

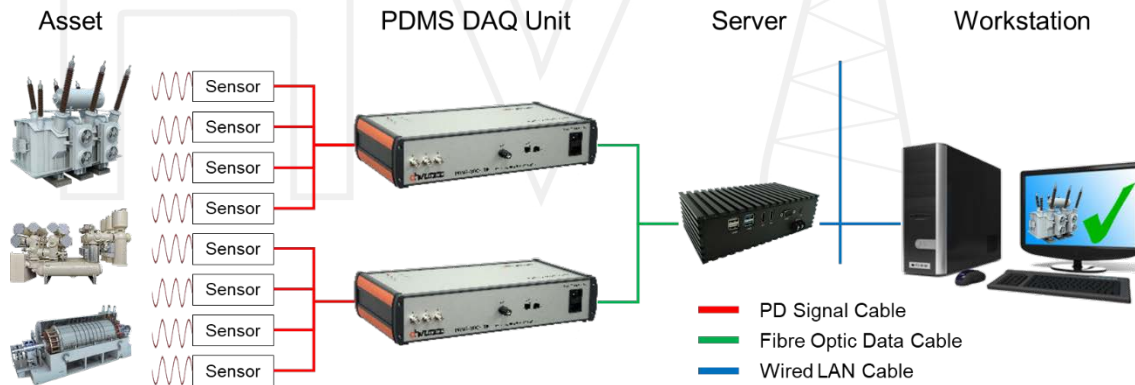
PD Monitoring System Data Acquisition Unit

Compact and universal partial discharge data acquisition unit for use within PD monitoring systems

Electric power generation as well as power transmission and distribution systems are an essential part of any industrialized society. Failure of any component may lead to power outage, damage, and costly repair or replacement. In particular generators, transformers, gas insulated switchgear (GIS), bushings and cables are critical components.

A permanent online partial discharge (PD) monitoring of critical system components detects deterioration of their insulation system at an early stage and allows to take measures before insulation breakdown and failure happens. A partial discharge monitoring system (PDMS) also helps to understand the health of the critical systems and supports maintenance and asset management.

A PDMS generally includes sensors, data acquisition units, and a server together with data visualisation, storage and connectivity facilities, such as a workstation or an interface to a SCADA or DCS system. The specific configuration strongly depends on the assets to be monitored, the system topology, and the requirements for data acquisition and analysis.



Within the PDMS hardware infrastructure, the data acquisition (DAQ) unit for acquiring and processing the PD signals from the sensors plays a crucial role in detecting PD. This is where the PDMS DAQ device can be configured as per specific monitoring project requirements with different sensors, channels, and operating mode options.

Features:

- Universal sensor, channel, and operating mode configuration
- Compatibility with a wide range of sensors covering the IEC/broadband/UHF frequency range
- Covers all applicable PD measuring standards acc. to IEC and IEEE
- Suitable for retrofit into any system, including permanent and temporary installation
- Flexible installation as wall mount or into a cabinet

Technical Data:

| Configuration | |
|--------------------------------|--|
| Synchronous DAQ Version | Up to 4 channels |
| Multiplexed DAQ Version | Up to 6 channels |
| Phase Synchronization | External (IEC version), internal (UHF version) |
| Data Acquisition | |
| Input Impedance | 50 Ω |
| Measuring Range | IEC: < 1 pC – 100 nC UHF: 1 – 500 mV |
| Sensitivity | IEC: 1 pC UHF: 1 mV |
| Frequency Range | IEC: 100 – 500 kHz Broadband: 50 kHz – 20 MHz UHF: 50 MHz – 2 GHz |
| Sampling Rate | 105 MS/s |
| Sampling Resolution | 14 bit |
| Operation | |
| Interfaces | PD input: up to 4x BNC (parallel version), 6x BNC (multiplexed version) Sync: 1x BNC Data/Control: 1x RJ45 (wired), 1x ST (fiberoptic) |
| Power Supply | 105 – 230 Vac, \leq 20 W DC options (5, 12, 24 V) available |
| Temperature Range | -20 – 40°C (-4 – 104°F) |
| Humidity Range | 0 – 90% RH, non-condensing |
| Housing/Mounting | Desktop for temporary monitoring Wall, cabinet for permanent monitoring |
| Dimensions & Weight | |
| Dimensions | 460 x 245 x 100 mm (19 x 10 x 4 in.) |
| Weight | 2 kg (4.4 lbs) |

Specific configuration depends on PDMS project requirements and must be clarified prior to order.

Scope of Supply:

- PDMS DAQ unit with project specific channel configuration and timing configuration options
- Optional: project specific PDMS hardware, such as sensors, server, workstation, interfaces
- Operating manual
- Software (operating system, application software)