Piezoresistive Pressure Transmitter

Model P46 For General Industrial Applications





Stainless Steel Piezoresistive Pressure Sensor

IP 65 IP 66 0.5%FS oil out water gas

Product Overview

P46 is made from high-quality silicon piezoresistive sensor. The piezoresistive sensor is packaged in stainless steel housing. The P46 is precision engineered to fit most industrial pressure measurement. The compact and rugged design makes these pressure transmitter suitable for applications including process control systems, hydraulic systems and valves, refrigeration and HVAC controls, level measure ment and test equipment.

A wide range of process connection and electrical connection options are available to meet almost requirement.

Applications

- ¡ Process control systems
- ¡Refrigeration and HVAC controls
- ¡Hydraulic systems and valve
- ¡Machine building
- ¡Pumps and compressors

Features

- ¡Measuring ranges from 100mbar to 600bar
- ¡ Absolute, gauge and sealed gauge
- ¡ Accuracy: ±0.5%FSO , ±0.25%FSO
- i Calibrated and temperature compensated
- i Stainless steel construction
- ¡ Piezoresistive pressure sensor design
- ¡ Variety of Pressure & Electrical connections
- i Output 4...20mA,0...10V,0...5V,1.5mV/V

Standard Pressure Ranges

Nominal pressure	gauge	sealed gauge	absolute
-10bar	•		
-0.350bar	•		
-0.20bar	•		
00.1bar	•		
00.2bar	•		
00.35bar	•		•
00.7bar	•		•
01bar	•		•
01.6bar	•		
02.5bar	•		•
04bar	•		•
06bar	•		•
010bar	•	•	•
016bar	•	•	•
025bar	•	•	
060bar		•	
0100bar		•	
0250bar		•	
0400bar		•	
0600bar		•	

Other pressure ranges available. Please consult the factory.

