POWER CABLE MONITORING

Distributed Fiber Optic Sensing
for Underground & Submarine Cables

Leading the Way with Passion.

AP Sensing:
Your trusted partner for Power Cable Monitoring

AP Sensing is the **Distributed Acoustic Sensing (DAS)** and **Distributed Temperature Sensing (DTS) solution provider** for your power grid. We provide global sales and service through a network of local offices and highly qualified partners. Our **product quality and reliability are unsurpassed**, which brings you peace of mind and lower cost of ownership. With references in transmission and distribution, land cables, subsea cables and superconductors, we ensure **proper monitoring of your network.**

We develop our fiber optic sensing solutions based on **the tradition of HP/Agilent Technologies**, the world leader in optical test and measurement for over 35 years. Building on HP/Agilent's processes and knowledge, we have established ourselves as **the leading solution provider for Distributed Fiber Optic Sensing (DFOS)** in a wide range of applications.
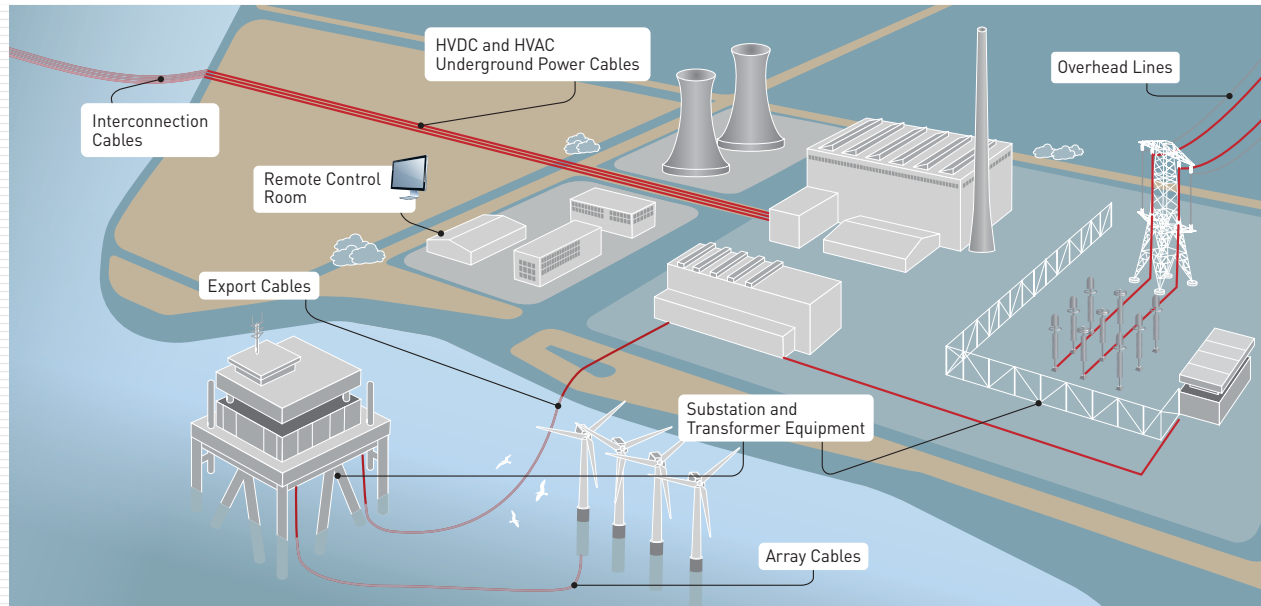
Leading the Way with Passion.

Our expertise:
Solutions that fit your needs

AP Sensing's unique technology ensures gapless and real-time temperature and acoustic measurements along the entire power circuit. It precisely localizes hot spots and cable faults, computes the actual ampacity, predicts emergency rating hours in advance, and estimates the burial depth of sea cables. With our sensing solutions you receive maximum network performance under safe operational conditions.

We deliver well-designed, comprehensive solutions for your challenges and applications.

With our innovative Code Correlation (DTS) and 2P Squared (DAS) technologies, AP Sensing's fiber optic sensing products are unique and superior in performance and quality. Our solutions measure a true linear and accurate temperature and acoustic profile along your power circuit that works as a perfect base for further computation.

