

PARTIAL DISCHARGE DETECTION



Advanced and innovative solutions for partial discharge detection

Since 1991, **ndb** Technologie is synonymous with expertise in the design and manufacturing of partial discharge instruments for the worldwide electrical network industry. Our range of solutions allows us to increase the reliability of the electrical networks as well as the security of workers. **ndb** Technologie is your reference for everything related to safety and preventive maintenance for the world's electrical networks.

Thanks to the diversity of our expertise and a close collaboration between its team members, **ndb** Technologie is able to develop innovative solutions. Our dynamic team has developed an enviable state-of-the-art expertise in the field of detection of partial discharge and corona effects.

Applications

Online

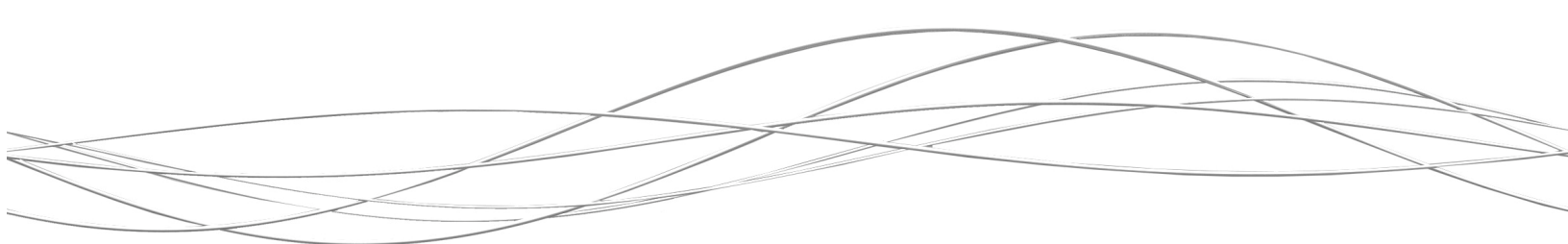
- Cable joint (XLPE/EPR type)
- Switchgear
- Elbow
- Cable Termination
- Corona Effect and arcing
- Arrester
- Power Transformer (Available soon)
- And more

Offline

- Distribution Transformer
 - Switchgear
 - HV Component
 - Insulating material
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What is Partial Discharge?

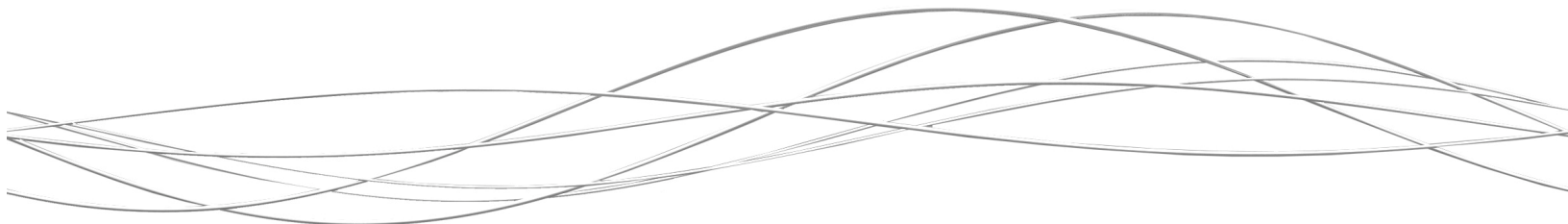
- According to the International Electro Technical Commission (IEC) International Standard 60270, Section 3.1 published in 2000, the definition of partial Discharge is: «Localized electrical discharge that only partially bridges the insulation between conductors and which can or cannot occur adjacent to a conductor».
 - IEC 60270 Section 3.1 Notes « Partial Discharges are in general a consequence of local electrical stress concentrations in the insulation or on the insulation... »
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Advantages of Online Partial Discharges Detection

- It is a non intrusive method; it requires no interruption of service.
 - It is a non destructive method; it doesn't affect the equipment under test.
 - It is a predictive method; it indicates specific problems in advance of failure. You can store results to compare with future test. It often allows locating the site of the partial discharge occurrence.
 - It doesn't need to use over voltages, which expose the tested equipment to higher voltage than under normal operating conditions. Partial Discharge Detection allows you to schedule corrective action before failure occurs.
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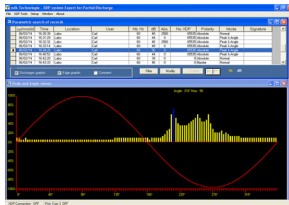
Our Innovative Products

XDP: Partial Discharge Detection System



The XDP is an online Partial Discharge Detection System for underground cable accessories and equipment for security/maintenance purposes. It records partial discharge measurements for computer analysis using the optional XDP software for a PC. The XDP is very accurate to **detect partial discharge on cable joints (XLPE/EPR type), switchgear, elbows, Cable Terminations** and more.

