

Wilcoxon Research®

# Low-frequency accelerometer with M12 connector

## 787-500-M12

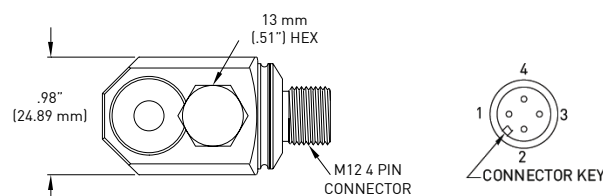
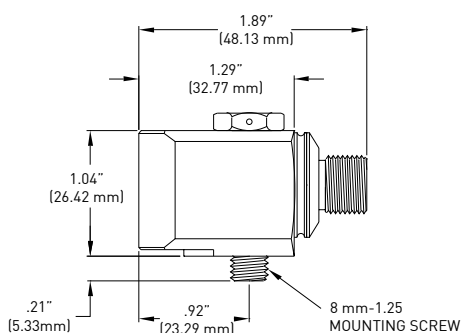


The side-exit 787-500-M12 high-sensitivity broadband Wilcoxon Research® sensor is supplied with the popular M12 connector. The accelerometer offers an interior sensing element capable of producing 500 mV/g. This results in clear signals from low-speed, low-level vibration amplitudes up to its full scale capability of 10 g. The low-end frequency response makes it ideal for slow-speed applications such as wind turbine generators and cooling towers. A high top-end frequency response offers clear signals for early bearing fault detection, gearbox wear, and other high-speed applications.

Low-frequency measurements for condition monitoring can present some of the biggest challenges for vibration detection. Applications typically include slow-speed agitators, wind turbines, cooling towers, semiconductor lithography, and seismic monitoring. Low-frequency measurements and low levels of acceleration are closely related making the electronic circuitry critical to obtaining a good measurement. In order to have adequate voltage levels with high signal-to-noise ratio at the acquisition equipment, low-frequency accelerometers must have sensing elements with higher output than general purpose sensors. The low-end frequency cutoff of the amplifier is designed to offer clear signals down to <math>\lt;0.1\text{ Hz}</math>.

### Key features

- Low profile
- Rugged design
- High sensitivity
- Hermetically sealed
- ESD protected
- Reverse wiring protection
- Clear signals at low vibration levels
- Extended low end frequency response
- Improved signal-to-noise ratio versus other general purpose accelerometers
- Comes with industry popular M12 connector
- Manufactured in an approved AS9100 and ISO 9001 facility



Connections	
Function	Connector pin
power/signal	1
common	2
N/C	3
N/C	4
ground	shell

Meggitt Sensing Systems

Our energy product competencies and services

Machinery protection | Condition monitoring | Integrated performance monitoring | Partial discharge monitoring | Sensors for extreme environments  
Ignition systems | Flame detection and analysis | Industrial monitoring solutions | Nuclear products

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smart engineering for  
extreme environments

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### Specifications

		English	Metric	
Sensitivity, ± 5%, 25° C		500 mV/g	500 mV/g	
Acceleration range	VDC >22V	10 g peak	10 g peak	
Amplitude nonlinearity		1%	1%	
Frequency response <sup>1</sup>	± 10%	30 - 300,000 Hz	0.5 - 5,000 Hz	
	± 3 dB	12 - 600,000 Hz	0.2 - 10,000 Hz	
Resonance frequency		1.32 kCPM	22 kHz	
Transverse sensitivity, max		5% of axial	5% of axial	
Temperature response	-25° C	-10%	-10%	
	+120° C	+10%	+10%	
Voltage source		18 - 30 VDC	18 - 28 VDC	
Current regulating diode		2 - 10 mA	2 - 10 mA	
Electrical noise, equiv g	Broadband 2.5 Hz to 25 kHz	250 µg	250 µg	
	Spectral	10 Hz	2.5 µg/√Hz	2.5 µg/√Hz
		100 Hz	1.5 µg/√Hz	1.5 µg/√Hz
		1000 Hz	1.5 µg/√Hz	1.5 µg/√Hz
Output impedance, max		100 Ω	100 Ω	
Bias output voltage		12 VDC	12 VDC	
Grounding		case isolated, internally shielded	case isolated, internally shielded	
Temperature range		-58 to 248° F	-50 to 120° C	
Vibration limit		500 g peak	500 g peak	
Shock limit		5,000 g peak	5,000 g peak	
Electromagnetic sensitivity, equiv g, max		70 µg/gauss	70 µg/gauss	
Sealing		hermetic	hermetic	
Base strain sensitivity, max		0.0002 g/µstrain	0.0002 g/µstrain	
Sensing element design		PZT, shear	PZT, shear	
Weight		5.11 oz	145 g	
Case material		316L stainless steel	316L stainless steel	
Mounting		1/4-28 captive hex head screw, 0.046" diameter safety wire hole	1/4-28 captive hex head screw, 0.046" diameter safety wire hole	
Output connector		M12, 4 pin	M12, 4 pin	
Recommended cabling		J10/J9T2A	J10/J9T2A	

<sup>1</sup> Frequency response limits, spectral and noise values are typical

Note: Due to continuous process improvement, specifications are subject to change without notice.

This document is cleared for public release.

### Contact

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