

## Model PC420V Series Velocity Loop Powered Sensors (LPS™)



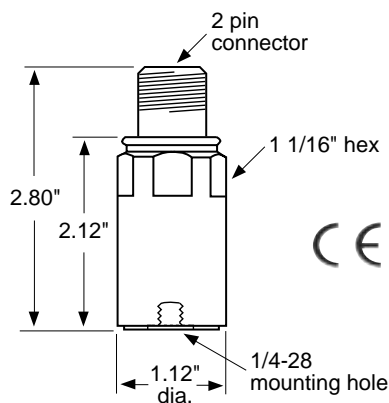
### FEATURES:

- Peak equivalent or True RMS or True Peak
- Corrosion resistant
- Hermetic seal
- ESD protection
- Overload protection
- Reverse wiring protection

### BENEFITS:

- Choice of output: RMS, or Peak, permits you to choose the sensor that best fits your industrial requirements.
- Provides continuous trending of overall machine vibration
- Can help guide maintenance
- True peak is useful for detecting loose parts like valves on reciprocating machinery
- Can help guide maintenance
- Helps notify of impending equipment failure

The 4-20 mA output of the PC420V Series is proportional to velocity vibration. An output of 4 mA indicates a level of 0 ips or no vibration present. A full-scale reading of 20 mA indicates that the maximum range (Peak or RMS) of vibration is present.



### OUTPUT, 4-20 mA

Full Scale, 20 mA (±5%) .....	see Table 1 on back
Frequency Response:	
±10% .....	10 Hz - 1.0 kHz
±3 dB .....	4 Hz - 2 kHz
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 <sup>1</sup> at 24 VDC, maximum .....	700Ω
Turn on time, 4-20 mA loop .....	30 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

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).



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

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**Table 1: PC420Vx-yy Model Number Selection**

x (4-20 mA Output Type)	yy (4-20 mA Full Scale)
R = RMS output, Velocity	05 = 0.5 ips
P = Equivalent Peak output, Velocity	10 = 1.0 ips
TP = True Peak output, Velocity	20 = 2.0 ips
	30 = 3.0 ips
	50 = 5.0 ips

**NOTES:** <sup>1</sup> Maximum loop resistance (R<sub>L</sub>) can be calculated by:

$$R_L \text{ (max resistance)} = \frac{V_{\text{DC power}} - 10 \text{ V}}{20 \text{ mA}}$$

DC Supply Voltage	R <sub>L</sub> (max resistance) <sup>2</sup>	R <sub>L</sub> (minimum wattage capability) <sup>3</sup>
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

<sup>2</sup> Lower resistance is allowed, greater than 10Ω recommended.

<sup>3</sup> Minimum R<sub>L</sub> wattage determined by: (0.0004 × R<sub>L</sub>).

**Typical Circuit**

