

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



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.

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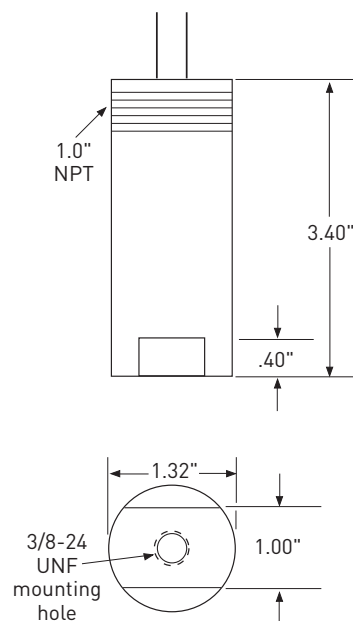
SPECIFICATIONS

| | | |
|---|------------------------------------|------------------|
| 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 |



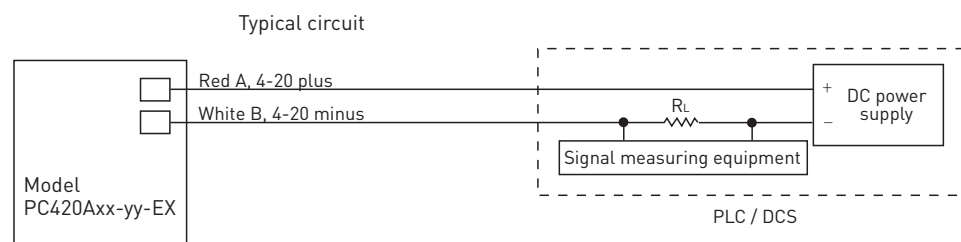
Notes: ¹ Maximum loop resistance (R_L) can be calculated by:

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

| 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: $(0.0004 \times R_L)$.



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