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SPT81 All-welded Sensor+Thread

Features

- Pressure range:-1...0 ~ 0.1...1000bar
- Gauge, absolute, sealed gauge
- Constant current power supply
- Isolated construction, enable to measure various media
- $\Phi 19\text{mm}$ standard OEM pressure sensor
- Full stainless steel 316L
- Wider temperature compensation $-10^{\circ}\text{C} \sim +80^{\circ}\text{C}$
- Long-term stability 0.1%FS/year



Application

- Industrial process control
- Level measurement
- Gas, liquid pressure measurement
- Pressure checking meter
- Pressure calibrator
- Liquid pressure system and switch
- Cooling equipment and air conditioning system
- Aviation and navigation inspection

Introduction

SPT81 all-welded sensor + thread is composed of a universal SPT81 pressure-sensitive element welded into a pressure interface with standard or specific threads. It has no sealing ring and has a flexible structure. It has a wider range of applications than general-purpose products and is suitable for the assembly and production of various pressure measurement products.

Electric Specification

- Power supply: $\leq 2.0\text{mA DC}$
- Electric connection: silicon rubber flexible wires
- Common mode voltage output: 50% input (typ.)
- Input impedance: $3\text{k}\Omega \sim 8\text{k}\Omega$
- Output impedance: $3.5\text{k}\Omega \sim 6\text{k}\Omega$
- Response (10%~90%): $< 1\text{ms}$
- Insulation resistor: $100\text{M}\Omega @ 100\text{VDC}$

- Overpressure: 2 times FS or 1100bar(min.)

Construction

- Diaphragm: stainless steel 316L
- Housing: stainless steel 316L
- O-ring: NBR

Environment Condition

- Shock: no change at 10gRMS, (20~2000) Hz
- Impact: 100g, 11ms
- Media compatibility: the gas or liquid which is compatible with stainless steel and NBR

Basic Condition

- Media temperature: (25±1) °C
- Environment temperature: (25±1) °C
- Shock: 0.1g (1m/s²) Max
- Humidity: (50%±10%) RH
- Local air pressure: (0.86~1.06) bar
- Power supply: (1.5±0.0015) mADC

Basic Specification

Specification*	Min.	Typ.	Max.	Units
Linearity		±0.15	±0.25	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
Hysteresis		±0.05	±0.075	%FS
Zero output		±1.0	±2.0	mVDC
FS output	70			mVDC
Zero thermal error		±0.75	±1.0	%FS, @35°C
Span thermal error		±0.75	±1.0	%FS, @35°C
Compensated temp. range	0 ~ 50			°C
Working temp. range	-40 ~ 125			°C
Storage temp. range	-55 ~ 125			°C
Stability error		±0.2	±0.3	%FS/year

