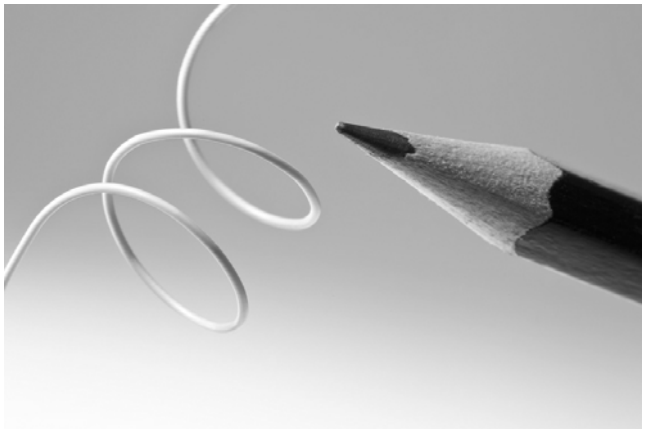


OptiMet-PKF

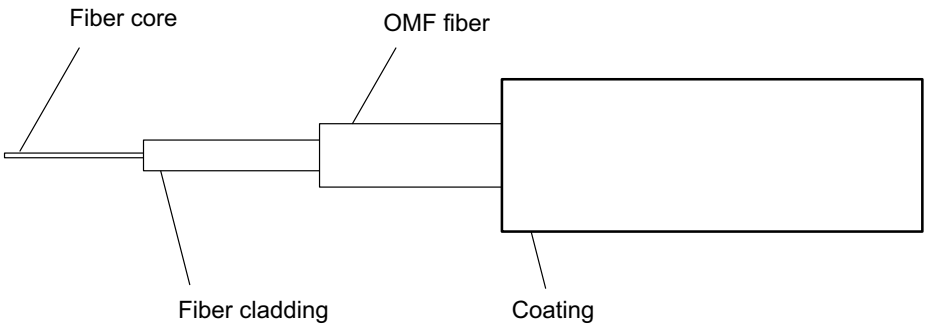
Coated strain measuring fiber

Special features

- **Optical fiber with fiber Bragg gratings**
- **13 fiber Bragg gratings 60 cm apart**
- **Simple installation**
- **Robust, resistant to most chemicals**
- **Strain transfer with defined gauge factor**
- **Insensitive to electromagnetic interferences**
- **Application in Ex-areas possible**
- **Lower wiring compared to electrical strain gauges**
- **Lower mass of glass fiber compared to standard connecting cables**

Data sheet

Principal layout



Specifications OptiMet-PKF

Design		OptiMet-OMF glass fiber embedded in coating with 13 Bragg gratings
Core diameter of glass fiber, approx.	µm	6
Diameter of fiber cladding, approx.	µm	125
Outer diameter of OMF fiber, approx.	µm	195
Outer diameter with coating, approx.	µm	700 ± 50
Connection (plug) [1]		FC/APC
Available Bragg wavelengths	nm	1520 … 1580 [2]
Bragg wavelength spacing tolerance	nm	±1
Gauge factor		0.79
Gauge factor tolerance	%	±2
Reference temperature	°C	23
Operating temperature range	°C	-40 … +140
Storage temperature range	°C	-40 … +140
Thermal cross sensitivity (TCS) [3] thermal contribution of sensor to strain signal	µm/m/°C	7.1
Tolerance of thermal cross sensitivity (TCS)	µm/m/°C	±1
Maximum elongation		
at reference temperature when using **X120 adhesive**		
Strain in positive direction	µm/m	7,000 (0.7%)
Strain in negative direction	µm/m	7,000 (0.7%)
Fatigue life		
at reference temperature when using **X120 adhesive**		
Achieved no. of load cycles Lw on steel measuring body at		
alternating strain ε_w = +1000 µm/m and variation of zero point <30 µm/m		>> 10^7 (aborted after 10^7 load cycles)
Smallest bend radius at reference temperature [4]	mm	10
Preferred bonding material [5]		X120

[1] 1.5 m Pigtail spliced on one end.

[2] Standard configuration with 13 Bragg gratings, grating to grating distance 60 cm, Bragg wavelength distance 5 nm, 1.5 m Pigtail spliced on one end; available ex stock.

[3] The thermal expansion coefficient of the measurement object must be added.

[4] Bending radius valid outside the Bragg grating region.

[5] Bonding length of 9 cm symmetric around the Bragg grating position required.

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