

## EHV-PDM Distributed PD Monitoring



**EHV-PDM** is a Partial Discharge monitoring system designed for application on critical assets where monitoring point could be tens of kilometres apart. Fibre linked monitoring points transmit PD data over long distances to the main monitoring unit which processes data, and displays results on a secure customer web front end.

The EHV-PDM is designed specifically for HV and EHV applications where there is a need for cost effective distributed monitoring of critical assets. RDUs (Remote DAQ Units) are connected via fibre optic link to allow from monitoring points beyond the normal reach of analogue signal cabling. The monitor is designed to detect defects in; EHV cable joints and GIS switchgear with external UHF sensors.



### The Benefits

- **Online PD Detection** - The EHV-PDM uses PD sensors that couple to the HV network and equipment non-intrusively and online such that no disconnection of the circuits is required.
- **Remotely Accessible** - Using any of a wide range of communication protocols, the EHV-PDM automatically downloads to a central database from where it can be viewed on a powerful analysis website.
- **Long Distance** - The key design of the EHV-PDM system is to allow for costs effective remote monitoring of assets which are usually inaccessible. Examples include joints along and EHV cable or cables terminations in wind farm arrays.



### Remote DAQ Unit

Each RDU is mounted locally to the monitoring point. The system is linked to the previous and next RDU in the chain via a fibre optic. RDUs are connected to up to 4 transducers.

The RDU digitises the analogue signal received from the connected sensors before converting this into an optical signal. This is then transmitted down the fibre link and back to the EHV-PDM monitoring unit. Each RDU has a unique signature to ensure that signals received at the EHV-PDM are correctly recorded.



### Web Based Analysis

Partial D The PD-Alarm is a customer specific secure website is used for review and analysis of individual asset condition. This powerful tool allows users to drill down from a basic condition overview to highly detailed data including sampled PD wave shapes.

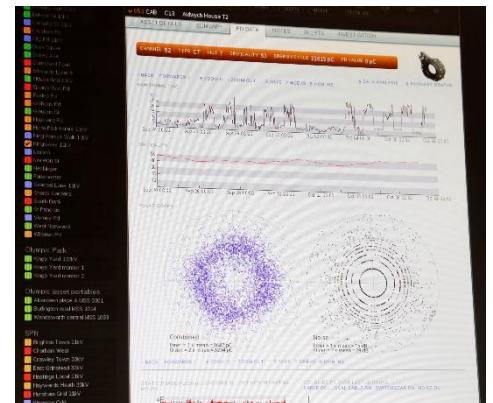
- Sensitive PD detection in high noise environments
- Local alarms plus email and SMS alarms
- Automated generation of criticality league table
- Supports HFCT, TEV and AE PD sensors
- Trend analysis and reporting

# Technical Specification

## EHV-PDM

Input Channels	
Number of Channels	Up to 128
Spike Protection	1,000V
PD Monitoring	
Sensor Types	HFCT for cable PD CC for TEV local PD AA for acoustic, surface tracking UHF for GIS PD Detection
Cable PD Range	50kHz to 20MHz 50pC to 1,000,000pC
TEV Range	20MHz to 440MHz 0dBmV to 54dBmV
Acoustic Range	40kHz -6dBuV to 54dBuV
UHF Range	300MHz to 1.5GHz      0dBmV to 49dBmV
Test Type	PRPD – PD pattern, wave shape analysis
Communication	Fibre Optic - 1 per 16 channels
Data Acquisition	
Signal sampling	100MSamples/sec, 12 bit
PD Analysis	Automatic
Reporting	Website
Data Analysis	
PD wave shape	Yes
PRPD View	Yes
Trending data	Yes
Data Validity	5 years
Reports	Yes
Alarms	Email, SMS, SCADA
Operating Environment	
Temperature	-10°C to 55°C
Humidity	≤90% RH non-condensing
IP Rating	55 when in use, not rated when in use
Power	
Rated Voltage	100 to 250 VAC, 512V, 1.65A
Frequency	47 to 63Hz
Safety and EMC	CE-compliant in accordance with Low Voltage Directive (2014/35/EU) and EMC Directive (2014/30/EU)
Designed and manufactured in the United Kingdom	

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