

## MPT 500 Series

### Miniature Aerospace Pressure Sensor

#### Applications

Aerospace  
Automobile Manufacturing  
Petroleum and Petrochemical  
Industrial Automation  
Shipbuilding  
Construction Machinery

#### Features

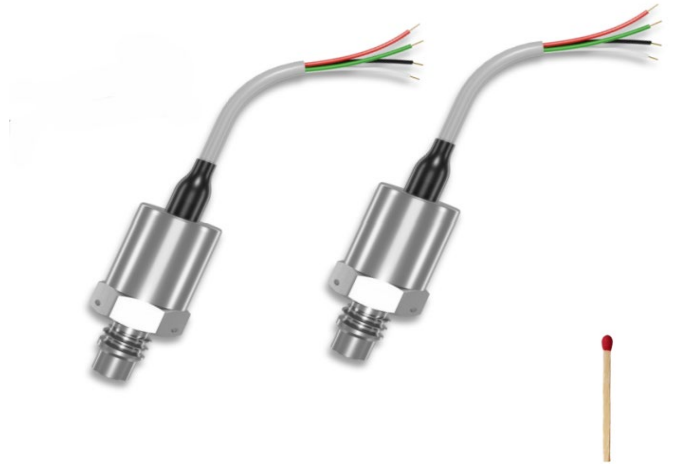
High Precision and Stability  
Superior Environmental Adaptability  
Flexible Customization  
Fast Response and Low Power Consumption  
Comprehensive Safety Certification  
High Frequency

#### Profiles

The MPT500 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 MPT500 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.





# DATASHEET

## PRESSURE MEASUREMENT

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

Power-up Time	S1、S2、S7 <1ms S4 <200ms
Zero and Full-Scale Output Range	Rating within $\pm 5\%FS$ Other requirements can be customized
Insulation Resistance	$\geq 100M\Omega@50VDC$
Electrical strength	leakage current $\leq 5mA@50VAC$ RMS
Maximum Operating Current	S4 <25mA
Input Impedance	S1、S2、S7 >5000 $\Omega$
Output impedance	S1、S2、S7 5000 $\Omega$ S4 <150 $\Omega$
Long-term stability	Typical values $\pm 0.1\%FS^5$
Electrical connection	See selection table, can be customized

### Temperature Performance<sup>4</sup>

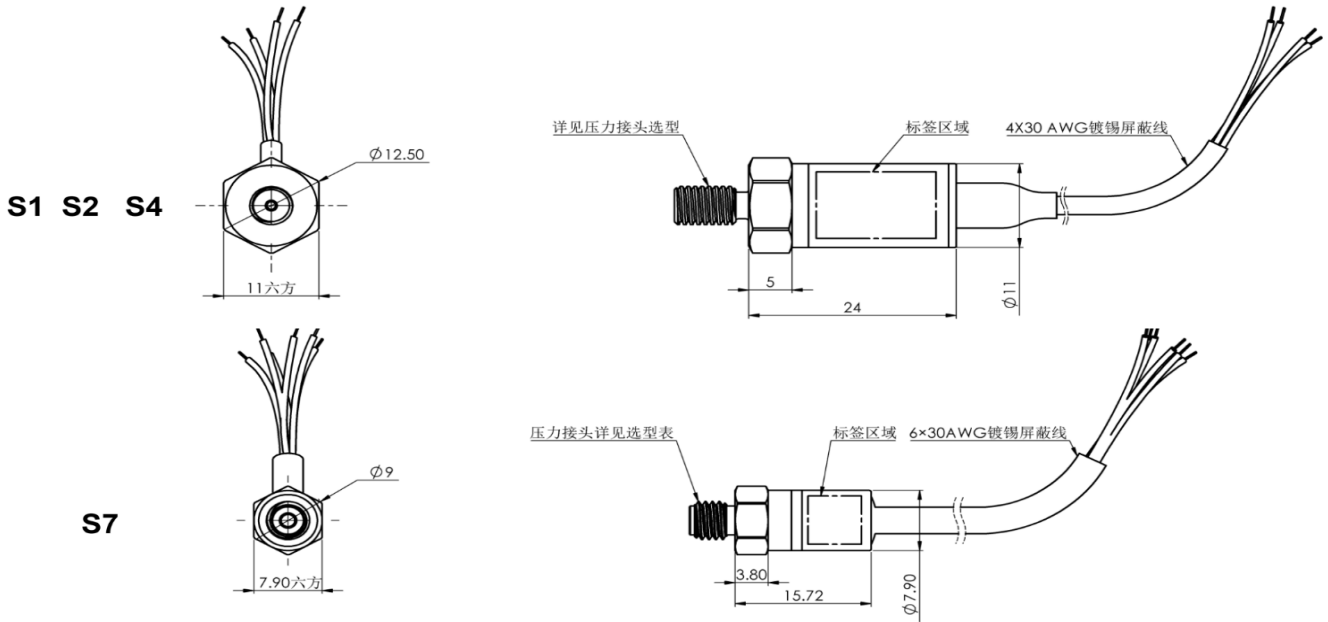
Specifications	Description
Temperature Compensation Range	Selectable within the range of -40°C to 125°C
Operating and storage temperature range	-55°C-150°C
Total error in the whole temperature zone <sup>7</sup>	S1、S2、S7
	Zero drift < $\pm 1.5\% FS^5/100^\circ C$
	Full scale drift < $1.5\% FS^5/100^\circ C$
	S4
	Total error <sup>6</sup> < $0.5\% FS^5/100^\circ C$

