XDP-II™ Expert Partial Discharge Detector

The well-established XDP-II™ is a battery-operated portable device allowing Partial Discharge detection and analysis. The data is saved in its internal memory for local or further analysis on the PC-based XDP-SOFT™. Paired with the proper accessories, the XDP-II™ becomes a powerful solution for many applications such as Cable Joints and Elbows, Switchgear, Offline, Acoustic, TEV, Rotating machines, Transformer, etc...

Features
- Easy to use, Portable and Battery operated
- pC and dB value display
- Several display modes for on-site real time analysis and diagnostic
- Saves the waveform and edge of PD in its memory with the date and time
- Up to 7.5 hrs autonomy
- Ultra-versatile instrument
- Network phase synchronization

Metal clad switchgear
Medium voltage metal clad switchgears are easily investigated with the XDP-II™ and its accessories. The XDP-II-016™ probe allows easy TEV (Transient Earth Voltage) detection on the surface of the metal cabinet. The XDP-II-406™ acoustic probe allows easy ultrasound detection that reveals the presence of partial discharge in switchgear cabinets. Simply install the magnetically held probe on the metallic surface of the cabinet for instant reading results on the XDP-II™ display. Use the unique Bi-Phase coupler to connect the XDP-II™ to the Voltage Indicator System (VIS or VPIS) for synchronized partial discharge detection. This technique allows a high noise rejection thus helping the operator taking the right decisions.

Cables and elbows
Capacitive probes allow the XDP-II™ to safely measuring partial discharge activity in extruded cable joints and elbows.

Corona effect
Corona effect detection can reveal the presence of contaminant and partial discharge. Use the ULD-401™ parabolic sensor with the XDP-II™ to detect and locate corona effect on any overhead apparatus. The integrated laser beam allows easy pinpointing.

Offline testing
Looking for a simple and effective portable offline partial discharge kit? The XDP-II™ offline kit allows easy testing of a great variety of MV and HV apparatus such as arrestors, insulators, couplers, transformers, etc, up to 50kV.

Analysis software
Transfer your recordings to any PC running Windows for further analysis using the XDP-SOFT™ advanced software. Managing and visualizing partial discharge recordings is the most effective method for tending evolution analysis.
The well-established XDP-II™ PD measuring system is the heart of this cutting edge diagnosis kit. It allows quick measuring, simplicity of use, graphic display of the signal while staying portable. The XDP-II™ is used with its unique peak angle mode that displays the PD level with the network’s phase synchronisation. The embedded speaker allows the user to quickly determine the presence of Partial Discharge in the equipment under test.

**Extruded Cable Joint and Elbow**

The XDP-302™ capacitive probe kit includes our flexible capacitive probe XDP-II-004™, the reference module XDP-008™ and a detachable hotstick. The reference module allows the user to self-test the probe before starting to test cable joints. This technique insures that the probe’s integrity thus removing any doubt about the readings the user will measure in the field. The XDP-II™ is the easiest and the most cost-effective method for cable joints and elbows testing in your network. The probe is mounted on a handling rod for the user to manipulate the system safely. Its special light and strong design is ideal for this task.

**CAPACITIVE PROBE KIT FOR XDP-II™**

WORRIED ABOUT NOISY ENVIRONMENT?

The XDP-II™ instrument and XDP-302™ probe kit can work in noisy environment without any problem. ndb Technologies has a great range of noise filter that can be easily installed on the XDP-II™ in series with the probe.
Metal clad switchgear: TEV testing

PD activity produces electromagnetic waves in a very wide frequency spectrum. It radiates in all directions. High frequency electromagnetic waves hit the surface of the earthed metal cladding of the switchgears. The TEV sensor measures the transient rise in the voltage of earthed metal cladding of the switchgear.

