



**Breakthrough technology for  
monitoring, condition assessment  
and asset management  
of electrical systems**

**Prysmian**  
Group

# Welcome to



## PRY-CAM

### **A revolution in monitoring, condition assessment and asset management of electrical systems**

The worlds of monitoring, condition assessment and asset management of electrical systems are undergoing a revolution that can help prevent failures and service interruptions and that harnesses the extraordinary possibilities of the Internet of Things.

It's a revolution where key parameters measurement and condition assessment data can be collected and stored via the Cloud, to be accessed and shared remotely, allowing effective maintenance strategies for electrical assets and learning for continuous improvement.



## Leading this revolution is PRY-CAM from Prysmian Group

A fast, flexible, reliable game-changer, a breakthrough technology and a suite of electronics-based products that perform online measurement of key parameters without service interruption, all born of 140 years' expertise in designing and delivering world-leading cable technology.

## Cutting-edge technologies with Prysmian Group's DNA

Every day, our technologies help customers by increasing uptime and safety of their electrical systems, enhancing assets longevity and significantly reducing maintenance costs and risks.



### Our core values



Revolutionise technologies for the management of electrical assets



Bring innovation to the world of electrical assets



Create simple products for complex problems

# Innovative solutions to real-world challenges

We're always developing new products and solutions for condition assessment and monitoring of electrical assets, driving widespread and lasting improvement in their management strategy.

And thanks to our cable system's DNA – based on long-standing experience in insulation materials – we're developing the most powerful diagnostics tools.

This is why we are a world leader. We are solving problems today, and delivering learning for tomorrow.

PRY-CAM's revolutionary technology allows online, accurate and reliable measurements of key parameters, diagnosis and defect localisation. Monitoring can be performed remotely and measurements can be taken without having to switch the system off. This implies a greater degree of safety for operators that do not need to be on site, and remarkable savings in terms of time and cost.

**It is faster, more accurate and more effective than ever before.**



# The PRY-CAM family

The PRY-CAM family features a range of cutting-edge products covering the key aspects of condition assessment and monitoring of electrical systems.

Suitable for any electrical equipment from 3 kV to 600 kV.

## Every PRY-CAM product is conceived based on four main pillars:



IDENTIFICATION OF PARAMETER TO MEASURE AND DEVELOPMENT OF THE SUITABLE DEVICE



DATA ACQUISITION AND TRANSMISSION



CLOUD PLATFORM STORAGE



MACHINE LEARNING



PRY-CAM SYSTEM

PRY-CAM SYSTEM integrated combined monitoring solutions consist of one or more PRY-CAM products installed within the same cabinet.

Each PRY-CAM SYSTEM solution can be configured based on the customers' specific requirements in terms of parameters to be monitored to fulfil their specific maintenance and asset management strategies.



### Use on HV and MV equipment



CABLES



JOINTS



TERMINATIONS



SWITCHGEAR



TRANSFORMERS



ELECTRICAL MACHINES



TO DETECT



TO PREVENT



TO MONITOR



TO LOCALISE



# Products



 **PRY-CAM**  
PORTABLE

Portable wireless device for the online spot measurement of PD (Partial Discharges) in AC (Alternate Current) electrical systems.



 **PRY-CAM**  
GATE






Fixed device for the permanent measurement of PD on cable joints both in AC and DC (Direct Current) electrical systems.



 **PRY-CAM**  
GRIDS

Fixed device for the permanent monitoring of PD in AC electrical systems.

## APPLICATIONS

 HV & Submarine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 Solar & Wind	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 O&G/SURF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 Power Distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 Other Industrial (Mining, Cranes, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



 **PRY-CAM**  
LINKBOX

Enhanced link-box containing self-powered electronic products and sensors capable of transmitting diagnostic information and data (PD, sheath current, SVL state, etc.) through GSM or fibre to a Cloud system.



 **PRY-CAM**  
HARVESTER






Device used to acquire power supply from the AC cable system and feed power to the monitoring system when a power connection is not available on site.



 **PRY-CAM**  
INFRARED

Contactless sensors using infrared technology to detect temperature of objects.

## APPLICATIONS

 HV & Submarine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 Solar & Wind	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 O&G/SURF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 Power Distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 Other Industrial (Mining, Cranes, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**PRY-CAM**  
WINGS

Sensors for the fixed measurement of PD and local temperature in AC systems.



