HSDP-W Series

Liquid Differential Pressure Transmitters

Honeywell HSDP-W Series Liquid Differential Pressure Transmitters are mainly used for the measurement of liquid pressure. The sensitive element of the liquid differential pressure transmitters is a solid piezoresistive sensitive chip, and the part in contact with the measured liquid is the corrugated diaphragm on both sides of the transmitters, and the space between the sensitive chip and the corrugated diaphragm is filled with silicone oil. The measured differential pressure acts on the corrugated diaphragm and is transmitted to the sensitive chip through silicone oil. Using the piezoresistive effect of semiconductor silicon materials, the conversion of differential pressure and electrical signals is realized. Since the output signal of the Wheatstone bridge on the sensitive chip has a good linear relationship with the differential pressure, accurate measurement of the measured differential pressure can be realized.

Features

- Using temperature compensation and high temperature screening to achieve stable and reliable performance.
- Fully sealed structure by laser welding.
- Various control signal outputs (0-10V, 4-20mA, Modbus RTU)
- 1-meter extension cable for easy wiring

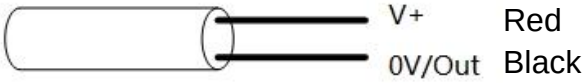
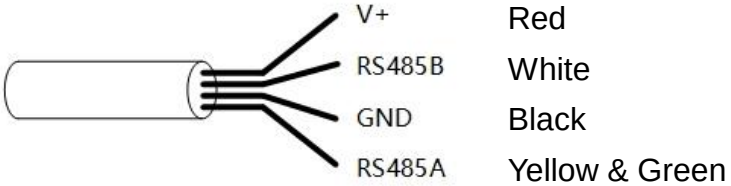
Basic Parameters

SKU Group	HSDP-WxxxxA HSDP-WxxxxV	HSDP-WxxxxM	HSDP-WxxxxAL
Output Signal /Protocol	HSDP-WxxxxA:4-20mA HSDP-WxxxxV:0-10V	Modbus RTU	4-20mA
Sensor Type	Piezoresistive Differential Pressure Sensor		
Operation mode	**Only Positive sensing is allowed** (positive sensing means high pressure side pressure is greater than low pressure side pressure) **Negative sensing is not allowed** (Negative sensing means high pressure side pressure lower than low pressure side pressure)		
Accuracy	Full Scale(FS) > 200 kPa: ±0.25%FS Full Scale(FS) ≤ 200 kPa: ±0.5%FS (This accuracy is met within the compensation temperature)		
Stability	±0.2%F.S / Year (Full Scale > 200 kPa) ±0.5%F.S / Year (Full Scale ≤ 200 kPa)		
Compensation Temperature Range	-10℃ to 60 ℃	-10℃ to 70 ℃	-10℃ to 60 ℃
Reaction Time	50ms	200ms	50ms
Overload Pressure	Positive sensing: ≤ 2 x FS Negative sensing is not allowed		
Rupture Pressure	Positive sensing: ≤ 3 x FS Negative sensing: < 200kPa		
Single side Max Static Pressure	≤20MPa		
Static Pressure Impact	± 0.05% F.S / 100kPa		
Applicable Medium	Cold & Hot water or glycol solution with a maximum concentration of 50%.		
Medium Temp.	-20℃ to 70℃	-20℃ to 70℃	-20℃ to 80℃
Operation Temp.	-20℃ to 70℃	-20℃ to 70℃	-20℃ to 80℃
Storage Temp.	-20℃ to 85℃	-20℃ to 85℃	-20℃ to 85℃
Power Supply	12V to 28V DC(4-20mA) 15V to 28V DC(0-10VDC)	3.6V to 28VDC	16V to 28V DC
Connection number for RS485 RTU devices	A maximum of 64 devices can be connected to a single network segment		
Connection	Female thread G1/4		
Protection standard	IP68 (EN 60529)	IP68 (EN 60529)	IP65 (EN 60529)
Wiring	Lead Wire:1m (Φ7.4mm cable)	Lead Wire:1m (Φ7.4mm cable)	Hersman Joint With 1 meter cable (Φ6mm cable)
Electromagnetic compatibility (Applications)	EN IEC61000-6-2: 2019, EN IEC61000-6-4: 2019 For use in residential, commerce, light industrial and industrial environments		
Certification	CE(EN IEC61000-6-2: 2019, EN IEC 61000-6-4: 2019), RoHS		
Materials	Housing : SS304 Sensing diaphragm : 316L Cable : PEC O-ring sealing : FPM		Housing : SS304 Sensing diaphragm : 316L Cable : PUR O-ring sealing : FPM LED housing : ABS

