# True peak acceleration loop powered sensors

## PC420ATP series



Wilcoxon's PC420ATP series sensors provide 24/7 output of true peak acceleration, allowing for continuous trending of overall machine vibration in process control systems. True peak output is particularly useful in detecting loose parts on reciprocating machinery. The trend data alerts users to changing machine conditions and helps guide maintenance in prioritizing the need for service.

### Table 1: PC420ATP-yy model selection guide

| 4-20 mA output type | yy (4-20 mA full scale) |
|---|---|
| ATP = True peak output, acceleration | 05 = 5 g<br>10 = 10 g<br>20 = 20 g |

## Key features

- True peak output helps detect high-frequency impacts on reciprocating machines
- Intrinsically safe certified and explosion-proof models available
- Easily integrated into existing process control systems
- Manufactured in an approved ISO 9001 facility

## Certifications

CE

# True peak acceleration loop powered sensors

## PC420ATP series

**Wilcoxon**
SENSING TECHNOLOGIES

## 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 | | 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 |

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

### Connections

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



MIL-C-5015 2 PIN CONNECTOR

2.77
2.12
Ø1.12
Ø.94
1/4-28 MOUNTING THREADS

**Typical circuit**



Pin A, 4-20 plus
Pin B, 4-20 minus
Model PC420ATP
$R_L$
Signal measuring equipment
+ DC power supply –
PLC / DCS
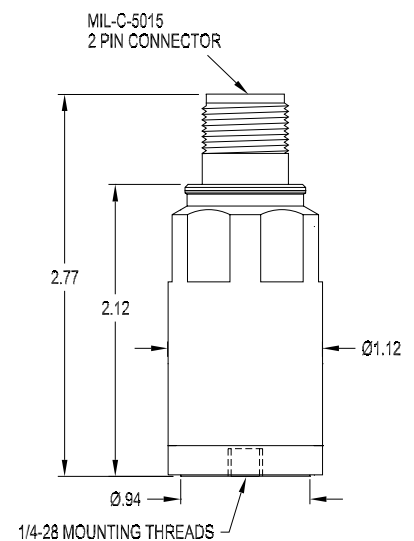
**Notes:** [1] Maximum loop resistance ($R_L$) can be calculated by:

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

| 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: $(0.0004 \times R_L)$.
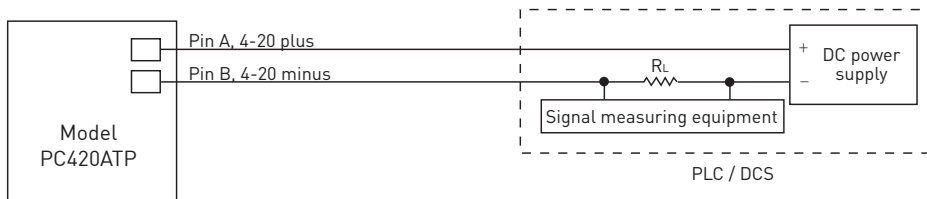
Note: Due to continuous process improvement, specifications are subject to change without notice.
This document is cleared for public release.