

# Dual output 4-20 mA sensors

## PC421 series

**Table 1: PC421xxx-yy-DA dual output model selection guide**

xxx (4-20 mA output type)	yy (4-20 mA full scale)	DA (dynamic accel output)
AR = acceleration, RMS <sup>A</sup> AP = acceleration, equiv. peak <sup>A,B</sup> ATP = acceleration, true peak <sup>C</sup>	05 = 5 g (49 m/sec <sup>2</sup> ) 10 = 10 g (98 m/sec <sup>2</sup> ) 20 = 20 g (196 m/sec <sup>2</sup> )	DA = dynamic acceleration, 100 mV/g (10.2 mV/m/s <sup>2</sup> )
VR = velocity, RMS <sup>A</sup> VP = velocity, equiv. peak <sup>A,B</sup>	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)	

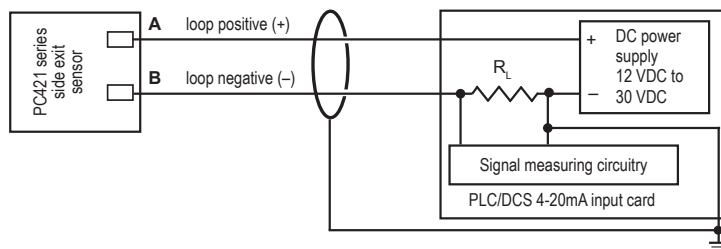
<sup>A</sup> RMS and equivalent peak versions (AR, AP, VR, VP) are available only with dynamic acceleration output option. Only PC421ATP models can be purchased without a dynamic output. The PCC421 series, with a 105°C maximum operating temperature, is available for standard (no dynamic output) RMS or equivalent peak models.

<sup>B</sup> Equivalent peak output is developed based on the true RMS value of vibration. The equivalent peak output is 1.414 times the RMS value.

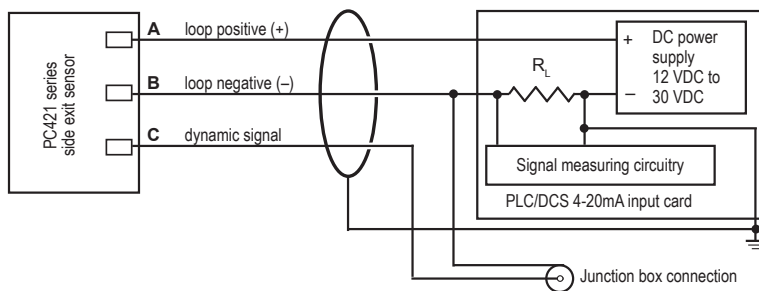
<sup>C</sup> True peak output is based on the actual measured peak value using the time domain data.



### PC421ATP-yy wiring



### PC421xxx-yy-DA wiring



### Key features

- Choice of RMS, equivalent peak or true peak output
- Intrinsically safe certified versions available (PC421xx-yy-IS models)
- 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.

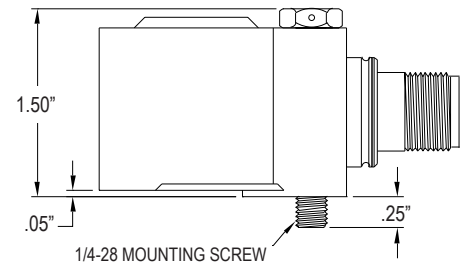
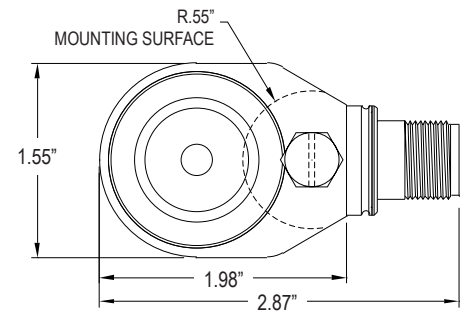
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### SPECIFICATIONS

<b>Output, 4-20 mA:</b>		
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%	
<b>Output, dynamic (-DA models only):</b>		
Sensitivity, ±10%	100 mV/g	
Full scale	20 g, peak	
Frequency response, ±3 dB	2.5 Hz - 10 kHz	
Amplitude nonlinearity, max	1%	
Resonant frequency, mounted, nom.	21 kHz	
Transverse sensitivity, max	5%	
<b>Power requirements, 2-wire loop power:</b>		
Voltage, between pins A and B	12 - 30 VDC	
Loop resistance <sup>1</sup> 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	320 grams	
Case material	316L stainless steel	
Mounting	1/4-28 captive bolt	
	<b>PC421ATP-yy</b>	<b>PC421xxx-yy-DA</b>
Output connector (MIL-C-5015 style)	2 pin	3 pin
Mating connector	R6 type	R6G type
Recommended cabling	J9T2A	J9T3A

Connections		
Function	Connector pin	
	PC421ATP-yy	-DA models
loop positive (+)	A	A
loop negative (-)	B	B
dynamic signal	N/A	C
ground	shell	shell



Accessories supplied: 1/4-28 captive bolt; calibration data (level 2)

DC supply voltage	R <sub>L</sub> (max resistance) <sup>2</sup>	R <sub>L</sub> (minimum wattage capability) <sup>3</sup>
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

Notes: <sup>1</sup> Maximum loop resistance (R<sub>L</sub>) can be calculated by:

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

<sup>2</sup> Lower resistance is allowed, greater than 10 Ω recommended.

<sup>3</sup> Minimum R<sub>L</sub> wattage determined by: (0.0004 x R<sub>L</sub>).

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