The PCH420V series sensors are velocity transmitters with 4-20 mA outputs and the added capability of digital communications using HART 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
- Hazardous area certified models available
- Remote configuration and diagnostics
- Connector options: 2 pin MIL-C-5015 (-R6 models) or M12 (-M12 models)
- Continuous asset monitoring
- Manufactured in an approved ISO 9001 facility

### Model Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCH420V-R6(-HZ)</td>
<td>4-20 mA + HART velocity sensor with 2 pin MIL-C-5015 connector</td>
</tr>
<tr>
<td>PCH420V-M12(-HZ)</td>
<td>4-20 mA + HART velocity sensor with 4 pin M12 connector</td>
</tr>
</tbody>
</table>

**Note:** Model numbers ending in "-HZ" are hazardous area certified sensors.

### CERTIFICATIONS

- **-HZ models only:**
  - III G Ex nA nC IIC T4 Gc Ta = -40°C to +105°C
  - Class I, Div 2, Groups A, B, C, D
  - Class I, Zone 2
  - AEx/Ex nA nC IIC T4
  - Tamb: -40°C to +105°C

The cable installed must be suitable for the installation temperature and the voltage of any intermingled circuits. • Connected cable must be of a type suitable for Zone 2 Hazardous Locations. • The connected cable and connector must provide a minimum ingress protection level of IP54, when assessed according to EN 60529-0 and EN 60529-15. Unused connector must be fitted with an appropriately rated blanking cover. • The connection must be made in a manner that cannot be separated without the use of a tool. • Where the installation requires that the Accelerometer enclosure be grounded, this is to be done using a metal mounting stud as described in document 13327-01, 13334-01, 13335-01 or 13336-01.

Note: Due to continuous process improvement, specifications are subject to change without notice. This document is cleared for public release.
PCH420V Series
HART-enabled vibration transmitter

SPECIFICATIONS

HART PARAMETERS

- **Full scale velocity output, 20 mA, ±10%**
  - 0.5 - 5.0 in/sec, peak
  - (12.7 - 127 mm/sec, peak)

- **Programmable PV band**

- **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 Hz - 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 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**
  - M12 models
  - -R6 models

- **Recommended cabling**
  - 4 pin, M12
  - 2 pin, MIL-C-5015

- **Recommended connector**
  - J9T4A
  - J9T2A
  - R7SS
  - R6H series

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

\[ R_L = \frac{V_{DC, max} - 10.3 \text{ V}}{22.8 \text{ mA}} \]

HART communication requires min. 2500Ω resistance.

Accessories supplied: SF6 mounting stud; calibration data; DD (Device Description) file is available for download at [burxwilcoxon.com](http://burxwilcoxon.com).

Connections - PCH420V-M12

<table>
<thead>
<tr>
<th>Function</th>
<th>Connector pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>loop positive</td>
<td>1</td>
</tr>
<tr>
<td>loop negative</td>
<td>2</td>
</tr>
<tr>
<td>N/C</td>
<td>3</td>
</tr>
<tr>
<td>N/C</td>
<td>4</td>
</tr>
<tr>
<td>ground</td>
<td>shell</td>
</tr>
</tbody>
</table>

Connections - PCH420V-R6

<table>
<thead>
<tr>
<th>Function</th>
<th>Connector pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>loop positive</td>
<td>A</td>
</tr>
<tr>
<td>loop negative</td>
<td>B</td>
</tr>
<tr>
<td>ground</td>
<td>shell</td>
</tr>
</tbody>
</table>

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