



Model PC420VP-10-B3041 Frequency-Banded Velocity Loop Powered Sensors (LPS™)

FEATURES:

- Peak velocity output
- Corrosion resistant
- Hermetic seal
- ESD protection
- Overload protection
- Reverse wiring protection

BENEFITS:

- Provides velocity vibration trending
- Provides continuous trending of overall machine vibration
- Can help guide maintenance
- Helps notify of impending equipment failure
- Much-narrower bandwidth response makes 4-20mA output dependent on key fundamental frequencies

OUTPUT, 4-20 mA

Full Scale, 20 mA (±5%)	1.0 inches/second
10% Frequency Response	6Hz-20Hz
±3 dB	3Hz-40Hz
Repeatability	±2%
Transverse Sensitivity, max.	5%

ELECTRICAL

Power Requirements (Two wire loop power):

Voltage at PC420-series sensor terminals	10 VDC min, 30 VDC max
Loop Resistance ¹ at 24 VDC, maximum	700Ω
Turn on time, 4-20 mA loop	<45 seconds
Grounding	Case isolated, internally shielded

ENVIRONMENTAL

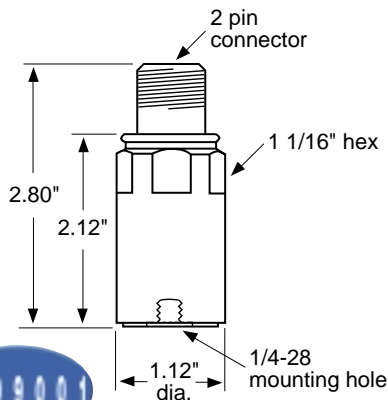
Temperature Range	-40 to 85°C
Vibration Limit	250 g peak
Shock Limit	2,500 g peak
Sealing	Hermetic

PHYSICAL

Sensing Element Design	PZT ceramic / shear
Weight	162 grams
Case Material	316L stainless steel
Mounting	1/4 - 28 tapped hole
Output Connector	2 pin, MIL-C-5015 style
Mating Connector	R6 type
Recommended Cabling	J9T2A

The PC420VP-10, B3041 4-20 mA loop powered transducers offer users the ability to monitor vibration at their running speed while ignoring many higher frequency effects. In equipment such as gearboxes there can be high-amplitude vibration at frequencies far above the running speed. This sensor will filter out the higher frequencies and allow users to trend only the low-frequency components such as running speed for machines operating in the 300 RPM to 1500 RPM range.

CONNECTOR PIN	FUNCTION
SHELL	ground
A	Loop Positive (+)
B	Loop Negative (-)



ACCESSORIES SUPPLIED:

SF6 mounting stud (International customers specify mounting requirements);
Calibration data (level 2).

*** See Back for Powering Diagram**



Due to continued research and development, Wilcoxon Research reserves the right to amend this specification without notice.

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Powering Diagram

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

$$R_L \text{ (max resistance)} = \frac{V_{\text{DC power}} - 10 \text{ V}}{0.2 \text{ A}}$$

DC Supply Voltage	R_L (max resistance) ²	R_L (minimum wattage capability) ³
12 VDC	100Ω	1/8 Watt
20 VDC	500Ω	1/4 Watt
24 VDC	700Ω	1/2 Watt
26 VDC	800Ω	1/2 Watt
30 VDC	1.0kΩ	1/2 Watt

² Lower resistance is allowed, greater than 10Ω recommended.

³ Minimum R_L wattage determined by: $(0.0004 \times R_L)$.

Typical Circuit

