PRODUCT INTRODUCTION

Fibre Optic Sensor

Fibre Optic Strain Sensor YOSC-OFS-M1

YOSC-OFS-M1 fibre optic grating embedded strain sensor can be widely used for the construction and long-term safety monitoring of surface layer strain and stress in various industrial and civil building steel structures.

Features

- High precision, high resolution, measurable positive and negative strains
- Naturally explosionproof, with good temperature resistance, corrosion resistance, aging resistance and electromagnetic interference resistance
- High stability, minimal temperature drift, and high survival rate
- Easy to build distributed sensor networks
- Stainless steel material packaging
- Easy to install and reusable
- Fibre optic dual end outlet, capable of series measurement
- Customizable

Applications

- Suitable for strain monitoring of surfaces such as buildings, bridges
- Strain monitoring on the surface of large steel structures

Parameters

Items	YOSC-OFS-M1
Range	±1500με
Resolution	0.1με
Accuracy	0.3%FS
Measuring gauge length	100mm(customizable)
Working temperature	-40°C~80°C
Center wavelength	C-band(1525-1565nm)
Peak reflectivity	>90%
External dimension	ϕ20×120mm
Weight	Approximately 300g~800g
Material	Stainless steel
Fibre optic cable type	Armored optical cable
Fibre optic interface	FC/APC or fusion welding
Installation method	Welding, bolt fixation, etc.

Fibre Optic Temperature Sensor YOSC-OFT-M1

The package of fibre optic temperature sensor YOSC-OFT-M1 is made of aluminum oxide ceramic material, which is particularly suitable for power system monitoring, such as high voltage switch temperature measurement, cable joint temperature measurement, copper aluminum busbar pressure connection surface temperature measurement, dry transformer temperature measurement, high voltage bus temperature measurement and other high voltage and high current monitoring environments, meeting the requirements of nonconductive sensing and achieving high and low temperature warning.

Features

- High precision, high stability, and high reliability
- Intrinsic safety, electromagnetic interference resistance, corrosion-resistant, strong lightning resistance, etc.
- Ceramic packaging, high voltage resistance, anti-creep, and flame retardancy

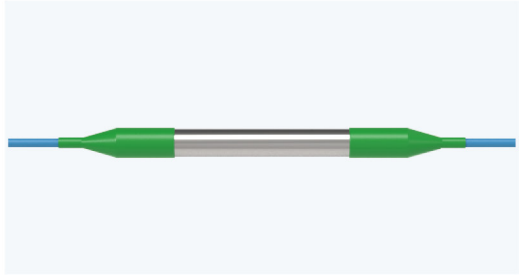
Applications

- Temperature monitoring and fire warning of petrochemical oil storage tank groups
- High voltage power cables, temperature monitoring of switchgear
- Tunnel temperature monitoring
- Temperature monitoring of hazardous material storage tanks and important areas
- Temperature monitoring of important areas, hazardous areas, and other areas with explosion-proof requirements
- Temperature monitoring of high-speed railway locomotives, ships and other equipment

Parameters

Items	YOSC-OFT-M1
Range	-40°C~120°C
Resolution	0.1°C
Accuracy	±0.5°C
Response time	300ms
Center wavelength	C-band(1525-1565nm)
Peak reflectivity	>90%
External dimension	Φ6x70mm
Weight	Approximately 50g-200g
Material	Alumina ceramic
Fibre optic cable type	Armored optical cable
Fibre optic interface	FC/APC or fusion welding
Installation method	Pasting, bolt fixation, etc.

Fibre Optic Temperature Sensor YOSC-OFT-M2



YOSC-OFT-M2 fibre optic temperature sensor utilizes the inherent temperature sensitivity of the grating to monitor temperature, and adopts a fully waterproof and stainless steel metal tube packaging design. It has the characteristics of high measurement accuracy and good dynamic thermal performance. It can be pasted on the surface or buried inside the tested structure for temperature monitoring.

Features

- High precision, high stability, and high reliability
- Intrinsic safety, electromagnetic interference resistance, corrosion-resistant, strong lightning resistance, etc.
- Stainless steel metal tube packaging, easy to reuse for multiple sensors

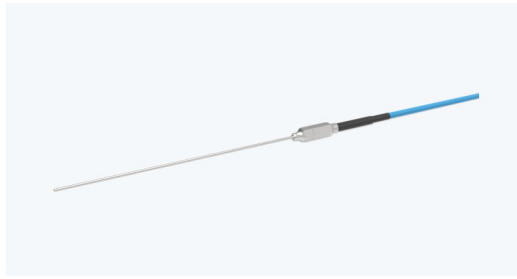
Applications

- Fire, flood, and condition monitoring of power transmission, tunnels, and pipelines
- Fire and safety monitoring of railway and highway tunnels
- Temperature monitoring of long-distance pipelines
- Temperature monitoring of important areas, hazardous areas, and other areas with explosion-proof requirements
- Temperature monitoring of high-speed railway locomotives, ships and other equipment

