



Hear your equipment problem **before** it becomes one.

The Acoustic Machinery Monitor

analyzes the sound produced by rotating machinery, non-rotating equipment, or processes in order to detect developing problems before they become catastrophic failures. It has the ability to **learn** what a machine or process sounds like during normal operation. After that, alarm relays are activated whenever the continuously monitored sound deviates from the sound that was learned when the machine or process was known to be operating properly.



U.S. Patent 6,507,790

Features

- Warning and danger alarms have adjustable sensitivity and response time
- Stand-alone operation or integrate with supervisory control and data acquisition system
- Heavy-duty microphone designed for industrial applications
- Digital signal processing (DSP) technology
- User-friendly controls and operation



Benefits

- Easy to understand, install, operate, and maintain
- Improve worker utilization and safety
- Protect critical processes and expensive equipment
- Economical alternative to direct vibration measurement
- Monitor equipment within a zone, not just a single bearing

Applications

- Monitor critical equipment or processes in remote, inaccessible, or dangerous locations
- Rotating machinery: motors, generators, compressors, fans, pumps, turbines, engines, gearboxes
- Non-rotating equipment: absorption chillers, boilers, electrical transformers, flow processes
- Detect escaping fluids: air, water, steam, natural gas
- Security applications: detect intruders, gunshots, breaking glass, cries for help



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Specifications

Model 527 Acoustic Machinery Monitor

Processor:	ADSP-2101 Digital Signal Processor
Peak Processor Speed:	75 Million Instructions per Second (MIPS)
Acoustic Power Spectrum Computation:	Real-Time Digital Filter Analyzer
Filter Type:	Third-Order 1/12-Octave Butterworth Bandpass Filters per ANSI S1.11-1986
Frequency Range:	Eight Octaves (96 Bands) from 33.108 Hz to 8 kHz
Line Voltage:	100-130 Volts AC or 200-260 Volts AC, 60 Hz (Switch Selectable)
Operating Current:	0.030 Amp @ 115 Volts AC, 0.015 Amp @ 230 Volts AC
Operating Power:	3.5 Watts (5.0 VA) Maximum
Internal Power:	5 Volt DC Linear Power Supply
Overload Protection:	0.040 Amp Line Fuse, 0.400 Amp Transformer Secondary Fuse
Transient Protection:	Common Mode and Differential Mode AC Power Transients up to 4 kV
Relay Contact Rating:	10 Amps @ 250 Volts AC or 30 Volts DC
FCC Approval:	Complies with Part 15 of the FCC Rules for a Class A Digital Device
Safety Approval:	UL Listed to U.S. and Canadian Safety Standards (UL508)
Mounting:	35 x 7.5 mm DIN Rail or Panel Mount using Corner Mounting Holes
Operating Temperature Range:	32°F to 122°F (0°C to 50°C)
Overall Dimensions (H x W x L):	3.05 x 3.94 x 4.50 inches (77 x 100 x 114 mm)
Weight:	1.12 lbs (506 g)

Type M1 Industrial Microphone

Microphone Type:	Waterproof, Dustproof Electret Condenser
Microphone Sensitivity:	-60 dB Relative to 1.0 Volt/Microbar @ 1 kHz
Microphone Materials:	Urethane Diaphragm, Teflon Barometric Vent, Stainless Steel Housing
Microphone Electronics:	Single-Ended to Differential Converter/Amplifier
Amplifier Voltage Gain:	Adjustable from 0 to 100 using 25-Turn Trimming Potentiometer
Microphone Enclosure:	Glass-Filled Polycarbonate (IP66/NEMA 4X Rating)
Microphone Windscreen:	Washable, Replaceable Black Polyurethane Foam
Cable Connection:	Color-Coded Terminal Block Inside Enclosure, Liquid-Tight Strain Relief
Cable Type:	Two Individually-Shielded Twisted Pairs (22 Gauge Stranded) with Drain Wire
Recommended Cable:	Alpha Wire 2466C, Belden 8723, Carol C1352
Maximum Cable Length:	0.5 mile (2,640 ft) (805 m)
Operating Temperature Range:	-40°F to 158°F (-40°C to 70°C)
Overall Dimensions (H x W x L):	2.24 x 2.56 x 5.15 inches (57 x 65 x 131 mm)
Weight:	0.29 lb (133 g)

Universal Shock-Mount Bracket

Bracket Material:	Type 304 Stainless Steel
Isolators:	Miniature Neoprene Ball Mounts (4)
Natural Frequency of Microphone & Bracket along Microphone Axis:	13.4 Hz
Vibration Attenuation along Microphone Axis:	-14 dB (80% Isolation) @ 33.108 Hz
Bracket Attachment:	Four Slots in Bracket Foot accommodate 0.25-inch Screws or U-Bolts
Overall Dimensions (H x W x L):	2.70 x 2.70 x 5.00 inches (69 x 69 x 127 mm)
Weight:	0.84 lb (383 g)