

Introduction:

P30 series pressure transducers are based on piezoresistive silicon pressure sensor. The sensing package utilizes silicone oil to transfer pressure from the 316L stainless steel diaphragm to the sensing element.

The wetted material is made of 316L stainless steel, Designed as compact profile with all welded structure (without O-ring).

There are various output signals available, Such as mV; I²C; 0.5-4.5V; 1-5V etc..

Features:

- Pressure Range: 0-100kPa...7MPa
- Compact profile (OD: 16mm)
- Stainless steel 316L welded, without O-ring
- High precision, total error band<0.50%(typical)
- Reverse polarity protection

Application:

- Hydraulic/Pneumatic Control Systems
- Energy and Water Management
- Pumps and Compressors
- Advanced HVAC Systems
- Refrigeration Systems



Performance Specifications (See next page)

Ambient Temperature: 25° C (unless otherwise specified)

mV output

Parameters	Min.	Typical	Max.
Accuracy (%FS)			
Non-Linearity ¹		±0.10	±0.20
Hysteresis		±0.05	±0.1
Repeatability		±0.05	±0.1
Temp. characters			
Operation Temp. (°C) ²	-40		125
Compensation 100kPa	0		70
Temp (°C) >100kPa	-10		70
Zero Temp. error (%FS) ³		±0.75	±1.0
Span Temp. error (%FS) ³		±0.75	±1.2
Thermal hysteresis (%FS)		0.1	
Long term Stability			
Zero (±%FS annual)		0.2	
Span (±%FS annual)		0.1	
Load Resistance ⁴	5MΩ		
Insulation Resistance (100V) ⁵	100MΩ		
Pressure Overload	2 times of Rated pressure range or 10MPa whichever is less		
Pressure Media	Liquids and Gases compatible with 316L Stainless Steel		

For mV output there are two types based on the different excitation power supply:
constant current and constant voltage.

Constant current power (Excitation:1.5mA)

Parameters	Min.	Typical	Max.
Supply Current	0.5mA	1.5mA	2mA
Output (mV)			
Zero output	-2	±1	2
Full scale output (FS)	90	120	200
Input Resistance	2kΩ		4kΩ
Output Resistance	2.5kΩ		5.5kΩ

Constant voltage power (Excitation:10VDC)

Parameters		Min.	Typical	Max.
Supply Voltage			10	14
Output (mV)				
Zero output		−2	±1	2
Full scale output (FS)	100kPa---4MPa	98	100±1	102
	7MPa	147	150±1.5	153
Input Resistance		4.5k Ω		10k Ω
Output Resistance		2.5k Ω		5.5k Ω

※Remark:

1. Best fit straight line.
2. The maximum rating temp. of cable is 105° C., of M12 connector is 85° C
3. Over the compensated temperature range with respect to 25° C.
4. Increase load resistance to reduce measurement errors due to output loading.
5. Between case and sensing element.

I ² C				
Ambient Temperature: 25° C (unless otherwise specified)				
Parameters	Min.	Typical	Max.	Notes
Power supply (V)	3	3.3	5.5	3.3V as default; 5V optional
Current consumption	1μA		2.5mA	Lowest consumption when no data reading
Interface Type	I ² C (Address: 0XFE)			
Output Type	10% – 90%			5%–95% Optional
Zero Pressure Output		838861		Count Hex
Full Scale Pressure Output (FS)		7549746		
Accuracy of pressure output (%FS)	–0.1	±0.05	0.1	combined linearity, hysteresis and repeatability.
Total Error Band (%FS) ²	–0.75	±0.5	0.75	includes calibration errors and temp. effects over the compensated range.
Temp. Accuracy (°C)	–2.5		2.5	over the compensated temp. range
Operation temp. (°C)	–40		125	
Compensation temp. (°C) ¹	–10		70	
Storage temp. (°C)	–40		125	
Insulation Resistance (MΩ/250V)	50			
Response Frequency (HZ)		100HZ	200HZ	
Over pressure	2 times or 10MPa whichever is less			
Media – Pressure	Liquids and gases compatible with 316L Stainless Steel			

Voltage output

Parameters	Min.	Typical	Max.
Accuracy (%FS) combined linearity, hysteresis and repeatability		±0.05	±0.1
Output	0.5–4.5V (Ratiometric); 1–5V		
Zero output (%FS)	–0.5	±0.25	0.5
Full Scale output (%FS)	–0.5	±0.25	0.5
Temp. characters			
Operation Temp. (°C)	–40		125
Compensation Temp. (°C) ¹	–10		70
Total error band (%FS) ²	–0.75	±0.5	0.75
Power supply	See ordering information		
Insulation Resistance (MΩ/250V)	50		
Over pressure	2 times or 10MPa whichever is less		
Media – Pressure	Liquids and gases compatible with 316L Stainless Steel		

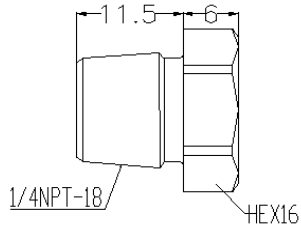
1. Compensation temp. –20~85°C is optional

2. Total error band: total output error including Zero, Span, non-linearity, temp. error within compensated temperature range.