**PRY-CAM**  
D-LOG

Multichannel fixed device for the measurement of key analogue parameters (temperature, pressure, currents, voltage, flooding, intrusion, smoke and more).



**PRY-CAM**  
MINILOG

Single channel fixed device for the measurement of analogue parameters (pressure, voltage, etc.).

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•	•	
•	•	
•	•	•
•	•	•



**PRY-CAM**  
OZONE

Sensor to detect the presence of ozone (O<sub>3</sub>) in the confined space surrounding a power grid component.



**PRY-CAM**  
DAS

Fixed optical device using Distributed Acoustic Sensing technology, for the measurement of noises in the vicinity of a cable.



**PRY-CAM**  
DTS

Fixed optical device using Distributed Temperature Sensing technology, for the measurement of the cable temperature along and/or inside a cable.

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•	•	•
•	•	•
•		
•		

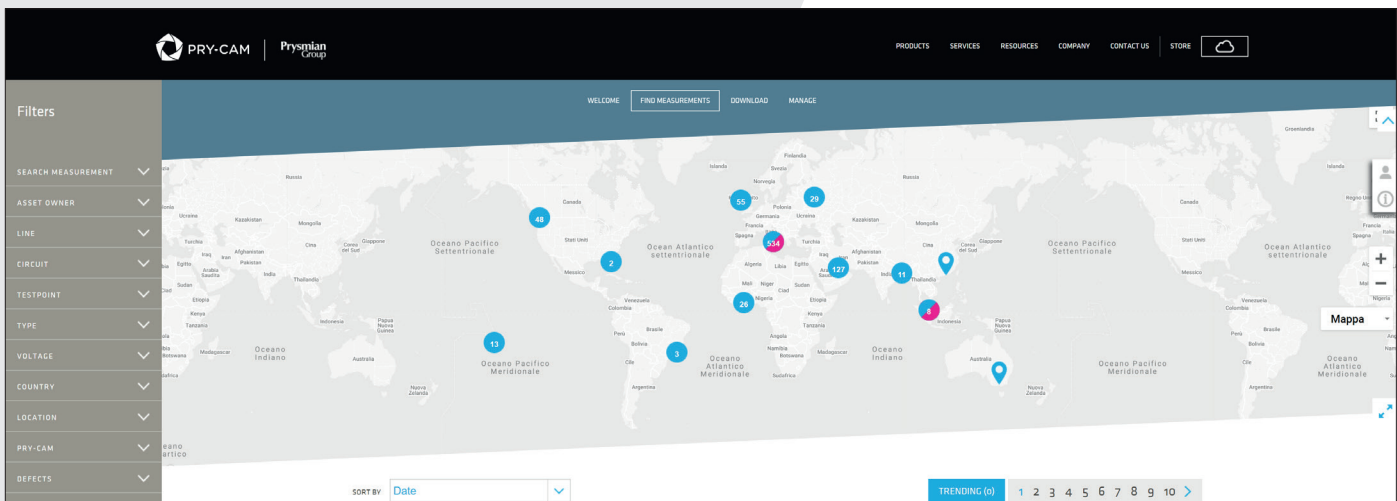
# PRY-CAM Cloud

Remote and real-time monitoring and data analysis for better maintenance management.

## How it works

The PRY-CAM Cloud is the ideal way to effectively manage your data. Your measurements, collected via PRY-CAM devices, can be safely stored and protected on the PRY-CAM Cloud and used for advanced post processing and learning. So you can easily share measurements, test-point details and knowledge within your company.

Manage, store and share your data safely and effectively. You measure, you control, you learn.





