

# ALPHEUS

## FIBER OPTIC DYNAMIC PRESSURE SENSORS

**Phonoptics** manufactures fiber optic sensors for use in harsh environments. Within the framework of its developments, Phonoptics offers its know-how in terms of optical sources.



The objective of this sensor is miniaturization and standardization.

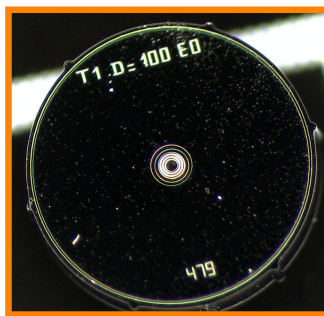
This sensor uses different membranes manufactured in clean room to cover a wide range of pressure and frequency, all compatible in the most severe environments.

This sensor can be inserted in any thread to facilitate its integration for measurement inside cavities with flush wall.

Compatible with all Phonoptics electronics.

Compatible with hostile environments :

- High temperatures
- EMI/RFI
- Magnetic fields (MRI)
- Chemical and humid environment
- ATEX



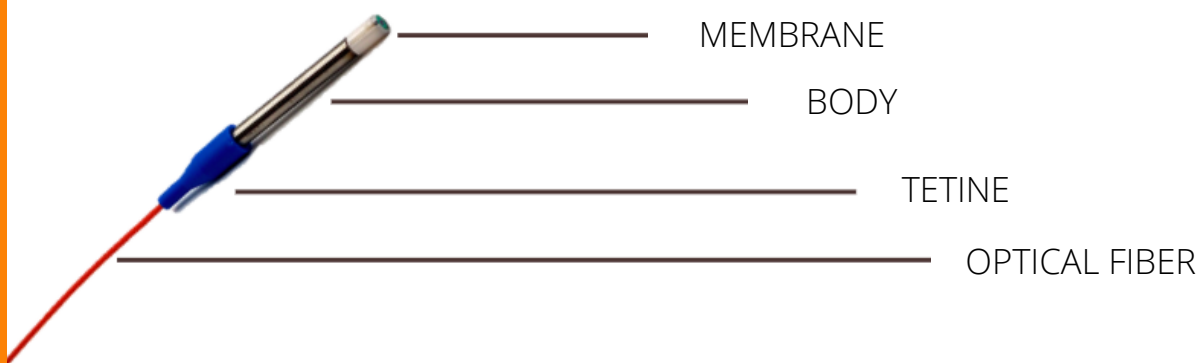
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# Detailed specifications



## General

Pressure medium	Any gas
Optical excitation rated	Standard 2 meter
Type of fiber	Multimode 50/125 OM2
Dimensions of the sensor head	3,2 mm(2,5 mm possible) x 10
Length of fiber optic cable	Standard 2 meter

## Environnement

Temperature of operation	-40° C to 350° C
Short-term peak	420° C

## Acoustics

Type of sensor	Calibration
Operating procedure	Differential (in advance)
Frequency natural	>100kHz
Range of frequencies	20Hz - 100kHz
Maximum dynamic pressure	0,5 Bar (10 <sup>5</sup> Pa) (=190dB SPL)
Static pressure maximum	Not limited. May change the frequency response
Background noise	50dB SPL (BW: 1Hz, full bandwidth), 40dB SPL with low-noise conditioning unit
Damage threshold	>1 Barre (=200db SPL)
Sensitivity	0,3mV/Pa (10V/Bar)
Polar model	Omnidirectional
Optimization of the sound field	Pressure field
Calibration	Calibrated at the factory. Adapter available

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