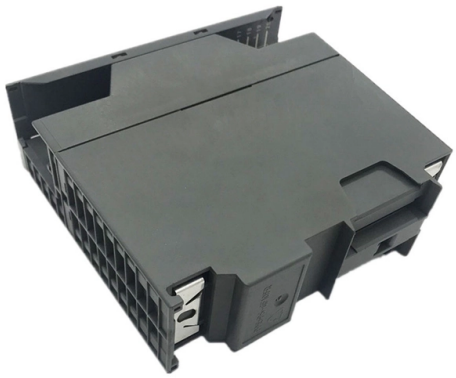
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Temperature Measurement Fiber Optic Sensor Manufacturer



Overview

This section provides an overview for fiber optic temperature sensors as well as their applications and principles.

Key Takeaways

Leading manufacturers of fiber optic temperature sensors include COMEM, OSENSA, Luna Innovations, FJ Inno, and Yokogawa, offering solutions for high-voltage, EMI/RFI-prone, and harsh industrial environments.Key Manufacturers and Technologies



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COMEM produces fiber optic sensors using a Gallium Arsenide (GaAs) crystal at the fiber tip, ideal for highly accurate temperature measurements in environments exposed to microwave radiation and electromagnetic interference. Their sensors are fully non-metallic, dielectric, and suitable for high-voltage and magnetic field-intense applications, integrating with FOTEMP monitoring devices for precise, repeatable measurements . OSENSA Innovations specializes in fiber optic temperature sensing and partial discharge monitoring for switchgear, transformers, data centers, and industrial applications. Their probes are immune to electromagnetic radiation, high voltage, RF, and magnetic fields, providing reliable monitoring in critical electrical equipment . Luna Innovations offers high-definition distributed temperature sensing based on Rayleigh backscatter, fiber Bragg grating (FBG) multipoint sensors, and long-range distributed acoustic sensing. Their systems deliver sub-millimeter spatial resolution and can be embedded in locations inaccessible to traditional sensors, suitable for batteries, industrial processes, and harsh environments . FJ Inno is a professional OEM/ODM manufacturer providing fiber optic temperature sensors, distributed temperature measurement systems, and transformer monitoring solutions. Their products are high-voltage resistant, anti-electromagnetic interference, and customizable for real-time monitoring in power, medical, laboratory, and aerospace applications . Yokogawa Electric Corporation offers distributed temperature sensing (DTS) systems integrated with industrial process control and asset management platforms. Their solutions are widely used in oil and gas, chemical, and power generation industries, benefiting from global service and support networks .

Sensor Technologies

• Fluorescent Fiber Optic Sensors: Point measurements with ±0.5°C accuracy, ideal for switchgear and transformer hot-spot detection.

• Distributed Temperature Sensing (DTS): Converts a single fiber into thousands of virtual sensors over 10–50 km, suitable for pipelines, tunnels, and power cable monitoring.

• Fiber Bragg Grating (FBG) Sensors: Multipoint sensing with high stability, capable of multiplexing multiple sensors along a single fiber.

Considerations for Selection

When choosing a manufacturer, consider:

• Technology type (fluorescent, DTS, FBG)

• Application environment (high voltage, EMI/RFI, harsh conditions)

• Required accuracy and spatial resolution

• Integration with monitoring systems

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• After-sales support and global availability These manufacturers provide solutions that ensure safe, precise, and reliable temperature monitoring in environments where traditional sensors may fail, supporting industrial automation, critical infrastructure protection, and high-voltage equipment monitoring .

Article Content

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In-Depth Overview of Fiber Optic Temperature Sensors

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