Meggitt Sensing Systems now offers a family of HART vibration sensors which offer superior performance in extreme environments. For over 20 years, the HART field communication protocol has grown to support over 40 million devices because of its high reliability and ease of programming. The PCH420V superimposes a digital signal on top of the popular 4-20 mA loop offering unparalleled flexibility for condition based maintenance of rotating equipment. Three user configurable bands allow targeted measurements for identifying machine faults like unbalance, alignment, looseness or bearing wear conditions. HART enabled communication enables PCH420 sensors to be easily integrated in existing HART networks without the expense of implementing a traditional vibration monitoring system.
Programmable vibration transmitter with HART protocol
PCH420V velocity sensor

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 - 1.0 kHz, 3.0 Hz - 1.95 kHz
- Measurement accuracy at 25° C, 100 Hz, 1 ips peak 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: 600Ω
- 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: 2,500 g peak
- Sealing: hermetic
- Sensing element design: PZT, shear
- Case material: 316L stainless steel
- Mounting: 1/4-28 tapped hole
- Output connector: M12
- Recommended cabling: shielded, multi-conductor (J9T4A/J12/J84)

Note: 1 Maximum loop resistance (R_L) can be calculated by: (VDC – 10.3 V) / 22.8 mA, HART communication requires min 2500Ω resistance, see manual for further details

Connections

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

Contact

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Meggitt Sensing Systems
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