

PD-SG1

Portable PD Detector and Locator

About the PD-SG1

PD-SG1 has the following key features:

- Ultrasonic detection of surface PD activity. Displayed on the LCD screen as dB reading, as well as audible signals through headphones.
- Measurement of TEV signals generated by internal PD. Displayed on the LCD screen as dB reading.
- PRPD Mode for viewing PD pattern in power cycle, allowing for the recognition of noise
- Precedence Mode for location of PD within the assets under test



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 cladding. TEVs travel around the cladding surface to the outside of the switchgear panel where they can be picked up externally using CC-TEV transducers.

The PD-SG1 is used to detect, verify and locate PD activity in switchgear. The unit offers both TEV detection for internal discharge and ultrasonic detection for surface tracking and corona.

The PD-SG1 has three modes: **Level Mode**, used to detect presence of both TEV and ultrasonic activity; **Cycle Mode**, Phase Resolved Partial Discharge Display (PRPD) enables the user to verify PD activity is genuine and not from electrical noise interference before taking further remedial action; **Precedence Mode**, dual sensor precedence allows users to pinpoint the source of PD activity.

The Benefits:

- **Detect MV and HV problems** – before they occur
- **Personnel Safety Device** – ensure the substation is clear of PD before conducting work
- **Locate PD Source** – precedence with pico second timing accurately locates PD within Switchgear
- **PRPD** – PRPD display allows user to distinguish between PD and Noise
- **Hear the PD** – only instrument available that allows the user to hear both ultrasonic and TEV PD activity

What's in the Box?



PD-SG1 has the following key features:

- PD-SG1
- Headphones
- Sync Transmitter and Function Tester
- 2x CC-TEV, 1x AA-Ultrasonic, 1x HFCT Sensors
- Hard wearing PELI™ case (suitable for hold luggage)

Detailed Specification

1. TEV Measurement – Capacitive Coupler (CC-TEV)
 - Measurement Range 0 to 80 dBmV
 - Resolution 1 dB
 - Accuracy ± 1 dB
2. Ultrasonic Measurements – Airborne Acoustic (AA-Ultrasonic)
 - Measurement Range -6dBuV to + 70 dB μ V
 - Resolution 1 dB
 - Accuracy ± 1 dB
 - Transducer Sensitivity -65dB (0dB = 1volt/ μ bar RMS SPL)
 - Transducer centre frequency 40 kHz
3. Cable PD – High Frequency CT (HFCT)
 - Measurement Range 0 to 2,000,000pC
 - Transfer Function 5.0V/A
 - Frequency 50kHz to 20 MHz
4. Precedence
 - Time resolution 240 pico-seconds
 - Distance resolution 80mm
5. Power Cycle mode
 - Frequency 50/60Hz
 - Display modes Live & Infinite Persistence
 - Linear Range Min 0 to 20mV, Max 0 to 14V
 - dB Range 0 to 80dBmV
6. Hardware
 - Enclosure Tough Aluminium case with rubber protective side panels
 - Screen Back-lit LCD with precedence LEDs
 - Control Membrane keypad
7. Environmental
 - Operating Temp -5°C to 55°C
 - Humidity 0 – 90% RH non-condensing
 - IP Rating 54
8. Dimensions
 - Size 210 x 90 x 65
 - Weight 1.8kg
9. Power
 - Internal Battery Lithium Ion, 12V, 4Ah
 - Operating Time Approx. 12hours
 - Battery Charger 100- 250VAC 50/60Hz, 12.6V, 1.65A
 - Charge time 4 hours