



TIANSHUI HUATIAN SENSOR

CYB1800 SERIES DIFFERENTIAL PRESSURE TRANSMITTER



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CE

CYB1811

1 Introduction

CYB1800 series is a small-profile differential pressure transmitter. This series of products use high-reliability silicon piezoresistive differential pressure sensors as the core components, and output standard industrial signals after temperature compensation, digital circuit correction and signal conditioning. Each type of product has undergone careful design, component screening, process verification and curing, cyclic loading and aging, environmental simulation testing and other processes to ensure that each product is stable and reliable.



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2 Features

- compact size, easy to install
- high stability, low drift
- a variety of structures
- can be used in industrial occasions

3 Main uses

CYB1800 series differential pressure transmitter is widely used in various pressure differential measurement due to its excellent accuracy and reliability. Especially in coal mine, oil field, chemical industry, civil explosion, environmental protection, medicine, water affairs, shipping and other industries, Huatian pressure transmitters have been widely recognized by customers.

4 Technical index

Range	MPa	-0.1MPa...0kPa~10kPa...3.5MPa		
Pressure form		D		
Accuracy		0.1 (customized)	0.25	0.5
Nonlinearity (FS%)		≤0.1	≤0.2	≤0.4
Hysteresis, repeatability (FS%)		≤0.05	≤0.05	≤0.1
Zero point and sensitivity temperature drift (%FS/°C)		≤0.015	≤0.03	≤0.05
Long-term stability (%FS/year)		≤0.1	≤0.2	≤0.5
Operating voltage (VDC)		+10~+30(calibration value is +24)		
Output signal		4mA~20mA / 0~10V / RS485 / I ² C bus type		
Compensation temperature (°C)		0~+50 (≤200kPa), -10~60 (>200kPa)		
Operating temperature (°C)		-30~+60		
Overload capacity (%)		≤200		
Load resistance (Ω) (4mA~20mA)		R=(U-12.5)/0.02-RD U: the power supply voltage RD: the internal resistance of the cable		
Response time (10%~90%) ms		≤1		
Measuring medium		fluid compatible with 304 and 316L		
Diaphragm material		316L		
Shell material		304, 316L / aluminum alloy		
Interface		304, 316L optional		
Protection		IP65(customizable IP67)		

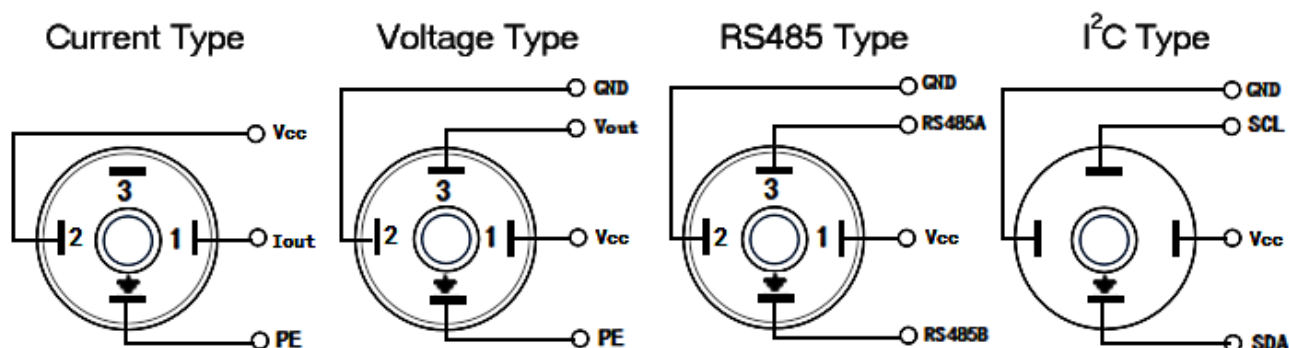


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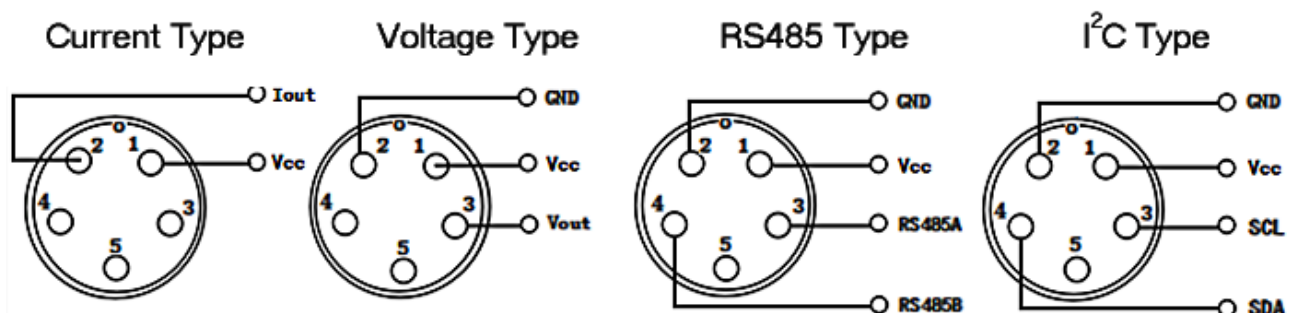
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5 Electrical connections

