

## Model PC420Ax-yy-Ex Explosion Proof Series Acceleration Loop Powered Sensors (LPS™)



### FEATURES:

- Peak equivalent or True RMS
- Explosion Proof Certification\*
- Corrosion resistant
- 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
- Hazardous area installation

The output of the PC420A Series is proportional to acceleration vibration. An output of 4 mA indicates a level of 0 g or no vibration present. A full-scale reading of 20 mA indicates the maximum range (Peak or RMS) of vibration is present. The Peak output units provide a computed equivalent peak level of vibration based on the RMS.

### OUTPUT, 4-20 mA

Full Scale, 20 mA (±5%) .....	see Table 1 on back
Frequency Response:	
±10% .....	10 Hz - 1.0 kHz
±3 dB .....	2 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 .....	< 10 seconds
Grounding .....	Case isolated, internally shielded

### ENVIRONMENTAL

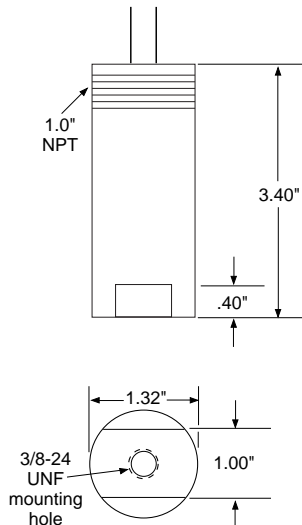
Temperature Range .....	-40 to 85°C
Vibration Limit .....	250 g peak
Shock Limit .....	2,500 g peak
Sealing .....	Epoxy Sealed

### PHYSICAL

Sensing Element Design .....	PZT ceramic / shear
Weight .....	380 grams
Case Material .....	303 stainless steel
Mounting .....	3/8-24 x 3/8 depth tapped hole
Output Leads, 18 AWG .....	4 meters long

\* CSA Approval: Class 1, Division1, Groups A, B, C, D.  
LCIE Approval: EEx d IIC T3C  
EEx nA IIC T3C

CABLE	FUNCTION
Red	Loop Positive (+)
White	Loop Negative (-)



### ACCESSORIES SUPPLIED:

SF20-2 Mounting stud (International customers specify mounting requirements);  
Calibration data (level 2).



98823 Rev.A 01/03

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



**Table 1: PC420Ax-yy-EX Explosion Proof Model Number Selection**

x (4-20 mA Output Type)	yy (4-20 mA Full Scale)
R = RMS output, Acceleration	05 = 5 g
P = Equivalent Peak output, Acceleration	10 = 10 g
	20 = 20 g

**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 x R<sub>L</sub>).

**Typical Circuit**

