4-20 mA loop powered sensors with temperature output

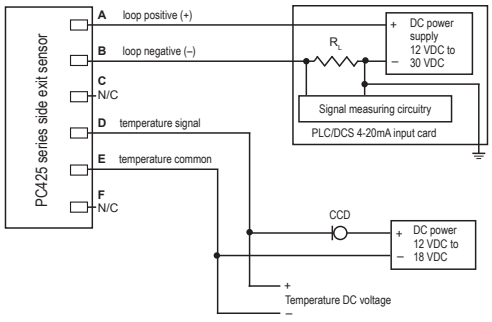
PC425 series

Table 1: PC425xxx-yy-Dz model selection guide

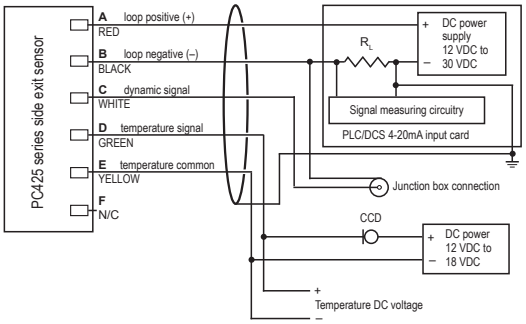
xxx (4-20 mA output type)	yy (4-20 mA full scale)	z (dynamic output)[A]
AR = acceleration, RMS AP = acceleration, equiv. peak[B] ATP = acceleration, true peak[C]	05 = 5 g (49 m/sec²) 10 = 10 g (98 m/sec²) 20 = 20 g (196 m/sec²)	DA = dynamic acceleration, 100 mV/g (10.2 mV/m/s²) DV = dynamic velocity, 100 mV/ips (3.94 mV/mm/s)
VR = velocity, RMS VP = velocity, equiv. peak[B]	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)	

[A] Dynamic output is an option on all models. If dynamic output option is not desired, do not add -DA or -DV to the model number.
[B] Equivalent peak output is developed based on the true RMS value of vibration. For a pure sine wave, the equivalent peak output is 1.414 times the RMS value.
[C] True peak output is based on the actual measured peak value using the time waveform and is not based on the RMS calculation.

PC425xxx-yy wiring



PC425xxx-yy-Dz wiring



Connections			
Function	Cable		Connector pin
	J9T4[3] / J9T4A[3]	J95	
loop positive (+)	white	red	A
loop negative (–)	black	black	B
dynamic signal	n/c	white	C
temp signal	green	green	D
temp common	red	yellow	E
not used	n/c	n/c	F
ground			shell

Certifications

CE

Key features

- Choice of peak equivalent, true RMS or true peak output
- Temperature signal output
- Optional dynamic signal output
- Easily integrated into existing process control systems
- Manufactured in an approved ISO 9001 facility

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

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98895 Rev.C7 11/21

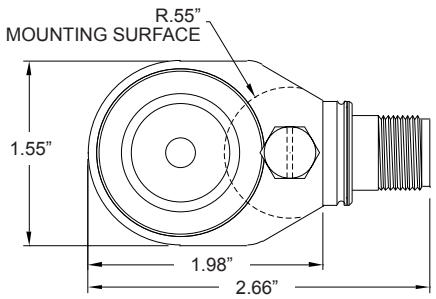
4-20 mA loop powered sensors with temperature output

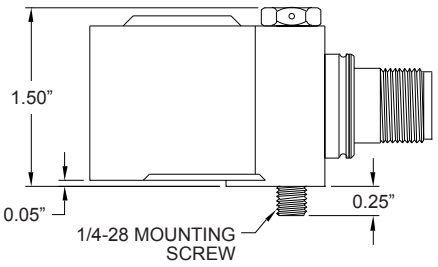
PC425 series

SPECIFICATIONS

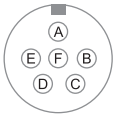
Output, 4-20 mA:			
Full scale, 20 mA, ±5%		see Table 1 on page 1	
Frequency response:	**±10%** **±3 dB**	10 Hz - 1.0 kHz 4.0 Hz - 2.0 kHz	
Repeatability		±2%	
Transverse sensitivity, max		5%	
Output, temperature:			
Temperature output sensitivity, ±5°K		10 mV/°K	
Temperature measurement range		223° to 358°K (–50° to +85°C)	
Output, dynamic (-Dz models only):		**PC425-DA**	**PC425-DV**
Sensitivity, ±10%		100 mV/g	100 mV/ips
Full scale		20 g, peak	1.5 ips at 1 kHz
Frequency response, ±3 dB		2.5 Hz - 10 kHz	2.5 Hz - 2.5 kHz
Amplitude nonlinearity, max		1%	
Resonant frequency, mounted, nom.		21 kHz	
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		700 Ω	
Turn on time, 4-20 mA loop		30 seconds	
Dynamic output, bias output voltage		+3.3 VDC, re: connector pin B	
Dynamic output noise, equiv. g: **2.5 Hz - 10 kHz**		**PC425-DA** 2 mg	**PC425-DV** 0.002 ips
Grounding		case isolated, internally shielded	
Power requirements, temp. sensor[2]: **Voltage source** **Current**		 12 - 18 VDC 0.4 - 5 mA	
Temperature range		–40° to +85°C	
Vibration limit		250 g peak	
Shock limit		2,500 g peak	
Sealing		hermetic	
Sensing element design		PZT ceramic / shear	
Weight		320 grams (excluding cable)	
Case material		316L stainless steel	
Mounting		1/4-28 captive bolt	
Output connector		6 pin, MIL-C-5015 style	
Mating connector		R19SLI	
Recommended cabling		J9T44 / J9T4A / J95	

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





6 pin connector, top view



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)[3]	R_L (minimum wattage capability)[4]
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] The temperature sensor must have a current flow to operate. This current can be provided through constant-current diodes.

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

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

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