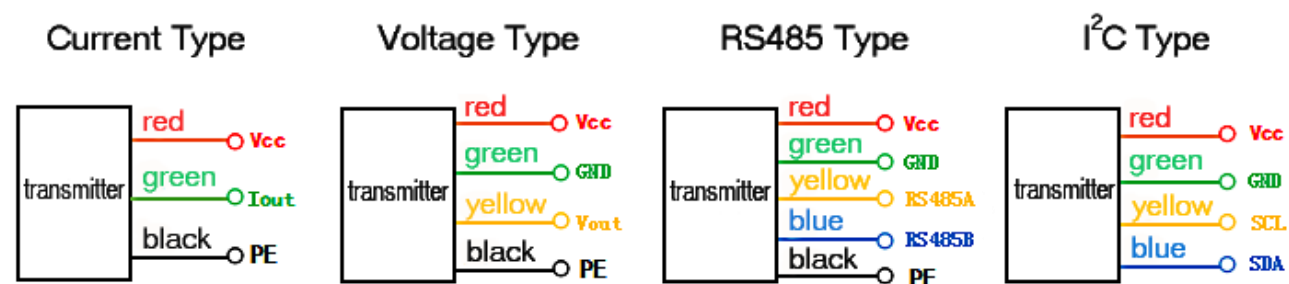
5.1 Hirschmann socket



5.2 Aviation socket



5.3 Direct cable outlet



6 Process interface size

Dimension D	Length L
M22×1.5	15
M20×1.5	15
M18×1.5	15
M16×1.5	15
M14×1.5	15

Dimension D	Length L
M12×1	15
M10×1	12
M8×1	12
G1/2	15
G1/4	15

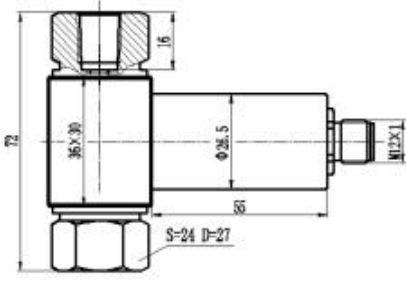
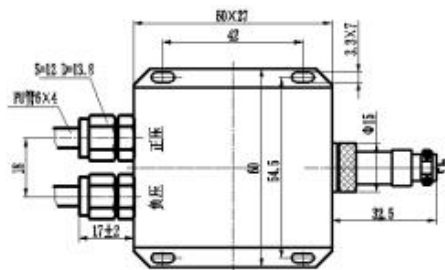
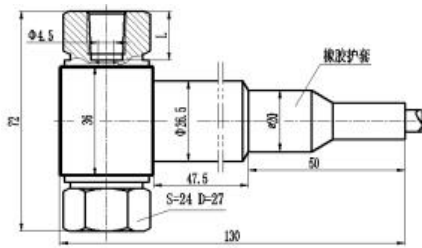
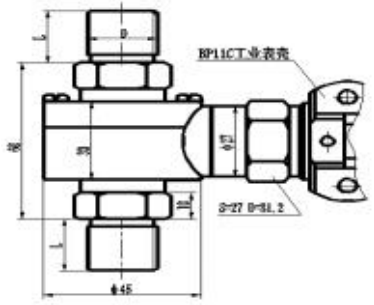
Dimension D	Length L
G1/8	12
G3/8	15
1/2NPT	18
1/4NPT	15
1/8NPT	12

Dimension D	Length L
3/8NPT	15
1/2PT	18
1/4PT	15
1/8PT	12
3/8PT	15

7 Election

7.1 Model characteristics and drawings

Model	Features	Drawing
Hirschmann socket		
CYB1810	<ol style="list-style-type: none"> 1. Standard Hirschmann socket 2. The full range of recommended threads is optional 3. The pressure interface material can be customized 4. Protection grade IP65 	
CYB1811	<ol style="list-style-type: none"> 1. Standard Hirschmann socket 2. The full range of recommended threads is optional 3. The pressure interface material can be customized 4. Protection grade IP65 	
Waterproof connector		
CYB1820	<ol style="list-style-type: none"> 1. Standard waterproof connector 2. The recommended series of threads are optional 3. The pressure interface material can be customized 4. Protection grade IP65 	
CYB1825	<ol style="list-style-type: none"> 1. Non-corrosive dry gas measurement 2. The recommended series of threads are optional 3. The pressure interface material can be customized 4. Cast aluminum housing, SS304 process connector 	
CYB1828	<ol style="list-style-type: none"> 1. Non-corrosive dry gas measurement 2. The recommended series of threads are optional 3. The pressure interface material can be customized 4. 4-digit LCD display 	