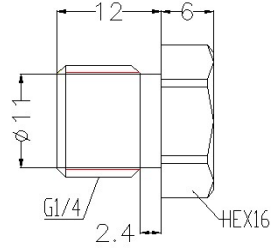
Dimension (mm) :

Threads and Hex

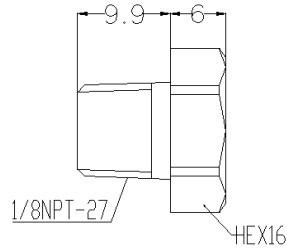
1/4NPT (Code:1)



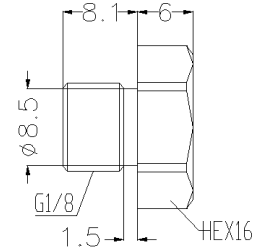
G1/4 (Code:2)



1/8NPT (Code:3)

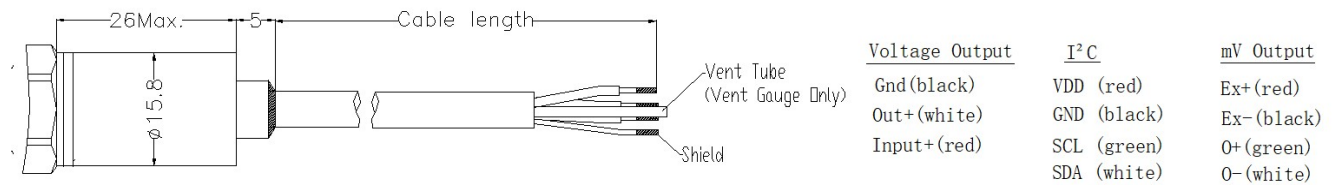


G1/8 (Code:4)

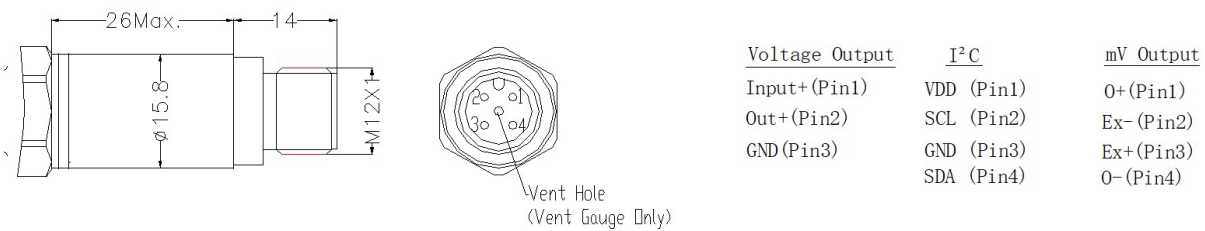


Case and wiring

Cable (Code: 2)



M12 Connector (4 Pins) (Code: 4)



Label



Ordering Information

Model	Excitation	Output
P31	1.5mA	mV
P32	10V	mV
P33	3.3V	I ² C
P34	5V	0.5-4.5V (Ratiometric)
P35	8-30V	1-5V

Code	Pressure Range	Vent Gauge	Sealed Gauge	Absolute
100k	0-100kPa	*	*	*
200k	0-200kPa	*	*	*
400k	0-400kPa	*	*	*
600k	0-600kPa	*	*	*
1M	0-1MPa	*	*	*
1.6M	0-1.6MPa	*	*	*
2.5M	0-2.5MPa	*	*	*
4M	0-4MPa	*	*	*
7M	0-7MPa	*	*	*
XX	Others			

Code	Pressure Mode
G	Vent Gauge
S	Sealed Gauge
A	Absolute

Code	Pressure Port
1	1/4NPT
2	G 1/4
3	1/8NPT
4	G 1/8
X	Others

Code	Electric outlet
2 (*m)	Cable (length: *meter)
4	M12X1 (4 Core Male)
X	Others

Example:

P33	600k	A	1	2 (0.5m)	
I ² C	0-600kPa	absolute	1/4NPT	Cable 0.5 m	Model: P33-600kA-12 (0.5m)

Remark: If need negative pressure sensor, Pls. contact us