

# KINGFISHER

## Fiber Optic Microphone SOM(4) Stereo



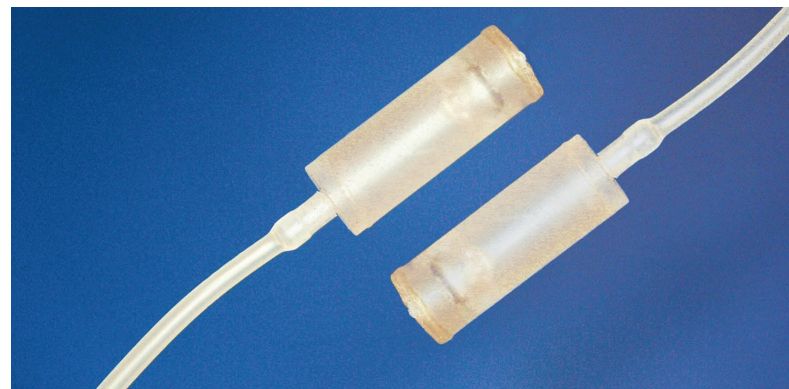
### Features

- Small, lightweight MEMS design
- Absolute EMI/RFI immunity
- Completely passive sensor with no metal or electrical parts
- Extended frequency response
- Matched stereo microphones
- High reliability and environmental stability
- Optical fiber connection over extended lengths without signal loss
- Exceptionally low sensitivity to vibration



### Applications

- Monitoring two separate locations
- Sound energy density measurement
- Stereo fidelity binaural recording
- High voltage electrical utilities
- High RFI or EMI areas
- Industrial & Aerospace measurements
- Petrochemical facilities



Miniature fiber optic stereo microphone system for indoor acoustic monitoring with extended frequency range response. Ideal where the footprint for microphone placement is severely limited or where the microphone is a sub-component in another device or system.

The SOM(4) Stereo system comprises of two (2) advanced fiber optic microphones & dual-channel electro-optic unit (EOU300), for digital-to-analog conversion of optical microphone output signals. The Dual Channel EOU300 supports monitoring with two sensors simultaneously. It features two pairs of ST-style fiber optic connectors; two 3.5 mm stereo sockets (one for stereo analog output, another for headphones); dual volume control knobs; green/red LED voltage indicator. DSP model provides up to 22 dB of real-time ambient noise removal (three levels: low, mid, high). Unit is powered either by internal batteries or external DC power supply.

The SOM(4) Stereo is supplied as standard with clear 1mm PVC fiber-optic cable. Where there is no benefit in the thin, transparent 1mm PVC cable, we recommend the more robust Kevlar reinforced black 3mm PVC cable.

## Technology

It's built around a tiny MEMS membrane and two optical fibers. When acoustic waves impinge on the membrane they cause it to vibrate, changing the intensity of light that is reflected from incoming to outgoing fibers. This patented mechanism detects even the slightest changes in membrane displacement, with resolutions at a fraction of an Angstrom. Such precision translates to clear sound and low self-noise, and produces exceptional microphone performance. ■



## Technical Specifications

<b>Polar Pattern</b>	Omnidirectional
<b>Twin Microphone Amplitude Match</b>	±0.5dB
<b>Frequency Response</b>	10-15,000Hz
Conformity 10 – 1,000 Hz	±0.5dB
Conformity 1,000 – 15,000 Hz	±3.0dB
<b>Sensitivity</b>	100mV/Pa ±10% at 1kHz
<b>Equivalent Self-Noise</b>	≤31dBA
<b>Maximum Acoustic Pressure</b>	114dB SPL
<b>Total Harmonic Distortion</b>	<1% at 84dB SPL
<b>Equivalent Vibration Sensitivity</b>	Max. 45dB SPL/g at 1kHz
<b>Supply Voltage</b>	8-15V DC
<b>Current Drain (max.)</b>	130mA
<b>Operating Temperature</b>	-20 to +60°C (-4 to +140°F)
<b>Storage Temperature</b>	-20 to +60°C (-4 to +140°F)
<b>Humidity – 1000 hours</b>	Up to 95% RH at +40°C
<b>MTBF</b>	>100,000 hours
<b>Microphone Head</b>	
Material	Polycarbonate
Dimensions D/L	6/23mm
Weight	0.6g (each microphone)
<b>Type of Fiber Optic Cable</b>	Multimode 100µm
<b>Optical Cable Length</b>	10m standard (lengths available up to 100m)

## Product Codes

### KINGFISHER SOM(4)Stereo – Full Systems

- 3-299-610\*** SOM(4)STE010XT - Stereo Security Optical Microphone with 2 x 10 meters of 1mm PVC coated optical fiber no extension tube
- 3-299-611\*** SOM(4)STE020XT - Stereo Security Optical Microphone with 2 x 20 meters of 1mm PVC coated optical fiber no extension tube

\*All kits come as standard with: Electro Optical Unit (EOU300), Audio cable with 3.5mm jack, 8-12V DC power adapter, Stereo headphones, 4x AA batteries & Guidance Manual.

The SOM(4)Stereo can be supplied with Black 3mm Kevlar reinforced cable instead of the 1mm clear PVC cable at no extra cost. Kevlar cable temp. range -25 to +80°C.

### KINGFISHER SOM(4) Accessories, Components & Upgrades

- 3-299-623** Extended Temperature Range from -50° to +120°C (-58° to +248° F)
- 3-229-646** Extension Cable Type Outdoor, **5mm Millspec MIL STD** (specify length from 10-100m)
- 3-299-647** Extension Cable Type Outdoor, **5.1mm Polyamide, lightweight, rigid** (specify length from 10-100m)
- 3-299-648** Extension Cable Type Indoor, **3mm Kevlar reinforced** (specify length from 10-100m)
- 3-299-649** Extension Cable Type Indoor, **2x3mm Zip Cord** (specify length from 10-100m) will withstand bending and stepping on it
- 3-299-690** OPTIClear Software - PC Based speech enhancement utilizing a single channel noise reduction algorithm. OPTIClear works in both real-time and post-processing modes. Price for 1 license includes USB dongle
- 3-299-650** EOU300 + DSP (instead of EOU300) - **Built-in noise canceling via DSP**

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