# → PDD Profile

The online Partial Discharge Detector (PDD) from ohv diagnostic is a comprehensive tool for assessing the dielectric condition in rotating machines, GIS, Transformers, Generators, HT Cables, Switchgears. By way of periodical monitoring of the partial discharge behavior within the insulation structure, the operational reliability of the insulation in critical equipment can be assessed. And it helps generate valuable information for maintenance planning and repairs when they are required. Or in many cases PD assessment can help avoid or postpone the inspection and maintenance plans to prioritize the operational availability of the assets.

ohv diagnostic's Partial Discharge Analyzer works based on IEC or UHF signal detection and covers the broad frequency range as per IEC 60270 or IEC TS 62478 and is designed for a very sensitive on-site PD measurement for assessing insulation defects within rotating machines, GIS, Transformers, Generators, HT Cables, and Switchgears.

ohv diagnostic's PD analyzer can be configured with any standard Coupling capacitor (superimposed or separate PD and Voltage signals) or with UHF decoupling sensor package like UHF sensors for cable sealing end, UHF drain valve & hatch sensors for transformers or window sensors for GIS.

The PDD analyzer offers flexibility of up to 6 multiplexed or synchronized channel measurements to facilitate measurements form multiple sensor inputs at a given location and perform better analysis. Even a combined PDD with IEC- and UHF-signal detectors within one housing is possible. The Hardware is ready for either hard- and software upgrades like Gating, VLF, DC pulse count and PD fault location.

The unit is available with an optional large on-board display and battery backup to facilitate use in outdoor areas where there is no power nearby, and also offers a lower noise floor. Devices with on-board display allow the storage of measurements for viewing them later either on the device itself or transfer to external storage via USB.




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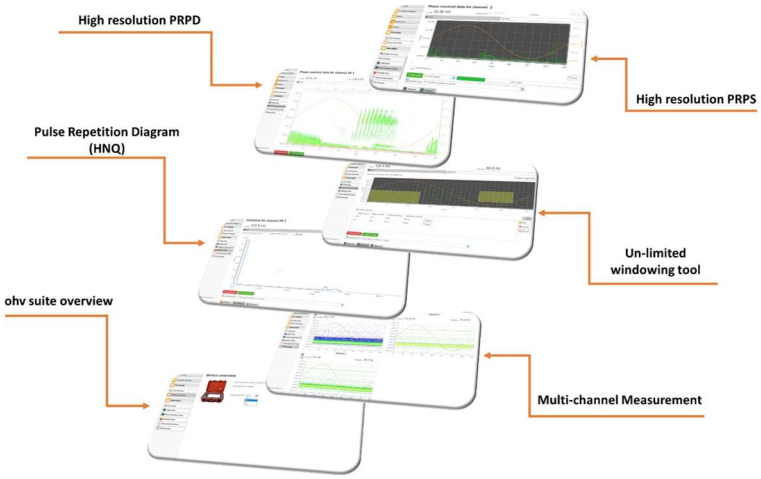
# Features of the PDD:

- Provides multiple channels for phase synchronous partial discharge measurements.
- PD measurements in compliance to IEC 60270 and / or IEC TS 62478.
- Dynamic auto ranging for consistent measurement response.
- Easy access via web browser for easy parameterization.
- User-friendly ohv suite software for high quality measurement and analysis of defect.
- Covers IEC, broadband and UHF frequency range.
- High sensitivity, excellent signal to noise ratio
- weatherproof outdoor housing available, Protection class IP 67

# TYPICAL CONFIGURATIONS optimized sensors for optimized asset analysis:


## Overview of software tools



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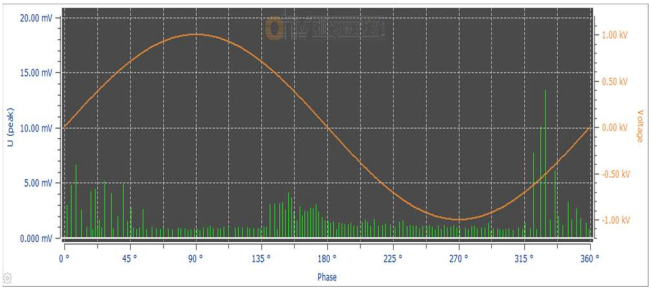
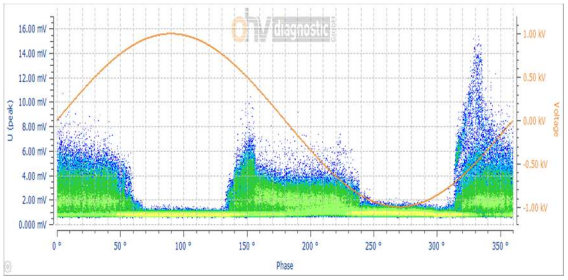
# Ohv software suite:



