

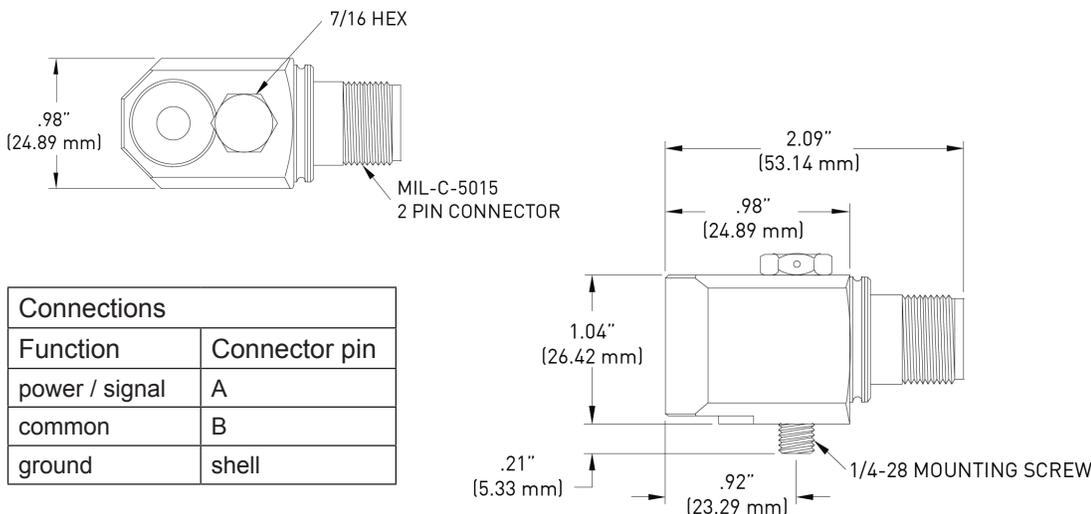
# Side-exit, low-frequency accelerometer

## 787-500



Wilcoxon's side-exit, high-sensitivity broadband 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 of the 787-500 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. The 787-500 is supplied with a 2 pin MIL-5015 connector.

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 <0.1 Hz.



Note: Due to continuous process improvement, specifications are subject to change without notice. This document is cleared for public release.

### Key features

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

### Certifications



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## SPECIFICATIONS

<b>Sensitivity, <math>\pm 5\%</math>, 25° C</b>		500 mV/g
<b>Acceleration range, VDC &gt;22V</b>		10 g peak
<b>Amplitude nonlinearity</b>		1%
<b>Frequency response<sup>1</sup>:</b>	$\pm 10\%$	0.5 - 5,000 Hz
	$\pm 3$ dB	0.2 - 10,000 Hz
<b>Resonance frequency</b>		22 kHz
<b>Transverse sensitivity, max</b>		5% of axial
<b>Temperature response:</b>	-25° C	-10%
	+120° C	+10%
<b>Power requirement:</b>	voltage source	18 - 30 VDC
	current regulating diode	2 - 10 mA
<b>Electrical noise, equiv. g:</b>		
Broadband	2.5 Hz to 25 kHz	250 $\mu$ g
Spectral	10 Hz	2.5 $\mu$ g $\sqrt$ Hz
	100 Hz	1.5 $\mu$ g $\sqrt$ Hz
	1000 Hz	1.5 $\mu$ g $\sqrt$ Hz
<b>Output impedance, max</b>		100 $\Omega$
<b>Bias output voltage</b>		12 VDC
<b>Grounding</b>		case isolated, internally shielded
<b>Temperature range</b>		-50 to +120° C
<b>Vibration limit</b>		500 g peak
<b>Shock limit</b>		5,000 g peak
<b>Electromagnetic sensitivity, equiv. g, max</b>		70 $\mu$ g/gauss
<b>Sealing</b>		hermetic
<b>Base strain sensitivity, max</b>		0.0002 g/ $\mu$ strain
<b>Sensing element design</b>		PZT, shear
<b>Weight</b>		145 grams
<b>Case material</b>		316L stainless steel
<b>Mounting</b>		1/4-28 captive hex head screw, 0.046" diameter safety wire hole
<b>Output connector</b>		2 pin, MIL-C-5015 style
<b>Mating connector</b>		R6 type
<b>Recommended cabling</b>		J10 / J9T2A

## Contact

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**Note:** <sup>1</sup> Frequency response limits, spectral and noise values are typical.

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