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SPT90 Differential Pressure Sensor

Features

- Pressure range: 0bar ~ 0.35bar…35bar
- Constant current or constant voltage power supply for option
- Isolated construction, Possible to various fluid media
- OEM differential pressure sensor
- Stainless steel 316L
- High static pressure 200bar
- 2 times overpressure

Application

- Industrial process control
- Differential pressure measurement
- Gas, liquid pressure measurement
- Pressure checking meter
- Pressure calibrator
- Ventura and Eddy-current flow meter

Introduction

SPT90 differential pressure sensor is OEM differential pressure sensor with stainless steel isolated diaphragm. It has integrated construction, high static pressure, high stability and good reliability. The high and low pressure sides are protected by isolated diaphragm. It can be used for measuring corrosive and conductive fluid media. The measured differential pressure is transmitted onto the die through the diaphragm and filling silicon oil so that the sensor could measure differential pressure precisely. The sensor is tested automatically, and compensated zero and temperature performance with provided resistors. The installation dimension is consistent with general products which makes the sensor has a good interchangeability. It is widely used for industrial process control and differential pressure measure fields, etc.

Electric Specification

- Power supply: ≤2.0mADC
- Electric connection: 100mm silicon rubber flexible wires
- Common mode voltage output: 50% input (typ.)
- Input impedance: 3kΩ～8kΩ
- Output impedance: 3.5kΩ～6kΩ
- Response (10%～90%): <1ms
- Insulation resistor: 100MΩ@100VDC
- Max. static pressure: 200bar
- Zero drift or static pressure: ≤0.05mV/bar

Construction

- Diaphragm: stainless steel 316L
- Housing: stainless steel 316L
- Pin: Silicon rubber flexible wires
- O-ring: FKM
- Net weight: ~36g

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 FKM

Basic Condition

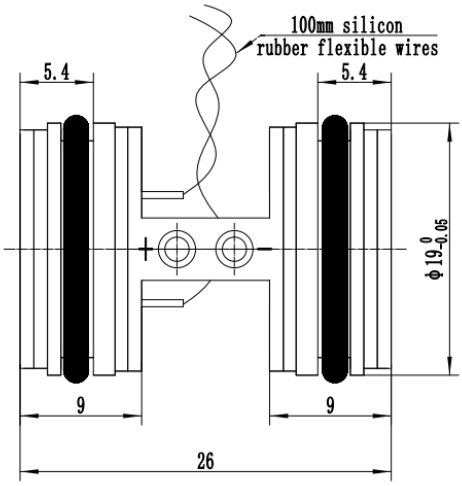
- Media temperature: （25±1）℃
- Environment temperature: （25±1）℃
- Shock: 0.1g (1m/s^2) Max
- Humidity: （50%±10%）RH
- Local air pressure: （0.86～1.06）bar
- Power supply: （1.5±0.0015）mADC

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			±3.0	mVDC
Output/Span**	60			mVDC
Zero thermal error		±0.75	±1.0	%FS,@35℃
Span thermal error		±0.75	±1.0	%FS,@35℃
Compensated temp. range	0 ~ 50			℃
Working temp. range	-40 ~ 125			℃
Storage temp. range	-40 ~ 125			℃
Stability error		±0.3	±0.5	%FS/year

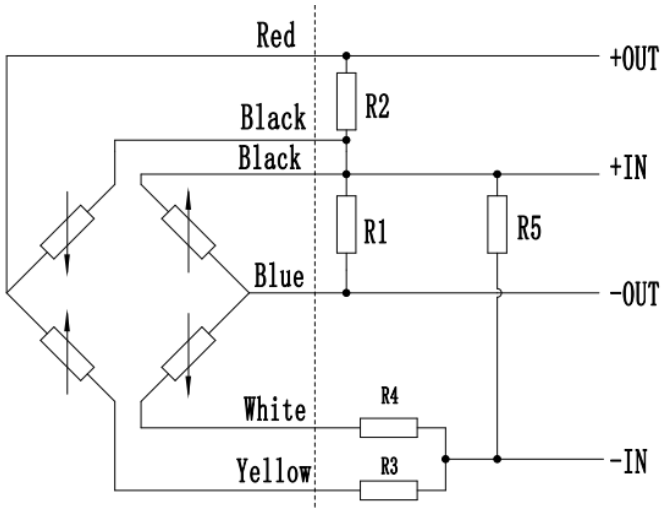
*testing at basic condition
**Output/Span=full scale output - zero point

Outline Construction (Unit: mm)



The suggested installation dimension is Φ19 $^{+0.05}_{+0.02}$ mm

Electric Connection



Compensation method	Definition	Wire Color
L Type	+OUT	Red
	+IN	Black
	-OUT	Blue
	-IN	Yellow
M Type	+IN	Black
	+IN	Black
	-IN	Yellow
	-IN	Yellow
	+OUT	Red
	-OUT	Blue

Notes

1. Compensation method M-type, range code 0A-10 for 6-wire system, 12-13 for 5-wire system.
2. The actual electrical connection method, please check the parameter label enclosed with products.
3. SPT90 type sensor has no laser trimming board, it compensates zero drift and temperature drift by outer compensated resistors, please seethe above chart for the connection. Please connect zero trimming resistor R3(R4), the other R4(R3) is short circuit as negative power supply; R1 or R2 is zero temperature drift compensated resistor,only one of them is used, the other is open circuit,please select the correct resistor value according to the specification label enclosed with sensor; R5 is sensitivity temperature compensated resistor.We suggest connecting the outer resistor and differential pressure sensor as close as possible during usage.

Order Guide

SPT90	Differential Pressure Sensor			
	Range Code	Pressure range(bar)	Range code	Pressure range(bar)
	0A	0～0.35	9	0~7
	02	0～0.7	10	0~10
	03	0～1	12	0~20
	07	0～2	13	0~35
	08	0～3.5		

Code	Compensation
L	With compenstated circuit board
M	Other compenstated resistor(providing resistor value)

Code	Electric connection
2	100mm silicon rubber flexible rubber wire

SPT90	02	L	2	the whole spec.

Order Note:

1. The default unit of the company's products is kPa,1kPa=0.01bar.
2. Please notice that one side of the leading wire is High Pressure Side, the other is Low Pressure Side. Or identify High Pressure Side by mark "+", and identify Low Pressure Side by mark "- " carefully.
3. Please pay attention to protect the diaphragm, prevent it from damaging.
4. Please do not pull or drag the 6 leading wires.
5. Temperature resistant range of standard FKM O-ring of sensor is -20℃ ~ 250℃ . When working temperature is lower than -20℃ , or sensor is applied in critical environment, please contact us.