# KEY FEATURES



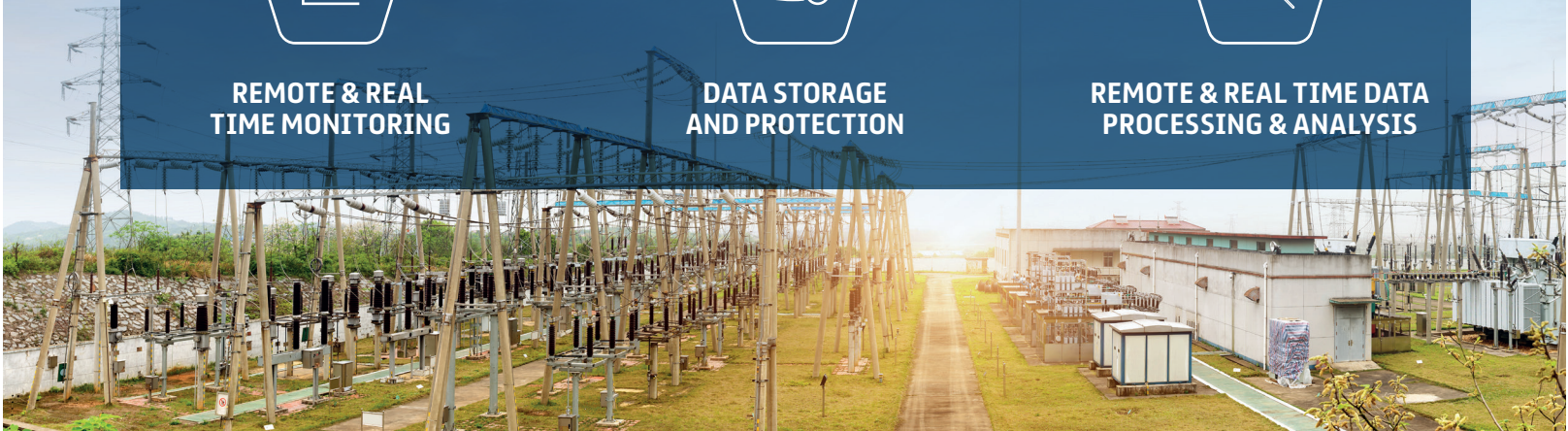
**REMOTE & REAL TIME MONITORING**



**DATA STORAGE AND PROTECTION**



**REMOTE & REAL TIME DATA PROCESSING & ANALYSIS**



**ASSET OWNER**  
Grid Ltd

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**LINE**  
220 GVR - NVI 1

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**CIRCUIT**  
SE GVR - SE NVI

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**TYPE**  
GIS termination

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**KV**  
220

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**TEST POINT**  
SE GVR

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**LOCATION**  
Springfield

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**CONFIG**  
[SET ALARMS](#)

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ADD TO TRENDING

2018-02-22 09:38:48

DIAGNOSIS ▲

PHASE: 4  
ADD TO TRENDING

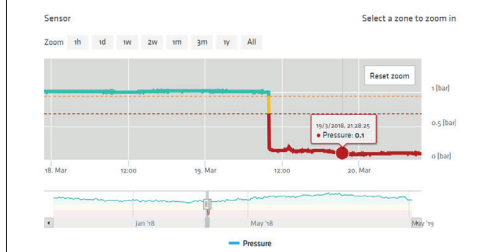
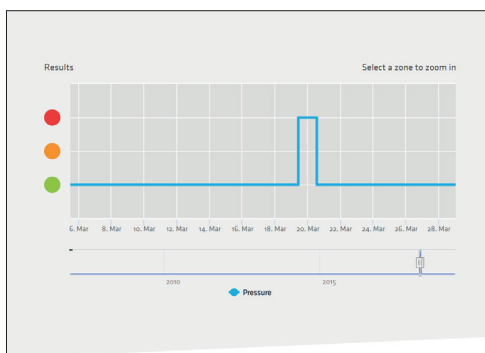
2018-02-15 13:01:14

DIAGNOSIS ▲

PHASE: 8  
ADD TO TRENDING

2018-06-28 09:21:13 UTC  
min of day: 1.17 / max of day: 1.22

0 2.5



- Springfield T1  
Pressure  
Line: Springfield 1 Circuit: T3 - Phase: B  
Springfield  
Outdoor termination - 150 kV

The PRY-CAM Cloud hosts all measured parameters that are analysed based on the most advanced protocols. For Partial Discharge (PD) automatic diagnosis, PRY-CAM uses a proprietary artificial intelligence algorithm: PRY-CAM BRAIN™.

The analytics functions allow you to evaluate what impact the PRY-CAM technologies have on your electrical assets over time. It also generates real-time alarms whenever a critical condition or a malfunctioning occurs.

As an option, you can have virtual access to Prysmian PRY-CAM experts with remote diagnosis within 24 hours.

# Diagnostics and asset integrity services

Hundreds of failures have already been prevented using PRY-CAM condition assessment and defect localisation systems and services.

PRY-CAM supports customers not only with products but also with **services** provided directly by its experts.

