

P08 Series

Miniature pressure sensor

Applications

- Aerospace
- Automobile Manufacturing
- Petroleum and Petrochemical
- Industrial Automation
- Shipbuilding
- Construction Machinery

Features

- High Precision and Stability
- Superior Environmental Adaptability
- Flexible Customization
- Fast Response and Low Power Consumption
- Comprehensive Safety Certification
- High Frequency



Profiles

The P08 series pressure sensor is a miniature, multi-functional, high-precision pressure sensor.

Advanced micromachined silicon technology MEMS chip, special oil-filled media isolation, solid anti-interference circuit design and stainless steel internal and external structural interfaces make the P08 series a high-precision, reliable pressure sensor suitable for a wide range of measurement media.

Through the front design of the pressure core, the series has a small size, wide range, and high pressure resistance. The sensor can provide a variety of different electrical output signals and output methods, and can measure two types of pressure: adiabatic pressure and sealed gauge pressure.

Performance Parameters

Main Performance Indicators

Specification	Description
Range	Absolute Pressure or Sealed Gauge Pressure as below

DATASHEET

PRESSURE MEASUREMENT

Dabey Technology Co., LTD
Sales@dabeysensor.com
86-18890003683
www.dabeysensor.com

Units	Mpa	Psi
Range	0-2	0-300
	0-5	0-700
	0-10	0-1500
	0-35	0-5000
	0-70	0-10000
	Note: Other non-standard ranges or units can be customized	
Accuracy (Integrated Non-linearity, Hysteresis, Repeatability)	A1: 0.2%FS ⁵ BFSL	
	A2: 0.1%FS ⁵ BFSL	
	"Custom accuracy available upon request	
Overload Pressure ²	2xFS ⁵	
Burst Pressure ³	3xFS ⁵	
Working Principle	Four-arm Wheatstone bridge silicon-based MEMS chip	
Chip natural vibration frequency	>400KHz	

Mechanical Performance

Specifications	Description
Pressure connection	See selection table, customizable
Vibration Impact on Sensor Accuracy	<1ppmFS ⁵ /g
Impact connection	Maximum 20g at 10-2500Hz; Impact time not exceeding 20ms
Housing Material	Standard 316L/17-4PH stainless steel ("Other materials available upon request)
Measuring Medium	All fluids compatible with 316L/17-4PH stainless steel
Weight	≤15g; weight of cable and electrical connectors is additional and depends on selection

Electrical perform:

Power Supply/Output	See selection table, customizable
Circuit Bandwidth	EA、EB Chip natural vibration frequency ≥400KHz
	ED The circuit bandwidth is about 5Hz@3DB
Actual Frequency Response	EA、EB ≤ Chip natural vibration frequency @3DB
	EC ≤ 5Hz@3DB
	Note: Specific and installation method related.
Power-up Time	EA、EB <1ms
	ED <200ms
Zero and Full-Scale Output Range	Rating within ±5%FS
	Other requirements can be customized
Insulation Resistance	≥100MQ@50VDC

DATASHEET

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Electrical strength	leakage current $\leq 5\text{mA}@50\text{VAC RMS}$
Maximum Operating Current	ED $< 25\text{mA}$
Input Impedance	EA、EB $> 5000\Omega$
Output impedance	EA、EB 5000Ω ED $< 150\Omega$
Long-term stability	Typical values $\pm 0.1\%\text{FS}^5$
Electrical connection	See selection table, can be customized

Temperature Performance

Specifications	Description
Temperature Compensation Range	Selectable within the range of -40°C to 125°C
Operating and storage temperature range	-55°C - 150°C
	EA、EB
	Zero drift $< \pm 1.5\%\text{FS}^5/100^{\circ}\text{C}$
Total error in the whole temperature zone ⁷	Full scale drift $< 1.5\%\text{FS}^5/100^{\circ}\text{C}$
	ED
	Total error ⁶ $< 0.5\%\text{FS}^5/100^{\circ}\text{C}$

Electrical Interface

Electrical connector	Pin Definition	Electrical Output		
		EA	EB	ED
E8	Red	Vin+	Vin+	Vin+
	Green	Vout+	Vout+	Vout+
	White	Vout-	Vout-	
	Black	Vin-	Vin-	Vin-

1: Custom compound ranges can be specially ordered, for example, (5-100)KPaA.

2: Pressure overload below this limit does not affect product performance.

3: This is the safe upper limit for the sensor; exceeding this value may cause leakage or deformation.

