Intrinsically safe 4-20 mA loop powered sensors

PC421-IS series

Table 1: PC421xx-yy-IS model selection guide

xx (4-20 mA output type)	yy (4-20 mA full scale)
AR = acceleration, RMS AP = acceleration, peak	05 = 5 g (49 m/sec^2) 10 = 10 g (98 m/sec^2) 20 = 20 g (196 m/sec^2)
VR = velocity, RMS VP = 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

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

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

For hazardous area locations, sensor must be installed in accordance with installation diagram 12779.
The mounting of the apparatus into the installation must be carried out in such a way that the metallic body of the acceleration and velocity transmitter and cable shield are reliably connected to the system earth.
The cable must have an operating temperature compatible with the environment in which the equipment is installed.
The mounting of the apparatus into an installation must be carried out in such a way that the bottom of the acceleration and velocity transmitter must be protected from external physical impact.
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 $L_o < L_i + L_{cable}$

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

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98901 Rev.E.1 01/19

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PC421-IS series

SPECIFICATIONS

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, between pins A and B**		12 - 30 VDC
Loop resistance[1] at 24 VDC, max		600 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
Output connector		2 pin, MIL-C-5015 style
Mating connector		R6 type
Recommended cabling		J9T2A

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

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

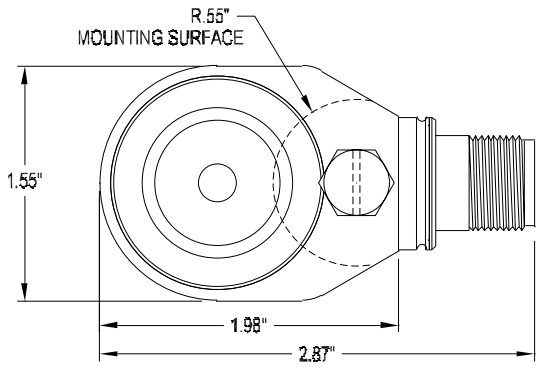
Notes: [1] Maximum loop resistance (R_L) can be calculated by:

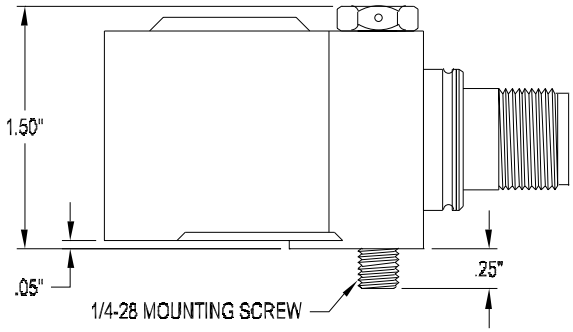
$$R_L = \frac{V_{DC\ power} - 10\ V}{20\ mA}$$

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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