

Introduction:

P50 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.

There is a custom ASIC in P50 transducers, Super accuracy is achieved through advanced digital compensation with an aggressive compensated temperature range of -20°C to 85°C.

The wetted material is made of 316L stainless steel, Small size with all welded structure without O-ring.

Weatherproof and exceeds 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: 0-7kPa...7MPa
- Wide range of compensation temp. (-20~85°C)
- Stainless steel 316L welded, without O-ring
- High precision, total error band<0.50%(typical)
- Reverse polarity protection
- Surge voltage protection
- Input/Output overvoltage protection



Application:

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

Performance Specifications

Ambient Temperature: 25° C (unless otherwise specified)

Parameters	Min.	Typical	Max.
Pressure Range	0-7kPa...7MPa		
Output	4-20mA; 0.5-4.5V(Ratiometric); 1-5V; 0-5V; 0-10V		
Accuracy (%FS) <small>combined linearity¹, hysteresis and repeatability.</small>		±0.05	±0.1
Temp. characters			
Operation Temp. (°C) ²	-40		125
Compensation Temp. (°C)			
≤10kPa	0		50
>10 and ≤100kPa	-10		70
>100kPa	-20		85
Total error band (%FS)³		±0.5	±1
Long term Stability			
Zero (±%FS annual)		0.2	
Span (±%FS annual)		0.1	
Frequency (Hz)	1k		
Insulation Resistance⁴	50MΩ /250V		
Load Resistance RL(Ω)			
Current output	RL < 50X (Vsupply-8)		
Voltage output	RL > 20k		

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.	
Water proof		
Cable	IP67	
Connector	IP65	
Over pressure	≤20kPa	10 times of rated pressure
	35kPa	5 times of rated pressure
	≥100kPa	2 times of rated pressure or 10MPa whichever is less
Wetted material	Stainless steel 316L	
Fasten torque recommended	20 N·m	
Life	>10 ⁷ full range pressure	

1. BFSL (best fitting straight line)
2. Operation temp. of cable is 105°C maximum / M12 Connector operation temp. range: -25~85°C
3. Total error band: total output error including Zero, Span, non-linearity, temp. error within compensated temperature range.
4. Measured between terminals and case

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)

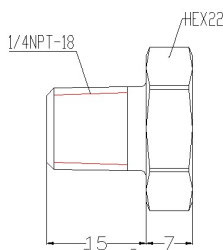
For all CE compliance tests, allowed output deviation within:

±1%FS (for current output); ±1.5%FS (for voltage output)

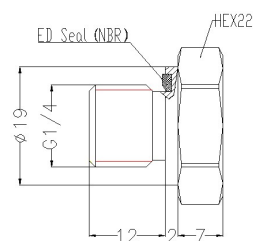
Dimensions (mm)

