

# OptiMet-PKF 2&4

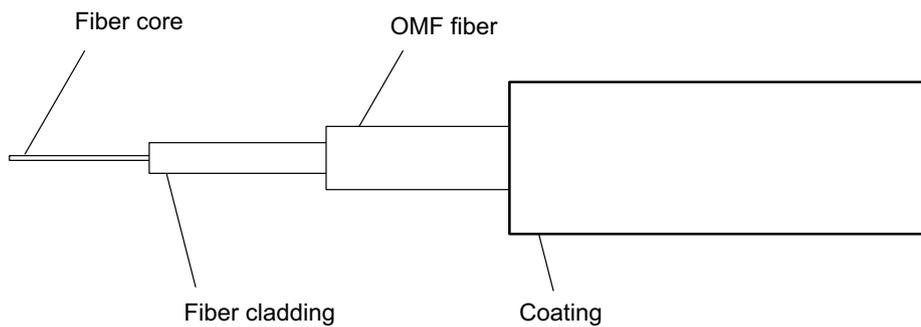
## Coated strain measuring fiber

### Special features

- Optical fiber with fiber Bragg gratings
- Two or four fiber Bragg gratings
- Test version to OptiMet-PKF with reduced number of Bragg gratings
- Simple installation
- Robust, resistant to most chemicals
- Insensitive to electromagnetic interferences
- Application in Ex-areas possible

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### Principal layout



## Specifications Opti-Met-PKF 2&4

<b>Design</b>		OptiMet-OMF glass fiber embedded in coating with 2 or 4 Bragg gratings
<b>Core diameter of glass fiber, approx.</b>	µm	6
<b>Diameter of fiber cladding, approx.</b>	µm	125
<b>Outer diameter of OMF fiber, approx.</b>	µm	195
<b>Outer diameter with coating, approx.</b>	µm	700 ± 50
<b>Connection (plug) <sup>1)</sup></b>		FC/APC
<b>Available Bragg wavelengths <sup>2)</sup></b>	nm	1515 ... 1585 <sup>2)</sup>
<b>Bragg wavelength spacing tolerance</b>	nm	±1
<b>Gage factor</b>		0.79
<b>Gage factor tolerance</b>	%	±2
<b>Reference temperature</b>	°C	23
<b>Operating temperature range</b>	°C	-40 ... +140
<b>Storage temperature range</b>	°C	-40 ... +140
<b>Thermal cross sensitivity (TCS) <sup>3)</sup></b> thermal contributing of sensor to strain signal	µm/m/°C	7.1
<b>Tolerance of thermal cross sensitivity (TCS)</b>	µm/m/°C	±1
<b>Maximum elongation</b> at reference temperature when using <b>X120 adhesive</b> Strain in positive direction Strain in negative direction	µm/m µm/m	7,000 (0.7%) 7,000 (0.7%)
<b>Fatigue life</b> at reference temperature when using <b>X120 adhesive</b> <b>Achieved no. of load cycles L<sub>w</sub> on steel measuring body at</b> alternating strain $\epsilon_w = \pm 1000$ µm/m and variation of zero point <30 µm/m		>> 10 <sup>7</sup> (aborted after 10 <sup>7</sup> load cycles)
<b>Smallest bend radius at reference temperature <sup>4)</sup></b>	mm	10
<b>Preferred bonding material <sup>5)</sup></b>		X120

1) 1.5 m Pigtail spliced on one end

2) 2 resp. 4 Bragg gratings, Bragg wavelength and grating-to-grating distance **not selectable** (typically ca. 0.5 m), but indicated on package; gratings marked on the fiber

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

Subject to modifications.

All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

**Hottinger Baldwin Messtechnik GmbH**  
Im Tiefen See 45 · 64293 Darmstadt · Germany  
Tel. +49 6151 803-0 · Fax +49 6151 803-9100  
Email: info@hbm.com · www.hbm.com

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