

Microwave and Induction Temperature Monitoring

Rapid-Response, High-Temperature Temperature Monitoring

The development and control of dielectric heating processes require inherently safe, real-time, and rapid-response temperature monitoring. Temperature sensors must be immune to EM/RF interference and be able to handle temperatures as high as 350°C. Applications include microwave ovens for food processing, sterilization, pasteurization and drying, microwave kilns for glass fusing, and paper, textile and wood drying. Additionally, induction heaters and induction furnaces employ high-power alternating electromagnetic fields to rapidly heat electrically conducting objects.



Microwave and RF heating is a rapid process. Temperature sensors must be able to safely and accurately monitor immediate temperature changes. OSENSA's industrial-grade fiber optic temperature sensors are ideally suited for these applications because of their natural immunity to intense electromagnetic energy, high reliability, and fast response time.

OSENSA's Microwave and RF Temperature Monitoring Solutions Meet the Challenge

OSENSA's fiber optic temperature sensors offer cost-effective and convenient temperature monitoring of industrial microwave and RF processes. OSENSA's optical temperature probes for microwave environments are constructed from Teflon jacketing materials for maximum chemical and bio-compatibility, or from rugged stainless steel and high-temperature ceramic. OSENSA microwave and RF temperature probes can measure temperatures up to 350°C. OSENSA's FTX series multi-channel temperature transmitters (signal conditioners) with 4-20mA analog outputs are easily integrated into process control equipment.

OSENSA's LUX+ solutions for microwave and RF applications include the following components:

- Temperature Transmitter - FTX-300/200/100-LUX+
- Temperature Probes and Extension Cables – PRB-G40, PRB-G20, EXT-400, EXT-200

Temperature Transmitters (Signal Conditioners)

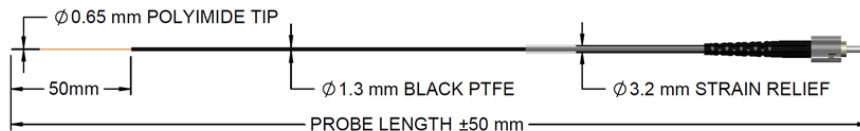
The FTX-300/200/100-LUX+ fiber optic signal conditioners offer exceptional value combined with industry-leading speed. The temperature transmitters are available in three, two or single channels, and can be connected in series and mounted on a standard 35mm DIN rail. The FTX-LUX+ transmitters can read optical sensors with tip diameters as small as 350 microns over distances up to 50 meters. The 4-20mA analog outputs have 16-bit resolution with configurable alarms for easy connection to a PLC, temperature controller, solid state relay, or digital display. Alternatively, the FTX-LUX+ transmitters connects to a computer with a standard USB cable to provide real-time temperature trending and data logging with the optional OSENSAVIEW Pro software.



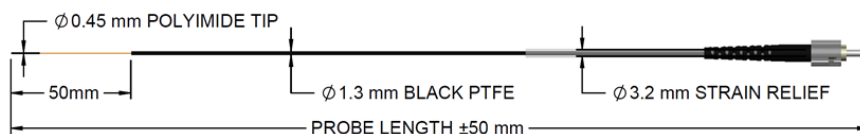
Temperature Probes

OSENSA's PRB-G40 and PRB-G20 fast response temperature probes provide accurate and reliable temperature sensing for a variety of high voltage, microwave and laboratory research applications requiring immunity to high intensity electro-magnetic fields and RF energy. These probes are constructed with high quality glass optical fiber and can handle temperatures up to 350°C with $\pm 2^\circ\text{C}$ accuracy (or 250°C with $\pm 1^\circ\text{C}$ accuracy). The temperature response time for the probes is $\sim 0.2\text{s}$. OSENSA's PRB-G40 and G20 temperature probes, together with the EXT-400 and EXT-200 extension cables, can support installation lengths up to 50m.

PRB-G40



PRB-G20





***Introducing OSENSA's LUX+ Fiber
Optic Temperature Sensing Solutions***

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