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^2)
P = acceleration, equivalent peak output	10 = 10 g (98 m/sec^2)
TP = acceleration, true peak output	20 = 20 g (196 m/sec^2)

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

C US
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

Ex
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.

CE

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

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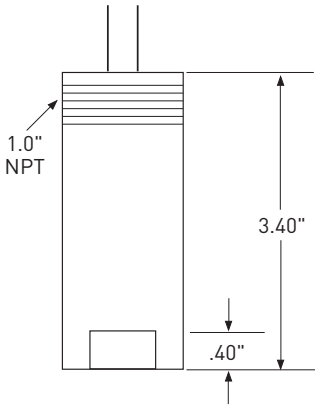
PC420A-EX series

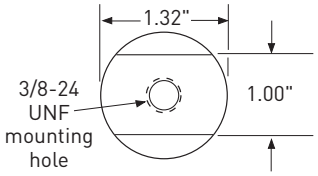
SPECIFICATIONS

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[1] 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.

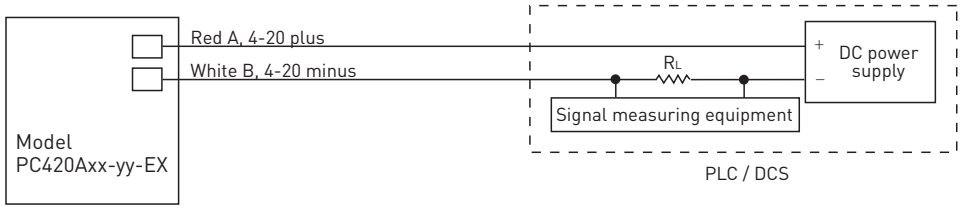
Accessories supplied: SF20-2 mounting stud; calibration data (level 2)
Optional accessories: SF20-1 mounting stud (1/4-28 to 3/8-24)

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





Typical circuit



Notes: [1] 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)[2]	R_L (minimum wattage capability)[3]
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

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

[3] Minimum R_L wattage determined by: (0.0004 x R_L).

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