

KINGFISHER

Fiber Optic Microphone SOM(4)



FEATURES

- Small, lightweight MEMS design
- Absolute EMI/RFI immunity
- Completely passive sensor with no metal or electrical parts
- Excellent sound accuracy
- Standard analog output
- High reliability and environmental stability
- Optical fiber connection over extended lengths without signal loss
- Exceptionally low sensitivity to vibration
- Cost-effective, long-term solution



APPLICATIONS

- High-fidelity recording and law enforcement
- High voltage electrical utilities
- High RF areas
- Severe electromagnetic fields
- Industrial & Aerospace measurements
- Equipment monitoring and sensing
- Audio calibration and measurement (EMC test labs)



Miniature fiber optic microphone for indoor acoustic monitoring applications 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) system comprises of an advanced fiber optic microphone & single-channel electro-optic unit (EOU200), for digital-to-analog conversion of optical microphone output signals. The Single Channel EOU 200 with enhanced electronics box. It features two analog outputs (one with volume control for headphones, another with fixed gain for monitoring equipment); one pair of ST-style fiber optic connectors; two 3.5 mm sockets (one for analog output, another for headphones); 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 battery or external DC power supply.

The SOM(4) 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.

The SOM(4) also has option of front or side extension tube. Extension tube versions for concealment and better installation through walls and objects. The only effect is that it slightly decrease bandwidth to be around voice frequencies.

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

Polar Pattern	Omnidirectional
Frequency Response	30-8,000 Hz
Conformity 30 - 1,000 Hz	±0.5 dB
Conformity 1,000 - 8000 Hz	±4.0 dB
Sensitivity	100 mV/Pa ±10% at 1 kHz
Equivalent Self-Noise	≤31 dBA
Maximum Acoustic Pressure	114 dB SPL
Total Harmonic Distortion	<1% at 84 dB SPL
Equivalent Vibration Sensitivity	Max. 45 dB SPL/g at 1 kHz
Supply Voltage	8-15 V DC
Current Drain	80 mA ±10%
Operating Temperature	-20 to +60 °C (-4 to +140 °F)
Storage Temperature	-20 to +60 °C (-4 to +140 °F)
Humidity - 1000 hours	Up to 95% RH at +40 °C
MTBF	>100,000 hours
Microphone Head	
Material	Polycarbonate
Dimensions D/L	6/16 mm
Weight	0.5 g
Type of Fiber Optic Cable	Multimode 100µm
Optical Cable Length	10 m standard (lengths available up to 100m)

PRODUCT CODES

KINGFISHER SOM(4) – Full Systems

3-299-619*	SOM(4)010AT - Security Optical Microphone with 10 meters of 1mm PVC coated optical fiber front extension tube
3-299-618*	SOM(4)010BT - Security Optical Microphone with 10 meters of 1mm PVC coated optical fiber side extension tube
3-299-617*	SOM(4)010XT - Security Optical Microphone with 10 meters of 1mm PVC coated optical fiber no extension tube
3-299-620*	SOM(4)020AT - Security Optical Microphone with 20 meters of 1mm PVC coated optical fiber front extension tube
3-299-621*	SOM(4)020BT - Security Optical Microphone with 20 meters of 1mm PVC coated optical fiber side extension tube
3-299-622*	SOM(4)020XT - Security Optical Microphone with 20 meters of 1mm PVC coated optical fiber no extension tube

*All kits come as standard with: Electro Optical Unit (EOU200), Audio cable with 3.5mm jack, 8-12V DC power adapter & Guidance Manual

The SOM(4) can be supplied with Black 3mm Kevlar reinforced cable instead of the 1mm clear PVC cable at no extra cost.

KINGFISHER SOM(4) Accessories, Components & Upgrades

3-229-646**	Extension Cable Type Outdoor, 5mm Milspec MIL STD
3-299-647**	Extension Cable Type Outdoor, 5.1mm Polyamide, lightweight, rigid
3-299-648**	Extension Cable Type Indoor, 3mm Kevlar reinforced
3-299-649**	Extension Cable Type Indoor, 2x3mm Zip Cord 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
3-299-654	EOU200 + DSP (instead of EOU200) - Built-in noise canceling via DSP

**Specify length from 10-100m

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