Metal clad switchgear: Acoustic testing

The contact probe allows the detection of Partial discharges in transformers, capacitors, switchgears and more. The sound is propagated by longitudinal waves through virtually any mediums including metal, oil, air, etc... Internal high voltage components noise will be heard with the contact probe.
Corona effect detection

Partial discharge activity, electrical arcs in the air and corona effects emits sounds and ultrasounds. The role of the XDP-II™ consists of capturing emitted ultrasounds and to display the result on its LCD screen with a dB reading. The XDP-II™ accurately pinpoints and identifies partial discharge, corona effects and arcs that may be encountered on any type of high voltage installation simply by scanning around the suspected area. The parabolic sensor enables the user to pinpoint electrical defects from a long distance.

Ground return PD detection: HFCT clamps

The HFCT-20™ and HFCT-60™ are high frequency current transformer sensors designed for partial discharge detection on electric apparatus’ ground returns. Made from superior quality materials, they are made to last in any environment. The HFCT™ clamps are intended to be used with the AE-150™ for partial discharge localisation, or with the XDP-II™ (or XDP-II-LT™) for quick partial discharge detection and analysis. The HFCT™ clamps allow current measurement up to a frequency of 100MHz. Their chassis are made of high quality plastic, offering an excellent sturdiness to abrasion and mechanical impacts making it the ideal tool for on-site applications. Its exclusive internal design provides an exceptional shielding to high frequency interferences from nearby electrical fields. These sensors are ideal for partial discharge measurements on ground returns of shielded cables. When used with portable partial discharge detection instruments, they allows knowing insulation integrity thus avoiding costly faults.
Combined with the XDP-304™ Bi-phase coupler kit, the XDP-II™ is the easiest and the most cost-effective method for Switchgear testing in your network. The Bi-phase coupler links the Switchgear’s capacitive output (VIS) to the XDP-II™ input for a precise reading of the Partial Discharge activity. The user is able to determine the state of the unit under test in a matter of seconds. With the use of the peak-angle mode, the XDP-II™ is able to synchronize the network’s phase angle thus allowing noise reduction which facilitates PD diagnosis. The XDP-012™ Bi-phase coupler comes with a self-test module allowing quick integrity tests.

**Metal clad switchgear: PD detection on capacitive ports (VIS)**

The XDP-II™ partial discharge detector is available with the XDP-II-017™ network phase synchronization module. This wireless module transmits a reference signal to the XDP-II™ thus allowing phase synchronization for a better noise attenuation.

Noise attenuation always brings a great challenge when trying to identify partial discharge in any electrical apparatus. ndb Technologies developed a unique feature in order to help the operator making the right decision. For direct connection, the XDP-II-017 module is used on a standard wall plug while. For XDP-II-017IND module is installed directly on the MV cable to test for wireless inductive synchronization.

Network phase synchronization is intended for TEV testing, acoustic testing, HFCT™ testing, splice and elbow testing, etc...

**Optional: Network phase synchronization**

The XDP-II™ partial discharge detector is available with the XDP-II-017™ network phase synchronization module. This wireless module transmits a reference signal to the XDP-II™ thus allowing phase synchronization for a better noise attenuation.

Noise attenuation always brings a great challenge when trying to identify partial discharge in any electrical apparatus. ndb Technologies developed a unique feature in order to help the operator making the right decision. For direct connection, the XDP-II-017 module is used on a standard wall plug while. For XDP-II-017IND module is installed directly on the MV cable to test for wireless inductive synchronization.

Network phase synchronization is intended for TEV testing, acoustic testing, HFCT™ testing, splice and elbow testing, etc...
XDP-SOFT™ Expert diagnostic PC software

The XDP-SOFT™ is designed to allow the operator managing the XDP-II’s™ recordings on a PC computer. The files are easily transferred from the XDP-II’s™ serial port to the PC.

