WINKELMANN

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KINGFISHER
Fiber Optic Microphone SOM(5) Extreme Temperature with Extended Frequency

Features

- Robust design suited to industrial applications
- Absolute EMI/RFI immunity
- Completely passive sensor
- Suitable for use at extreme temperatures
- Extended frequency response
- Standard analog output
- High reliability and environmental stability
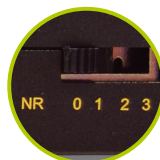- Exceptionally low sensitivity to vibration

Applications

- Extreme cold or hot environments
- Close-proximity machine monitoring
- Robust outdoor operations
- High voltage electrical utilities
- Oil and gas detection sites
- Highly explosive areas
- High RFI & EMI areas

Optional internal recorder

Optional noise reduction

Fiber optic microphone for indoor and outdoor acoustic monitoring at extreme temperatures with extended frequency range response. Ideal for industrial use, placement in heavy machinery, or where the microphone requires very robust housing and fiber cables.

The SOM(5) Ext. temp./freq. 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 EOU200 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 3.5mm sockets (one for analog output, another for headphones); green/red LED voltage indicator.

DSP model (EOU250) provides up to 22dB of real-time ambient noise removal (three levels: low, mid, high). Unit is powered either by internal battery or external DC power supply.

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	10 - 15,000Hz
Conformity 10 - 1,000Hz	±0.5dB
Conformity 1,000 - 15,000Hz	±3.0dB
Sensitivity	100mV/Pa ±10% at 1kHz
Equivalent self-noise	≤31dBA
Maximum acoustic pressure	114dB SPL
Total harmonic distortion	<1% at 84dB SPL
Equivalent vibration sensitivity	Max. 45dB SPL/g at 1kHz
Supply voltage	8 - 15V DC
Current drain (max.)	80mA
Operating temperature	-50° to +120°C (-58° to +248°F)
Storage temperature	-50° to +120°C (-58° to +248°F)
Humidity - 1000 hours	Up to 95% RH at +40°C
MTBF	>100,000 hours
Microphone head	
Material	Polycarbonate
Dimensions D/L	10/70mm
Weight	5g
Type of fiber optic cable	Multimode 100μm
Optical cable length	10m standard (lengths available up to 100m)

Product Codes

KINGFISHER Fiber Optic Microphone SOM(5)EXTF – Full Systems

3-299-639   SOM(5)EXTF010XT - Security Optical Microphone with 10m of 5.1mm black polyamide optic cable no extension tube, Electro Optical Unit (EOU200), audio cable with 3.5mm jack, 8-12V DC power adapter and guidance manual

3-299-640   SOM(5)EXTF020XT - Security Optical Microphone with 20m of 5.1mm black polyamide optic cable no extension tube, Electro Optical Unit (EOU200), audio cable with 3.5mm jack, 8-12V DC power adapter and guidance manual

KINGFISHER Fiber Optic Microphone SOM(5)EXTF – Accessories & Upgrades

3-229-646   Extension cable type outdoor, 5mm milspec (military standard) (specify length from 10-100m)

3-299-647   Extension cable type outdoor, 5.1mm polyamide, lightweight, rigid (specify length from 10-100m)

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

3-299-667   Internal digital recorder (Micro-SD format) 2-16GB, 44.1kHz, 16bit, no compression > 10 hours / 4 days

3-299-654   EOU250 (instead of EOU200) - built-in noise canceling via DSP