POWER GRIDS

Essential Infrastructure for Power Distribution & Transmission

prysmian

The planet's pathways

SUPPORTING UK ENERGY EVOLUTION

A combination of rising user demand and the transition to renewable energy generation is placing unprecedented demand on the UK power transmission and distribution infrastructure.

In this rapidly developing climate, Prysmian, the world's leading manufacturer of power cable systems, has a crucial role to play.

Prysmian provides a wrap-around service for power transmission and distribution from 66 up to 400 kV.

We design and manufacture cable and cable accessories that integrate seamlessly with existing network infrastructure.

We can help plan the most efficient route and supply all the logistics that support the installation of HV and EHV cable systems.

We conduct testing and commission circuits in accordance with client specification. We can provide ongoing maintenance including fault finding and emergency re-instatement should cables or networks have been damaged.

We work with transmission and distribution network operators, providing the cable systems that carry electricity across the country.

Our range includes cables from standard 1 kV LV distribution cables to bespoke HV and EHV cables over 600 kV, together with the associated terminations, joints and accessories to make the system come to life.

Working with Power Grids in the UK for over 100 years

Prysmian factories have been making cable in the UK for over a century. We supplied cable systems for the first electric power grid and we have continued to support the network as it changes and expands. The next decade will see a transformation of power generation and we're right here to support it.

We work with all the Transmission and Distribution Network Operators and understand the requirements of existing networks, allowing us to deliver solutions that integrate with legacy systems.

Our difference lies in the depth of our engineering expertise, the breadth of our experience in the UK energy industry and the unparalleled service provided by our UK team.

PEOPLE AND PLANET FIRST

The welfare of our employees must always be our first priority. The entire Prysmian organisation has embraced a culture of health and safety that ensures appropriate procedures and management systems are embedded in the culture of the company.

Our procedures are supported by accreditation to ISO45001:2018. We develop these still further to include behaviours and mental awareness in our workforce.

By involving the workforce in key safety aspects and taking account of their knowledge and experience, there is an empowerment to ensure actions can be completed correctly and safely first time.

Competency is a key factor in delivering a safe project, which is why we continue to train, retrain and expand on experience to develop the competency of the main Prysmian asset: our people.

OUR SUSTAINABILITY COMMITMENT

With operations around the globe, Prysmian is all too aware of the impact of climate change and we are determined to lead by example.

Our target is to reach net zero greenhouse gas emissions by 2035. Achieving this involves technical innovation and behavioural change throughout our own organisation and collaboration with our supply chain to reduce the emissions associated with the materials we use.

Examples in action include:

COMMITMENT TO RECYCLING	In 2024, all our copper cables were manufactured using fully traceable copper with recycled content and we're pioneering the use of recycled polymers
LOW CARBON ALUMINIUM	100% of the aluminium we use in UK for cables is sourced from producers using renewable energy
PACKAGING	Redesigned to focus on reduced material use – particularly to eliminate single use plastic

These innovations are just the start. Our international research and development team is focused on developing new technology to support our sustainability commitments. Look out for:

P-Laser: a new cable concept combining improved performance with HPTE (High Performance Thermoplastic Elastomer) insulation

Alesea: an IoT solution for monitoring of cable drum location and usages.

E3X: a new proprietary technology heralding the first heat-dissipating overhead conductors set to reduce power loss while increasing capacity and lowering costs.

MONITORING, MAINTENANCE AND REPAIR

The Prysmian name is most widely recognised for the design, manufacture and installation of high voltage and extra high voltage cable systems, but the service provided extends long after the system is completed.

The company has unrivalled experience in the maintenance and repair of existing fluid filled or polymeric insulated cable systems in the UK.

Our company has been installing and maintaining high voltage pressurised fluid filled cable systems, MIND insulated and polymeric cable systems since their first introduction into the UK.

This maintenance offer is supported and complemented by our in-house manufacturing, jointing and fluid technician training school and high voltage and chemical laboratories.

Rapid response problem solving

Prysmian includes a rapid response team of highly skilled engineers, cable jointers and fluid technicians ready to respond to any call-out relating to circuit failure. Our 24-hour call out rota system coupled with our emergency hotline ensures that we can provide a response 24 hours a day.

Whether the problem is catastrophic damage or oil pressure alarm indication, our response team provides the specialist response expected from a leading and expert manufacturer of power cables and accessories with a 100-year history in the UK.

