

Low-frequency intrinsically safe accelerometer

786-500-IS

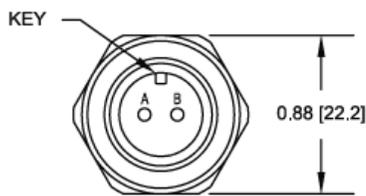


Wilcoxon's intrinsically safe 786-500-IS sensor is certified for usage in hazardous areas and offers clear signals at low vibration levels. The sensor is designed with extended low-end frequency response and improved signal-to-noise ratio compared to other general purpose models. It can be used to detect both low- and high-speed vibrations and is optimized for detecting vibration on slow turning machinery such as cooling tower fans and slow-speed gearboxes.

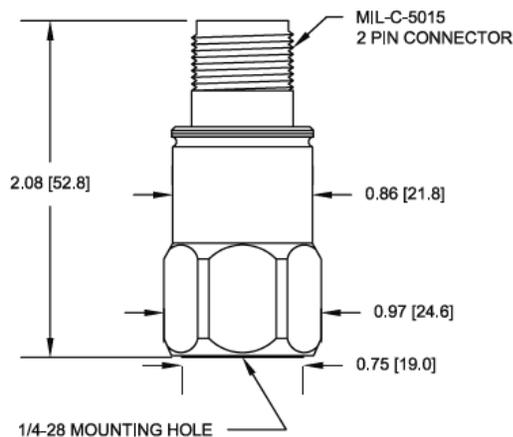
The 786-500-IS sensor is classified for usage in Class I Division 1/Zone 0/1 locations where ignitable concentrations of flammable gases, vapors or liquids are present continuously under normal operating conditions. Class I areas are defined into groups by the presence of the following flammable material:

- Group A - Acetylene
- Group B - Hydrogen
- Group C - Ethylene
- Group D - Propane

For proper protection the installation drawing must be followed.



Connections	
Function	Connector pin
ground	shell
power/signal	A
common	B



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

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Key features

- High sensitivity
- Extended low frequency response
- Clear signals at low vibration levels
- Class I, Div 1/Zone 0/1 certified
- Hermetically sealed
- ESD protected
- Reverse wiring protection
- Manufactured in an approved ISO 9001 facility

Certifications

Wilcoxon Sensing Technologies
 An Amphenol Company

Low-frequency intrinsically safe accelerometer

786-500-IS

SPECIFICATIONS

	English	Metric
Sensitivity, $\pm 5\%$, 25° C	500 mV/g	49 mV/m/sec ²
Acceleration range, VDC > 22V	10 g peak	98 m/sec ² peak
Amplitude nonlinearity	1%	1%
Frequency response¹:		
$\pm 5\%$	42 - 300,000 CPM	0.7 - 5,000 Hz
$\pm 10\%$	30 - 540,000 CPM	0.5 - 9,000 Hz
± 3 dB	12 - 840,000 CPM	0.2 - 14,000 Hz
Resonance frequency	1.80 kCPM	30 kHz
Transverse sensitivity, max	5% of axial	5% of axial
Temperature response:		
-20° C	-10%	-10%
+120° C	+10%	+10%
Power requirement:		
Voltage source	18 - 30 VDC	18 - 30 VDC
Current regulating diode	2 - 10 mA	2 - 10 mA
Electrical noise, equiv. g:		
Broadband 2.5 Hz to 25 kHz	250 μ g	2.4×10^{-3} m/sec ²
Spectral 10 Hz	2.5 μ g/ $\sqrt{\text{Hz}}$	2.4×10^{-5} m/sec ² / $\sqrt{\text{Hz}}$
100 Hz	1.5 μ g/ $\sqrt{\text{Hz}}$	1.5×10^{-5} m/sec ² / $\sqrt{\text{Hz}}$
1,000 Hz	1.5 μ g/ $\sqrt{\text{Hz}}$	1.5×10^{-5} m/sec ² / $\sqrt{\text{Hz}}$
Output impedance, max	100 Ω	100 Ω
Bias output voltage	12 VDC	12 VDC
Grounding	case isolated, internally shielded	
Temperature range	-58 to +248° F	-50 to +120° C
Vibration limit	500 g peak	4,900 m/sec ² peak
Shock limit	5,000 g peak	49,000 m/sec ² peak
Electromagnetic sensitivity, equiv g, max	70 μ g/gauss	6.9×10^{-4} m/sec ² /gauss
Sealing	hermetic	
Base strain sensitivity, max	0.0002 g/ μ strain	1.9×10^{-3} m/sec ² / μ strain
Sensing element design	PZT, shear	
Weight	3.17 oz	90 grams
Case material	316L stainless steel	
Mounting	1/4-28 captive hex head screw, 0.046" diameter safety wire hole	
Output connector	2-pin, MIL-C-5015 style	
Mating connector	R6 type	
Recommended cabling	J10 / J9T2A, <100 ft.	J10 / J9T2A, <30 m

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Contact

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Accessories supplied:

- Calibration data (level 2)
- 1/4-28 captive hex head screw

Notes: ¹ Frequency response limits, spectral and noise values are typical.