## REMOTE DATA ANALYSIS

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## SPOT PD MEASUREMENTS

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## COMMISSIONING OF ELECTRICAL SYSTEMS

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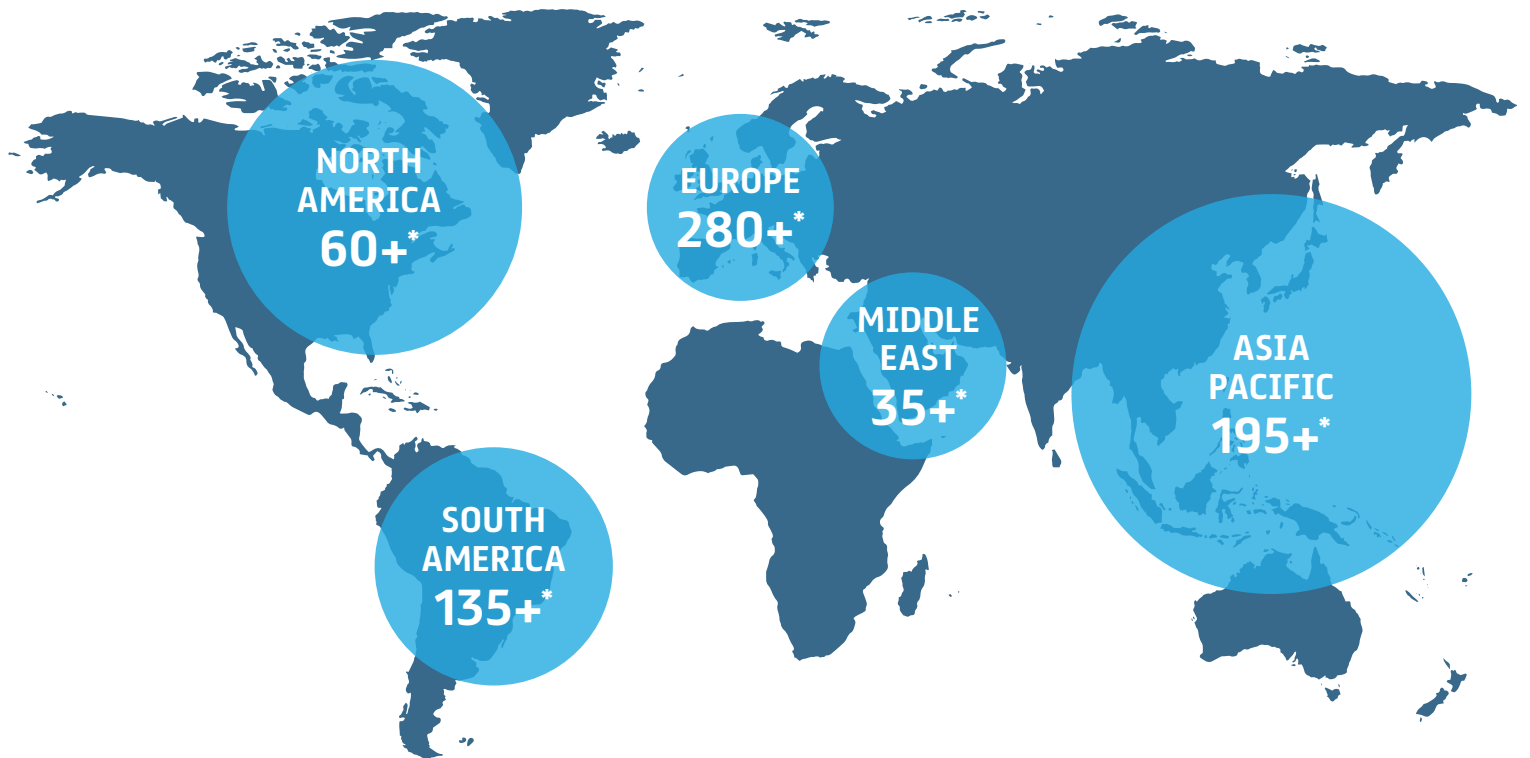


## Training & education

We believe that innovation and knowledge must be shared to achieve the highest level of asset management and condition assessment. For this reason, we can provide you with two types of PRY-CAM training, BASIC and ADVANCED.

**For more information, please don't hesitate to contact a member of the team.**

# Our worldwide figures



\*Number of permanently monitored test points

Number of  
spot PD  
measurements  
**3,500,000+**

Number of  
monitoring  
systems sold  
**700+**

Number of  
DTS systems  
installed  
**25+**

Number of  
recurring  
customers  
**120+**

PD diagnosis  
reliability  
rate  
**100%**



PRY-CAM

**Prysmian**  
Group

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