**FEATURES**

- Allows transferring the recorded PD waveforms from the XDP-II™ to a PC computer
- Allows easy management of the recording (sorting by columns, graphic display of the waveform, add comments to the record, etc.)
- Allows listening to the recording audio thus helping identifying PD from noise
- Compatible with any Windows based computer

**Offline Partial Discharge testing**

This Partial Discharge measuring kit provides you with the easiest way to measure PD in a variety of MV/HV equipment such as transformers, cables, arrestors, couplers, etc. Partial Discharge diagnosis has been established as the most convincing technique for the evaluation of the insulation quality of MV/HV apparatus. Design, manufacturing or handling problems can be quickly identified using Partial Discharge testing and then improve design, network reliability and reduce operation cost by installing reliable components. Also included in the kit is our new design of the Capacitive Coupler where the integrator module is now embedded. Its refreshed design is not only good looking, it is also well made with high quality materials for years and years of service. Also included are a 200pC calibrator module, an AC line filter, high voltage cables and connectors and all other necessary tools.
**XDP-II™ PD DETECTOR TECHNICAL SPECIFICATIONS**

- **Dynamic Range**: 60 dB
- **Sampling Frequency**: 30 MHz
- **Data Storage**: Over 380 recordings
- **Accuracy**: ± 1 dB
- **Resolution**: 1 dB
- **Bandwidth**: 300 kHz to 70 MHz
- **Operating Phase Signal Range (50 to 60Hz)**: 50 to 700mVrms
- **Operating RF Signal Input Range**: 380uV to 380mV
- **Sensitivity**: 5pC, depending on DUT capacitance
- **Reference Signal Output (REF)**: 3.4V
- **Clock**: Real-time internal clock
- **Auto shutdown**: After 30 minutes of inactivity
- **Operating Temperature**: -20 to 50°C (-4 to 122°F)
- **Storage Temperature**: -20 to 50°C (-4 to 122°F)
- **Charging Temperature**: 0 to 50°C (32 to 122°F)
- **Humidity**: 0 to 95% non-condensing
- **Liquid Protection**: Splash proof
- **Display**: Backlit LCD screen
- **Autonomy**: 7.5 hours
- **Batteries**: NiMH, rechargeable
- **Charging**: 3 hours
- **Dimensions**: 203 x 114 x 51 mm
- **Weight**: 860g

**XDP-II-016 + XDP-II-018 TEV PROBE**

- **Measurement range**: 0dB to 60dB
- **Bandwidth low frequency**: 10MHz to 70MHz
- **Bandwidth high frequency**: 1200MHz to 4000MHz
- **Resolution**: 1 dB
- **Accuracy**: ± 1dB
- **Method**: Capacitive
- **Auto shutdown**: 15 minutes
- **Operating temperature**: -20 to 50°C
- **Storage temperature**: -40 to 85°C
- **Dimensions**: 123 x 35 x 69 mm (0.8 x 1.4 x 2.7 inches)
- **Installation**: Magnetically supported

**XDP-II-017™ WIRELESS PHASE SYNCH TECHNICAL SPECIFICATIONS**

- **Auto shutdown**: 15 minutes
- **Operating temperature**: -20 to 65°C
- **Storage temperature**: -20 to 125°C
- **Power supply**: 120-240 volts 50-60Hz
- **Wireless frequency**: 869 MHz or 916 MHz

**XDP-II-017IND INDUCTIVE WIRELESS PHASE SYNCHRONIZATION MODULE**

- **Auto shutdown**: 15 minutes
- **Operating temperature**: 0°C to 65°C
- **Storage temperature**: -20°C to 60°C
- **Power supply**: Three AA type alkaline batteries
- **Wireless frequency**: 869 MHz or 916 MHz

**XDP-II-018™ HF CONVERTER TECHNICAL SPECIFICATIONS**

- **Auto shutdown**: 15 minutes
- **Battery type**: Lithium-ion Polymer
- **VHF UHF bandwidth**: 10MHz to 1.2GHz
- **VHF UHF input maximal amplitude**: 250 mV RMS
- **HF output maximal amplitude**: 100 mV RMS

**XDP-II-016-019 CONTACT ACOUSTIC PROBE**

- **Measurement range**: 0dB to 60dB
- **Transducer Sensitivity**: -75dB (0dB = 1 volt/uBar RMS SPL)
- **Transducer center frequency**: 40 kHz
- **Accuracy**: ± 1dB
- **Resolution**: 1dB
- **Operating temperature**: -20 to 50°C
- **Storage temperature**: -20 to 50°C
- **Dimensions**: 203 x 114 x 51 mm
- **Weight**: 860g