XDP Soft: PD Database and Viewer Software



This software is used to manage the partial discharge recordings made with the XDP. It is an easy to use option that allows the expertise to evolve by following-up the wave forms of partial discharges found on the cables and joints of underground electrical networks.

XDP-10: Inductive Probe



The inductive probe is an accessory of the XDP, our partial discharge detector. The probe detects the magnetic field generated by partial discharges on high voltage equipments equipped with grounding wire. The probe detects any prompt an abrupt variation of the magnetic field surrounding the cable without service interruption. The user does not have any direct contact with high voltage equipments. The probe is very easy to use and allows a **quick verification of all high voltage equipments, such as switchgear and power transformers**. The user needs an access to the high voltage equipments ground cables.

XDP-012: Coupler for Switchgear Partial Discharge Application



The Bi-phase Coupler is used with the XDP Partial Discharge Detector to allow **online PD detection on switchgears equipped with Voltage Indicator Lamp and/or test points**. It gives you a real time picture of your switchgear equipment behaviour and tells you when maintenance is required to avoid network failures. It is perfect for a predictive maintenance program. The XDP-012 gives a real time picture of switchgear equipment behaviour and tells when maintenance is required to avoid network failures. Get a quick return on investment. No training required, easy to use by any maintenance people.

XDP-013: Partial Discharge Differential



The XDP-013 has been specially designed **for insulated cable joints (XLPE/EPR type of insulation)**. Both spatulas are installed on each side of joints, which are the most critical areas in which to locate partial discharge activities. The sensor provides the level of noise, in dB, on both side of the joint individually. The sensor also gives the result of the subtraction of both values in a way to reduce significantly the ambient noise habitually present.

XDP-014: Partial Discharge Differential Sensor for Elbows



The XDP-014 has been specially designed **for cable elbows (XLPE/EPR type of insulation)**. Both spatulas are installed on the elbow to locate partial discharge activities. It has been designed taking into consideration the different cable geometry of an elbow to give the most accurate value. The sensor provides the level of noise, in dB. The sensor also gives the result of the subtraction of both values in a way to reduce significantly the ambient noise habitually present.

PDS: Partial Discharge Scanner



The PDS allows online partial discharge detection on **underground cable accessories and equipment** for security/maintenance purposes. This equipment is perfect for a high voltage predictive maintenance program. The PDS is very accurate to detect partial discharge on **cable joints (XLPE/EPR type), switchgear, elbows, Cable Terminations**, and more. Small to ease access to all types of installations, the PDS can be handheld or manipulated with a hotstick depending on the situation. Obviously, along with strippers and insulated tools, it belongs in one's toolkit, for everyday work.

ADD: Arrester Default Detector



The ADD allows on-line arresters default detection on power lines up to 69 kV (or up to 45kV phase-to-neutral). The ADD has been designed **to detect arresters' internal / external partial discharge or sparking** that are the cause of power line TV and radio interference. We developed a contact method using ultra wide band radio frequency detection technology. It is used on energized lines.

ADD Display



The Display is a wireless communication **link with the ADD**. The ADD Display will give a **precise reading** in dB of what the probe analyses. The range is 0 to 65 dB.

