

HART-enabled vibration transmitter

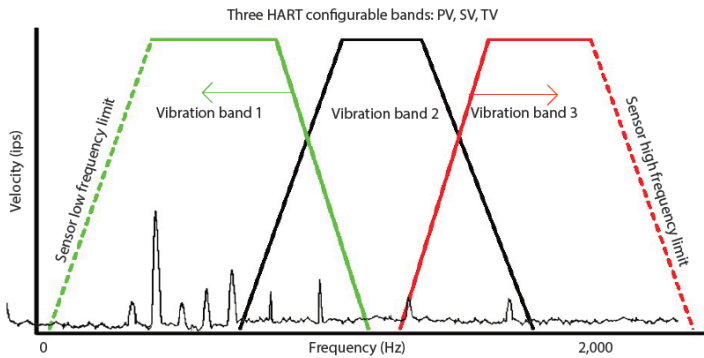
PCH420V velocity sensor



The PCH420V series sensors are velocity transmitters with 4-20mA outputs and the added capability of digital communications using the HART 7.2 protocol. The HART functionality allows user configuration of the sensors, enables multi-drop cable installations and allows the sensor to communicate directly with a HART-enabled DCS or PLC. The benefits are a sensor that can be configured by the user for a number of different full-scale ranges and filter settings, a reduction in the required cabling, and simple connection to existing plant infrastructure. Digital sensors allow improved connectivity into plant networks improving efficiency and simplifying decision-making about machinery health.

Key features

- 4-20 mA + HART 7.0 output
- Three user-configurable bands
- Single or multi-drop loop installation
- Remote configuration and diagnostics
- Continuous asset monitoring
- Manufactured in an approved ISO 9001 facility



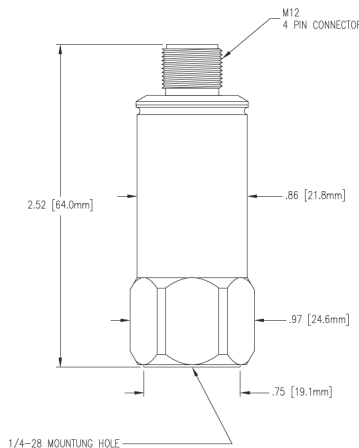
Device variables	Description
PV	Vibration band 1
SV	Vibration band 2
TV	Vibration band 3

Certifications



Models available

Model	Description
PCH420V-R6	4-20 mA + HART velocity sensor with 2 pin MIL-5015 connector
PCH420V-M12	4-20 mA + HART velocity sensor with 4 pin M12 connector



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

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SPECIFICATIONS

HART PARAMETERS

Full scale velocity output, 20 mA, ±10% Programmable PV band	0.5 - 5.0 in/sec, peak (12.7 - 127 mm/sec, peak)
HART analysis bands, independently programmable: PV, SV, TV	low-pass high-pass band-pass (max 2, simultaneous)
Signal detection options	RMS, peak, true peak
Minimum analysis bandwidth	10 Hz

SENSOR SPECIFICATIONS

Frequency response:	± 10% ± 3 dB	10 Hz - 1 kHz 3.0 - 1.95 kHz
Measurement accuracy at 25°C, 100 Hz, 1 ips full scale		±5%
Power requirements, 2-wire loop power Voltage, between pins A and B		12 - 30 VDC
Current draw		3.8 - 22 mA
Loop resistance ¹ at 24 VDC, max		600 Ω
Turn on time, 4-20 mA loop		30 seconds
Grounding		case isolated, internally shielded
Temperature range		-40 to +105° C (-40 to +221° F)
Vibration limit		500 g peak
Shock limit		5,000 g peak
Sealing		hermetic
Sensing element design		PZT, shear
Case material		316L stainless steel
Mounting		1/4-28 tapped hole
Mating connector		4-pin M12 or 2-pin MIL-C-5015
Recommended cabling		shielded, four-conductor (J9T4A)
Recommended connector		Model R75S, 5 socket M12

Contact

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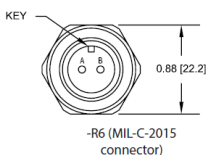
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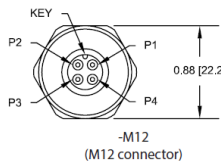
Notes: ¹ Maximum loop resistance R_L can be calculated by:

$$R_L = \frac{VDC - 10.3V}{22.8 mA}$$

HART communication requires min 250 Ω resistance.



Function	Connector pin
loop positive	A
loop negative	B
ground	shell



Function	Connector pin
loop positive	1
loop negative	2
N/C	3
N/C	4
ground	shell

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