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## SERIES: PS04 | DESCRIPTION: PRESSURE SENSOR

#### **FEATURES**

- temperature compensated
- multiple pressure range options
- gauge pressure
- stainless steel housing
- o-ring seal





## **SPECIFICATIONS**

parameter	conditions/description	min	typ	max	units
pressure range	see Pressure Specifications for more details	0		2.5	MPa
pressure reference	gauge pressure				
constant current models constant voltage models			1.5 10	2.5 15	mA V
input impedance constant current models constant voltage models		2 3		5 18	kΩ kΩ
insulation resistance	at 250 Vdc	200			МΩ
response time up to 90%FS				1	ms
vibration	20 G (20~5,000 Hz)				
shock	100 G for 10 ms				
compensated temperature	constant current models ≤35 kPa models all other models	0 -10		60 70	°C °C
	constant voltage models	-20		85	°C
operating temperature		-40		125	°C
storage temperature		-40		125	°C
life		1,000,000		cycles	
RoHS	yes				

## **MECHANICAL**

parameter	conditions/description	min	typ	max	units
measured medium	all 316L compatible liquids and gases	all 316L compatible liquids and gases			
housing/diaphragm	stainless steel 316L	stainless steel 316L			
dimensions	Ø19 x 14		mm		
weight			80		g

## **BASIC PARAMETERS**

parameter	conditions/description	min	typ	max	units
nonlinearity¹		-0.3	±0.2	0.3	%FS
hysteresis		-0.05	±0.03	0.05	%FS
repeatability		-0.05	±0.03	0.05	%FS
zero output		-2	±0.2	2	mV
full scale span output	constant current; ≤35 kPa models constant current; all other models constant voltage; ≤35 kPa models constant voltage; all other models	40 60 60 80	90 90 90 100	150 150 150 120	mV mV mV
zero temperature coefficient²	≤10 kPa models all other models	-2 -1.5	±1.5 ±0.75	2 1.5	%FS %FS
span temperature coefficient²		-1.5	±0.75	1.5	%FS
thermal hysteresis³		-0.075	±0.05	0.075	%FS
long term stability		-0.3	±0.2	0.3	%FS/yea

Note:

- 1. Calculated according to best fit straight line (BFSL) least square method.
- 2. In the compensated temperature range, refer to 30°C for constant current models, and refer to 32.5°C for constant voltage models.
- 3. After passing high and low temperature, return to the reference temperature.

#### PRESSURE SPECIFICATIONS

pressure range	pressure reference <sup>4</sup>	overload pressure	burst pressure
0~10 kPa	G	200%FS	500%FS
0~20 kPa	G	200%FS	500%FS
0~35 kPa	G	200%FS	500%FS
0~70 kPa	G	200%FS	500%FS
0~100 kPa	G	200%FS	500%FS
0~160 kPa	G	200%FS	500%FS
0~250 kPa	G	200%FS	400%FS
0~400 kPa	G	200%FS	400%FS
0~800 kPa	G	200%FS	400%FS
0~1 MPa	G	200%FS	400%FS
0~1.6 MPa	G	150%FS	400%FS
0~2.5 MPa	G	150%FS	300%FS

Note:

4. G=gauge pressure (current atmospheric pressure as zero).

### PART NUMBER KEY

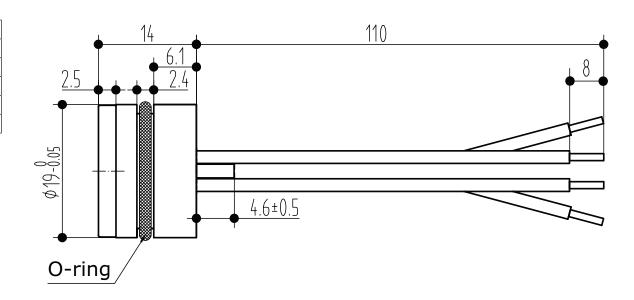
<u>PS04</u> - <u>X XXXX</u> P - <u>X</u> 4W Base Number Pressure Reference: Pressure Range: Excitation: G = Gauge 10K = 10 kPa A = 1.5 mA 20K = 20 kPa V = 10 V 35K = 35 kPa70K = 70 kPa 100K = 100 kPa 160K = 160 kPa 250K = 250 kPa 400K = 400 kPa 800K= 800 kPa 10M = 1 MPa 16M = 1.6 MPa 25M = 2.5 MPa

## **MECHANICAL DRAWING**

units: mm tolerance: ±0.1 mm unless otherwise noted

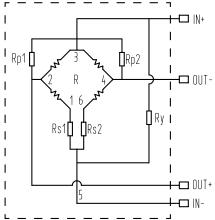
ITEM	DESCRIPTION	MATERIAL	PLATING/COLOR	
Α	housing	SS 316L		
В	diaphragm	SS 316L		
С	oil filling	silicon oil		
	o-ring	NBR	black	
E	wires	silicon; OD: 1.4 mm; O.15 mm²		

WIRE CONNECTIONS				
Wire Color Function				
Red	+IN			
Blue	-IN			
Yellow	+OUT			
White	-OUT			

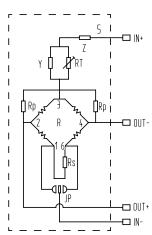


## **INTERFACE DIAGRAM**

# Constant Current Models



#### **Constant Voltage Models**



## **USAGE CONSIDERATIONS**

- 1. Do not touch the diaphragm with hard objects, which may cause damage to the diaphragm.
- 2. Strictly follow the wiring method, otherwise it may cause product damage or other potential faults.
- 3. Misuse of the product may cause danger or personal injury.
- 4. Pressure range can be selected higher or lower than actual conditions, but should be within ±30%FS.
- 5. Pressure reference consists of gauge pressure, absolute pressure, and sealed gauge pressure.
  - a. Gauge pressure is based on the current atmospheric pressure. Generally, it refers to the measurement of pressure which is greater than the current atmospheric pressure. Negative pressure is a special case of gauge pressure. It refers that there is such working condition that the pressure of work site is lower than the current atmospheric pressure.
  - b. Absolute pressure is based on vacuum.
  - c. Sealed gauge pressure uses absolute pressure die for gauge pressure product based on the atmospheric pressure of production site.
- 6. Confirm the maximum overload of the applied system, which should be less than the overload protection limit of the sensor, otherwise it will affect the product life or even damage the product.
- 7. The material and process for manufacturing negative pressure sensors are different from those of positive pressure sensors. So, gauge pressure sensors cannot be used as substitue of negative pressure sensors.

Additional Resources: Product Page | 3D Model

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### **REVISION HISTORY**

rev.	description	date
1.0	initial release	12/09/2021
1.01	logo, datasheet style update	08/05/2022

The revision history provided is for informational purposes only and is believed to be accurate.



CUI Devices offers a one (1) year limited warranty. Complete warranty information is listed on our website.

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