### Electrical Interface Definition

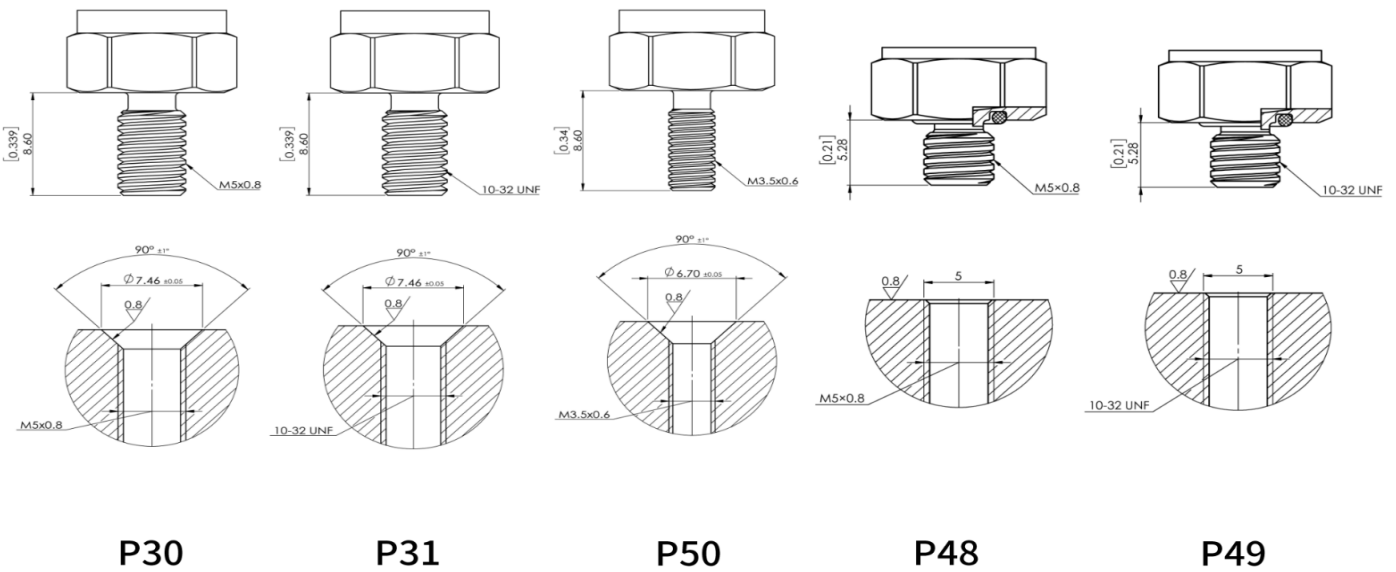
Electrical connector	Pin Definition	Electrical Output			
		S1	S2	S4	S7
C8	Red	Vin+	Vin+	Vin+	Vin+
	Green	Vout+	Vout+	Vout+	Vout+
	White	Vout-	Vout-		Vout-
	Black	Vin-	Vin-	Vin-	Vin-

- 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 (mm [inch])**



**Pressure fittings & Recommended installation drawings(mm [inch])**



**P30&P31**

Installation torque: 6.5 N·m for pressure range 0–35 MPaA  
O-ring: 3.5 × 1.5 mm, material compatible with the measured medium

**P48 & P49**

Installation torque: 6.5 N·m for pressure range 0–35 MPaA  
O-ring: 4.8 × 1.0 mm, material compatible with the measured medium

**How to Order? Look at the selection table below**

Model No :

**MPT500**

**Signal output**

- S1** 0~100mV output, 10VDC powered, output proportional to supply voltage, four-wire.
- S2** 0~100mV output, 8-16VDC powered, output independent of supply voltage, four-wire.
- S4** 0.5~4.5V output, 8~32VDC powered, high-precision digital compensation, three-wire
- S7** Uncompensated six-wire output. Typically used with external compensation circuit.  
See compensation circuit specification.

**Electrical Connection**

**C8** 4x30AWG (1m length) tinned shielded wire

**C26** 6x30AWG (1m length) tinned shielded wire

Note:Other specifications are available upon request.

**Pressure Connection Fittings**

**P30** M5\*0.8 external thread

**P31** 10-32 UNF external thread

**P48** M5\*0.8 external thread, **Length: 5.28mm**

**P49** 10-32 external thread, **Length: 5.28mm**

**P50** M3.5X0.6 external thread

Note:Other specifications are available upon request

**Compensation Temperature Range**

**TA** 25°C~80°C

**TE** -10°C~50°C

**TB** -20°C~125°C

**TF** -20°C~80°C

**TC** -40°C~125°C

**TG** -40°C~80°C

**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

<b>MPT500</b>	<b>S1</b>	<b>C8</b>	<b>P30</b>	<b>TA</b>	<b>A1</b>	<b>CA</b>	<b>Pressure Range</b> 0~35 0~35	<b>Unit</b> MPa MPa	<b>Type</b> A (Absolute Pressure) S (Sealed Gauge Pressure)	<b>Special Requirements</b> Refer to the purchase contract for details on 'S'.
<b>MPT500</b>	<b>S1</b>	<b>C8</b>	<b>P30</b>	<b>TA</b>	<b>A1</b>	<b>CA</b>	<b>0~10</b>	<b>Mpa</b>	<b>A</b>	<b>S</b>

**MPT500- S1C8P30TAA1CA, 0~20Mpa, A**

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