FIBER OPTIC
TEMPERATURE SENSOR

TS2

Key Features

- Temperature range: -200 °C to +300 °C
- Electrically non-conductive
- Immunity to RFI, EMI, NMR and micro-wave radiation
- Resistance to high temperatures
- High accuracy
- Stable and repeatable measurements
- GaAs-based temperature sensor

Applications

- EMI, RFI and microwave environments
- High voltage environments
- Process monitoring
- Medical applications (MRT)

WEIDMANN

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TEMPERATURE SENSOR

TS2

TECHNICAL SPECIFICATION

Name of sensor	TS2
Measurement range [*1]	-200 °C to +300 °C
Inertia	Up to 8 K/s
Accuracy [*2]	+/- 0.2 K
Fiber Ø	200 um
Sensor standard lengths	2 m up to 20 m
Connector type	ST with metallic ferrule (-40 to 85 °C)
Signal conditioner	Compatible with all Weidmann fiber optic thermometers

DESCRIPTION

The fiber optic temperature probe TS2 is designed for a wide range of applications, especially for the use inside of generators, power transformers as well as bus bars, R&D and industrial applications and offers immunity to RFI, EMI, NMR and microwave radiation – the best choice for a lot of challenges.
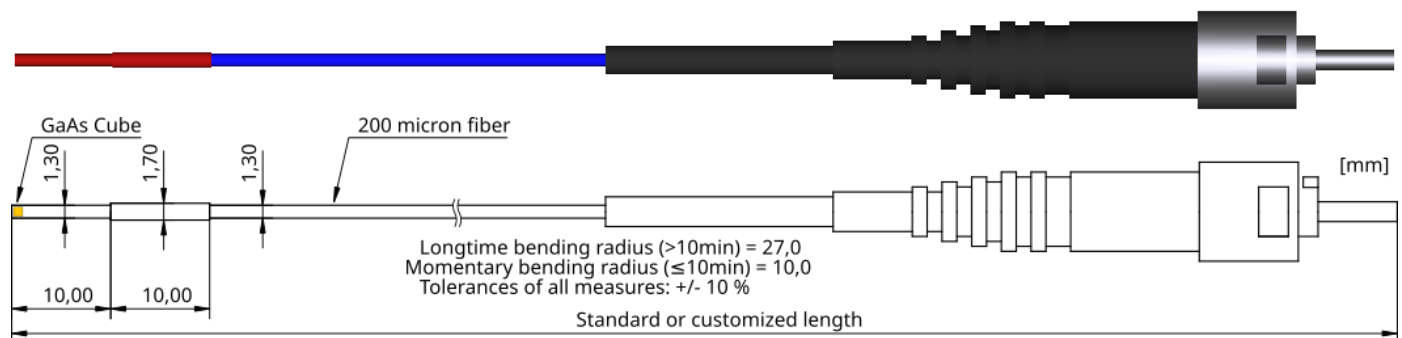
The standard temperature sensor TS2 has a response time of < 2 s. With an accuracy[*2] of +/- 0.2 K it allows precise and repeatable measurements. The coating of TS2 temperature sensor is made of PTFE, the fiber tip has a diameter of 1.3 mm and has a ST-connector. For mechanical stability and applications e.g. in oil special protective coatings and hoses are available.

The fiber optic probe TS2 consists of a PTFE protected glass fiber and a GaAs-crystal (gallium arsenide) at the sensor tip. It is totally free of metal and immune to RFI, EMI, NMR and microwave radiation – therefore TS2 probes are explicit suitable for the use in wide temperature ranges (-200 °C to +300 °C) as well as in aggressive and rough test environments.

All fiber optical temperature sensors can be connected to the fiber optic temperature measurement devices (FOTEMP), delivers accurate and complete reliable, stable and repeatable values. Starting at a light wave length of 850 nm GaAs becomes optical translucent. Since the position of the band gap is temperature dependent, it shifts about 0.4 nm/K. The sensor cable can be produced in different lengths without influencing the accuracy of the measurement result. Other sensor lengths and connector types are available upon request.

We are always anxious to adjust our offer to your special needs. In case of any further questions about individual measurement problems, lengths of sensors or connector types, please contact us.

DIMENSION

GaAs Cube · 200 micron fiber
1,30 · 1,70 · 1,30
10,00 · 10,00
Longtime bending radius (>10min) = 27,0
Momentary bending radius (≤10min) = 10,0
Tolerances of all measures: +/- 10 %
Standard or customized length
[mm]

*1   Long-term temperature range -200 °C up to +260 °C, short-term temperature range +260 °C up to +300 °C
*2   Statement only possible with analysis unit. See data sheet of the measurement device for information about technical data.