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SPT81Au Gold Plated Pressure Sensor

Features

- Pressure range:-1...0 ~ 0.1...1000bar
- Gauge, absolute, sealed gauge
- Isolated construction, enable to measure various media
- Φ19mm standard OEM pressure sensor
- Corrugated diaphragm with gold plated

Application

- Hydrogen pressure measurement instrument
- Hydrogen production and purification equipment
- Hydrogen storage and transportation equipment



Introduction

SPT81Au gold plated pressure sensor is a measuring element specially developed for hydrogen measurement applications. The sensor is flat membrane structure and adopts gold plating techniques on the membrane to effectively prevent "hydrogen embrittlement" and "hydrogen penetration". It improves the working life of the sensor as well as ensure the site safety. SPT81Au pressure sensor selects the high-precision and high stability diffusion silicon piezoresistive pressure sensitive chip produced by famous international manufacturer. The pressure sensitive component is automatically tested by computer and fabricated with zero point correction and temperature compensation. With high accuracy and good stability, it can be widely used in various hydrogen pressure measurement applications.

Electric Specification

- Power supply: ≤2.0mADC
- > Electric connection: Φ0.5mm gold-plated Kovar pin or 100mm flexible silicone rubber wires
- Common mode voltage output: 50% input (typ.)
- Input impedance: 3kΩ~8kΩ
 Output impedance: 3kΩ~6kΩ
 Response (10%~90%): <1ms

Insulation resistor: 100MΩ@100VDC

Overload: 2 times FS

Construction

> Diaphragm: stainless steel 316L with gold plated

Housing: stainless steel 316L

> Vented tube: Stainless steel 316L

> Pin: Gold-plated Kovar

➤ Net weight: ~16g

Environment Condition

➤ Shock: No change at 10gRMS,(20~2000)Hz

Impact: 100g, 11ms

Media compatibility: High purity hydrogen or mixed gas with high hydrogen content

Basic Condition

Media temperature: (35±1) ℃

➤ Environment temperature: (35±1) °C

Shock: 0.1g (1m/s²) Max
 Humidity: (50±10)%RH

Local air pressure: (0.86 ~ 1.06)barPower supply: (1.5±0.0015)mADC

Basic Specification

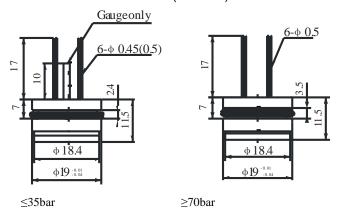
Specification*	Min.	Тур.	Max.	Units	
Linearity**		±0.15	±0.25	%FS,BFSL	
Repeatability		±0.05	±0.075	%FS	
Hysteresis		±1.0	±0.075	%FS	
Zero output		±1.0	±2.0	mVDC	
FS output	60			mVDC	
Zero thermal error***		±0.75	±1.0	%FS,@35℃	
Span thermal error		±0.75	±1.0	%FS,@35℃	
Compensated temp. range		0~70	$^{\circ}$		
Working temp. range	-40 ~ 125 °C				
Storage temp. range		$^{\circ}$			
Stability error	±0.2 ±0			%FS/year	

^{*}testing at basic condition;

^{**} For range code 0AG, Linearity ≤ ±0.3%FS;

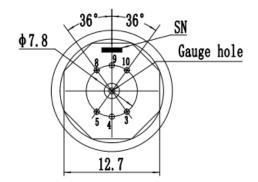
^{***} For range code 0A, Zero thermal error ≤ 1.5%FS.

Outline Construction (Unit: mm)



The suggested installation dimension is $\Phi \, 19^{+0.05}_{+0.02} \, \text{mm}.$

Electric Connection



DIVI	For range 0	2G/03G/17	Other range codes		
PIN	PIN Definition Wire color		Definition	Wire color	
4	-OUT	Blue	+OUT	Red	
5	-IN	Yellow	-IN	Yellow	
8	+IN	Black	+IN	Black	
9	+OUT	Red	+OUT	Blue	

Order Guide

SPT81Au	Gold Plated Pressure Sensor								
	Range code	Pressure range 0bar~0.35bar 0bar~0.70bar 0bar~1bar		Ref.	Range code	Pressure range	Ref.		
	0A			G.A	G.A 10 0ba		G.A		
	02			.70bar G.A 12 0bar~			G.A		
	03			0bar~1bar G.A 13			13	0bar~35bar	G.S.A
	07	0bai	~2bar	G.A	14	0bar~70bar	S.A		
	08	0bar~3.5bar 0bar~7bar		0bar~3.5bar G.A 15		0bar~100bar	S.A		
	09			G.A	17	0bar~200bar	S.A		
		Code	Pressure	e type					
		G	Gauge						
		Α	Absolute						
		S	Sealed gauge						
			Code	Compensation					
			L Laser trimming						
			М	Outer compensated resistor (providing resistor value) Code Electrical connection					

SPT81Au Gold Plated Pressure Sensor Datasheet

				1	k	Kovar pin(d	default)
				2	1	100mm flexible silicone rubber wires	
					C	Code Special measurement	
					Υ	Y	Gauge sensor to measure Vacuum (0bar ~
							1bar)
SPT81Au	07	G	L	1		Υ	The whole spec

Order Note:

- 1.Please pay attention to protect the diaphragm and the compensated board to prevent any damage or bad performance;
- 2. It can be used for pressure higher or lower than the range code, but generally needs to be controlled within ±30%FS;
- 3. Please check the maximum overload of the system before using the product. The maximum overload of the system should be smaller than the maximum overload of the product. Otherwise, the performance and service life of the product will be affected, and even the product will be damaged.