

RMS and peak velocity loop powered sensors

PC420V series



Wilcoxon’s PC420V series sensors provide a 4-20 mA output proportional to velocity vibration, allowing for continuous trending of overall machine vibration. This trend data alerts users to changing machine conditions and helps guide maintenance in prioritizing the need for service. The choice of RMS or peak output allows you to choose the sensor that best fits your requirements.



Table 1: PC420Vx-yy model selection guide

x (4-20 mA output type)	yy (4-20 mA full scale)
R = RMS output, velocity P = calculated peak output, velocity	05 = 0.5 ips (12.8 mm/sec)
	10 = 1.0 ips (25.4 mm/sec)
	20 = 2.0 ips (50.8 mm/sec)
	30 = 3.0 ips (76.2 mm/sec)
	50 = 5.0 ips (127 mm/sec)

Key features

- True RMS or calculated peak output
- Intrinsically safe certified and explosion-proof models available
- Easily integrated into existing process control systems
- Manufactured in an approved ISO 9001 facility

Certifications



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

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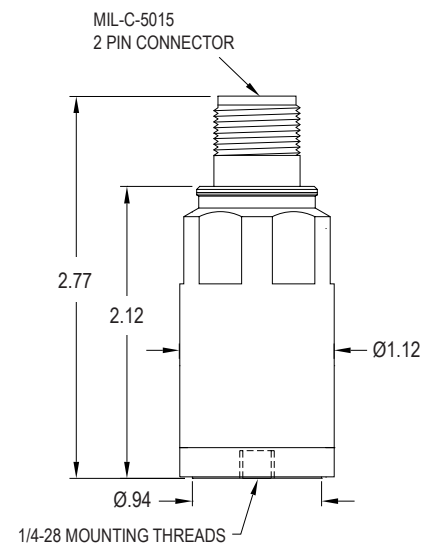
PC420V series

SPECIFICATIONS

Full scale, 20 mA, ±5%	see Table 1 on page 1	
Frequency response:	±10%	10 Hz - 1.0 kHz
	±3 dB	3.5 Hz - 2.0 kHz
Repeatability	±2%	
Transverse sensitivity, max	5%	
Power requirements, 2-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	
Operating temperature range	-40° to +105° C	
Vibration limit	250 g peak	
Shock limit	2,500 g peak	
Sealing	hermetic	
Sensing element design	PZT, shear	
Weight	160 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	

Accessories supplied: SF6 mounting stud; calibration data (level 2)

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



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

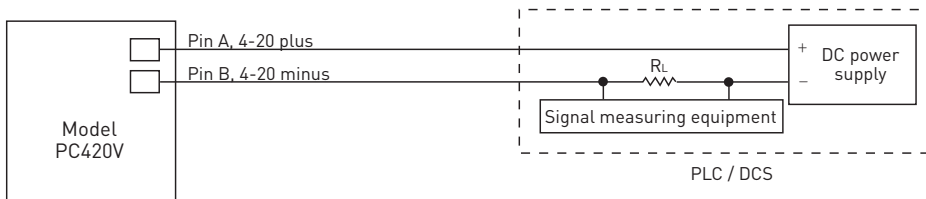
$$R_L = \frac{V_{DC \text{ power}} - 10 \text{ V}}{20 \text{ mA}}$$

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: $(0.0004 \times R_L)$.

Typical circuit



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