

Low-frequency intrinsically safe accelerometer

786-500-M12-IS

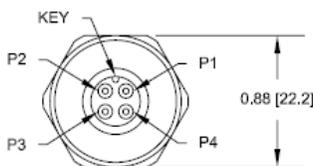


Wilcoxon's top-exit broadband sensor is certified for usage in hazardous areas. The high-sensitivity accelerometer offers an interior sensing element capable of producing 500 mV/g for clear signals at low vibration levels. The low-end frequency response makes it ideal for slow-speed applications such 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. The sensor is supplied with the popular M12 connector.

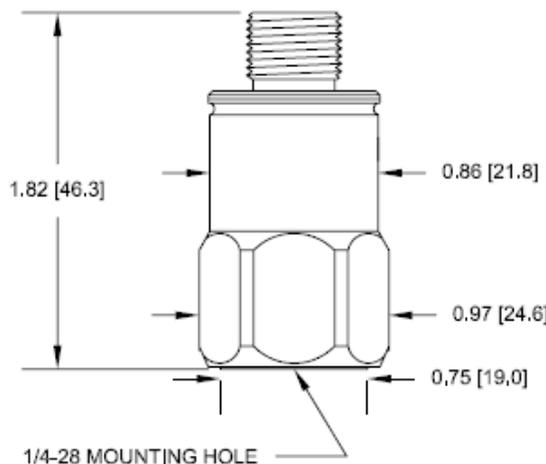
The 786-500-M12-IS sensor is classified for usage in Class I Division 1/Zone 0/1 locations where ignitable concentrations of flammable gases, vapors or liquids are present continuously under normal operating conditions. Class I areas are defined into groups by the presence of the following flammable 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	1
common	2
N/C	3
N/C	4



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

Key features

- High sensitivity
- Extended low frequency response
- Clear signals at low vibration levels
- Class I, Div 1/Zone 0/1 certified
- Comes with industry popular M12 connector
- Hermetically sealed
- ESD-protected
- Reverse wiring protection
- Manufactured in an approved ISO 9001 facility

Certifications

Class I, Div 1 Groups A, B, C, D
 Class II, Div 1 Groups E, F, G
 Class III, Div 1
 Class I, Zone 0
 AEx/Ex ia IIC T4
 Tamb: -50°C to 120°C

II 1 G
 Ex ia IIC T4 Ga
 -50°C ≤ Ta ≤ 120°C



For hazardous area locations, sensor must be installed in accordance with installation instructions or local code requirements.

Special conditions for safe use: for applications in explosive atmospheres caused by gases, vapors or mists and where the use of apparatus of category 1 G is required, electrostatic charges on cable and non-metallic parts of the enclosure shall be avoided. The ambient temperature range for these applications is -40°C ≤ Tamb ≤ +80°C.



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SPECIFICATIONS

Sensitivity, ±5%, 25° C	500 mV/g
Acceleration range, VDC > 22V	10 g peak
Amplitude nonlinearity	1%
Frequency response¹:	
± 5%	0.7 - 5,000 Hz
± 10%	0.5 - 5,000 Hz
± 3 dB	0.2 - 10,000 Hz
Resonance frequency	30 kHz
Transverse sensitivity, max	5% of axial
Temperature response:	
-25° C	-10%
+120° C	+10%
Power requirement:	
Voltage source	18 - 30 VDC
Current regulating diode	2 - 10 mA
Electrical noise, equiv. g:	
Broadband	2.5 Hz to 25 kHz
Spectral	10 Hz
	100 Hz
	1,000 Hz
	250 µg
	2.5 µg/√Hz
	1.5 µg/√Hz
	1.5 µg/√Hz
Output impedance, max	100 Ω
Bias output voltage	12 VDC
Grounding	case isolated, internally shielded
Temperature range	-50 to +120° C
Vibration limit	500 g peak
Shock limit	5,000 g peak
Electromagnetic sensitivity, equiv. g, max	70 µg/gauss
Sealing	hermetic
Base strain sensitivity, max	0.0002 g/µstrain
Sensing element design	PZT, shear
Weight	90 grams
Case material	316L stainless steel
Mounting	1/4-28 UNF tapped hole
Output connector	M12 style, 4 pin

Contact

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Accessories supplied:

- Calibration data (level 2)
- SF6M mounting stud

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

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