

Introduction:

P10 pressure sensors 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 all welded structure without O-ring, the plastic housing was made of PA66+30%GF, Which make sure the sensor with low cost and excellent weatherproof.

Each sensor was strictly temperature compensated for both zero and span, With the performance of high accuracy and excellent long term stability.

There are various of signal outputs are available, including: 0-100mV, I²C, 4-20mA, 0.5-4.5V, 0-5V, 1-5V etc, Different pressure ports are optional as well.

The amplified sensors meet the latest heavy industrial CE requirements, including surge protection. The circuit is protected from reverse wiring at input and short circuit at output.

Features:

- Pressure Range: 0-10kPa...7MPa
- High accuracy
- SS 316L welded, without O-ring
- IP65 protection
- PA66 Housing; low cost

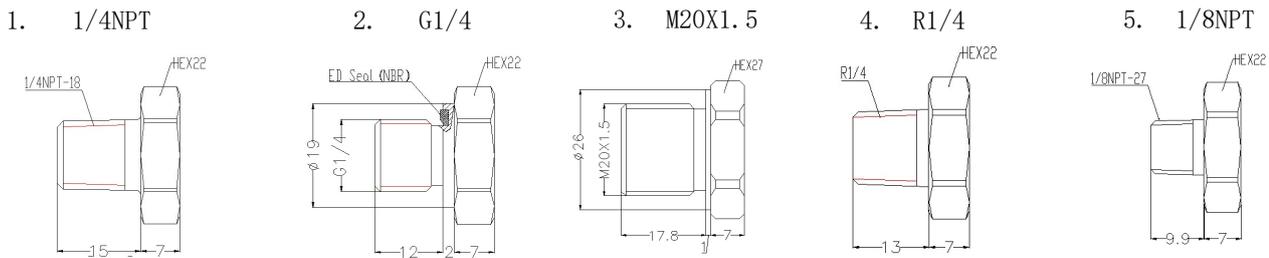
Application:

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

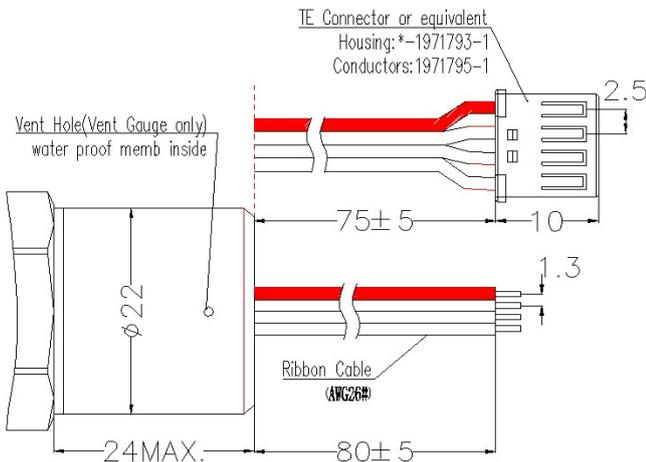


Dimensions (mm)

Pressure port and Hex

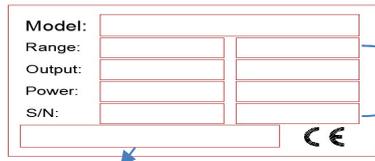


Housing & Cable/Connector



0-100mV	I ² C	Voltage Output	Current Output

Label



Wiring Information

Manufacture Information

General items of Specifications

Pressure Range	0-10kPa...7MPa	
Over pressure	10kPa, 20kPa	10 times of rated pressure
	≥40kPa	2.5 times of rated pressure or 10MPa whichever is less
Materials	Wetted materials: Stainless steel 316L; Housing: Nylon PA66+30%GF	
Operation Temp.	-40~105°C	
Insulation Resistance	50MΩ/250V	
Water proof	IP65	
Anti-Shock	50g, 11MSEC HALF SINE SHOCK PER MIL-STD-202G, METHOD 213B, CONDITION A.	
Anti-Vibration	±20g MIL-STD-810C, PROCEDURE 514.2, FIGURE 514.2-2, CURVE L.	
Life	>10 ⁷ full range pressure	
Long term stability(%FS annual)	Zero	0.2
	Span	0.1

Specifications of amplified sensors

25° C (unless otherwise specified)