Parameters

Items	YOSC-OFT-M2
Range	-40°C~120°C
Resolution	0.1°C
Accuracy	±0.5°C
Response time	300ms
Center wavelength	C-band(1525-1565nm)
Peak reflectivity	>90%
External dimension	Φ6x70mm
Weight	Approximately 50g-200g
Material	Stainless steel, etc.
Fibre optic cable type	Armored optical cable
Fibre optic interface	FC/APC or fusion welding
Installation method	Pasting, bolt fixation, etc.

Fibre Optic Temperature Sensor YOSC-OFT-M3



YOSC-OFT-M3 fibre optic temperature sensor is a miniaturized and fast temperature responsive sensor that utilizes the inherent temperature sensitivity of gratings to monitor temperature. It adopts a fully enclosed waterproof design, stainless steel metal tube packaging, and the tail fibre is covered with high-temperature resistant PTFE sheath.

It has the characteristics of high measurement accuracy, long-term zero stability, and good dynamic characteristics. Suitable for long-term temperature monitoring in narrow spaces such as power plants, GBT chips, and oil tanks, it can be widely used for temperature measurement in fields such as electricity.

Features

- High stability and reliability
- Short temperature response time
- Intrinsic safety, electromagnetic interference resistance, corrosion resistance, etc.
- Small size, stainless steel metal tube packaging
- Customizable

Applications

- Temperature measurement of batteries, power station converter cabinets, etc.
- Dynamic temperature measurement of GBT chips
- Temperature measurement of current modules and capacitors
- Temperature monitoring of high-speed railway locomotives, ships and other equipment

Parameters

Items	YOSC-OFT100-M3	YOSC-OFT200-M3	YOSC-OFT500-M3	YOSC-OFT1000-M3
Range	-40~100°C	-40~200°C	-40~500°C	-40°C~1000°C
Resolution	0.1°C	0.1°C	0.1°C	0.1°C
Accuracy	±0.5°C	±1°C	±2°C	±3°C
Response time	150ms			
Center wavelength	C-band(1525-1565nm)			
Peak reflectivity	>70%			
External dimension	Φ1/Φ3×25mm			
Weight	Approximately 20g			
Material	Stainless steel, etc.			
Fibre optic cable type	Armored optical cable			
Fibre optic interface	FC/APC or fusion welding			
Installation method	Pasting, bolt fixation, etc.			

Fibre Optic Acceleration Sensor YOSC-OFA

YOSC-OFA fibre optic accelerometer is an accelerometer independently developed by YOSC, which has the characteristics of passive, anti-electromagnetic interference, anti-lightning strike and maintenance-free, and can be accurately monitored for a long time. Adopting a metal sealing design, armored optical cable protection, and equipped with rain proof junction boxes and joint protection devices, the FBG accelerometer can be directly installed onstructures exposed to the outdoors, fully suitable for long-term outdoor monitoring needs.

Features

- High precision, high stability, and high reliability
- Intrinsic safety, electromagnetic interference resistance, corrosion resistance, pollution resistance, strong lightning resistance, etc.
- By adhering to the same strict quality standards as traditional electrical sensors
- Easy and fast installation, reusable
- Installation blocks can be provided for dual or triple axis installation
- Protective devices can be used in harsh environments

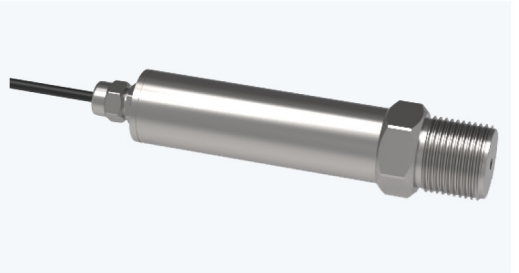
Applications

- Earthquakes, surface and underground building vibrations
- Low frequency vibration of bases such as power transmission towers and wind turbine towers
- Vibration of rotating electromechanical equipment
- Long term safety testing of bridges, dams, buildings, tunnels, ships, trains, and other complex structures

Parameters

Items	YOSC-OFA005-MF	YOSC-OFA010-MF	YOSC-OFA050-MF	YOSC-OFA050-MF-3Tri
Range	±5g	±10g	±50g	±50g
Accuracy	0.3%FS	0.5%FS	1%FS	1%FS
Resolution	0.03%FS	0.05%FS	0.1%FS	0.1%FS
Frequent response	0-100Hz	0-100Hz/600Hz	0-600Hz/1000Hz	0-600Hz
Working temperature	-40~80°C			
Center wavelength	C-band(1525-1565nm)			
Peak reflectivity	>90%			
External dimension	60x60x60mm(customizable)			
Weight	200~500g			
Material	Aluminum alloy/Stainless steel, etc			
Fibre optic cable type	Armored optical cable			
Fibre optic interface	FC/APC or fusion welding			
Installation method	Welding, bolt fixation, etc.			

