

# Explosion-proof, acceleration loop powered sensor

## PC420A-EX series



**Table 1: PC420Ax-yy-EX model selection guide**

x (4-20 mA output type)	yy (4-20 mA full scale)
R = acceleration, RMS output	05 = 5 g (49 m/sec <sup>2</sup> )
P = acceleration, equivalent peak output	10 = 10 g (98 m/sec <sup>2</sup> )
TP = acceleration, true peak output	20 = 20 g (196 m/sec <sup>2</sup> )

### Key features

- RMS, peak equivalent or true peak detection
- Explosion-proof certified
- Provides continuous trending of overall machine vibration
- Manufactured in an approved ISO 9001 facility

### Certifications



Class I, Div 1, 2 Groups A, B, C, D  
Class II, Div 1, 2 Groups E, F, G  
Class III  
T3C Ta = 85°C max



II 2 G  
Ex d IIC T3  
II 3 G  
Ex nA IIC T3  
-40°C ≤ Ta ≤ +85°C



For hazardous area locations, sensor must be installed in accordance with installation instructions or local code requirements.

Special conditions for safe use:

- Conduit seal must be installed within 18 inches (450 mm) of the enclosure.
- Use supply wires with spreading suitable for at least 70° C.

Note: Due to continuous process improvement, specifications are subject to change without notice. This document is cleared for public release.

# Explosion-proof, acceleration loop powered sensor

## PC420A-EX series

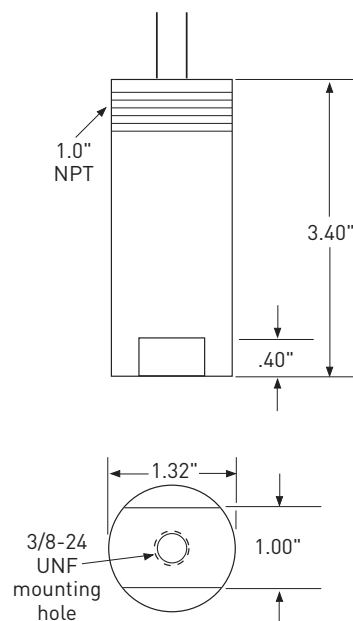
### SPECIFICATIONS

Full scale, 20 mA, ±5%		see Table 1 on page 1
Frequency response:	±10%	10 Hz - 1.0 kHz
	±3 dB	4.0 Hz - 2.0 kHz
Repeatability		±2%
Transverse sensitivity, max		5%
Power requirements, 2-wire loop power:		
Voltage at sensor terminals		14 - 30 VDC
Loop resistance <sup>1</sup> at 24 VDC, max		700 Ω
Turn on time, 4-20 mA loop		<10 sec
Grounding		case isolated, internally shielded
Temperature range		-40° to +85° C
Vibration limit		250 g peak
Shock limit		2,500 g peak
Sealing		epoxy sealed
Sensing element design		PZT, shear
Weight		380 grams
Case material		303 stainless steel
Mounting		3/8-24 x 3/8 depth tapped hole
Output leads, 18 AWG		13 ft.

**Accessories supplied:** SF20-2 mounting stud; calibration data (level 2)

**Optional accessories:** SF20-1 mounting stud (1/4-28 to 3/8-24)

Connections	
Function	Cable color
loop positive (+)	red
loop negative (-)	white



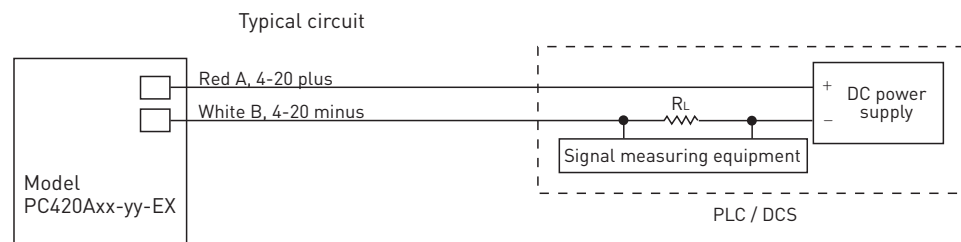
**Notes:** <sup>1</sup> Maximum loop resistance ( $R_L$ ) can be calculated by:

$$R_L = \frac{V_{DC\ power} - 12\ V}{20\ mA}$$

DC supply voltage	$R_L$ (max resistance) <sup>2</sup>	$R_L$ (minimum wattage capability) <sup>3</sup>
12 VDC	100 Ω	1/8 watt
20 VDC	500 Ω	1/4 watt
24 VDC	700 Ω	1/2 watt
26 VDC	800 Ω	1/2 watt
30 VDC	1,000 Ω	1/2 watt

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

<sup>3</sup> Minimum  $R_L$  wattage determined by:  $(0.0004 \times R_L)$ .



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