

# Optical Fiber | Displacement Sensor

Displacement sensor series (DS)

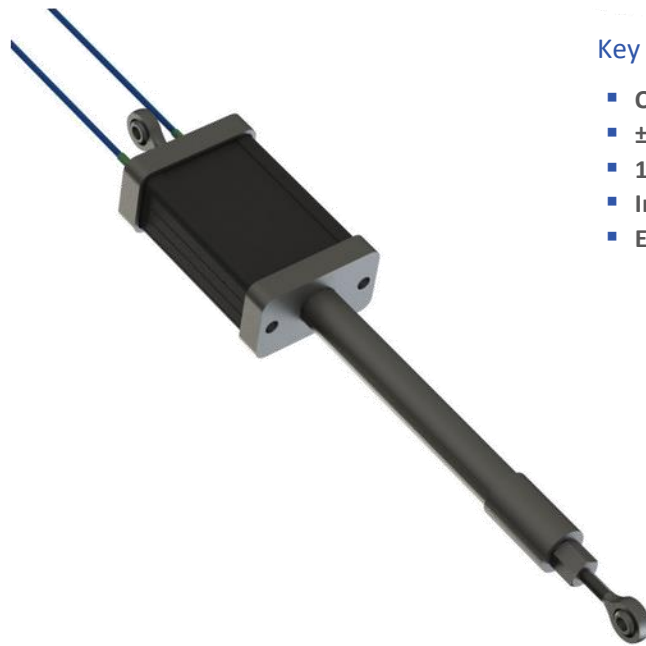
## Optical Fiber Sensor – Product Information Sheet

Fiber optic sensors provide high accuracy and high-resolution measurement, beneficial for test and measurement applications involving extreme conditions where conventional sensors cannot perform well.

Optical displacement sensors offer a method of collecting small variations in length within a single axis of a structure. The Fibos Displacement Sensor utilizes two FBG sensors for effective temperature compensation and is available in point measurement configuration.

This optical pressure sensors meet PiMS™ (Pi-FBG Measurement Standard). To achieve the performance specifications presented, a Q.series X F108 Optical Gage Amplifier is required.

The F108 Optical Gage Amplifier seamlessly integrates with the Q.series X data acquisition platform. The modularity and versatility of the Q.series X product line can address any of your measurement challenges. Utilize GI.bench software for quick and easy setup and combine with GI.cloud for cloud storage and remote monitoring.



### Key Features

- **Operating Range: -20 up to 70 °C**
- **±0.25% FSO Uncertainty**
- **10 km transmission**
- **Intrinsically Safe**
- **EMI & Radiation Immune**

### Typical applications:

Structural health monitoring

Bridge, tunnel, and other infrastructure monitoring

Oil and gas containment tank monitoring

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## Technical Data

### Performance

|                               |                 |
|-------------------------------|-----------------|
| Transducer operating range    | -20 up to 70 °C |
| Measurement range             | 0 up to 100 mm  |
| Displacement sensitivity      | 22 pm/mm        |
| Temperature sensitivity       | 22 pm/°c        |
| Displacement resolution       | 0.0005 mm       |
| Temperature resolution        | 0.0005 °C       |
| Displacement uncertainty      | ±0.09 mm        |
| Temperature uncertainty       | ±0.09 °C        |
| Optical sensor specifications | PiMS compliant  |

### Environmental

|                                |  |
|--------------------------------|--|
| Mounting Method                | M6 Rod Ends (both ends)                      |
| Dimension                      | 276 x 64 x 36 mm (without rod ends & cables) |
| Cable temperature (OFNP Cable) | -40 up to 70 °C                              |
| Minimum cable bend radius      | 16 mm  |
| Optical connector              | E2000/AFC                                    |
| Fiber type                     | SMF28 compatible                             |

### Ordering Information

|                   |               |
|-------------------|---------------|
| Model part number | DS-SPPS-NB1E2 |
|-------------------|---------------|

For Detailed Information about standard geometries, material substitutions, custom tip dimensions and alternative cable lengths please contact your sales partner.

For further information visit [Q.series X F108 landing website](#) or contact your local [Gantner Instruments sales representative](#)