

## 12.1081 MUST TEMPERATURE SENSOR

*Fiber Bragg Grating (FBG)*



### GENERAL DESCRIPTION

SMARTEC's temperature sensors are suitable for a large range of applications. These sensors are fiber optic versions of the conventional electrical and vibrating wire temperature sensors but completely passive, offering inherent insensitivity to environmental induced drift.



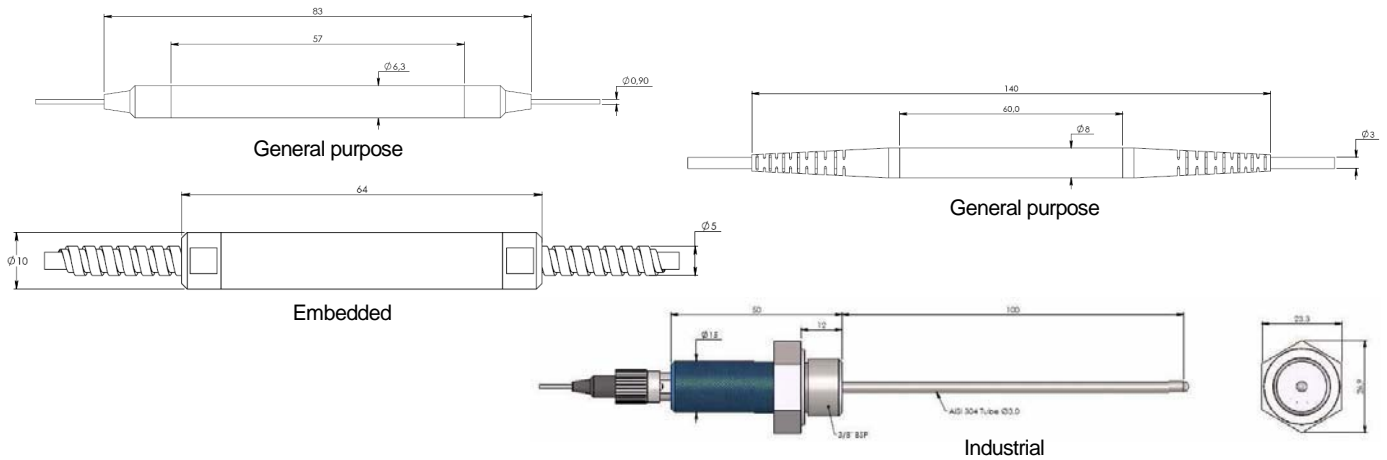
### TECHNICAL DESCRIPTION

These temperature sensors feature high accuracy and resolution, and total fiber optic design ensuring intrinsic immunity to electric sparks and EMI/RFI. Compatible with most common FBG measurement units, the embedded temperature sensors combine compact size, high resistance to corrosion and harsh environments, and long-term reliability. They are also suitable for remote sensing being possible to install them several kilometers away from the measurement unit and connect a large number of sensors in a single optical fiber. These sensors are also suitable for difficult-to-reach locations and large scale sensing networks.

### FEATURES

- High sensitivity
- Self-referenced
- Stainless steel housing
- Long-term reliability
- Large scale integration
- Intrinsically safe design
- Immunity to EMI/RFI
- Compatible with most FBG measurement units

## SENSOR DRAWINGS



## TECHNICAL CHARACTERISTICS

<b>Central Wavelengths</b>	1510 to 1590 nm. Max. 12 sensors on same chain.	
<b>Measurement range</b>	-20 to +80 °C <sup>(1)</sup>	
<b>Accuracy</b>	±0.5 °C	
<b>Resolution</b>	±0.1 °C	
<b>Sensitivity</b>	10 $\mu$ m/°C	
<b>Reflectivity</b>	> 75%	
<b>Insertion loss</b>	< 0.1 dB	
<b>Spectral width (FWHM)</b>	< 0.2 nm	
<b>Relative humidity</b>	< 90% at 80° C	
<b>Packaging</b>	Stainless steel	
<b>Dimensions <sup>(2)</sup></b>	General purpose with $\phi$ 0.9 mm cable:	83 x 6.3 mm
	General purpose with $\phi$ 3 mm cable:	140 x 8 mm
	Weldable:	45 x 15 x 0.3 mm
	Embedded:	60 x 10 mm
<b>Cable types</b>	$\phi$ 0.9 mm $\phi$ 3 mm Indoor $\phi$ 3 mm Outdoor $\phi$ 5 mm Embedded	
<b>Weight</b>	Surface	100 g
	Weldable	5 g
	Embedded	150 g

<sup>(1)</sup> Measurement range may be customized upon request.

<sup>(2)</sup> Dimensions may be customized upon request.