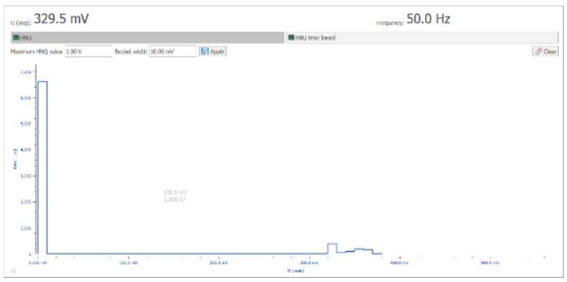
**Pulse Diagram:**

ohv software suite provides high resolution dynamic pulse patterns over sync voltage reference in order to characterize the defect and visually identify the external noise signals. Automatic scaling of discharge magnitude allows better analysis of dynamic measurement from each channel.



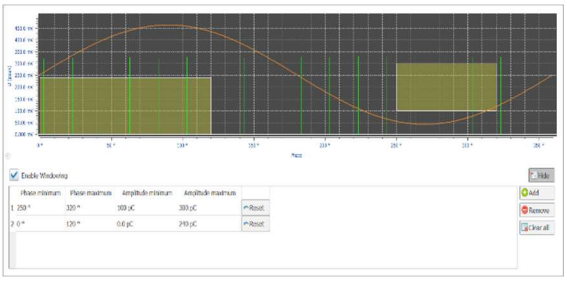
**PRPD Pattern:**

ohv software suite provides high resolution PD patterns which are phase synchronized and with resolution of 0.5 deg or 720 pts on X-axis thereby enabling better quality visual images. It facilitates to characterize the defect type and also distinguish external noise signals.



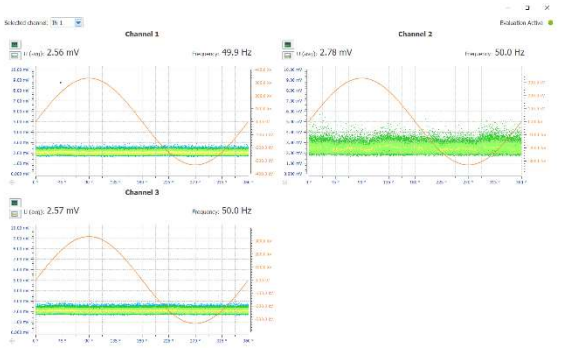

**HNQ Patterns:**

HNQ patterns provides statistical data tool for quantifying severe PD activity along with repetition rate of PD events during the measurement time period.



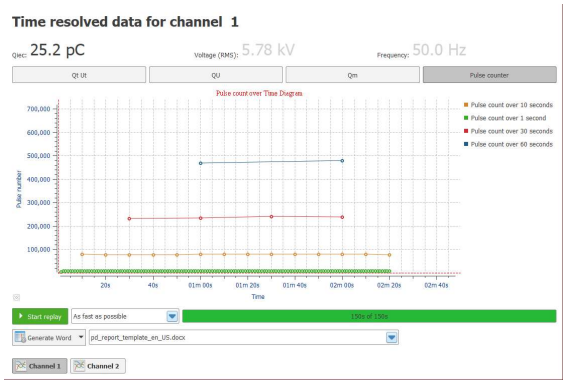
**Windowing**

Ohv software suite allows windowing feature to improve measurements in a noisy circumstances. Availability of unimited number of windows will help users elimintae those noise signals which are phase locked, thereby avoiding unnecessary pulses into measurent programme. Windows could be freely configured based on magnitude and phase positions to help user mitigate ever-dynamic on-site challenges.




**Multi-Channel measurement**

ohv software suite readily displays measured data from multiple channels on a single viewing pane. Data visualization simultaneously from all available channels can help make a quick comparison of PD from multiple sensors or apparatus




**Pulse counter measurement**

ohv software suite provides detailed information about the pulse counts for all measured PD pulses in each time interval printed over the measurement duration. Trigger levels help to separate noise and PD pulses for the counting.