ASSET MONITORING SYSTEMS AND DIAGNOSTICS

The worlds of monitoring, condition assessment and asset management of energy networks are undergoing a revolution. A revolution that can help prevent failures and service interruptions, increasing uptime and safety, enhancing longevity and significantly reducing maintenance costs and risks for clients.

PRY-CAM is a breakthrough technology paired with a suite of electronics-based products. The solutions allow online measurement and data gathering of key parameters without service interruption, supported by cloud data management.

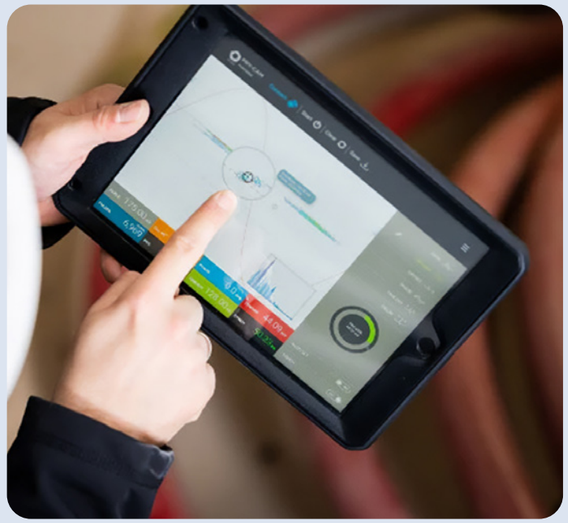
PARTIAL DISCHARGE (PD) MONITORING SOLUTIONS

PD measurements are key parameters for assessing the condition of any HV and EHV circuit. Despite this, PD testing analysis is a powerful online diagnostic tool that has been hampered by limitations of traditional PD technologies.

PRY-CAM innovative wireless technology removes many of those limitations. It allows PD testing to be performed online removing any need to switch the system off. There is also no need for a direct connection to the asset being tested – giving much greater safety for operators.

PRY-CAM is simple to operate and the system can be integrated with the whole asset, whatever the size of the system.

PRY-CAM condition assessment and defect localisation systems and services is already widely used across Europe, providing valuable real-time insight and preventing system failures.



PRY-CAM PORTABLE

PRY-CAM PORTABLE is an integrated portable instrument for the automatic acquisition, processing and classification of pulse signals generated by PD phenomena. These occur in insulating materials of medium and high voltage (MV and HV) electrical systems and equipment, such as transformers, electrical machines, cables systems and switchgear.

PRY-CAM PORTABLE provides an instant snapshot of the conditions of the object being monitored. It is easy and immediate to read thanks to a red-yellow-green traffic-light-like visual interface, based on a proprietary artificial intelligence algorithm.

PRY-CAM FIELDS

PRY-CAM Field is an advanced on-site service tool that is designed to simplify Partial Discharge (PD) testing activities.

Compact, portable and highly efficient, PRY-CAM Fields enables accurate and reliable online PD measurements, diagnostics, and defect localisation, without the need to disconnect the circuit. Using PRY-CAM technology, the system can detect and classify PD without physical contact on the cable.

PRY-CAM GRIDS

PRY-CAM GRIDS is a fixed device for the temporary and permanent monitoring of PD in Alternating Current (AC) electrical systems through PRY-CAM WINGS sensors.

PRY-CAM WINGS sensors are active sensors that provide higher sensitivity, up to 70 MHz bandwidth, suitable for continuous monitoring of PD and temperature and are IP 68 rated (can be installed in critical water environment).

Key features include online installation, no galvanic connection, several data connectivity modes for remote communication and access, automatic advanced warning and alarms based on PRY-CAM BRAIN A.I. algorithm.

For High Voltage Direct Current (HVDC) electrical systems PRY-CAM GATE is deployable with automatic diagnosis and automatic alarms for highly reliable PD detection in HVDC circuits. PRY-CAM GATE is the only PD monitoring solution available on the market to date.

PFT SOLUTIONS

WHAT IS PFT?

Perfluorocarbon tracers are specialist compounds with excellent insulation properties which are added to the cable fluid in minute quantities. Where the cable system is damaged, the PFT compound will permeate through the ground and can be detected using highly sophisticated detection equipment.

We have developed specialised methods of mixing PFTs with cable oil to facilitate injection into the cable system with no detriment to the flow or insulation properties of the oil.

CIRCUIT TAGGING

Prysmian continues to manufacture cable accessories for fluid-filled cable systems. This expertise helped develop modular bespoke tagging equipment that is easily deployed to site.

Circuit tagging can be carried out with or without the need for a circuit outage. We have developed technical solutions to overcome all variables in cable design and hydraulic installation parameters.