Performance Specifications

General	Parameter	Value			Units	Notes	
Pressure Range -1-0,,0-0.1,,600 bar 1bar=14.5psi Overpressure 1.5xFS bar Ibar=14.5psi Environmental String remperature Range -20 to +80 °C -4°F to 176°F Compensated Temperature Range 0 to +50 °C 32°F to 122°F Storage Temperature Range -40 to +120 °C -40°F to 248°F Vibration 10 g 20 to 2000Hz Shock 100 g 20 to 2000Hz Shock 100 g 10ms cycles 10ms Cycles Electrical @25°C(77°F) 0utput Signal 420mA 05Vdc 15Vdc 010Vdc 0.54.5Vdc(ratiometri Power Supply(Vs) 1228Vdc 1228Vdc 1528Vdc 54.5Vdc(ratiometri Power Supply(Vs) 1228Vdc 1228Vdc 1528Vdc 54.5Vdc(ratiometri Insulation Resistance <(Vs-12)/0.02A (For current output), >10kΩ (For voltage output) 1 1 Insulation Resistance 304 stainless steel 100 1 1 1	General						
Overpressure 1.5xFS bar Environmental -20 to +80 ····································	Pressure Range	-1-0,,0-0.1	-1-0,,0-0.1,,600			1bar=14	.5psi
Environmental -20 to +80 °C -4° F to 176° F Compensated Temperature Range 0 to +50 °C 32° F to 122° F Storage Temperature Range -40 to +120 °C 40° F to 248° F Vibration 10 °C 40° F to 248° F Vibration 100 °C 40° F to 248° F Shock 100 °C °C 40° F to 248° F Cycles 10x10° °C 100 °C 40° F to 248° F Shock 1001 °C °C 40° F to 248° F °C Gycles 10x10° °C science 40° F to 248° F °C Gycles 10x10° °C science 40° F to 248° F °C Gycles 10x10° °C science 40° F to 248° F °C Gycles 10x10° °C science	Overpressure	1.5xFS			bar		
Operating Temperature Range -20 to +80 °C -4°F to 176°F Compensated Temperature Range 0 to +50 °C 32°F to 122°F Storage Temperature Range -40 to +120 °C -40°F to 248°F Vibration 10 g 20 to 2000Hz Shock 100 g 10ms Cycles 10x10° cycles 10ms Electrical @25°C(77°F) 0utput Signal 420mA 05Vdc 010Vdc 0.54.5Vdc(ratiometri Power Supply(Vs) 1228Vdc 1228Vdc 1528Vdc 5Vdc Load Resistance c(Vs-12)/0.02A (For current output), >10kΩ (For voltage output) Insulation Resistance 100MQ@50Vc Physical Specifications Media Compatibility All media steles steel Stelestance Stelestance Stelestance Oil Filling 304 stainless steel Silicone oil Stelestance Stelestance Stelestance Seal Ring Viton or NBR Silicone oil Stelestance Stelestance Stelestance Stelestance Oil Filling Silicone oil	Environmental						
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Storage Temperature Range -40 to +120 °C -40 °F to 248°F Vibration 10 g 20 to 2000Hz Shock 100 g 10ms Cycles 10x10° g 10ms Electrical @25°C(77°F) 05Vdc 15Vdc 010Vdc 0.54.5Vdc(ratiometri Output Signal 420mA 05Vdc 15Vdc 010Vdc 0.54.5Vdc(ratiometri Power Supply(Vs) 1228Vdc 1228Vdc 1528Vdc 5Vdc Load Resistance (Vs-12)/0.02A (For current output), >10kD (For value output) 5Vdc Insulation Resistance 100MQ@50Vc F 5Vdc Physical Specifications 100MQ@50Vc F 5Vdc Media Compatibility All media compatible with 316L stainless steel 5 5 Bael Ring Viton or NBR 5 5 5 5 Oil Filling Silicone oil F 5 5 5 Protection IP65(Standard), IP66(ontrationed) Intext Notes 5 1 5 Performance Accuracy 0.25 0.5	Compensated Temperature Range	0 to +50			°C	32°F to 122°F	
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Cycles 10x10 ^e cycles Electrical @25°C(77°F) 05Vdc 15Vdc 010Vdc 0.54.5Vdc(ratiometri Power Supply(Vs) 1228Vdc 1228Vdc 1228Vdc 5Vdc 5Vdc Load Resistance <(Vs-12)/0.02A (For current output), >10kΩ (For voltage output) Insulation Resistance 100MΩ@50Vdc Physical Specifications 100MΩ@50Vdc Image: Steel Image: Steel Media Compatibility All media compatible with 316L stainless steel Image: Steel	Shock	100			g	10ms	
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Net WeightApprox.175gParameterMinimumTypicalMaximumUnitsNotesPerformanceAccuracy0.250.5%FSO1,2Temp Coeff - Zero±0.75±1.5%FSO3Temp Coeff - Span±0.75±1.5%FSO3Long-Term Stability±0.2±0.3%FSO/year1	Protection	IP65(Standard), IP66(only for cable outlet)					
Parameter Minimum Typical Maximum Units Notes Performance 0.25 0.5 %FSO 1,2 Accuracy ±0.75 ±1.5 %FSO 3 Temp Coeff - Span ±0.75 ±1.5 %FSO 3 Long-Term Stability ±0.2 ±0.3 %FSO/year 1	Net Weight	Approx.175g					
Performance Accuracy 0.25 0.5 %FSO 1,2 Temp Coeff - Zero ±0.75 ±1.5 %FSO 3 Temp Coeff - Span ±0.75 ±1.5 %FSO 3 Long-Term Stability ±0.2 ±0.3 %FSO/year 1	Parameter	Minimum	Typical	Maxim	num Unit	S	Notes
Accuracy 0.25 0.5 %FSO 1,2 Temp Coeff - Zero ±0.75 ±1.5 %FSO 3 Temp Coeff - Span ±0.75 ±1.5 %FSO 3 Long-Term Stability ±0.2 ±0.3 %FSO/year 1	Performance						
Temp Coeff - Zero ±0.75 ±1.5 %FSO 3 Temp Coeff - Span ±0.75 ±1.5 %FSO 3 Long-Term Stability ±0.2 ±0.3 %FSO/year 1	Accuracy		0.25	0.5	%FS	80	1,2
Temp Coeff - Span ±0.75 ±1.5 %FSO 3 Long-Term Stability ±0.2 ±0.3 %FSO/year 1	Temp Coeff - Zero		±0.75	±1.5	%FS	80	3
Long-Term Stability±0.2±0.3%FSO/year1	Temp Coeff - Span		±0.75	±1.5	%FS	80	3
	Long-Term Stability		±0.2	±0.3	%FS	SO/year	1

