Intrinsically safe 4-20 mA loop powered sensors

PC420V-IS series

Table 1: PC420Vx-yy-IS model selection guide

x (4-20 mA output type)	yy (4-20 mA full scale)
R = velocity, RMS P = velocity, equivalent peak	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 peak output
- Certified intrinsically safe for use in hazardous areas
- Easily integrated into existing process control systems
- Manufactured in an approved ISO 9001 facility

Certifications

C SP US
Class I, Div 1
Groups A, B, C, D
T3C
Ta = 85°C max

Ex
II 1 G
Ex ia IIC T4 Ga
-40°C ≤ Ta ≤ +85°C

IEC IECEx

For hazardous area locations, sensor must be installed in accordance with installation diagram 12779. Refer to installation diagram 12779 for correct method of grounding the safety barrier. The apparatus must be connected to certified intrinsically safe equipment with electrical parameters as specified below:
$14\ V < U_o < 30V$, $20\ mA < I_o < 106\ mA$ (linear supply only), $P_o < 0.75\ W$
Furthermore, the following conditions must be satisfied:
$C_o < C_i + C_{cable}$ and $L_o < L_i + L_{cable}$
Maximum cable length: 100 ft (31 m)
C_{cable}: 6 nF for 100 ft.

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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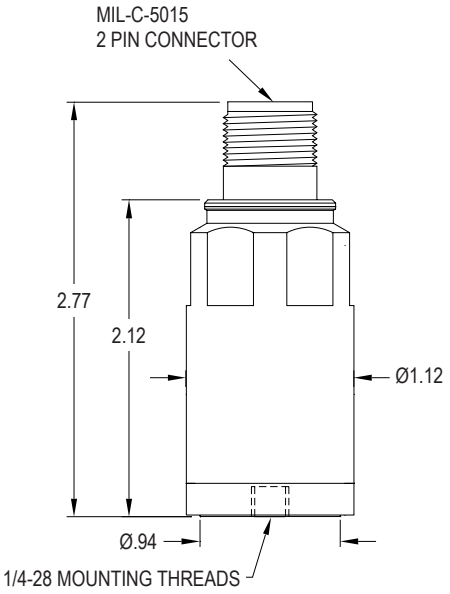
PC420V-IS series

SPECIFICATIONS

Output, 4-20 mA:		
Full scale, 20 mA, ±5%		see Table 1 on page 1
Frequency response:	**±10%** **±3 dB**	10 Hz - 1.0 kHz 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		600 Ω
Turn on time, 4-20 mA loop		30 sec
Grounding		case isolated, internally shielded
Operating 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		316L 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



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]
20 VDC	400 Ω	1/4 watt
24 VDC	600 Ω	1/2 watt
26 VDC	700 Ω	1/2 watt

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

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

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