XDP II: Portable PD Recorder and Diagnostic System

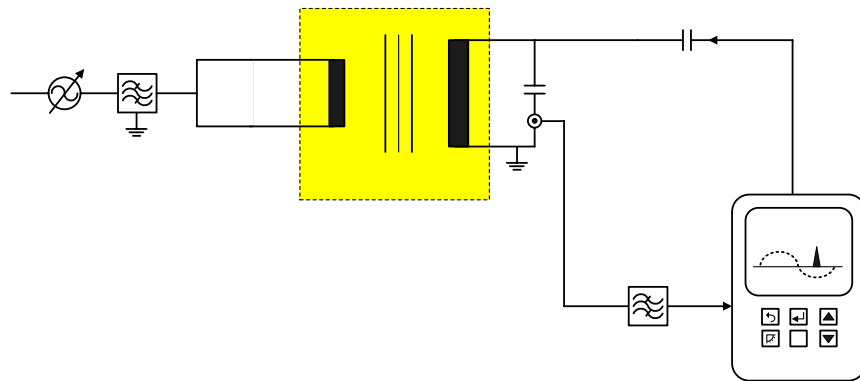


The XDP II is a portable device for **online and offline, factory and laboratory partial discharge measurement on electrical apparatus, or components**. The XDP II can be used in accordance to IEC 60270. It records partial discharge measurements for computer analysis and diagnostic using the optional XDP II software for a PC. Using the appropriate accessories, the XDP II can be used in several applications.

XDP-TRANS II: Distribution Transformer PD Measuring Kit



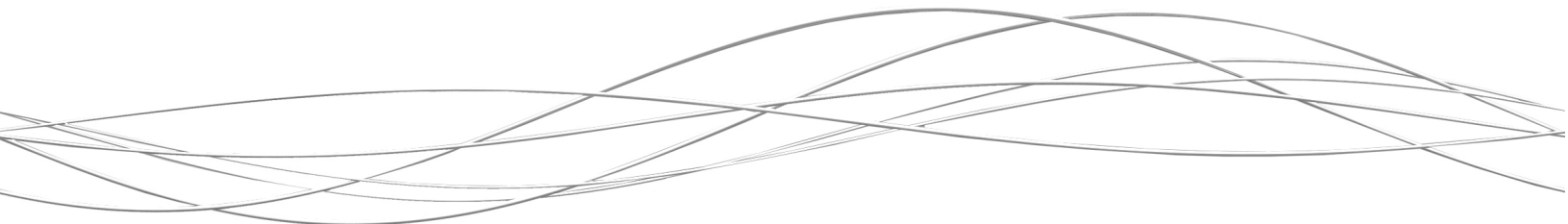
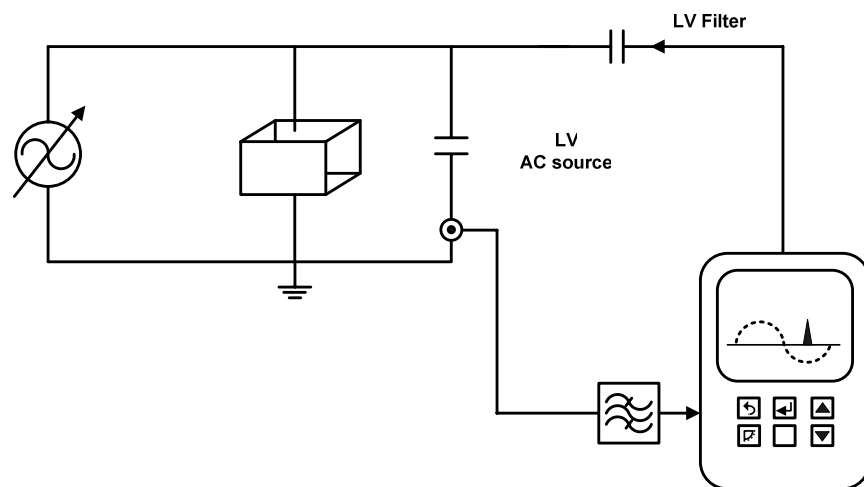
This Partial Discharge Measuring Kit, for **distribution transformers**, provides you with the easiest way to measure Partial Discharge in your single phase distribution transformers. Partial Discharge Tests can be performed up to 50 kV. **Design, manufacturing or handling problems can be quickly identified** using Partial Discharge testing and then improve design, increase network reliability and reduce operation cost by installing reliable components.



KIT-PD-50KV: Partial Discharge Measuring Kit 50 kV

Partial discharge testing is a PREDICTIVE qualitative analysis tool that can warn of a potential upcoming system failure. The 50 kV Partial Test kit II is a powerful and flexible Partial Discharge Measurement System that offers all devices to automatize a high voltage test set up for series tests on components. Assorted coupling devices, including coupling capacitors and a variable source, are available to sense the PD signal in the object under test.

