

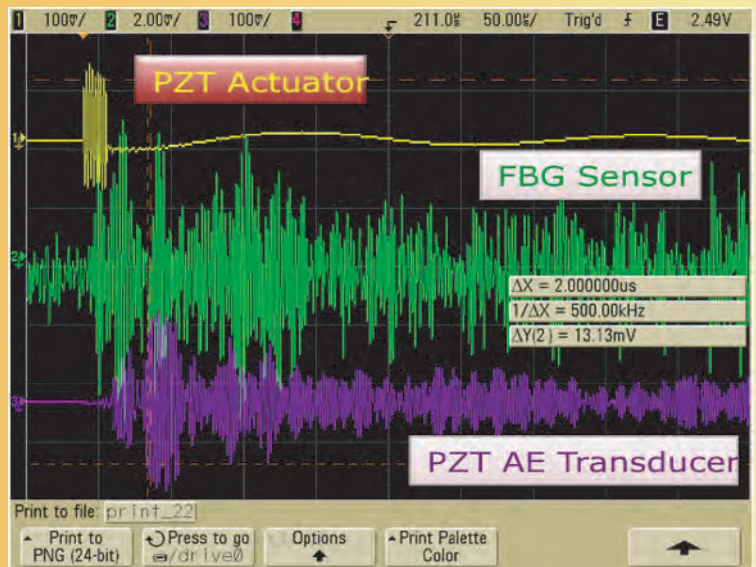
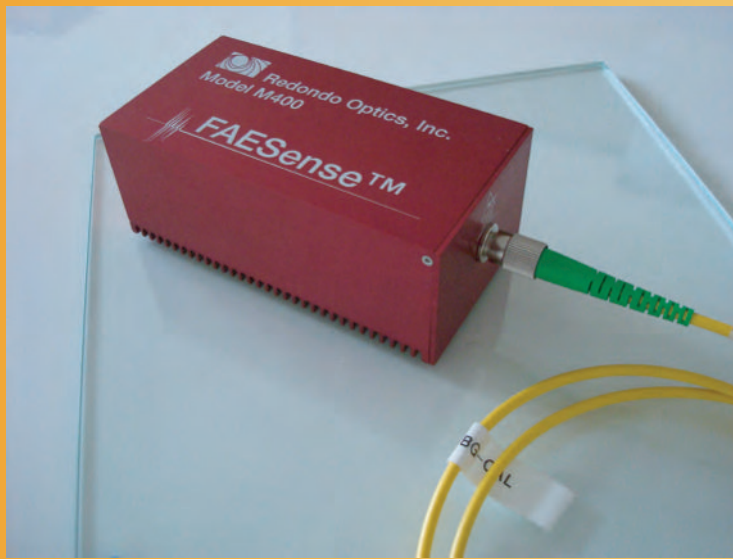


Redondo Optics, Inc.

Product Disclosure

Multi-Channel Fiber Optic Acoustic Emission Sensor System

FAESense™



Redondo Optics FAESense™ system is a next generation, stand-alone, and fully integrated distributed fiber optic acoustic emission sensor system based on the integration of state-of-the-art technologies that include: 1) distributed array of in-line fiber Bragg gratings (FBGs) sensors sensitive to strain, vibration, impacts, and acoustic emissions, 2) adaptive spectral demodulation of FBG sensor dynamic signals using two-wave mixing interferometry, and 3) integration of all the sensor system passive and active opto-electronic components within a 0.5-cm x 1-cm photonic integrated circuit microchip.

Its miniaturized packaging, low power operation, state-of-the-art data communications architecture and affordable price make it a very attractive solution for a large number of asset management SHM/NDE applications in aerospace, naval and maritime industries, civil structures such as bridges, buildings and dams, the oil and chemical industry, defense and for homeland security.

FAESense™ System Series

Performance Specifications*

Monitoring Principle	Adaptive Two-Wave Mixing (TWM) interferometry
FBG Sensor Channels	2 to 12 acoustic-emission transducers per sensor fiber
AE Frequency Range	DC to 500-kHz
Frequency Sensitivity	0.1-microstrain/Hz
Frequency Resolution	1 kHz
Frequency Accuracy	± 1% of reading
Frequency Bandwidth	3 dB from 1-kHz to 500-kHz
Graphical Interface Software	Adaptive sensor fusion prognostic analysis (LabView)
Data Communication	RS-232, USB, Ethernet, Wireless, Wi-Fi, Bluetooth
Internal Data Memory	32 GB
Power Supply	Main plug appliance NG 16, 12 V/500 mA @ 10-mA/Ch
Weight	≤ 250-g
Dimensions	2-inch (W) x 2-inch (H) x 4-inch (L)

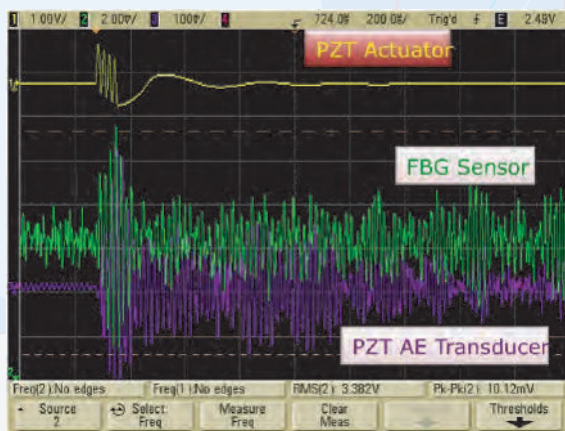
* Engineering prototypes specification subject to change without prior notice.

Applications

- Structural health monitoring
- Nondestructive evaluation
- Smart structures
- Passive and dynamic sensing

Key Features

- No moving parts
- Monolithic integration
- Miniature package
- Autonomous operation



Contact Information

For further information on this or other products, please contact our sales department at (310) 406-1295 or e-mail sales@redondooptics.com.



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