



# RADIOMETRIC CONDITION MONITORING

**PDtect<sup>®</sup>4 Mobile**



Re-locatable, trailer-mounted radiometric PD detection and location system, which is suitable for air-insulated substations. Bespoke ultra-high-speed recording unit records and logs PD events. GPRS/3G mobile phone communications used to transfer data to Elimpus web server for user results.



## PDTECT® TECHNOLOGY

The Elimpus PDtect® series of radiometric PD locators detect the presence of partial discharge (PD) through the reception of radio frequency impulses emitted from stressed insulation. Due to the ultra-high bandwidth (0.01 – 0.75 GHz) and ultra-high speed sampling rate (1.5 G samples per second), the locator is able to determine the direction of arrival of a PD impulse by tracing its propagation across a four antenna array. Thus, by computer analysis of the recorded signals, the source of the PD can be located and its severity



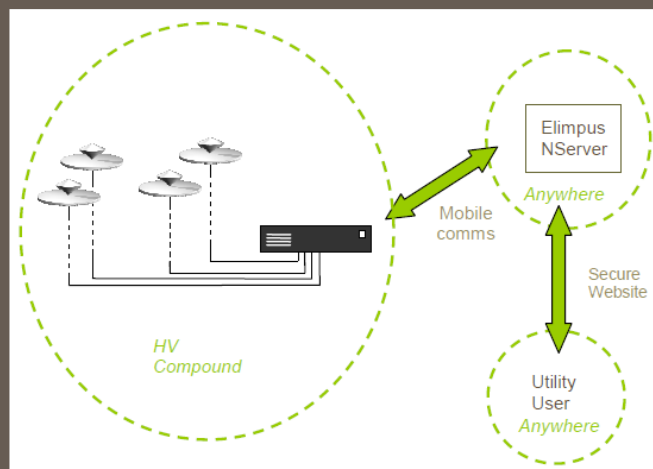
## OVERVIEW

The PDtect®4 Mobile allows the use of Elimpus' PDtect® technology from a mobile, re-locatable platform that is ideal for temporary PD measurement campaigns lasting up to several months.

PDtect®4 Mobile provides continuous monitoring for PD effects within the local high-voltage compound. PDtect®4 Mobile is housed in a trailer which can be trailed from site to site. The trailer provides a secure and temperature-controlled environment for the sensitive radiometric PD monitoring system. Communicating via mobile phone-based data services, data recorded from PDtect®4 Mobile is uploaded every 90 seconds to a web server running the Elimpus NServer software.

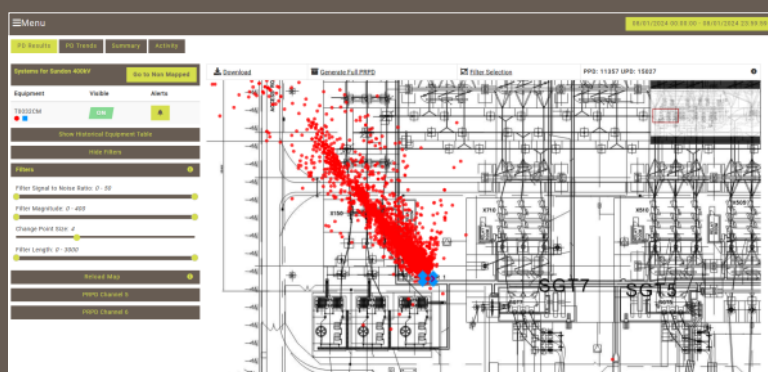
The NServer calculates the PD position which is served to the user using secure, password protected accounts. The NServer allows the user to see the PD position superimposed onto a plan view of the local substation, along with other PD metrics including time of capture and amplitude. Additionally, the user can set alerts for a variety of PD behaviour patterns. The alerts are communicated by either email, or SMS message.

The use of internet technology allows the user to log into the NServer from any location. This, combined with the flexibility to position the NServer hardware in any chosen location, e.g., a substation, Head Office, or contracted out to a third party, provides flexible, reliable and cost-effective PD detection and location.



## MAIN FEATURES

- PDtect®4 system fitted into a road-legal (EU) trailer.
- Trailer can be located in, or close, to the high-voltage compound.
- Four antenna array is located underneath the dielectric roof of the trailer.
- Simple and rapid deployment of the trailer.
- Wideband disk cone antennas give high sensitivity to PD impulses.
- On site recording hardware monitors for PD 24 hours a day, 365 days a year.
- NServer web software collects site recorded data and processes PD positions.
- Site recorded data uploaded to the NServer every 90 seconds for near real-time PD display.
- Ability to set alerts for PD rate of emission and amplitudes metrics.





## PDTECT®4 MOBILE COMPONENTS

- TRAILER UNIT ( x 1 )
- MAINS LEAD ( x 1 )
- RCD UNIT ( x 1 )
- EARTHING LEAD ( x 1 )
- UPS
- MOBILE COMMUNICATIONS
- PROCESSING



## PDTECT®4 MOBILE SPECIFICATIONS

<b>ARRAY</b>	Array dimensions	1.39 m x 0.93 m
	Antenna type	Disk cone
	Number of antennas	4
<b>TRAILER</b>	Weight	450 kg
	Dimensions (W x L x H)	1.59 x 2.95 x 1.85 m
	Supply voltage	230 Vac
	Current drawn (typical)	1 A
	Current drawn (max)	2 A
	Sampling rate per channel	1.5 Gsps
<b>FLIGHT CASE</b>	GPRS/3G modem	Yes
	Dual sim capability	Yes
<b>LEADS</b>	Mains cable length	20 m
	Mains cable type	Armoured
	RCD cable protection	Yes
	Earthing cable length	7 m
	Earthing cable type	Aluflex, 150 mm <sup>2</sup>
<b>CERTIFICATION</b>	GPRS/3G modem	Yes
<b>ENVIRONMENTAL</b>	Operating temperature range	-10°C to +40°C
	Internal trailer heating	Yes
	Internal trailer fan cooling	Yes
	Internal trailer air-conditioning	On request

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