Pressure port and Hex

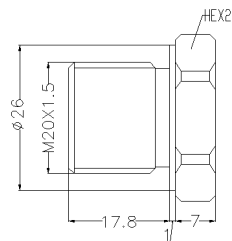
1. 1/4NPT



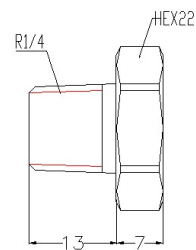
2. G1/4



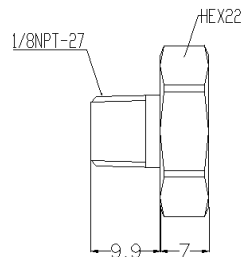
3. M20X1.5



4. R1/4

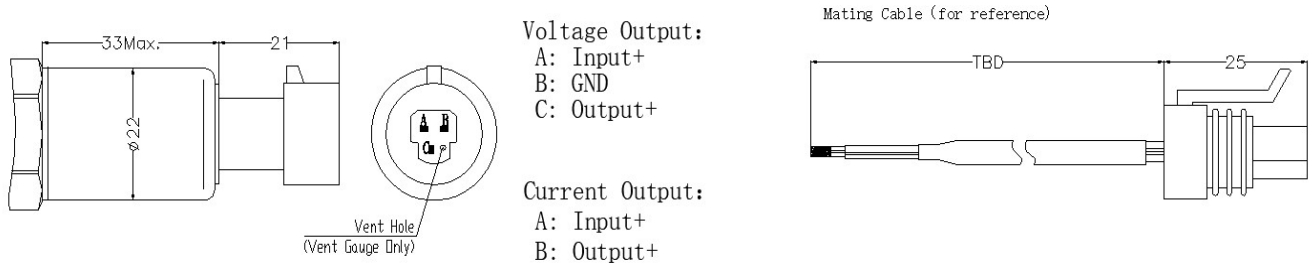


5. 1/8NPT

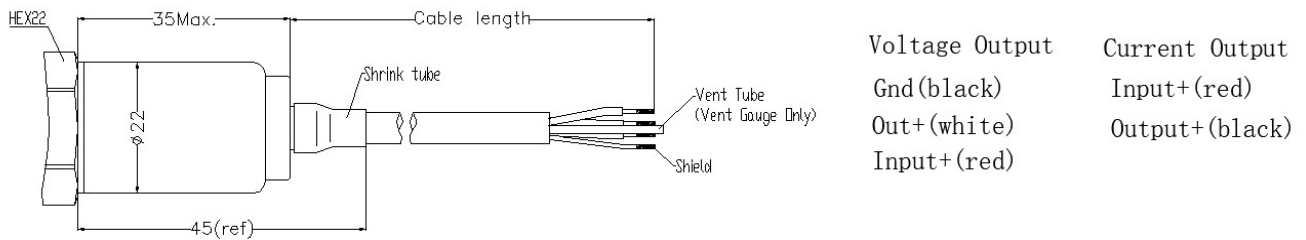


Case and Cable/Connector

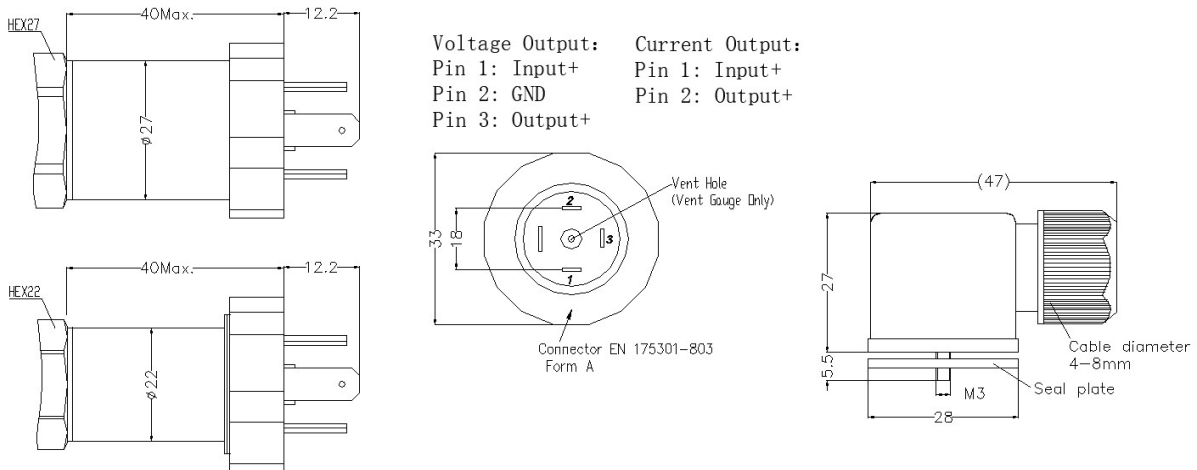
1. Parkard connector



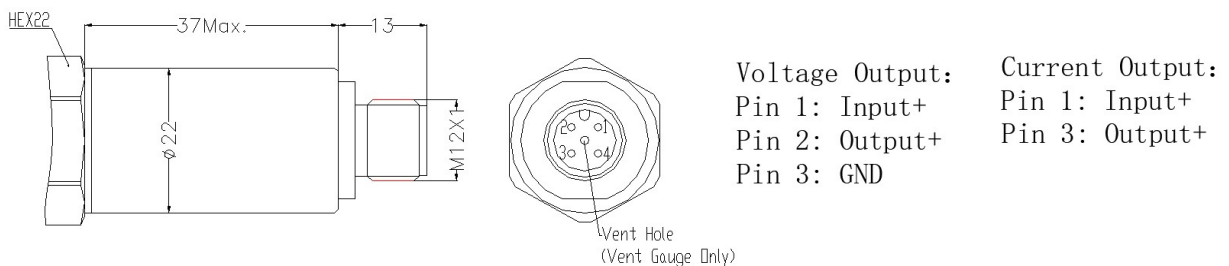
2. Cable



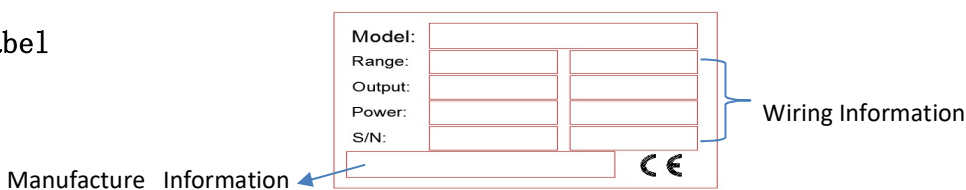
3. Connector EN 175301-803 (Form A)



4. M12X1 connector (4 Pins)



Label



Ordering Information

Model	Excitation	Output
P51	5V	0.5-4.5V (Ratiometric)
P52	8-30V	0-5V
P53	8-30V	4-20mA
P54	8-30V	1-5V
P55	15-30V	0-10V

Code	Pressure Range	Vent Gauge	Sealed Gauge	Absolute
7k	0-7kPa	*		
10k	0-10kPa	*		
20k	0-20kPa	*		
35k	0-35kPa	*		
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 Gage
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	Packard connector
2(*m)	Cable (lengh: *meter)
3	Connector EN 175301-803 (Form A)
4	M12X1 (4 Core Male)
X	Others

Example:

P53	600k	A	1	2 (2m)	
4-20mA	0-600kPa	absolute	1/4NPT	Cable 2 meter	Model:P53-600kA-12 (2m)

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