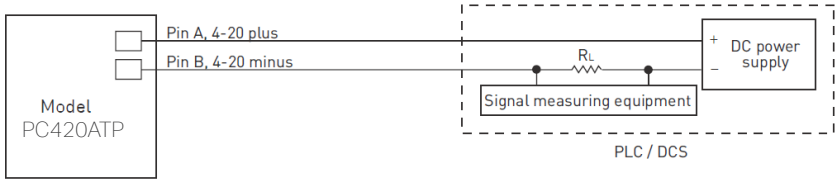
True peak acceleration loop powered sensors (LPS)

PC420ATP series

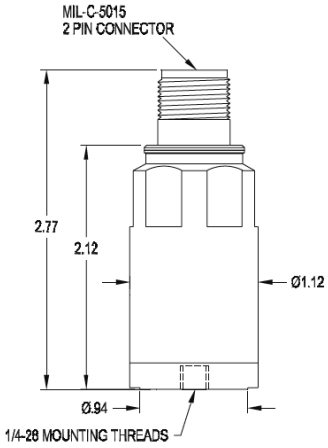
Wilcoxon's PC420ATP series 4-20 mA vibration sensors provide 24/7 output of true peak acceleration for trending in PLC systems, alerting users to changing machine conditions and helping to guide maintenance in prioritizing the need for service. True peak is useful for detecting loose valves, rod knock and piston slap on reciprocating machinery.

The 4-20 mA output of the PC420ATP series is proportional to true peak 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 that the maximum range of vibration is present.

Typical circuit



Connections	
Function	Connector pin
ground	shell
loop positive (+)	A
loop negative (–)	B



Key features

- True peak output
- Corrosion resistant
- Hermetically sealed
- ESD protection
- Overload protection
- Reverse wiring protection

Certifications

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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Wilcoxon Sensing Technologies
An Amphenol Company

98819 Rev. C 08/17

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SPECIFICATIONS

OUTPUT, 4-20 mA	
Full scale 20 mA, ±5%	see table 1 below
Frequency response:	
± 10%	10 Hz - 1.0 kHz
± 3 dB	4.0 Hz - 2.0 kHz
Repeatability	± 2%
Transverse sensitivity, max	5%
Power requirements (two-wire loop power)	
Voltage at sensor terminals	12 - 30 VDC
Loop resistance[1] at 24 VDC, max	700 Ω
Turn on time, 4-20 mA loop	< 30 seconds
Grounding	case isolated, internally shielded
Temperature range	–40 to +85° C
Vibration limit	250 g peak
Shock limit	2,500 g peak
Sealing	hermetic
Sensing element design	PZT, shear
Weight	162 grams
Case material	stainless steel
Mounting	1/4-28 tapped hole
Output connector	2 pin, MIL-C-5015 style
Mating connector	R6 type
Recommended cabling	J9T2A

Table 1: PC420ATP-yy model selection

yy (4-20 mA full scale)
05 = 5 g 10 = 10 g 20 = 20 g

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

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Accessories supplied:

- SF6 mounting stud (metric mounting available)
- Calibration data (level 2)

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

$$R_L = \frac{VDC - 10\ V}{20\ mA}$$

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

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