

## MPTW100 Series

### Miniature Pressure Sensor

#### Applications

Aerospace  
Automobile Manufacturing  
Oil and Gas  
Industrial Automation  
Energy and Power

#### Features

Light in weight ( $\leq 24.5g$ )  
Compact structure design  
High precision pressure measurement  
Wide Range  
Fast Response  
High frequency

#### Profiles



The MPTW100 series pressure sensor from DABEY Technology is a high-precision sensor that's compact, multifunctional, and designed for a wide temperature range. It uses advanced MEMS silicon micromachining, has an oil-filled medium isolation, robust interference-resistant circuitry, and stainless steel construction. This makes it highly accurate, reliable, and suitable for various media.

The MPTW100 series offers an electronic circuit with a 10KHz frequency bandwidth and a front-mounted pressure core for a smaller size, wider range, and stronger pressure resistance. It provides multiple electrical output signals and can measure both absolute and sealed gauge pressure.



# DATASHEET

## PRESSURE MEASUREMENT

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

Power-up Time	S1、S2<1ms S3、S4、S5、S6 <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	S3、S4、S5、S6 <25mA
Input Impedance	S1、S2 >5000 $\Omega$
Output impedance	S1、S2 5000 $\Omega$ S3、S4、S5、S6 <150 $\Omega$
Long-term stability	Typical values $\pm 0.1\%FS$
Electrical connection	See selection table, can be customized

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

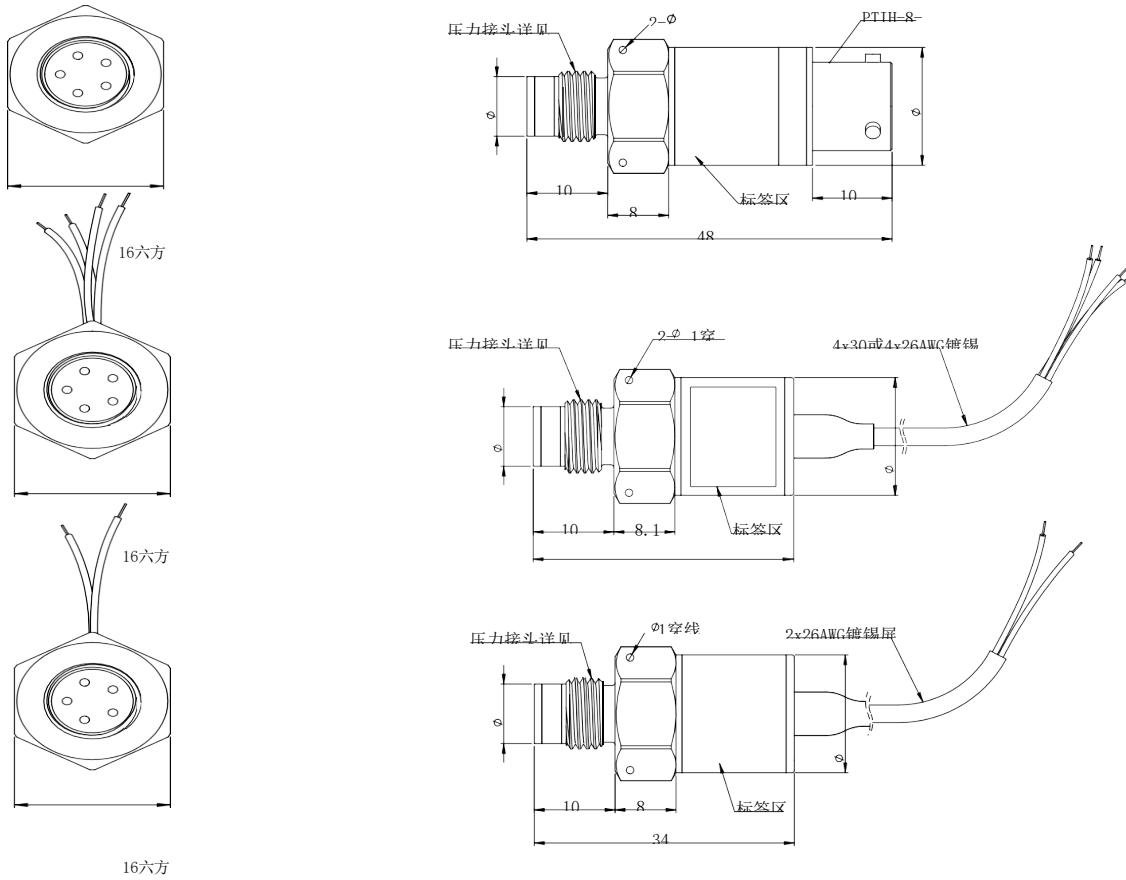
Specifications	Description
Temperature Compensation Range	Selectable within the range of -55°C to 150°C
Operating and storage temperature range	-55°C-150°C
Total error in the whole temperature zone <sup>7</sup>	S1、S2 Zero drift < $\pm 1.5\% FS^5/100^\circ C$
	Full scale drift < $1.5\% FS^5/100^\circ C$
	S3、S4、S5、S6
	Total error <sup>6</sup> < $0.25\% FS^5/100^\circ C$