We offer gapless, 24/7 monitoring.

Fiber optic advantages

Distributed temperature and acoustic/ vibration measurements along the entire circuit, providing thousands of data points

Accurate measurements not compromised by strain or EMI

Perfect base to compute precise power ratings (RTTR), burial depth, and for machine-learning event detection

Precise detection and classification of critical events such as thermal overload, third-party events (digging, anchoring) and cable faults

Applications

HVDC / HVAC

Underground power cables

Export and array cables

Interconnectors

Joints and terminations

Utility tunnels

Overhead lines

Transformers

Substation equipment

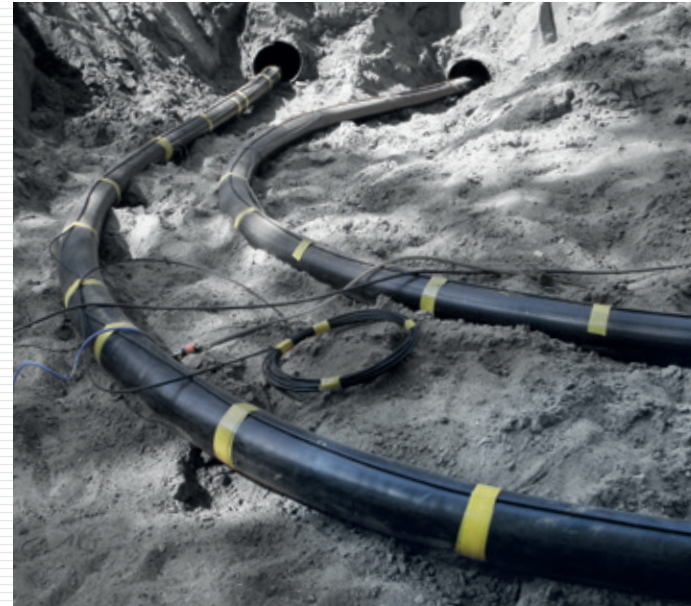## Maximum safety and protection for your assets

AP Sensing's cable monitoring system gives you the ideal solution to monitor and protect your power infrastructure.

Operate your network at the highest possible safe ampacity level by using steady-state and transient thermal analyses. Compare current loads with estimates made during the planning stage and learn how much you can safely increase the steady-state load. **The system computes all data you need** to plan for peak loads and emergencies including the burial depth of sea cables enabling the **indication of critical sections of exposed cables.**

Based on AP Sensing's deep application knowledge, intelligent event detection is built in. Highly advanced machine learning algorithms accurately classify Third Party Interference (TPI) ensuring reliable **alarming of potential threats on the integrity** of the cable. Cable faults are detected and localized within seconds, which **significantly reduces repair and outage time.**

"AP Sensing's support team has been a fantastic resource for us over the years. They have helped us with system development and implementation planning, and they are always quick to respond to our technical queries with competent advice and helpful tips."

Geoff Harris, Ausgrid
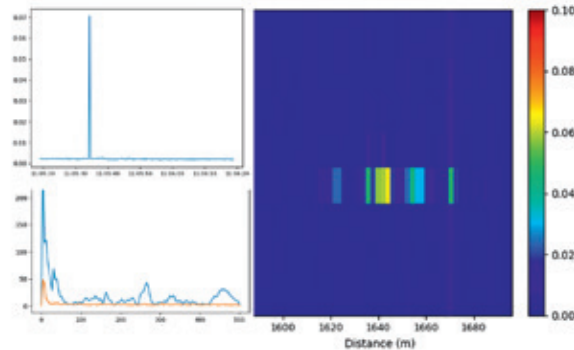
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Confident asset management and network planning insight

AP Sensing's SmartVision management suite shows the **condition of your circuits** at a glance controlled by an easy-to-use graphical interface. It seamlessly integrates many DAS, DTS, CCTV and other sensors into a single platform.

SmartVision provides a clear overview with an integrated map, asset view, waterfall diagrams, and several analysis functions. A modern client-server architecture allows installation on virtualized IT networks and offers a comprehensive range of protocols for integration into SCADA systems.

