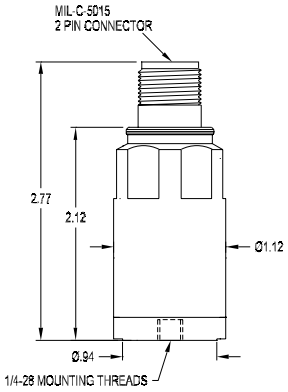
Model PC420V Series - RMS and peak Velocity loop powered sensors (LPS™)

Features
- True RMS or calculated peak output
- Corrosion resistant
- Hermetic seal
- ESD protection
- Overload protection
- Reverse wiring protection

Benefits
- Choice of output: RMS or peak, permits you to choose the sensor that best fits your industrial requirements
- Provides continuous trending of overall machine vibration
- Can help guide maintenance in prioritizing need for service
- Helps notify of impending equipment failure

The 4-20 mA output of the PC420V Series is proportional to velocity vibration. An output of 4 mA indicates a level of 0 ips or no vibration present. A full-scale reading of 20 mA indicates that the maximum range (RMS or peak) of vibration is present.



Output, 4-20 mA

Full scale, 20 mA (±5%)	see table 1 on back
Frequency response:	
±10%	10 Hz - 1.0 kHz
±3 dB	3.5 Hz - 2.0 kHz
Repeatability	±2%
Transverse sensitivity, max.	5%

Electrical

Power requirements (two wire loop power):	
Voltage at PC420 series sensor terminals	10 VDC min, 30 VDC max
Loop resistance at 24 VDC, maximum	700Ω
Turn on time, 4-20 mA loop	30 seconds
Grounding	case isolated, internally shielded

Environmental

Operating temperature range[1]	–40 to 105°C
Vibration limit	250 g peak
Shock limit	2,500 g peak
Sealing	hermetic

Physical

Sensing element design	PZT ceramic / 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

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

Notes: [1] 105°C operating temperature applies to units shipped after July 1, 2009, and with serial numbers greater than 50000.

Accessories supplied: SF6 mounting stud (International customers specify mounting requirements); calibration data (level 2)

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Due to continued research and product development, Wilcoxon Research reserves the right to amend this specification without notice.

Table 1: PC420Vx-yy model number selection

x (4-20 mA output type)	yy (4-20 mA full scale)
R = RMS output, velocity	05 = 0.5 ips
P = Calculated peak output, velocity	10 = 1.0 ips
	20 = 2.0 ips
	30 = 3.0 ips
	50 = 5.0 ips

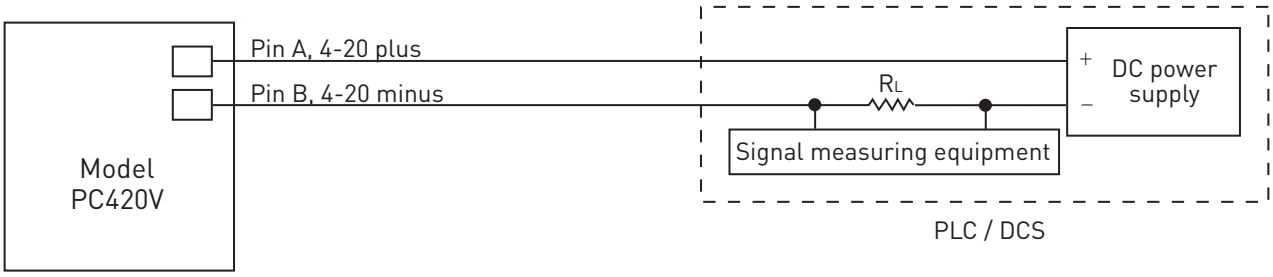
Notes: [1] Maximum loop resistance (R_L) can be calculated by:

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

DC supply voltage	R_L (max resistance)[2]	R_L (minimum wattage capability)[3]
12 VDC	100Ω	1/8 Watt
20 VDC	500Ω	1/4 Watt
24 VDC	700Ω	1/2 Watt
26 VDC	800Ω	1/2 Watt
30 VDC	1.0kΩ	1/2 Watt

[2] Lower resistance is allowed, greater than 10Ω recommended.
[3] Minimum R_L wattage determined by: (0.0004 x R_L).

Typical circuit



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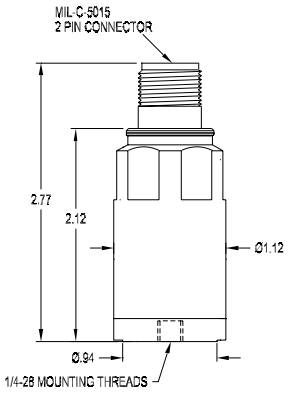
Model PC420VTP Series - true peak Velocity loop powered sensors (LPS™)

Features
- True peak output
- Corrosion resistant
- Hermetic seal
- ESD protection
- Overload protection
- Reverse wiring protection

Benefits
- Provides continuous trending of overall machine vibration
- True peak is useful for detecting high frequency impacts on reciprocating machinery
- Can help guide maintenance in prioritizing need for service
- Helps notify of changing equipment condition

The 4-20 mA output of the PC420VTP Series is proportional to the true peak velocity vibration. An output of 4 mA indicates a level of 0 ips or no vibration present. A full-scale reading of 20 mA indicates that the maximum range of vibration is present.



Output, 4-20 mA

Full scale, 20 mA (±5%)	see table 1 on back
Frequency response:	
±10%	10 Hz - 1.0 kHz
±3 dB	4 Hz - 2 kHz
Repeatability	±2%
Transverse sensitivity, max.	5%

Electrical

Power requirements (two wire loop power):	
Voltage at PC420 seriessensor terminals	10 VDC min, 30 VDC max
Loop resistance[1] at 24 VDC, maximum	700Ω
Turn on time, 4-20 mA loop	30 seconds
Grounding	case isolated, internally shielded

Environmental

Temperature range	–40 to 85°C
Vibration limit	250 g peak
Shock limit	2,500 g peak
Sealing	hermetic

Physical

Sensing element design	PZT ceramic / 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

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

Accessories supplied: SF6 mounting stud (International customers specify mounting requirements); calibration data (level 2)

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Table 1: PC420VTP-yy model number selection

yy (4-20 mA full scale)
05 = 0.5 ips
10 = 1.0 ips
20 = 2.0 ips
30 = 3.0 ips
50 = 5.0 ips

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

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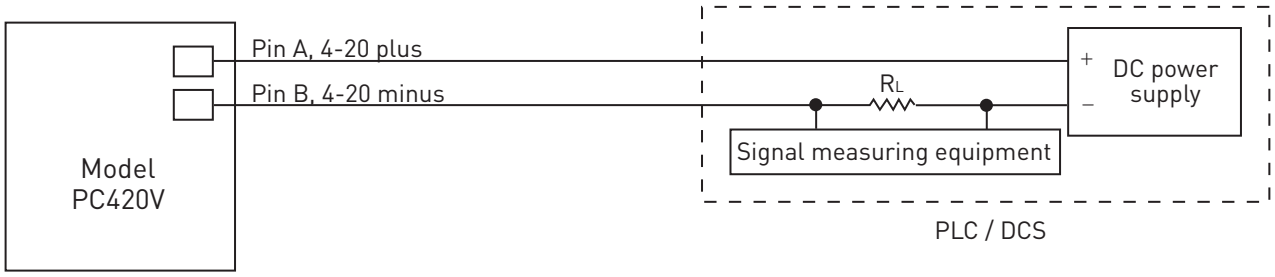

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