PD DETECTOR

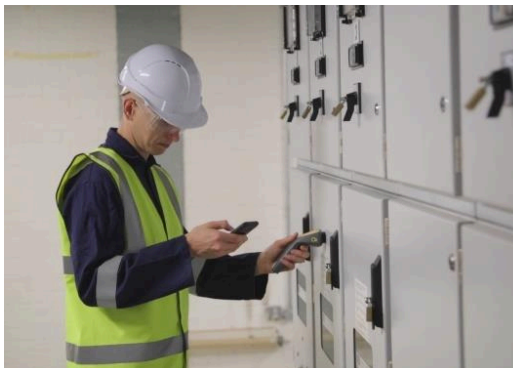
On-line PD Detection of HV Assets with Data Synchronisation
(Is designed and manufactured by IPEC Ltd)

The Benefits

Advanced Noise Rejection
System detects PD in higher noise environments, reducing the possibility false positives

PRPD
PRPD display allows user to distinguish between PD and Noise

PC or Cloud Sync
Sync data locally to your PC with the included software, or sync remotely to the cloud for access across devices



Rapidly survey whole substation
detects MV and HV problems before developing into tangible failure risks

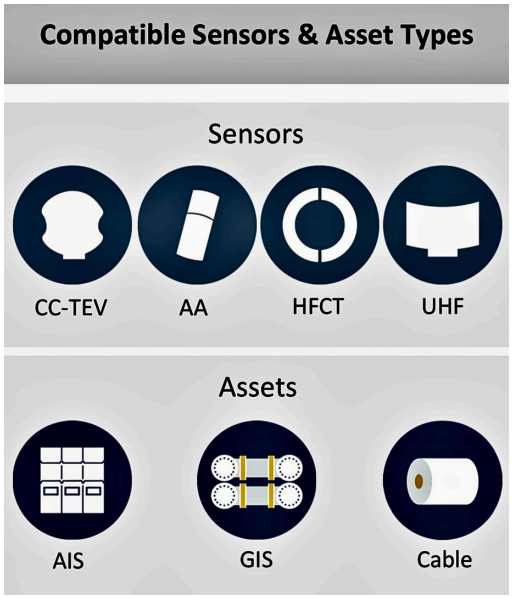
Trend
Log the PD against individual assets and view data from each test ever conducted

PD Detector

Switchgear – Air Insulated (AIS)

Partial Discharge activity inside metal clad high voltage plant induces small voltage impulses called Transient Earth Voltages on the surface of the metal panels. TEVs travel around the surface to the outside of the switchgear, where they can be picked up externally using the PD Detector

Defects on the surface of high voltage insulators are prone to a phenomenon known as surface tracking. Tracking causes carbon deposits that build up over time, ultimately leading to flashover and insulation failure. The PD Detector is highly sensitive to the ultrasonic emissions produced by tracking and enable the onset to be detected before insulation failure.



Switchgear – Gas Insulated (GIS)

IPEC's UHF (Ultra High Frequency) sensor is used to detect PD in EHV cable terminations, GIS (Gas Insulated Switchgear), GIL (Gas Insulated transmission Lines) & GIT (Gas Insulated Transformers). The sensors pick up signals in the UHF range (200MHz-2.0GHz) and are mounted against the insulating barrier spacers that separate components of the HV asset.

Cable

Partial discharge activity in solid high voltage insulation induces small high frequency currents in the earth conductor of the electrical system. These impulses travel along the equipment earth to the substation earth. Using a high frequency current transformer, they can be detected as they pass through the CT.

Technical Specification
PD Detector

TEV Measurements	
Measurement Range	0 to 80dBmV
Measurement Bandwidth	3 to 200MHz (with FM
Resolution	Bandstop) 1dB (Accuracy ±1dB)
Noise Rejection	Yes, with PRPD
Ultrasonic Measurements	
Measurement Range	-6dBµV to + 68dBµV
Resolution	1 dB (Accuracy ±1 dB)
Transducer Sensitivity	-65dB (0dB = 1volt/µbar RMS SPL)
Transducer Centre Frequency	40 kHz
HFCT Measurements	
Measurement Range	0 to 50,000pC
Measurement Bandwidth	100kHz to 70MHz
Resolution	5pC (Accuracy ±5pC)
UHF Measurements	
Measurement Range	0dB-75dB
Resolution	1dB (Accuracy ±1dB)
Bandwidth	200MHz – 2.0GHz
Hardware	
Enclosure	Injection moulded plastic case
Control	Membrane keypad
Connectors	Power, Headphones and optional sensors
Display	OLED with level LEDs
Operating Environment	
Operating Temperature	0°C to 60°C
Humidity	0 - 95% RH non-condensing
Application	
Communication	Bluetooth
Data Storage	Customer Server
Data Access	Web front end, SAP, Oracle, etc.
Capability	Android, iOS
Reporting	Yes
Results	PD Level, Noise Level, PRPD,
Dimensions	
Unit Size	190 x 90 x 55 mm
Unit Weight	210 g
Kit Size	295 x 340 x 145 mm
Kit Weight	2.9 kg
Power	
Internal Battery	Lithium Ion, 3.75V, 2.2Ah, 8.25Wh
Operating Time Approx.	6 hours
Battery Charger	
Charging Temperature	0°C to 45°C
Rated Voltage	100 to 250 VAC, 5V, 3A
Frequency	47 to 63Hz
Country Adapters	UK, EU, Australia, USA
Charge time	3 hours
Compliance	CE-compliant in accordance with EMC Directive (2014/30/EU) IEC 62478: High voltage test techniques - Measurement of partial discharges by electromagnetic and acoustic methods

Designed and manufactured in the United Kingdom

The PD Detector kit contains
PD Detector
Headphones
Function Tester
Mains Charger
USB Charger
Hard wearing PELI™ case

Optional Accessories
HFCT Sensor
UHF Sensor
Flexible AA Probe
Parabolic Reflector

PRPD on mobile APP

PRPD on mobile APP