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# → PDD Specification

| Parameter Name | Value |
|---|---|
| **Configuration** | |
| PD Channel | Synchronous / Multiplexed |
| PD Input Channels | From 1 to 9 channels (depends on the configuration) |
| **Synchronization** | External/ Internal |
| **PD Inputs** | BNC f Type |
| Input Impedance | 50 Ω |
| Measuring Range | 0,2 pC…100 nC (IEC)<br>300µV…500mV (UHF) |
| Sensitivity | 0,1 pc<br>50µV (UHF) |
| Maximum input voltage | 50 $V_{RMS}$ (IEC)<br>5 $V_{RMS}$ (UHF) |
| Input attenuation | selectable from 0 dB to 66 dB (with 6 dB steps) |
| Input amplification | selectable from 0 dB to 30 dB (with 6 dB steps) |
| Frequency Range | 100 kHz…1 MHz (IEC 60270) / 10 kHz…5 MHz / 10 kHz…20 MHz (IEC)<br>50 MHz…2 GHz (UHF) |
| Sampling Rate | 105 MS/s |
| Vertical Resolution | 14 bits |
| PD event time resolution | 9,5ns |
| Max double pules resolution | 150 µs / configurable |
| **Synchronization input** | BNC f Type |
| Input impedance | 1 MΩ |
| Maximum input voltage | 50 $V_{RMS}$ |
| Input frequency | DC…300 Hz |
| **Operation** | |
| Interfaces | Ethernet 100Mbit/1000Mbit RJ-45<br>USB (optional, only with internal display)<br>SSD Storage (optional, only with internal display) |
| Power Supply | 105 – 230 VAC 50/60Hz, ≤ 35 W without Display/Battery option,<br>≤ 150 W with Display/Battery option |
| Temperature Range | -20 to +50°C (storage)<br>0 to +40°C (operating) |
| Humidity Range | 0 to 90% relative Humidity (rH), non-condensing |
| Housing | For integration in outdoor/ indoor cabinet |
| Max. operation altitude | 2000 m |
| **Mechanical** | |
| Dimension | 450 * 88 * 315 (mm; rack version)<br>503 * 406 * 193 (mm; weatherproof housing) |
| weight | approx. 3100 grams (rack version)<br>approx. 9000 grams (weatherproof housing with internal display)<br>+ 1000 grams (internal battery pack) |
| **PC (Laptop) requirements** | |
| RAM | min. 2 GB |
| Display resolution | 1366 x 768 Pixel |
| Hard drive space | Min. 1 GB |
| Operating system | Windows 10 / 11 (64bit) |



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## Scope of Supply

- PDD unit
- Operating Manual
- Software
- Models: PDD, x…number of channels, TV input (yes or no); Synchronous measurement,
- Options: internal Touchscreen Display, SSD Storage, Battery inbuilt

| Option Name | Value |
|---|---|
| **Battery** | |
| Battery voltage | 13.2 V DC, 7500mAh |
| Operation time | Autonomy >3Hrs. |
| Type of battery | LiFePO4 |
| **Display** | |
| Display Size | 13,3" |
| Resolution | 1920 * 1080 |
| Internal storage memory | 128 GB SSD |
| Touchpad | 13,3" easy Touch |
| Refresh rate | 60 Hz |

## Optional Sensors:


| | |
|---|---|
| **Model** | UST-50/ UST 80 |
| **Frequency range** | 100 MHz – 2GHz |

| | |
|---|---|
| **Model** | CT-01 |
| **Frequency range** | 30 MHz – 900MHz |

| | |
|---|---|
| **Model** | USM-100 |
| **Frequency range** | 30 MHz – 1.5GHz |

| | |
|---|---|
| **Model** | HFCT-60/50 |
| **Frequency range** | 50 kHz – 20MHz<br>Customizable up to 200MHz |



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| | |
|---|---|
| **Model** | CD 17...36 |
| **Frequency bandwidth** | ≥ 25 MHz |

| | |
|---|---|
| **Model** | CD-1 / 2 |
| **Frequency range** | 50 kHz – 20MHz |

## Optional accessories – Calibrators, Pulse injectors

| | |
|---|---|
| **Model** | C-1 |
| **IEC Calibrator** | 5…500 pC |

| | |
|---|---|
| **Model** | C-2 |
| **IEC Calibrator** | 50…10000 pC |

| | |
|---|---|
| **Model** | PG-1 / UHF |
| **Pulse magnitude** | Approx. 2,8 V |

| | |
|---|---|
| **Model** | PG-2 / UHF |
| **Pulse magnitude** | Up to 60 V |



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