

# Fiber optic dynamic pressure sensors

## Evotis

Standard version (metal)



### DESCRIPTION

This sensor has been designed to be used in harsh environment with high sensitivity on audible frequency range. This sensor is fully calibrated for sensitivity and frequency bandwidth.

Thanks to its small size, it makes possible the study of acoustic waves at high frequency in pipes

Typical applications:

- Crack monitoring in oven
- Non-destructive testing
- High voltage measurements (Overhead line, electrical transformer)
- MRI speech
- Measurements in ATEX environments

### Acoustic

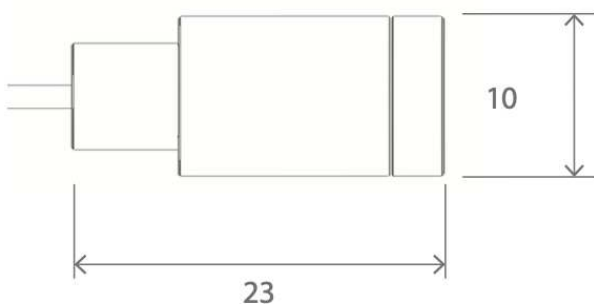
<b>Transducer type</b>	Silicon nitride membrane
<b>Operational Mode</b>	Differential (rear-vented)
<b>Natural frequency</b>	15kHz
<b>Frequency range</b>	20Hz-15kHz (-3dB)
<b>Dynamic maximum pressure</b>	0.05 Bar ( $\approx$ 167dB SPL)
<b>Static maximum pressure</b>	Not limited. (May change frequency response)
<b>Self-noise</b>	30dB SPL (BW: 1Hz, over full bandwidth). 20dB SPL with low noise conditioning unit
<b>Damage threshold</b>	$>$ 0.1 Bar ( $\approx$ 173dB SPL)
<b>Sensitivity</b>	10mV/Pa
<b>Polar pattern</b>	Omnidirectional
<b>Sound field optimization</b>	Free field
<b>Calibration</b>	Calibrated at factory. Adapter available

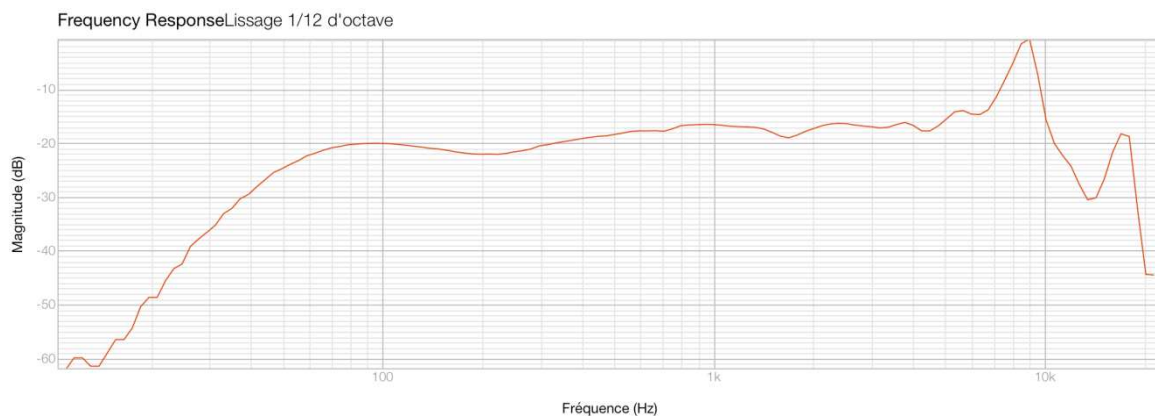
### General

<b>Pressure Media</b>	Any gas
<b>Rated Optical Excitation</b>	150 $\mu$ W @1310nm
<b>Fiber type</b>	Multimode 50/125 OM2
<b>Sensor head dimensions</b>	10 mm x 23 mm
<b>Sensor head weight</b>	2 grams
<b>Fiber cable length</b>	Standard 2 meters
<b>Material</b>	Aluminum

### Environmental

<b>Operating Temperature Range</b>	-40° C to 125° C
<b>Peak short-term</b>	250° C
<b>Temperature influence</b>	$<$ 1% of response sensitivity
<b>Environmental humidity</b>	100% RH
<b>EMI/RFI</b>	Full immunity. No influence
<b>Certifications</b>	Waterproof IP65





Frequency response measured thanks to B&K type 4232 anechoic test box

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