# Fiber Optic Sensing Cable Solutions.





# Fiber Optic Distributed Sensing.

Brugg Cables is a leading developer, manufacturer and supplier of engineered fiber optic sensing cable system solutions. These sensing cables detect strain, temperature, acoustics/vibration, pressure, humidity and intrusion using the Brillouin, Raman, Rayleigh or FBG measurement methods. Brugg offers a wide range of fiber optic sensing cables and accessories for distributed sensing, connecting cables and specialty fiber optic cables.

#### **Products**

The comprehensive BRUsens range of fiber optic sensing cables uses Brillouin, Raman, Rayleigh and FBG methods to monitor:

Strain

- **Temperature**
- Acoustics
- Pressure

Furthermore, we also offer BRUsens cable solutions for:

- Interconnection
- **Specialties**

#### **Accessories**

Brugg Cables' fiber optic sensing solutions are available with the required accessories and are ready to connect to any interrogator unit:

- Loops, mini loops
- **Enclosures**
- Standard PC/APC connectors
  - Ruggedized connectors
- Fan-out, pigtails
- Joint boxes
- Reels, backpacks
- Anchors, cable holders

#### **Tools for Installation and Maintenance**

Brugg Cables provides a complete set of tools for any situation in the life-cycle of the sensing system:

- Installation- and repair kits
- Measuring kits
- Cleaning sets
- Installation aids and tools
- Calibration aids

# **Services**

With Brugg Cables' expertise and services, we are your reliable partner in every project phase:

- Consulting and engineering •
- Installation support
- Training for deployment, operation, maintenance
  - and repair







# **Production Facilities**

The manufacturing of sensing cables requires state-of-the-art, flexible production lines, special tools and high-performance equipment. Combined with our engineering know-how and more than a century of technical excellence, a high-quality output from Brugg Cables' production facilities in Switzerland is assured.

#### **Test Laboratory**

Brugg Cables' material and test laboratories ensure the performance of BRUsens cables in any mechanical or environmental conditions. With our sensing interrogator units, we verify the performance of our products to ensure customer requirements are met.

# Market Scope.

Brugg Cables' expertise and services make a valuable contribution to a safer and more efficient operation of assets. Our fiber optic cable solutions are ready to plug and play.

#### Oil & Gas

In the oil and gas industry, fiber optic sensing cable solutions are used for optimized production and integrity monitoring in risers, umbilicals and oil wells, and for subsea, reservoir and seismic monitoring. They are also used along pipelines, in refineries and in LNG terminals.



#### **Industrial Applications**

Fiber optic sensing cable solutions monitor the most diverse processes and ensure optimum operation of the workflows and processes.



### **Transportation**

Fiber optic sensing cables are typically installed in transportation infrastructures, along highways embedded in roads, bridges and rail tunnels to achieve efficient, fast, flexible and cost-effective structural monitoring as well as fire, ice or water detection.



## Security

Sensing solutions for security enable the surveillance and monitoring of assets along every meter of remote facility perimeters, long-distance pipelines, power lines, railway tracks, airports, construction sites or national borders.



#### **Energy**

Fiber optic sensing cables are used to monitor the temperature of energy production and distribution facilities, power cables, high-voltage switchgears and transformers etc. and contribute to the optimization of performance and operational safety.



#### **Environment & Geotechnics**

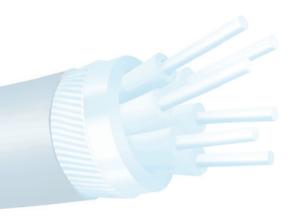
Typical geotechnical applications include the monitoring of soil movement, dams and construction areas. Fiber optic distributed temperature and moisture sensing is also used to understand and monitor hydrological processes in agriculture, oceans, lakes, rivers and sewers.



#### **Fire Prevention**

Fiber optic sensing cables can accurately and swiftly measure any temperature increase caused by local fires or overheating in a specific area, thus preventing major damage in many cases.





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