Parameters	Min.	Typical	Max.
Output	4-20mA; 0.5~4.5V(Ratiometric); 1-5V; 0-5V		
Accuracy (%FS) combined NLH ¹ , HYS and REP.		±0.05	±0.1
Zero Error (%FS)		±0.25	±0.5
Span Error (%FS)		±0.25	±0.5
Compensation Temp. (°C)			
≤10kPa	0		50
>10kPa	-10		70
Total error band (%FS)²		±0.5	±1
Frequency (Hz)	1k		
Load Resistance RL (Ω)			
Current output	RL < 50X (Vsupply-8)		
Voltage output	RL > 20k		

Circuit with reverse polarity protection

CE Compliance:

EN55032 Emissions Class A&B

IEC61000-4-2 (ESD) :15KV(air)/8KV(contact)

IEC61000-4-3 Radiated, Radio-Frequency Electromagnetic Field Immunity (10V/m, 80MHZ~1GHZ)

IEC61000-4-4 Electrical Fast Transient Immunity (1kV)

IEC61000-4-5 Surge Immunity

Input to Output: ±1kV/42Ω; Leads to Case: ±1kV/12Ω;

Output to GND: ±1kV/42Ω (The third item only apply to Voltage Output)

IEC61000-4-6 Immunity to conducted disturbances Induced by Radio Frequency Fields

150kHz~80MHZ, 3V Level for current output; 10V Level for Voltage output

IEC61000-4-9 Pulse Magnetic Field Immunity (100A/m Peak)

For CE compliance tests, allowed output deviation within: ±1%FS(current output); ±1.5%FS(voltage output)

Specifications of I ² C		3.3V under 25° C (unless otherwise specified)			
Parameters		Min.	Typical	Max.	Notes
Interface Type		I ² C (ADDR, 0X28H)			SPI (optional)
Accuracy(%FS)		-0.1	±0.05	0.1	combined linearity ¹ , hysteresis and repeatability.
Total Error	≤100kPa	-0.75	±0.5	0.75	
Band (%FS) ²	>100kPa	-0.5	±0.3	0.5	
Output Type		10% -- 90% (A type)			5%~95%(B type) Optional
Zero Pressure Output			666		Count Hex
Full Scale Pressure Output (FS)			399A		
Resolution-Pressure (%FS)		0.008			14bits
Temp. Accuracy(°C)		-2		2	over the compensated temperature range
Resolution - Temp. (°C)			0.1		8~11bits
Compensated	≤10kPa	0		50	
Temp. (°C)	>10kPa	-10		70	
Input Voltage (V)		2.7	3.3	5.5	
Current consumption	Non-Sleep		2.7mA		default (See Note1)
	Sleep mode		2μA		optional
Load Resistance (KΩ)		10			
Response Frequency (HZ)			2K		

Specifications of 0-100mV output		Excitation 10VDC under 25°C (unless otherwise specified)		
Parameters		Min.	Typical	Max.
Accuracy (%FS)				
Non-Linearity ¹			±0.10	±0.20
Hysteresis			±0.05	±0.1
Repeatability			±0.05	±0.1
Output (mV)				
Zero		-1	0	1
Span (FS)		99	100	101
Temp. characters				
Compensation Temp (°C)		-10		70
Zero Temp. error (%FS)			±0.75	±1.0
Span Temp. error (%FS)			±0.75	±1.2
Supply Voltage			10VDC	14VDC
Input Resistance		4.5kΩ		10kΩ
Output Resistance		2.5kΩ		5.5kΩ
Load Resistance		5MΩ		

Remark:

1. BFSL (best fitting straight line)
2. Total error band: total output error including Zero, Span, non-linearity, temp. error within compensated temperature range.

Ordering Information

Model	Excitation	Output
P11	5V	0.5-4.5V (Ratiometric)
P12	8-30V	0-5V
P13	8-30V	4-20mA
P14	8-30V	1-5V
P15	3.3V	I ² C
P16	10V	0-100mV

Code	Pressure Range	Vent Gauge	Sealed Gauge	Absolute
10k	0-10kPa	*		
20k	0-20kPa	*		
40k	0-40kPa	*		
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	M20X1.5
4	R1/4 (old ZG1/4)
5	1/8NPT
X	Others

Code	Electric outlet
1	Ribbon Cable
2	TE connector (Pin pitch:2.5mm)
X	Others

Example:

P13	600k	A	1	1		
4-20mA	0-600kPa	absolute	1/4NPT	Ribbon cable		Model:P13-600kA-11

- Remark:**
1. If need negative pressure sensor, Pls. contact us
 2. For P16 series (Output: 0-100mV), the pressure range available is 0-20kPa...4MPa