Principle of Microwave Fiber Optic Temperature Sensor

Overview

The fibre optical sensor is completely non-conductive and offers complete immunity to RFI, EMI, NMR and microwave radiation with high temperature operating capability, intrinsic safety, and non-invasive use. The principle of operation is based on the temperature dependence of. Fiber-optical thermometers can be used in electromagnetically strongly influenced environment, in microwave fields, power plants or explosion-proof areas and wherever measurement with electrical temperature sensors are not possible. 45GHz frequency with power outputs ranging from 1kW in laboratory equipment to 100kW in industrial applications. This intense electromagnetic field creates fundamental obstacles for standard temperature measurement devices that were designed for benign thermal. This article explores the structure, working principles, advantages, and disadvantages of Fiber Optic Temperature Sensors.

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