Fibre Optic Hydraulic Sensor YOSC-OFP-M



YOFC-OFP-M fibre optic hydraulic sensor is a high-precision pressure sensor used for liquid and gas measurement, with passive, electromagnetic interference, corrosion and shock resistance characteristics, for long-term accurate monitoring. The shell adopts all-metal design, IP65 seal protection, and is equipped with a fusion box, which can be remotely monitored online, fully suitable for the long-term pressure monitoring needs of oil wells, oil tanks, or pipelines.

Features

- IP65 seal design, competent in industries such as petrochemicals
- Intrinsic safety, corrosion and impact resistance
- Passive online monitoring, electromagnetic interference resistance
- Long distance optical signal transmission, small size, and easy installation
- High measurement accuracy, long-term stable monitoring, and good linearity

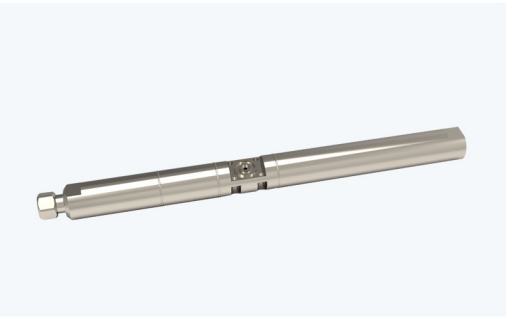
Applications

- Liquid pressure measurement
- Dynamic gas pressure measurement
- Petroleum pressure measurement

Parameters

Items	YOSC-OFP006-M1	YOSC-OFP100-M1	YOSC-OFP600-M1
Range	0.6MPa	10MPa	60MPa
Resolution	0.03%FS	0.03%FS	0.05%FS
Accuracy	0.3%FS	0.3%FS	0.5%FS
Working temperature	-40~80°C		
Center wavelength	C-band(1525-1565nm)		
Shell protection	IP65		
External dimension	Φ20×70mm		
Weight	Approximately 400~600g		
Material	Stainless steel		
Fibre optic cable type	Armored optical cable		
Fibre optic interface	FC/APC or fusion welding		
Installation method	M20x1.5, G1/2, G1/4, etc.		

Fibre Optic Pressure Sensor YOSC-OFPT-M



YOSC-OFPT-M fibre optic pressure sensor is a high temperature and high precision pressure sensor specially designed for petrochemical and other fields etc., with the characteristics of passive, electromagnetic interference resistance, corrosion resistance, high temperature and high pressure resistance and can be accurately monitored for a long time.

It is equipped with a fusion box and adopts a metal to metal sealing connection design, which can achieve the connection and sealing between the fibre optic pressure sensor and the 1/4 armored optical cable. It is fully suitable for the long-term monitoring of underground annulus, pipeline or port pressure.

Features

- Metal sealing design, capable of essential safety in industries such as petrochemicals
- Intrinsic safety, corrosion and impact resistance
- Passive online monitoring, electromagnetic interference resistance
- Long distance optical signal transmission, small size, and easy installation
- High measurement accuracy, long-term stable monitoring, and good linearity

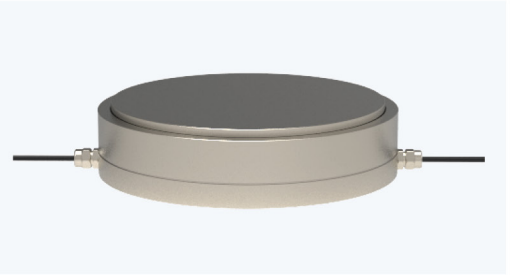
Applications

- Liquid pressure measurement
- Dynamic gas pressure measurement
- Petroleum pressure measurement

Parameters

Items	YOSC-OFPT010-M1	YOSC-OFPT040-M1	YOSC-OFPT070-M1
Work Pressure(psi/Mpa)	1450/10	5800/40	10150/70
Pressure resolution	0.05%FS		
Pressure accuracy	0.5%FS		
Working temperature	-40~200°C		
Temperature resolution	0.05°C		
Temperature accuracy	±0.5°C		
Center wavelength	C-band(1525-1565nm)		
External dimension	Approximately Φ20x215mm		
Weight	Approximately 300~500g		
Material	316L stainless steel/Inconel718		
Fibre optic cable type	Φ1/4 steel pipe		
Installation method	Secure with screws and protective clips		

Fibre Optic Soil Pressure Sensor YOSC-OFSP



YOSC-OFSP fibre optic soil pressure sensor is a force sensor used for both static and dynamic measurements. Its principle is that the elastic structure undergoes elastic deformation under external forces, and the fibre optic grating pasted on the elastic structure also undergoes deformation.

