HPM180S Hard Flush Diaphragm Pressure Transmitter

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Overview

HPM180S hard flush diaphragm pressure transmitter uses a silicon piezoresistive core with a special metal diaphragm as the sensitive element and is assembled and produced through strict process flow. The product has a built-in signal conditioning circuit to convert the pressure sensor signal into a standard current or voltage signal output, which can be directly connected to a computer, control instrument, display instrument, etc. The metal diaphragm is made of 17-4PH material, which has high hardness, good rigidity, scratch resistance and impact resistance. It is suitable for pressure measurement in media containing particulate impurities, such as slurry, crude oil, sewage, etc.

This product adopts a modular design and has a variety of electrical interfaces and pressure interface combinations. The diverse selection can meet almost all pressure measurement needs under harsh on-site conditions in the industrial field.

Features

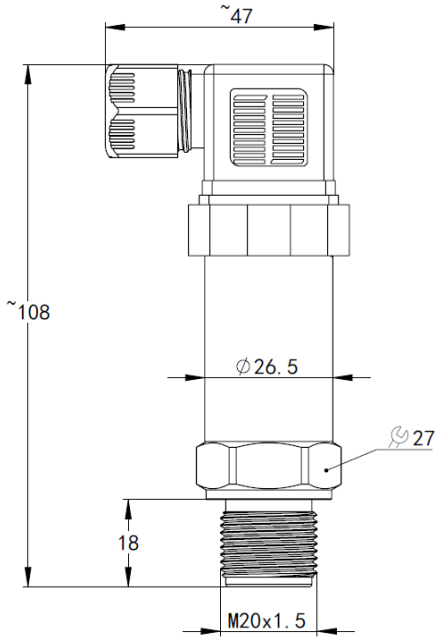
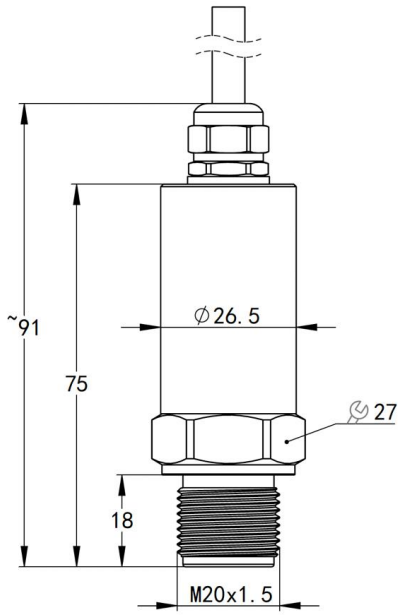
- Pressure measurement of media with particulate impurities
- Multiple pressure interfaces available
- Multiple output signals available
- Wide temperature range compensation, small temperature drift
- Good long-term stability

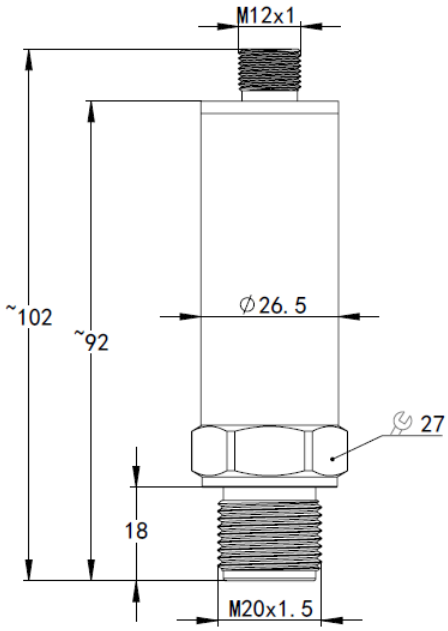
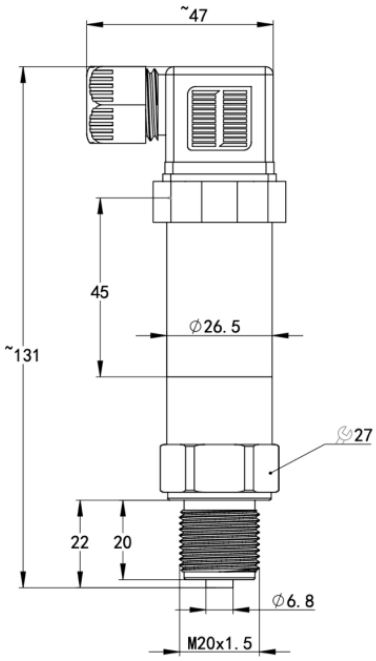
Technical Parameters

Pressure Range (Gauge pressure)	0~0.5MPa…100MPa
Pressure Range (Absolute pressure)	0~1MPa…70MPa
Overload	1.5x of full scale
Measuring medium	Various liquids and gases compatible with contact materials
Output Signal/Power supply	● 2-wire 4~20mA/ Vs=8~30V ● 3-wire 0~5V /Vs=8.5~30V or Vs=3.1~8V (Needs to be higher than the maximum output voltage of 0.4V at the same time) ● 3-wire 0~10V / Vs=12~30V ● 4-wire RS485/ Vs=6~30V
Accuracy	±0.3%FS @25℃
Long-term Stability	±0.25%FS/year
Compensated temperature range	-10~70℃
Temperature Coefficient of Zero	±1.5%FS,Reference 25℃,Within temperature compensation range
Temperature Coefficient of Full Scale	±1.5%FS,Reference 25℃,Within temperature compensation range
Ambient Temperature	-40~85℃
Medium Temperature	-40~125℃