Notes

1. All values measured at 25°C(77°F)

2. Including non-linearity, hysteresis and repeatability.

3. 0°C to 50°C(32°F to 122°F) with reference to 25°C(77°F).

The listed specifications and dimensions are subject to change without prior notice.

Connection Diagrams

Connector DIN43650		Cable outlet					
	2-wire(cu	rrent)	3-wire(voltage)		2-wire(current)	3-wire(voltage)	5-wire(voltage)
	Supply+	1	1		Supply+red	red	red
	Signal+	2	3		Supply	-	black
	Gnd	-	2		Signal+ black	yellow	green
	4-wire(1.5mV/V) Supply:5~10V			Signal	-	white	
	Signal+	1			Gnd -	black	bare(Shield wire)
	Signal-	2					
	Supply+ 3		Connector M12x	:1(4-pin)			
	Supply- (Gnd			2-wire(current)	3-wire(volt	age)
				31	Supply+ 1	1	
			4002	Signal+ 2	3		

Gnd

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Piezoresistive Pressure Transmitter

Dimensions (in mm)

Connector DIN43650





M12x1 connector, 4-pin













Ordering Information

Measuring Range: – N1 – -10 bar	P46]-[]-[]	Option: 0 - No 1 - LED Digital Indicator(DP- 2 - LCD Digital Indicator(DP-	4) 3)
N2 – -0.350 bar	10 – 016 bar		3 - LED Digital Indicator(DP-5	5)
N3 – -0.20 bar	11 – 025 bar		Process connection:	
01 – 00.1 bar	12 – 040 bar		M20 – M20x1.5 male thread	P1 - PT1/2 male thread
02 – 00.35 bar	13 – 050 bar		$G_2 - G_{1/2}$ male thread	$P_2 = P_1 1/4$ male thread
03 - 00.7 bar	14 – 060 bar		G4 = G1/4 male thread $N2 = 1/2NPT$ male thread	$R_1 = R_1/4$ male thread
04 - 01 bar 05 - 0.16 bar	16 - 0.250 bar		$N_{4} - 1/4NPT$ male thread	Nx – Customized
06 – 02.5 bar	17 - 0400 bar		Electrical Connection:	
07 – 04 bar	18 – 0600 bar		D – Connector DIN43650	
08 – 06 bar	xx – Customized range		H - Cable outlet with PVC-ca	ble,length=2m
			M – M12x1 connector, 4-pin	-
			Accuracy:	
A – Absolute			E1 - 0.5%F.S	
S - Sealed Gauge			E2 - 0.25%F.S	
e eelled eddye			Output signal:	
			42 - 4~20mA-2wire	
			$U_{0} = U_{0} V_{0} C_{0} V_{0} C_{0}$	
			15 - 1~5Vuc-3WIFe 25 - 1~5Vdc-5wire	
			10 - 0~10Vdc-3wire	

Correct specification examples: P46-04-G-42-E1-D-G2-0

Option:

Option1 LED Digital Indicator

Option2 LCD Digital Indicator





Option3 LED Digital Indicator



45 - 0.5~4.5Vdc-3wire (ratiometric)

55 - 1.5mV/V- 4wire (Supply 5~10V)