Aviation connector		
<p>CYB1830</p>	<ol style="list-style-type: none"> 1. Standard integrated aviation connector 2. The full range of ranges, the recommended series of threads are optional 3. The pressure interface material can be customized 4. Protection grade IP65 	 <p>Technical drawing of the CYB1830 aviation connector. It shows a side view with dimensions: 16mm for the top flange, 72mm for the main body height, 36x30mm for the main body, 26.5mm for the internal thread, 50mm for the total length, and S-24 D-27 for the connector type. The output is M12x1.</p>
<p>CYB1835</p>	<ol style="list-style-type: none"> 1. Non-corrosive dry gas measurement 2. The full range of ranges, the recommended series of threads are optional 3. The pressure interface material can be customized 4. Square shell 	 <p>Technical drawing of the CYB1835 aviation connector. It shows a side view with dimensions: 80x27mm for the top flange, 42mm for the main body width, 3.3x7mm for the output, 15mm for the main body height, 60mm for the main body, 54.5mm for the internal thread, 17±2mm for the bottom flange, and 32.5mm for the total length. The output is M12x1.</p>
Cable outlet		
<p>CYB1841</p>	<ol style="list-style-type: none"> 1. Waterproof liquid level outlet, waterproof grade IP68 2. Flat membrane structure, easy to clean 3. The pressure interface M20×1.5, G1/2 is optional 	 <p>Technical drawing of the CYB1841 cable outlet. It shows a side view with dimensions: 4.5mm for the top flange, 72mm for the main body height, 36mm for the main body, 26.5mm for the internal thread, 47.5mm for the total length, and 50mm for the cable outlet. The output is S-24 D-27.</p>
<p>CYB1863</p>	<ol style="list-style-type: none"> 1. BP11 industrial housing 2. Pressure port M20×1.5 or G1/2 3. Waterproof grade IP68 	 <p>Technical drawing of the CYB1863 cable outlet. It shows a side view with dimensions: 45mm for the top flange, 80mm for the main body height, 36mm for the main body, 26.5mm for the internal thread, 47.5mm for the total length, and 50mm for the cable outlet. The output is S-27 D-31.2. The housing is labeled BP11CT工业表壳.</p>



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7.2 Selection Guide

CYB18X ₃ X ₄		differential pressure transmitter													
	range		measuring range -0.1MPa...0MPa~0.01MPa...3.5MPa												
	xxn		unit is kPa. The first two digits of XX are multiplied by 10, and N is the third digit.												
		code name		pressure form											
		D		differential pressure type											
				code name		supply voltage									
				U ₁		24VDC									
				U ₂		12VDC									
				U ₅		other power supply methods									
					code name		output signal								
					E ₁		4mA~20mADC								
					V ₃		0VDC~10VDC								
					V ₅		other voltage output								
					R ₄		RS485 communication Interface								
					H		HART® protocol communication								
					II		I ² C protocol communication								
					code name	interface									
						electrical Interface				process interface					
					Hirschmann socket (J1)				G¼						
					Aviation connector (J2)				G½						
					Waterproof connector (J3)				G1						
					Cable outlet (J4)				M20×1.5						
					others(J5)				Others (customized)						
						code name		Direct label							
						M ₁		4-digit LCD digital display meter (only 4mA~20mADC output)							
						M ₂		4-digit LED digital display header (only 4mA~20mADC output)							
						d		ExdIICT5							
						i		ExiaIICT6							
						QT		other functions							
CYB1811 [102] D		U ₁	V ₃	J1G½	complete model specifications										

Ordering model CYB1811 [102] D U1 V3 J1G½ indicates the product model CYX1811, measuring range 1MPa, differential pressure, 24V power supply, 0~10V output, Hirschmann socket, G1/2 threaded connector.



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8 Precautions

- 8.1 When the product range is within $-5 \sim 5\text{kPa}$, the sensor uses non-isolated silicon piezoresistive differential pressure chip, and the product can only measure non-corrosive gases.
- 8.2 If the product will be immersed or submerged, please order the cable outlet type, or consult us.
- 8.3 The installation interfaces on both sides ensure coaxial, free from excess external stress.
- 8.4 The static pressure should be within the range specified by the transmitter.
- 8.5 Please install a balance valve in an easy single overvoltage measurement environment.
- 8.6 When installing, the spanner shall be used on the hexagon of the pressure joint close to the thread, and the indicator should not be used as a focal point to prevent the failure of the product from sealing.