Our proprietary **SmartAlarm** technology offers **unique methods and algorithms** to detect small **hotspots**, even under transients. SmartAlarm **analyzes acoustic patterns**, providing fast and dependable event classification and alarming.

SmartVision features

Fully integrated management solution (DTS, DAS, RTTR)

Asset visualization, reporting and analysis capabilities

Alarm management with machine-learning algorithms

Central database and networking that runs on virtualized IT networks

Computing of ampacity (actual and predicted) and burial depth of sea cables

System features

World-leading measurement ranges

Provides true linear and highly accurate measurement profiles

Capable of measuring on SM and MM fibers

Seamless integration due to variety of interfaces and protocols

Detection & Localization of Cable Fault

AP Sensing's leadership in quality and innovation

AP Sensing has **the industry's lowest failure rate**. Aside from over 35 years of HP/Agilent's optical test leadership, we are passionate about continuously improving our fiber optic solutions to help you meet your day-to-day challenges.

Quality and performance are the drivers for our innovation. Unique technologies such as the single receiver design, Code Correlation Concept, 2P Squared Technology, and Variable Timing Technology (VTT) enable us to offer you distributed fiber optic sensing solutions with **world-leading precision** and range as well as **long-term measurement stability**.

All instruments run on **proven operating systems**, which are extremely stable and secure. For example, our DTS runs on VxWorks, which is designed for mission-critical applications and used in the aviation and space industry.

"For me, AP Sensing is the forerunner for distributed optical temperature sensing. You can see in their solutions a combination of experience and creativity – an intuitive design that works just as you'd expect, yet they aren't afraid to think out of the box or provide a customized solution. They carry on their HP/Agilent heritage and continue to develop and advance, while remaining true to their core values of quality and reliability."

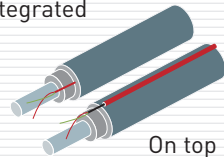Roberto Gaspari, Prysmian

Leading the Way with Passion.

Your complete solution provider

AP Sensing is your long-term partner. **We listen to your challenges and strive to provide the best distributed fiber optic solution for your power application**. Our complete offering fits your monitoring demands and protects your valuable assets.

AP Sensing's instruments use a **low power laser** to ensure a maximum lifetime and safe handling under all conditions. These instruments have undergone **extensive testing and obtained the certifications required to meet** the demands of your industry.
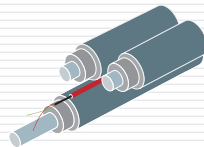
AP Sensing's support philosophy does not end with the commissioning – it goes far beyond. Our experienced support and engineering team can **help you with the design, installation and project management**. This includes not only onsite service but also **hotline support, maintenance and training**. Whatever is needed – our team of experts is happy to assist you.

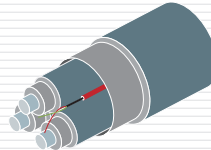### Why choose AP Sensing?

Best measurement performance due to unique technologies such as Code Correlation and 2P Squared

No drift and no recalibration thanks to patented single-receiver design and the inherent strain insensitivity (no strain cross-talk)

Low-power laser for safe use and long product life

Market's most complete set of test reports and certifications

Support for project planning, design, and installation

Project management and commissioning

A worldwide network of regional partners and experts

Integrated

Trefoil configuration

Subsea cable

On top

Temperature

Acoustic

Temperature and Strain

Our mission is to ensure your success

Drawing on our HP/Agilent heritage in optical testing, we have established ourselves as **the leading solution provider for Distributed Fiber Optic Sensing (DFOS).**

We remain committed to delivering **well-designed, comprehensive solutions** to our customers.

We have worldwide offices **with highly qualified and motivated employees, and a network of expert regional partners.**

At AP Sensing we recognize that we can only be successful when our customers and partners are successful. Therefore, we take a **respectful and proactive role** in all our commitments.

With the industry's most complete set of tests and certifications, **AP Sensing helps you comply to relevant security standards** and ensures environmental and employee safety.

Contact us for more information!

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Passion for Plants.
For every unit sold, AP Sensing plants 100 trees.

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