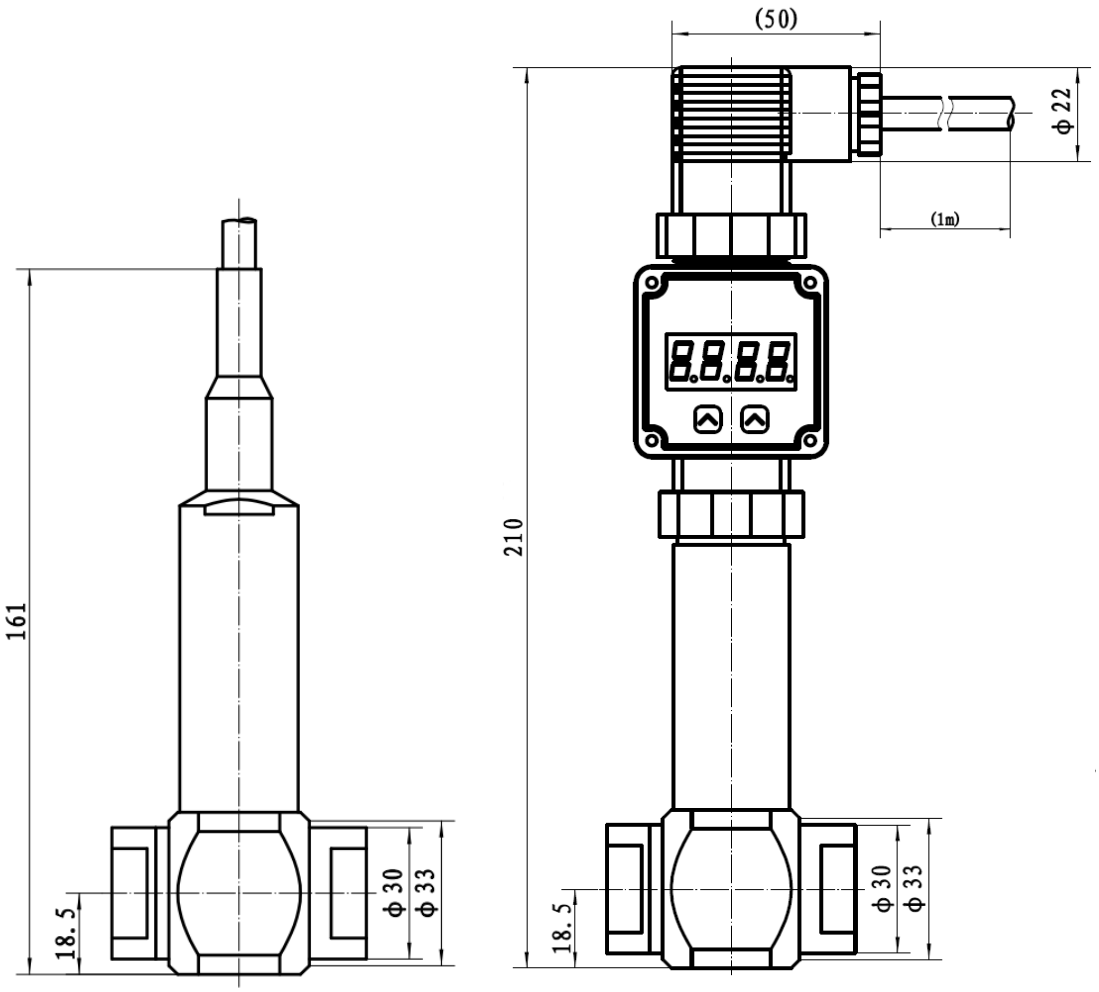
Order Information and Technical Specification