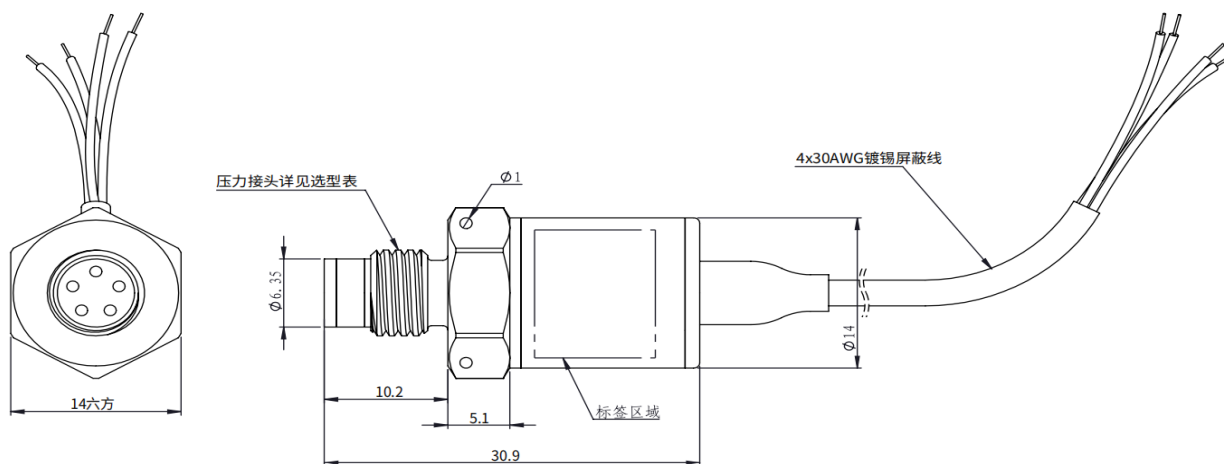
4: Temperature performance refers to the performance within the compensated temperature range.

5: FS = Full Scale (Full Range).

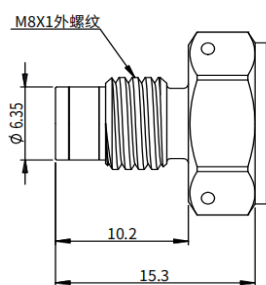
6: Error based on the best endpoint line fit.

7: Refer to China's national standard GB/T 15478-2015

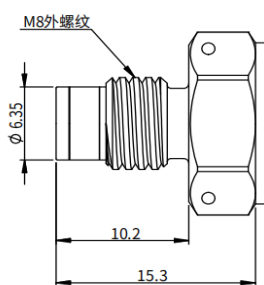
Outline Drawing



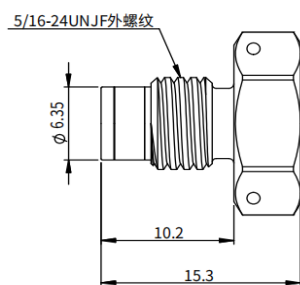
Pressure fittings & Recommended installation drawings



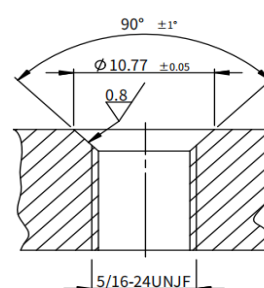
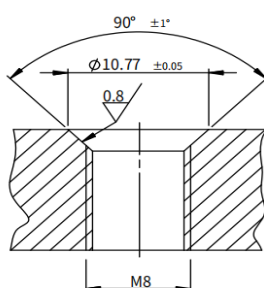
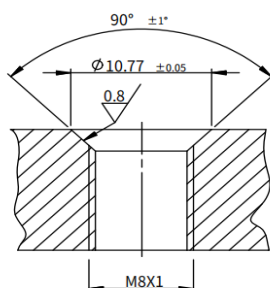
P19



P20



P22



Installation torque: Measuring range 0~35 MPaA, 10N.m
Measuring range 35~70 MPaA, 22N.m

O-ring: inner diameter 7.65mm, wire diameter 1.63mm,
material and measured medium match

How to Order? Look at the selection table below

Model NO

P08

Signal output

- EA 0~100mV output, 10VDC powered, output proportional to supply voltage, four-wire.
- EB 0~100mV output, 8-16VDC powered, output independent of supply voltage, four-wire.
- ED 0.5~4.5V output, 8~32VDC powered, high-precision digital compensation, three-wire

Circuit Connections

E8 4x30AWG (1m length) tinned shielded wire
Note:Other specifications are available upon request.

Pressure Connection Fittings

- P19 M8X1 external thread
- P20 M8 external thread
- P22 5/16-24UNJF external thread

Note:Other specifications are available upon request

Compensation Temperature Range

TA 25℃~80℃	TE -10℃~50℃
TB -20℃~125℃	TF -20℃~80℃
TC -40℃~125℃	TG -40℃~80℃

Accuracy

- A1 0.2%FS BFSL
- A2 0.1%FS BFSL

Calibration Report

- CA Ambient temperature six-point pressure data
- CB Five-point full-temperature data

Pressure Range	Unit	Type
0~70	MPa	A (Absolute Pressure)
0~70	MPa	S (Sealed Gauge Pressure)

Special Requirements

Refer to the purchase contract for details on 'S'.

P08	EA	E8	P19	TA	A1	CA	0-20	MPA	A	S
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P08-EA-E8-P19-TA-A1-CA (0~20) -MPA-A-S