

Fiber Optic Displacement Sensor Series Products



AI Overview

Fiber optic displacement sensors are precision instruments that measure linear or angular displacement using light, offering high reliability in harsh or compact environments. Overview of Fiber Optic Displacement Sensors Fiber optic displacement sensors use light transmitted through optical fibers to detect changes in position or displacement. They are widely used in industrial automation, aerospace, civil engineering, and structural health monitoring due to their non-contact measurement, immunity to electromagnetic interference, and suitability for harsh environments (Keyence).

Key Technologies

Fiber Bragg Grating (FBG) Sensors: These sensors incorporate FBGs inside the fiber core, acting as reflectors that measure strain, temperature, or displacement. FBG arrays allow multiple sensors to operate in series along a single fiber, enabling distributed sensing over long distances (DirectIndustry).

WLPI-based Sensors: Used in geotechnical, aerospace, and transportation applications, these sensors provide real-time monitoring of structures and aircraft, offering long-term reliability (Opsens).

Interferometric and Laser-based Sensors: Some series, like the PICOSCALE Interferometer, use focused or line-focused beams for precise displacement measurement of small or cylindrical targets (DirectIndustry).

Product Series and Features

Philtec D and RC Series Designed for high-precision displacement measurement in industrial and research applications. Standard fiber optic cable length: 914 mm (3 feet), with options for customization. Includes DMS Control Software for data acquisition at up to 10,000 samples/sec. Supports multi-channel enclosures with up to 8 D-type or 5 RC-type sensors (Philtec).

Flexible, semi-crush-proof cables suitable for high-pressure, twisting, and cryogenic environments.

Opsens Fiber Optic Linear Displacement Sensors Ideal for civil engine...

Article Content

Fiber optic displacement sensor (LVDT), transducer and probe

WLPI-based fiber optic displacement sensor for geotechnical, Aerospace Defense, aviation, transportation, test and measurement and general industry.

Fiber Optic Displacement Sensors

Standard single channel units include amplifier and sensor tip with 914 mm (3 Feet) long fiberoptic cable, require +12 VDC input power, and provide 0 to +5 volt analog output with DC - 20 KHz bandwidth.

High-precision displacement sensor in advanced ...

Currently, as displacement sensors are moving towards the direction of high precision, large range, and universal applicability, the market has seen a large variety of new displacement

High-Sensitivity Displacement Sensor Using Few-Mode

This paper presents a displacement sensor designed to achieve the Optical Vernier Effect (OVE) through a simple yet robust configuration,

Fiber Optic Pressure Sensors

Fiber optic pressure sensor for oil & gas, energy, structural health monitoring, defense & aerospace, geotechnical, civil engineering, microwave chemistry,

ZW-8000 / 7000 / 5000 Series Confocal Fiber

Our white light confocal displacement sensor can measure from the same installation position while moving in any direction, with no restriction on

Fibre-optic displacement sensors

The range of displacement sensors available from SCAIME offers high sensitivity. Their robust design ensures a long lifespan, including in hostile environments. Additionally, integration into the case of a

Fiber Optic Displacement Sensors

Non-Contact Fiber Optic Displacement Probe Sensor Gap Module with Replaceable Battery, Angle Sensor and WiFi Radio

Turbine balancing, precision measurement & metrology

1D/2D/3D Laser Systems & Fiber Optic Sensors MTI Instruments offers high-speed, high-resolution, and highly accurate 1D laser sensors (non-contact linear position

Products | Philtec

Our Product Precision Fiber Optic Sensors Explore configurable displacement sensor systems designed for precision measurement in aerospace, vacuum,

Fiber Optic Sensors | KEYENCE America

Product Lineup Digital Fiber Optic Sensor FS-N40 series This series is able to detect virtually anything, in any environment with high power and a variety of

Fiber Optic Displacement Sensors

The MTI 2100 Fotonic Sensor represents the pinnacle of precision measurement technology, embodying advanced fiber optic sensing capabilities. This state-of-the-art sensor is engineered to deliver proper

Fiber Optic Displacement Sensors

Measure linear displacement with FBG technology. These rugged sensors enable temperature compensation and are ideal for SHM.

Philtec | Fiber Optic Sensors

Precision Fiber Optic Sensors for Extreme Environments Accurate, non-contact measurement of displacement, vibration, and position—even in cryogenic,

ZW-8000 / 7000 / 5000 Series Confocal Fiber

Minute objects Thanks to its very small spot diameter, the ZW-8000 Series can measure targets on minute objects extremely precisely, which is

A Review of Optical Interferometry for High-Precision

Optical interferometry has emerged as a cornerstone technology for high-precision length measurement, offering unparalleled accuracy in various

Products | Philtec

Access technical documentation, product specifications, software tools, and engineering resources for Philtec fiber optic sensor systems.

Digital Fiberoptic Sensor

The Next Evolution in Fiber Optic Sensing Downloads: Technical Guides Data Sheet (PDF) CAD / CAE Manuals Software For Your Support: Ask an Expert

Displacement Measuring Interferometers | ZYGO ZMI™

ZYGO offers several interferometers for displacement measuring interferometry so you can choose the ones that best suit your measurement requirements.

Monitoring tunneling induced ground displacements using distributed ...

Abstract Determination and monitoring of tunneling induced ground displacement is an important component in tunneling design and construction. In recent years several technologies for distributed

Fiber optic displacement sensor (LVDT), transducer and probe

Fiber optic linear displacement sensor is ideal for real-time monitoring of civil engineering structures, structural monitoring of aircraft, both in-flight and on-ground, smart structures instrumentations,

Fiber optic displacement sensor

Find your fiber optic displacement sensor easily amongst the 9 products from the leading brands (Brüel & Kjaer, SCAIME, Micron Optics, ...) on DirectIndustry, the

Fiber Optic Sensors | KEYENCE America

Learn all about various sensors—including fiber optic sensors, photoelectric sensors, laser sensors, and contact sensors—with detailed information on

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