ICMseries Accessories: Sensors

Ultrasonic PD Sensors
The AS751 and AS1501 are active sensors with very high sensitivity for measurements on GIS, transformer tanks, or cable joints. They come with a built-in 40 dB preamplifier and can be connected to the RPA1D, RPA1F, RPA1G or directly to the AlAcompact, ICMsystem, ICMcompact or ICMmonitor.

The SFX1 is suited to secure the acoustis sensors on a GIS. The magnetic sensor fixtures SFX2 are for temporarily mounting of the acoustic sensors on a transformer tank.

WS Window Sensors
External window sensors are used to conveniently equip older GIS with UHF monitoring. Power Diagnostix offers such window sensors of different sizes to fit the inspection windows of older GIS. Instead of embedded sensors, additionally, modified earthing switches can be used. In case of non-shielded support insulator disks a proven method is to apply ring antennas to capture the UHF signals at the flanges.

EFS1 Sensor
The external flange sensor EFS1 is a wide-band UHF antenna for PD detection on GIS and GIL. Since it is wrapped around the unshielded flange connection, the flange dimensions are required on order. With the N-connector it can be directly jointed with a UHF preamplifier like the UHF1, UHF2 or FCU2.
The versatility of the Power Diagnostix line of PD detection equipment is due in large part to the range of accessories available for the ICM series instruments. Each ICM series data acquisition unit can be combined with different accessories to suit specific applications.

**UHF Transformer Sensors**

UHF transformer sensors can be used to detect internal PD on power transformer in a frequency range between 300 MHz and 1 GHz. The UHF frequency range can be chosen under difficult on-site conditions, such as high impact of the measurements due to corona discharges or other disturbances within the typical HF range (100 kHz to 10 MHz). UHF sensors are suitable for retrofitting as well as for pre-installation. The sensitivity can be proven by injecting an impulse generator signal in the UHF range into the system. UHF PD signals can be used for PD pattern analysis as well as for triggering acoustic measurement systems, like the FOS4, for instance. Power Diagnostix provides the TFS1 for valve flanges and the TVS2 for oil valves. Both sensors can be modified and designed in accordance of special customer specifications.

**Flange sensor TFS1**

**Valve sensor TVS2**

**UHF Transformer Sensors**

**DFS Differential Foil Sensor**

Besides the embedded coaxial sensor of cable accessories, external sensors can be applied to joints and terminations. Especially on cross-bonding joints differential foil sensors serve to capture partial discharge signals in elevated frequencies. Such foil sensors can be permanently installed for monitoring or temporary applied for survey type measurements.

**Foil sensor DFS1**

**Valve sensor TVS2**