**ULD-401 + XDP-II-019 AIRBORNE ACOUSTIC PARABOLIC SENSOR**

- **Measurement range**: 0dB to 60dB
- **Transducer Sensitivity**: -65dB (0dB = 1 volt/uBar RMS SPL)
- **Transducer center frequency**: 40 kHz
- **Transducer Diameter**: 16 mm
- **Resolution**: 1dB
- **Accuracy**: ± 1dB
- **Laser pointing**: 645mm to 665mm Class IIIA
- **Operation distance**: Optimized for 15 meters (49ft)
- **Operating temperature**: -10 to 60°C
- **Storage temperature**: -20 to 50°C
- **Dish external diameter**: 255 mm
### XDP-II-019 ACOUSTIC AND HF INTERFACE MODULE
- **Operating temperature**: 0°C to 65°C
- **Storage temperature**: -20°C to 60°C
- **Charging temperature**: 0°C to 45°C
- **Extended storage temperature** (more than 2 months): < 35°C
- **Dimensions**: 123 x 35 x 69 mm (4.8 x 1.4 x 2.7 inches)
- **Autonomy**: 5 hours or 3 hours with parabolic sensor
- **Battery type**: Lithium-ion Polymer
- **Acoustic input frequency**: 40 kHz
- **Bandwidth (HF input)**: 250 kHz to 50 MHz
- **HF maximum input amplitude**: 1 mV peak
- **Wireless frequency**: 6.67 MHz or 9.16 MHz

### XDP-II-053 HIGH VOLTAGE COUPLER
- **Voltage max**: 50 kV peak AC 50 Hz - 60 Hz
- **Bandwidth**: 150 kHz to 550 kHz (-3 dB)
- **Sensitivity**: < 1.5 pC
- **Power supply**: 12V / 50mA
- **HF Output impedance**: 50 ohms
- **LF Output impedance**: 1 ohm at 20mA
- **Phase output**: < 1V for 50V peak

### XDP-012™ BI-PHASE COUPLER TECHNICAL SPECIFICATIONS
- **Measurement range**: 0dB to 60dB
- **Signal Bandwidth**: 300kHz to 70MHz
- **Resolution**: 1 dB
- **Accuracy**: ± 1dB
- **RF Max Input**: 4 V RMS
- **RF Operating Input with XDP-II**: 1 V RMS
- **Max and Operating Input at 50-400Hz (synchronization signal)**: 5.5 V RMS
- **Input impedance**: 740 ohms
- **Output Impedance**: 50 ohms
- **Operating temperature**: -20 to 85°C
- **Storage temperature**: -20 to 85°C
- **Weight**: 135 g

### HFCT-20 CURRENT TRANSFORMER CLAMP
- **Measurement range**: 0dB to 60dB
- **Resolution**: 1 dB
- **Accuracy**: ± 1dB
- **Transfer ratio**: 13 V/A
- **Frequency response (-3dB)**: 2 MHz to 80 MHz
- **Internal diameter**: 20 mm
- **External diameter**: 60 mm
- **Output impedance**: 50 ohms
- **Weight**: 260 g
- **Connector type**: BNC

### HFCT-60 CURRENT TRANSFORMER CLAMP
- **Measurement range**: 0dB to 60dB
- **Resolution**: 1 dB
- **Accuracy**: ± 1dB
- **Transfer ratio**: 13 V/A
- **Frequency response (-3dB)**: 4 MHz to 100 MHz
- **Internal diameter**: 60 mm
- **External diameter**: 125 mm
- **Output impedance**: 50 ohms
- **Weight**: 530 g
- **Connector type**: BNC

### XDP-302 CAPACITIVE SENSOR
- **Resolution**: 1 dB
- **Measurement range**: 0dB to 60dB
- **Accuracy**: ± 1dB
- **Self test module**: Include
- **Cable length**: 2.3 meter (90 inches)
- **Handling rod total length**: 61 cm (24 inches)

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