** Testing at basic condition, G: Gauge; A: Absolute; S: Sealed gauge

** Output/Span=full scale output - zero point

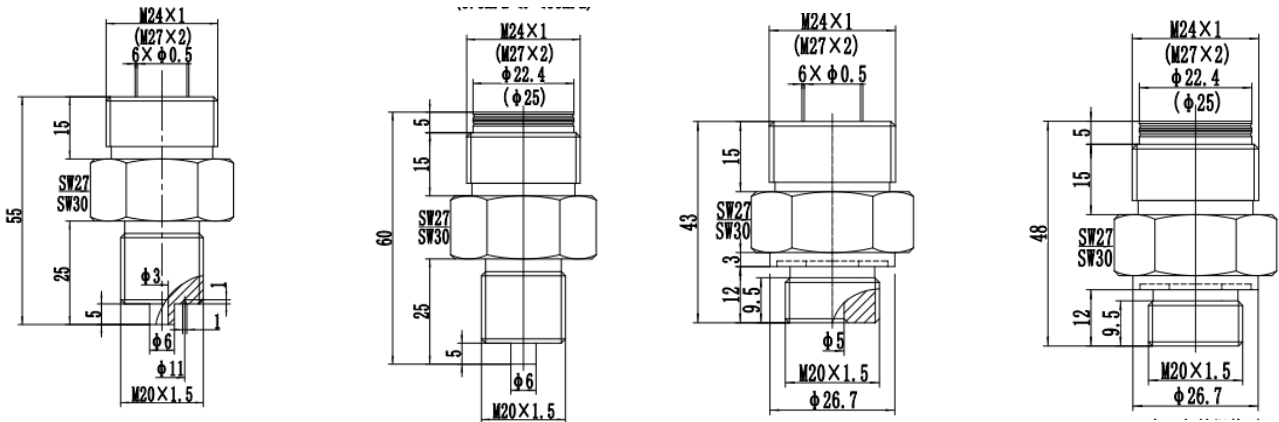
Range code 0BG, FS output ≥45mV

Range code 0AG, FS output ≥60mV

Range code 02A.03A.02GY.03GY, FS output ≥45mV

Range code 07A. 08A. 07GY. 08GY, FS output ≥60mV

Outline Construction (Unit: mm)



Electric Connection

Electric connection	Wire color
+OUT	Red
+IN	Black
-IN	White
-OUT	Blue

Order Guide

SPT81		All-welded Sensor+Thread					
		Code	Range	Ref.	Code	Range	Ref.
		0B	0kPa~20kPa	G	12	0MPa~2MPa	G.A
		0A	0kPa~35kPa	G.A	13	0MPa~3.5MPa	G.A.S
		02	0kPa~70kPa	G.A	14	0MPa~7MPa	A.S
		03	0kPa~100kPa	G.A	15	0MPa~10MPa	A.S
		07	0kPa~200kPa	G.A	17	0MPa~20MPa	A.S
		08	0kPa~350kPa	G.A	18	0MPa~35MPa	A.S
		09	0kPa~700kPa	G.A	19	0MPa~70MPa	A.S
		10	0MPa~1MPa	G.A			
			Code	Pressure type			
			G	Gauge			

SPT81 Piezoresistive Pressure Sensor Datasheet

			A	Absolute					
			S	Sealed gauge					
				Code*	connection				
				O/null	O-ring				
				H1	M24×1 male（assembled, P≤20bar）			C1～C6 are available for pressure connections for both assembled and welded type.	
				H2	M27×2 male（assembled, P≤700bar）				
				H3	M24×1 male（welded, P≤20bar）				
				H4	M27×2male（welded, P≤700bar）				
				C1	M20×1.5 maleface type seal			Pressure connection options for assembled or welded type	
				C2	G1/4 male				
				C3	G1/2 male				
				C4	G1/4 male				
				C5	1/4NPTmale				
				C6	1/2NPT male				
					Code	Compensation			
					L	Laser trimming			
					M	Outer compensated resistor (providing resistor value)			
					Code	Electrical connection			
						2	100mm silicon rubber flexible wires		
					Code	Special measurement			
						Y	Gauge sensor to measure vacuum (-1bar ~ 0bar)		
SPT81	08	G	O		L	2	Y	The whole spec.	

*For assembled and welded type, please choose the top connection and pressure connection at the same time, eg. H1C2. For other customized options not shown in the order guide, please contact us.

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Order Note:

1. The default unit of the company' s products is kPa, 1kPa=0.01bar.
2. It can be used in over-range or down-range, generally within ±30%.
3. The materials and processes used to manufacture negative pressure products are quite different from those of positive pressure products, and general gauge pressure products cannot be used to replace negative pressure products.
4. Confirm the maximum overload of the system, the maximum overload of the system is less than the maximum overload of the product, otherwise it will affect the performance and service life of the product, and even cause the product to be damaged.
5. For the temperature compensation of conventional products under the condition of constant current source, constant current power supply should be selected to ensure temperature performance.
6. Temperature resistant range of standard FKM O-ring of sensor is -20°C~250°C. When working temperature is lower than -20°C , or sensor is applied in critical environment, please contact us.