Secondary



XDP-20: Capacitive Coupler 200 pF/ 25 Kvac



This Capacitive Coupler 200 pF 25 kV is use with the XDP II . It is an option for our KIT-PD-45 kV. An ideal PD Capacitive Coupler should be able to detect as many PD pulse as possible and yet prevent significant noise from entering the PD measurement system. Higher capacitance with higher sensibility can provide more PD information for condition monitoring of transformers and predictive maintenance. This equipment allows connecting high voltage without danger for the XDPII. It reduces the tension inside.

XDP-21: Line Filter



The Line filter is use to **reduce the noise** on the 120v line. It allows reducing the external noise. It is connected on the power supply. It is very useful in noisy environment.

XDP-30:1,000 pC Calibrator



We use the 1000 pC Calibrator to calibrate the data and to use the pico Coulombs mode. It allows to get an **analogy between dB and Pico Coulombs**

XDP-50: 50 kV 330 pF Capacitive Coupler



This Capacitive Coupler 330pF 50 kV is use with the XDP II . It is an option for our KIT-PD-50 kV. An ideal PD Capacitive Coupler should be able to detect as many PD pulse as possible and yet prevent significant noise from entering the PD measurement system. Higher capacitance with higher sensibility can provide more PD information for condition monitoring of transformers and predictive maintenance. This equipment allows connecting high voltage without danger for the XDPII. It reduces the tension inside.

XDP-47: 10,7 MHz Filter



The 10,7 MHz Filter is a low pass Filter. We use it in noisy environment. It eliminates the noise and it is connected on the XDP II.

Custom Filters

XDP-048XX



We design and manufacture a large range of BANDPASS Filters to eliminates external interferences found in certain environment.

What is Corona Effect and arcing?

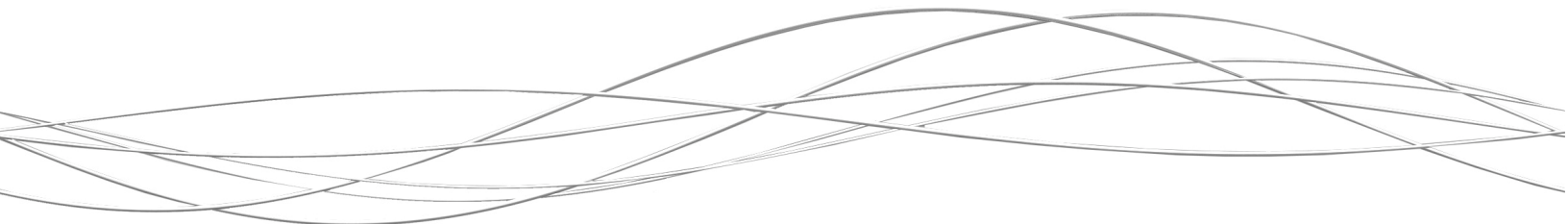
“Corona is a form of partial discharge that occurs in gaseous media around conductors which are remote from solid or liquid insulation...”

“Partial discharges are often accompanied by emission of sound, light, heat and chemical reactions...”

ULD-40: Ultrasonic Corona/Arcing Detector



The ULD-40 is an ultrasonic detector designed for **corona and arcing inspections** for predictive maintenance in electric utilities. Corona effect occurs when electricity is discharges into the surrounding atmosphere form a high voltage source. Corona effects and electrical arcs in the air emit ultrasounds. The role of the ULD-40 consists of capturing emitted ultrasounds and of translating them into the audible range. This equipment is perfect for high voltage maintenance program.



ULD-406: Contact Probe



The contact probe is an accessory of the ULD-40, our Ultrasonic Corona/Arcing Detector. The **magnetic probe detects internal discharges caused by insulation breakdown in transformers, capacitors and switchgears**. The contact probe provides an immediate and accurate indication of the presence of internal discharge activity. The magnetic sensor allows users to pinpoint the problem without interruption of service of the high voltage equipment. The probe is very easy to use and gives an excellent contact surface. Early detection of partial discharges in transformers, capacitors or switchgears prevents catastrophic failures.

Custom Products

A large portion of our business is building custom products. We can also adapt a product to your specific needs. Please do not hesitate to contact us to tell us what your needs are.

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