

## PD-SGS

### Handheld Switchgear PD Detector

#### About the PD-SGS

PD-SGS has the following key features:

- Measurement of TEV signals generated by internal PD
- Ultrasonic detection of surface PD activity
- Integrated Noise Detection Algorithm helps avoid 'False Positives'
- Level Mode and Trend Mode
- Audible output through headphones or built in speaker



#### TEV - PD Detection

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-SGS detector.

#### AE - PD Detection

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-SGS is highly sensitive to the ultrasonic emissions produced by tracking and enable the on-set to be detected before insulation failure.

The PD-SGS is a dual transducer PD detector for Switchgear. The instrument detects TEV signals generated by internal discharge as well as acoustic discharge generated by surface tracking or corona.

#### The Benefits:

- **Rapidly survey whole substation** – detects MV and HV problems before they occur
- **Personnel Safety Device** – ensure the substation is clear of PD before conducting work
- **Hear the PD** – only instrument available that allows the user to hear both ultrasonic and TEV PD activity
- **Ergonomic and compact design** – fits in the user's pocket and is easy to use
- **Long lasting battery** – allowing a whole day of testing without requiring a recharge

#### What's in the Box?



The PD-SGS kit contains:

- PD-SGS
- Headphones
- Mains charger and USB car charger
- Function Tester
- Hard wearing PELI™ case



## Detailed Specification

### 1. TEV Measurements

- Sensor Capacitive
- Measurement Range 0 to 80 dBmV
- Resolution 1 dB
- Accuracy  $\pm 1$  dB

### 2. Ultrasonic Measurements

- Measurement Range  $-6\text{dB}\mu\text{V}$  to  $+70\text{dB}\mu\text{V}$
- Resolution 1 dB
- Accuracy  $\pm 1$  dB
- Transducer Sensitivity  $-65\text{dB}$  ( $0\text{dB} = 1\text{volt}/\mu\text{bar}$  RMS SPL)
- Transducer centre frequency 40 kHz

### 3. Hardware

- Enclosure Injection moulded plastic case
- Screen OLED with level LEDs
- Control Membrane keypad
- Connectors Power, Headphones and External Acoustic Sensor

### 4. Environmental

- Operating Temp  $5^{\circ}\text{C}$  to  $55^{\circ}\text{C}$
- Humidity 0 to 90% RH non-condensing
- IP Rating 54

### 5. Dimensions

- Size 190 x 90 x 65
- Weight 300g

### 6. Power

- Internal Battery Lithium Ion, 3.75V, 2.2Ah
- Operating Time Approx. 12 hours

### 7. Battery Charger

- Rated Voltage 90 to 264 V AC, 5V, 2.6A
- Frequency 47 to 63Hz
- Charge time 2 hours