SKU	Full Scale	Output Signal /Protocol	Display Option
HSDP-W0035A	0 to 35kPa	4-20mA	NO
HSDP-W0070A	0 to 70kPa	4-20mA	NO
HSDP-W0100A	0 to 100kPa	4-20mA	NO
HSDP-W0200A	0 to 200kPa	4-20mA	NO
HSDP-W0350A	0 to 350kPa	4-20mA	NO
HSDP-W0700A	0 to 700kPa	4-20mA	NO
HSDP-W1000A	0 to 1000kPa	4-20mA	NO
HSDP-W2000A	0 to 2000kPa	4-20mA	NO
HSDP-W3500A	0 to 3500kPa	4-20mA	NO
HSDP-W0035V	0 to 35kPa	0-10V	NO
HSDP-W0070V	0 to 70kPa	0-10V	NO
HSDP-W0100V	0 to 100kPa	0-10V	NO
HSDP-W0200V	0 to 200kPa	0-10V	NO
HSDP-W0350V	0 to 350kPa	0-10V	NO
HSDP-W0700V	0 to 700kPa	0-10V	NO
HSDP-W1000V	0 to 1000kPa	0-10V	NO
HSDP-W2000V	0 to 2000kPa	0-10V	NO
HSDP-W3500V	0 to 3500kPa	0-10V	NO
HSDP-W0035AL	0 to 35kPa	4-20mA	YES
HSDP-W0070AL	0 to 70kPa	4-20mA	YES
HSDP-W0100AL	0 to 100kPa	4-20mA	YES
HSDP-W0200AL	0 to 200kPa	4-20mA	YES
HSDP-W0350AL	0 to 350kPa	4-20mA	YES
HSDP-W0700AL	0 to 700kPa	4-20mA	YES
HSDP-W1000AL	0 to 1000kPa	4-20mA	YES
HSDP-W2000AL	0 to 2000kPa	4-20mA	YES
HSDP-W3500AL	0 to 3500kPa	4-20mA	YES
HSDP-W0035M	0 to 35kPa	Modbus	NO
HSDP-W0070M	0 to 70kPa	Modbus	NO
HSDP-W0100M	0 to 100kPa	Modbus	NO
HSDP-W0200M	0 to 200kPa	Modbus	NO
HSDP-W0350M	0 to 350kPa	Modbus	NO
HSDP-W0700M	0 to 700kPa	Modbus	NO
HSDP-W1000M	0 to 1000kPa	Modbus	NO
HSDP-W2000M	0 to 2000kPa	Modbus	NO
HSDP-W3500M	0 to 3500kPa	Modbus	NO

Wiring

Output Signal/Protocol	Wiring diagrams
4-20mA	
0-10V	
Modbus RTU	

Dimension (mm)



Application Precautions

1. Accuracy: The accuracy of this product is directly related to the temperature of the applied medium, so the declared accuracy value is the accuracy value when the medium temperature is within the compensation temperature range. When the medium temperature is not within the compensation temperature range, its accuracy cannot be guaranteed.
2. Applicable medium: This product can only be used for the media listed in this document. It may not work or cause damage to the product when used for media not listed in this document.
3. Applicable medium temperature range: The applicable temperature range declared by this product means that the product can work normally within the medium temperature range and will not be damaged or the function is not guaranteed. When working outside the applicable medium temperature range, the product may be damaged or the function cannot be guaranteed. The declared temperature and humidity range for the working environment and storage environment of the product has the same impact on this product as the applicable medium temperature range.
4. Overload differential pressure refers to the maximum differential pressure that the sensor can withstand. If the differential pressure that the sensor withstands exceeds the overload differential pressure, it may cause performance degradation or damage. Therefore, when selecting a sensor, please note that the maximum differential pressure that the selected sensor must withstand must be less than the overload differential pressure.
5. The burst pressure difference refers to the pressure difference under which the sensor will be damaged. Therefore, when selecting the sensor, please note that the maximum pressure difference of the pipeline installed in the selected sensor must be less than the burst pressure difference.
6. The sensor already has an extension cable for connecting to external cables. Do not disassemble the sensor body when wiring unless necessary to avoid damage.
7. The high-pressure side and low-pressure side need to be clearly identified during product installation to avoid wrong connection. If the connection is wrong, the product will be damaged.
8. Power supply: The product can work normally under the power supply conditions required by this document. If this requirement is not met, the product may not work properly or be damaged. Therefore, before the product is powered on, you need to ensure that the product wiring is correct and the power supply meets the requirements.
9. Electromagnetic compatibility and application: The technical parameters of electromagnetic compatibility of this product meet the standards EN IEC61000-6-2: 2019, EN IEC61000-6-4: 2019, and are only suitable for residential, commercial and industrial environments. When using this product, you need to pay attention to the electromagnetic interference of the installation site to meet the standards EN IEC61000-6-2: 2019, EN IEC61000-6-4: 2019. If the electromagnetic interference data on site exceeds the standard, it may affect the normal operation of the product.
10. During product operation, ensure that there is no dirt inside the sensor, otherwise it may cause inaccurate measurement or product damage.

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Honeywell