### Electrical Interface Definition

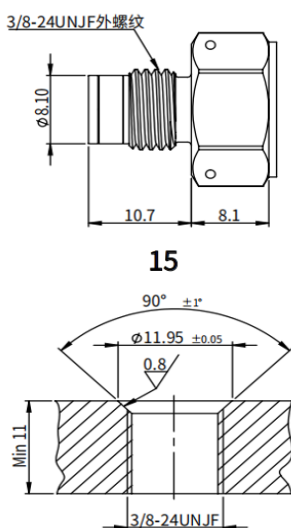
Electrical connector	Pin Definition	Electrical Output					
		S1	S2	S3	S4	S5	S6
C5	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
C8 C14	Red	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	Green	Vout+	Vout+		Vout+	Vout+	Vout+
	White	Vout-	Vout-			Vout-	Vout-
	Black	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
C9	Red			Vin+			
	Black			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

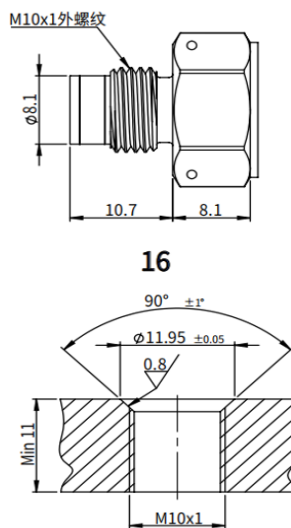
**Outline Drawing**



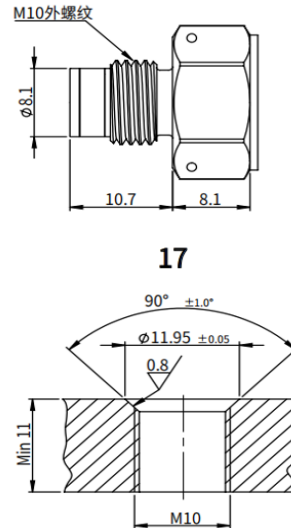
**Pressure fittings & Recommended installation drawings**



**15**



**16**



**17**

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**

**MPTW100**

**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.
- S3** 4~20mA output, 12~28VDC powered, high-precision digital compensation, two-wire
- S4** 0.5~4.5V output, 8~32VDC powered, high-precision digital compensation, three-wire
- S5** 0~5V output, 8~32VDC powered, high-precision digital compensation, four-wire,  
output common mode 2.5V (typical)
- S6** 0~10V output, 14~32VDC powered, high-precision digital compensation, four-wire,  
output common mode 5V (typical)

**Circuit Connections**

- C5** PTIH-8-4P
- C8** 4x30AWG (1m length) tinned shielded wire
- C9** 2x26AWG (1m length) tinned shielded wire
- C14** 2x26AWG (1m length) tinned shielded wire

Note:Other specifications are available upon request.

**Pressure Connection Fittings**

- P15** 3/8-24 UNJF external thread
- P16** M10x1 external thread
- P17** M10 external thread

Note:Other specifications are available upon request

**Compensation Temperature Range**

- |                       |                      |
|-----------------------|----------------------|
| <b>TA</b> 25°C~80°C   | <b>TE</b> -10°C~50°C |
| <b>TB</b> -20°C~125°C | <b>TF</b> -20°C~80°C |
| <b>TC</b> -40°C~125°C | <b>TG</b> -40°C~80°C |
| <b>TD</b> -55°C~150°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

**Pressure Range**

- 0~70
- 0~70

**Unit**

- MPa
- MPa

**Type**

- A (Absolute Pressure)
- S (Sealed Gauge Pressure)

**Special Requirements**

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

<b>MPTW100</b>	<b>S1</b>	<b>C5</b>	<b>P15</b>	<b>TA</b>	<b>A1</b>	<b>CA</b>	<b>0-20</b>	<b>MPa</b>	<b>A</b>	<b>S</b>
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**MPTW100-S1C5P15TAA1CA, 0~20Mpa, A**