

**Introduction:**

P20 pressure sensors are based on microfused technology which employs micromachined silicon piezoresistive strain gages fused with high temperature glass to a stainless steel diaphragm.

The wetted material is made of stainless steel, designed as all welded structure without O-ring, High burst pressure is achieved by its solid structure. 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, I<sup>2</sup>C, 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: 0-3.5MPa...35MPa
- Stainless steel welded, without O-ring
- 5X burst pressure
- Nylon Housing; low cost

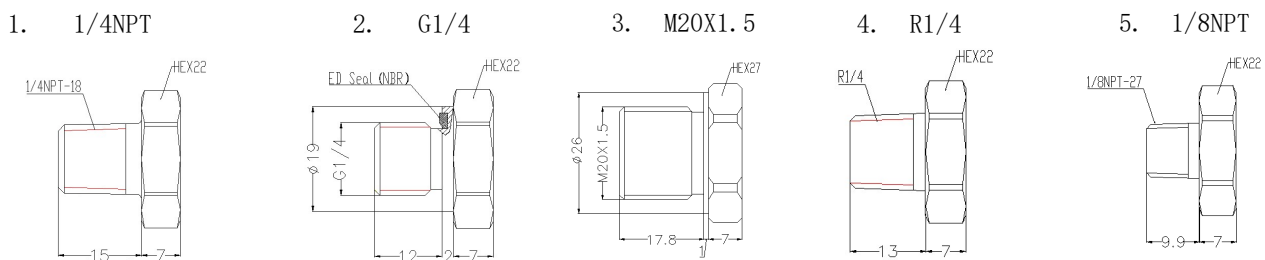
**Application:**

- Hydraulic/Pneumatic Control Systems
- Energy and Water Management
- Pumps and Compressors
- Automotive Test Stands
- Agriculture Equipment

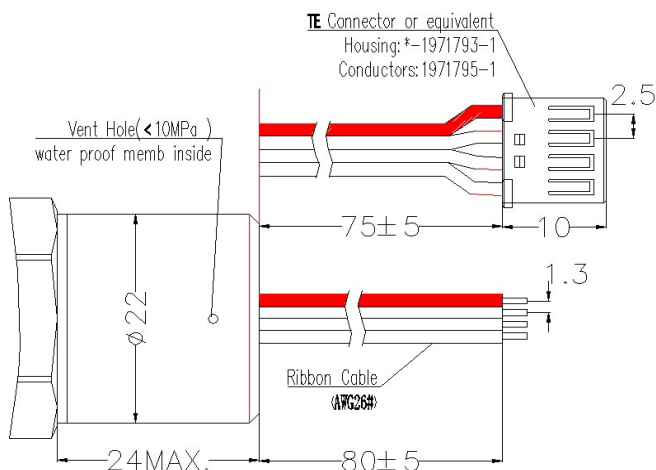


**Dimensions (mm)**

**Pressure port and Hex**

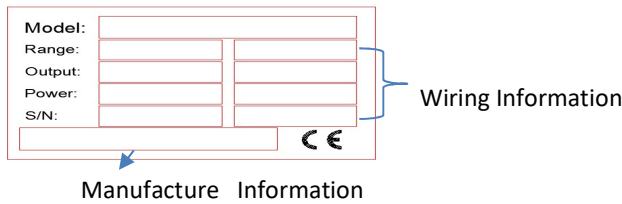


**Housing & Cable/Connector**



0-100mV	I <sup>2</sup> C	Voltage Output	Current Output

Label



**General items of Specifications**

<b>Pressure Range</b>	0-3.5MPa...35MPa	
<b>Over pressure</b>	2 times of rated pressure	
<b>Burst pressure</b>	5 times of rated pressure or 150MPa whichever is less	
<b>Materials</b>	Wetted materials: Stainless steel 17-4PH and 304; Housing: Nylon PA66+30%GF	
<b>Operation Temp.</b>	-40~105°C	
<b>Insulation Resistance</b>	50MΩ/250V	
<b>Water proof</b>	IP65	
<b>Anti-Shock</b>	50g, 11MSEC HALF SINE SHOCK PER MIL-STD-202G, METHOD 213B, CONDITION A.	
<b>Anti-Vibration</b>	±20g MIL-STD-810C, PROCEDURE 514.2, FIGURE 514.2-2, CURVE L.	
<b>Life</b>	>10 <sup>7</sup> full range pressure	
<b>Long term stability (%FS annual)</b>	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 <sup>1</sup> , HYS and REP.		±0.05	±0.1
Zero Error (%FS)		±0.25	±0.5
Span Error (%FS)		±0.25	±0.5
Compensation Temp. (°C)	-10		70
Total error band(%FS) <sup>2</sup>		±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 <sup>2</sup> C		3.3V under 25° C (unless otherwise specified)		
Parameters	Min.	Typical	Max.	Notes
Interface Type	I <sup>2</sup> C (ADDR, 0X28H)			SPI (optional)
Accuracy(%FS)	-0.15	±0.1	0.15	combined linearity <sup>1</sup> , hysteresis and repeatability.
Total Error Band(%FS) <sup>2</sup>	-0.75	±0.5	0.75	
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 Temp. (°C)	-10		70	
Input Voltage (V)	2.7	3.3	5.5	
Current consumption	Non-Sleep		2.7mA	default
	Sleep mode		2µA	optional
Load Resistance (KΩ)	10			
Response Frequency (HZ)		2K		

Specifications of 0–100mV output		Excitation 5VDC under 25°C (unless otherwise specified)		
Parameters	Min.	Typical	Max.	
Accuracy(%FS)				
Non-Linearity <sup>1</sup>		±0.15		±0.25
Hysteresis		±0.1		±0.15
Repeatability		±0.1		±0.15
Output (mV)				
Zero	-1	0		1
Span (FS)	99	100		101
<b>Temp. characters</b>				
Compensation Temp(°C)	-10			70
Zero Temp. error (%FS)		±0.75		±1
Span Temp. error (%FS)		±1		±1.5
<b>Supply Voltage</b>		5VDC		10VDC
<b>Input Resistance</b>	5.0	6.6		8.0
<b>Output Resistance</b>	3.5	4.4		5.5

**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
P21	5V	0.5-4.5V (Ratiometric)
P22	8-30V	0-5V
P23	8-30V	4-20mA
P24	8-30V	1-5V
P25	3.3V	I <sup>2</sup> C
P26	5V	0-100mV

Code	Pressure Range	Vent Gauge	Sealed Gauge
3.5M	0-3.5MPa	*	
7M	0-7MPa	*	
10M	0-10MPa		*
20M	0-20MPa		*
35M	0-35MPa		*
XX	Others		

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:**

P23	3.5M	1	1			
4-20mA	0-3.5MPa	1/4NPT	Ribbon cable			Model :P23-3.5M-11