The product has a simple structure, no electronic components, high system reliability, and can be widely used for long-term monitoring of soil pressure in structures such as earth dams, embankments, slopes, and roadbeds.

Features

- All metal design, easy to install
- Intrinsic safety, electromagnetic interference and lightning strikes resistance
- Long distance optical signal transmission
- Dual end outlet, capable of multiple multiplexes
- High precision, long-term reliability and stability

Applications

- Highway safety monitoring
- Slope monitoring
- Soil stress in building foundations such as earth and rock dams, breakwaters, revetments, and dock walls
- Soil stress in foundations of high-rise buildings, bridge piers, retaining walls, tunnels, subways, airports, and other buildings
- The compressive stress between the foundation and soil of buildings such as highways, railways, and anti-seepage wall structures

Parameters

Items	YOSC-OFSP
Range	0.1~10MPa
Resolution	0.1%FS
Accuracy	0.5%FS
Working temperature	-40~80℃
Center wavelength	C-band(1525-1565nm)
Peak reflectivity	>90%
External dimension	Φ120×35mm(customizable)
Weight	Approximately 1~5kg
Material	Stainless steel/Spring steel
Fibre optic cable type	Armored optical cable
Fibre optic interface	FC/APC or fusion welding
Installation method	Welding, bolt fixation, etc.

Fibre Optic Weight Sensor YOSC-OFW

YOSC-OFW fibre optic weight sensor is a force sensor used for both static and dynamic measurements. Its principle is that the elastic structure undergoes elastic deformation under external forces, and the fibre optic grating pasted on the elastic structure also undergoes deformation. The product has a simple structure, no electronic components, high system reliability, and can be widely used in the fields of weighing scales, belt scales, and industrial automation.

Features

- Metal sealing design, waterproof, dustproof, etc
- Intrinsic safety, electromagnetic interference and lightning strikes resistance
- Long distance optical signal transmission
- High precision, high stability, high reliability, easy installation and series connection
- Good linearity and strong resistance to unbalanced loads

Applications

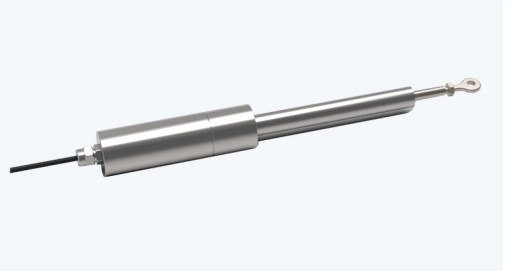
- Weighbridge scale, belt scale
- Industrial automation
- Mechanical processing

Parameters

Items	YOSC-OFW
Range	1~100t
Resolution	0.1%FS
Accuracy	0.5%FS
Working temperature	-40°C~80°C
Center wavelength	C-band(1525-1565nm)
Peak reflectivity	>90%
External dimension	ϕ220×70mm
Weight	Approximately 15kg
Material	Alloy steel/Spring steel
Fibre optic cable type	Armored optical cable
Fibre optic interface	FC/APC or fusion welding
Installation method	Welding, bolt fixation, etc.

Fibre Optic Displacement Sensor YOSC-OFD-M

YOSC-OFD-M fibre optic displacement sensor converts the relative displacement of the component into the wavelength change of FBG. The sensor has the advantages of high measurement accuracy, long service life, safety and reliability, and is suitable for monitoring the relative displacement between various structures or the opening/closing of expansion joints.



Features

- Metal sealing design, waterproof, dustproof, etc
- Intrinsic safety, electromagnetic interference and lightning strikes resistance
- Long distance optical signal transmission
- Fibre optic cable with dual outlet, easy to install and connect in series
- Built in temperature compensation sensor, no need for external temperature sensor, good linearity

Applications

- Bridge expansion joint, damper expansion displacement monitoring pipe gallery
- Tunnel expansion joint displacement measurement
- Measurement of long-term cracks on the surface of concrete structures in civil and hydraulic engineering

Parameters

Items	YOSC-OFD-M1
Range	100mm(customizable)
Resolution	0.03%FS
Accuracy	0.3%FS
Working temperature	-40°C~80°C
Center wavelength	C-band(1525-1565nm)
Peak reflectivity	>90%
External dimension	ϕ54×287mm
Weight	Approximately 1~5kg
Material	Stainless steel
Fibre optic cable type	Armored optical cable
Fibre optic interface	FC/APC or fusion welding
Installation method	Welding, bolt fixation, etc.