PRE-TAG FOR FAST LEAK REPAIR

Vulnerable cable systems that have high environmental impacts if they leak can be pre-tagged so that should a leak occur, it can **be located and repaired promptly.**

DETECT LEAKS WHILE ENERGISED

Cable systems that have on-going small leaks can be tagged during an outage period and leak detection can take place **whilst the system is energised.**

UPGRADE TO ECO-SAFE CABLE FLUIDS

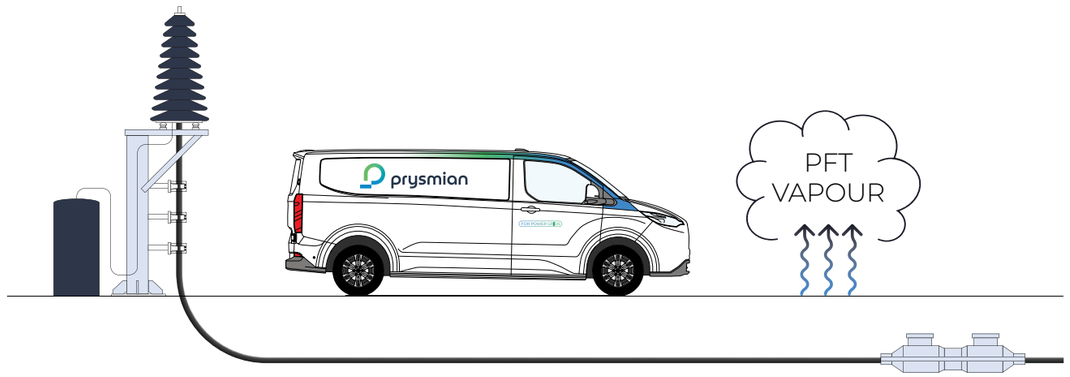
Replacing loose cable fluid oil with modern alkylbenzene solutions offers greater biodegradability should the cables become damaged and leak in the future. Furthermore, the modern alkylbenzene fluid has superior electrical qualities and greatly improved gas absorption properties.

DETECTION

The Prysmian advanced mobile laboratory detects background levels of perfluorocarbons in the atmosphere. It will sample the air over the cable route and detect any PFT which has permeated through the subsoil with the leaking cable fluid.

The level of PFT surrounding a cable leak is incredibly small, typically 40 to 100 parts per million. This is readily detectable above background using Prysmian methods.

The Prysmian mobile laboratory means that the time between air sample and result is 90 seconds: detection results are achieved in real time. Traditional methods require air sample tubes to be taken, collected, couriered to specialist laboratories and one or two weeks of delay before receiving results.



THIRD PARTY DAMAGE

CRYSTALLINE CRACKS IN METALLIC SHEATH

LEAK AT JOINT WIPE/PLUMB

HIGH VOLTAGE JOINTING

All of our jointing operatives and fluid mechanics have undergone specialist training and certification in our very own purpose-built training school. We not only train our own personnel but offer external training opportunities to the wider industry.

Whether it's the installation of new cable accessories or the repair of existing cable accessories, we can provide all the necessary skilled resources required for all voltages up to and including 400kV.

CIRCUIT REINSTATEMENT

Whether the outage is planned or the result of a fault or third party damage, our clients can be assured that we have all the expertise, facilities and materials required to reinstate the circuit to full commercial operation quickly and economically, addressing diagnostics, repair and testing, without compromising the future integrity of the circuit.

High Voltage Commissioning

In addition to our high voltage laboratory in Eastleigh, UK, Prysmian has extensive mobile high voltage testing facilities.

High voltage tests are often required prior to returning a cable circuit into service following replacement of major components, such as cable joints or the diversion of an existing circuit. We can perform a full range of tests on a cable circuit whether as part of repair, diagnostics or routine maintenance performed in order to avoid a fault and hence a forced outage occurring in the future.

Prysmian has three HV resonance test trailers capable of testing up to 400kV in the UK. This ensures we can mobilise multiple HV test teams simultaneously throughout the UK. Should further capacity be required, we call upon the Prysmian European test fleet.

PRYSMIAN POWER GRIDS LOCATIONS

CONTACT US FOR MORE INFORMATION, OR FOR IMMEDIATE SUPPORT.

24 hour emergency hotline

0845 400 2 132

Email

cables.marketing.uk@prysmiangroup.com

Learn more about our full offer for power transmission and distribution

uk.prysmian.com/markets/power-grids

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