers installed in their IPB can easily add the Iris Power GuardII+ 4208 IPB monitor to the system by connecting it to the existing coupler termination panel within the plant. This does not require an outage and the installation effort is limited to providing power to the monitor, wiring the alert relay, transducers if the remote I/O option for analogue input of operating and ambient parameters is selected, and running a communication link to a local control room computer or an Ethernet LAN/WAN.
IPB not previously equipped with Iris Power capacitive couplers must have the 80 pF PD sensors installed during a suitable outage

DATA PRESENTATION

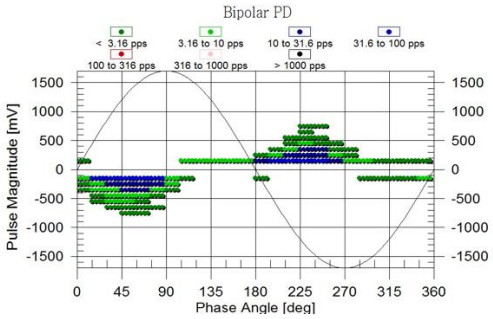
The Iris Power GuardII+ 4208 IPB monitor continuously collects and archives PD data which is used to produce 2D and 3D (phase resolved or PRPD) plots. The summary numbers (Qm and NQN) can be used for trending and comparison with other units. Using the Windows™-based software provided with the monitor, the archived PD data can be downloaded locally over a USB port, or remotely using Ethernet (TCP/IP) network communication.

Important operating conditions such as equipment temperature, voltage, current, ambient humidity and ambient temperature can be recorded and stored with the archived data. These parameters are useful for trending of the partial discharge activity and explaining variation in levels.



FEATURES

- Monitors coupler sets at intervals on an IPB or busduct. Monitor performs continuous PD measurements with advanced alert features, allowing minimal intervention by maintenance personnel. In response to an alert indication, users can review the PRPD plots, using basic interpretation skills to confirm the cause of the alert.
- Superior noise separation technology based on time of flight ,filtering and pulse shape analysis, reliably distinguishing partial discharges from electrical interference (noise).
- Alert Output is a dedicated relay fitted within the monitor. The relay has a solid state latching contact that can activate a remote indicator.
- Monitor is equipped with ambient sensor input modules to enhance data gathering for trending and analysis. Available inputs include ambient temperature and ambient humidity, as they may impact PD readings.
- USB memory stick port for uploading configuration and 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.
- Qualitrol-Iris Power has extensive experience with continuous on-line PD monitoring. Over 3,500 continuous on-line PD monitors have been installed.



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, IPB, 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, also increases.

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
Recommended PD Sensors	80 pF EMC (6.9 kV - 35 kV) 6 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

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.

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

Ver 1 – 9/21