Storage Temperature	-40~85℃
Protection Grade	IP65, with DIN43650 connection (ordering code:C1) IP66, with M12x1 electronic connection (ordering code:C5) IP67, cable outlet (ordering code:C2) IP68, cable outlet (ordering code:C2P)
Vibration	10g(20~2000Hz)
Impact resistance	100g(11ms)
Insulation resistance	>20MΩ @500VDC
Dielectric strength	<2mA 500VAC (Apply 500VAC 50Hz test voltage for 1 minute without breakdown or arcing)

Structure Drawing (unit: mm)

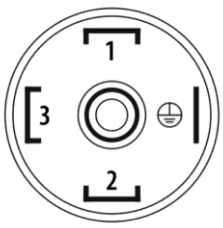
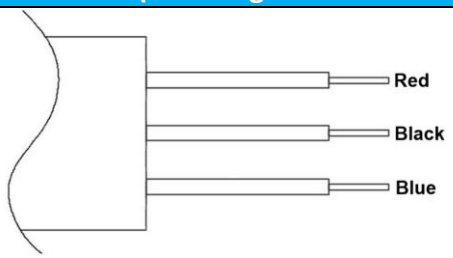
Hirschmann/DIN43650 (Ordering code C1)	Cable outlet (Ordering code C2)
	

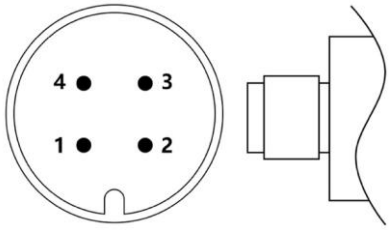
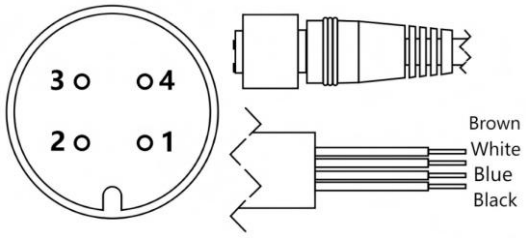
M12×1 (Ordering code C5)	DIN43650 (Ordering Code C1, Range >60MPa)
	

Structural Materials

Ordering Code	Part	Note
S4	Pressure interface	Stainless steel 304 (By default)
S6		Stainless steel 316L
MS	Sensor	17-4PH diaphragm and 316L housing
NB	O ring/ Sealing ring	NBR nitrile sealing ring (Applicable temperature range -40~120℃)
FK		FKM fluor rubber sealing ring (Applicable temperature range -20~200℃)
ED		EPDM sealing ring (Applicable temperature range -55~150℃)

Electrical Connection

Hirschmann/DIN43650(Ordering code:C1)	Cable Outlet (Ordering code:C2 or C2P)
	

M12*1 (Ordering code:C5)	M12*1, with cable (Ordering code:C5X)
	

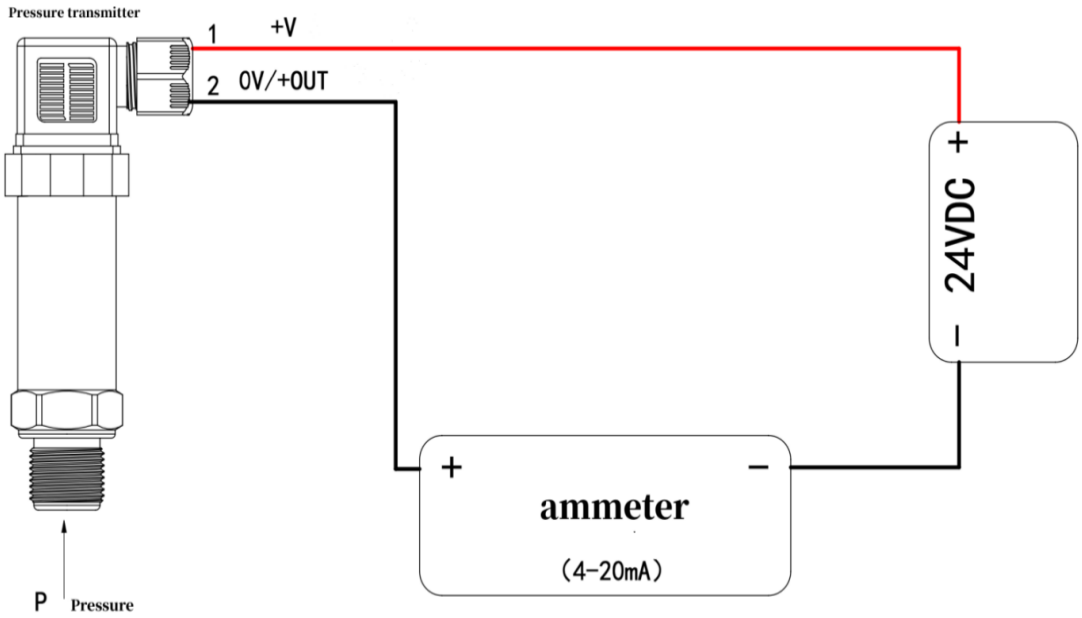
2-wire 4~20mA current output		
Signal definition	**Power+(+V)**	**Power- (0V/+OUT）**
Hirschmann DIN43650	1	2
Cable outlet	Red	Black
M12×1-4P	1	3
M12×1-4P, with cable	Brown	Blue

3-wire 0~5V/10V voltage output			
Signal definition	**Power+(+V)**	**Power- (GND)**	**Signal+(+OUT)**
Hirschmann DIN43650	1	2	3
Cable outlet	Red	Black	Blue
M12×1-4P	1	3	2
M12×1-4P, with cable	Brown	Blue	White

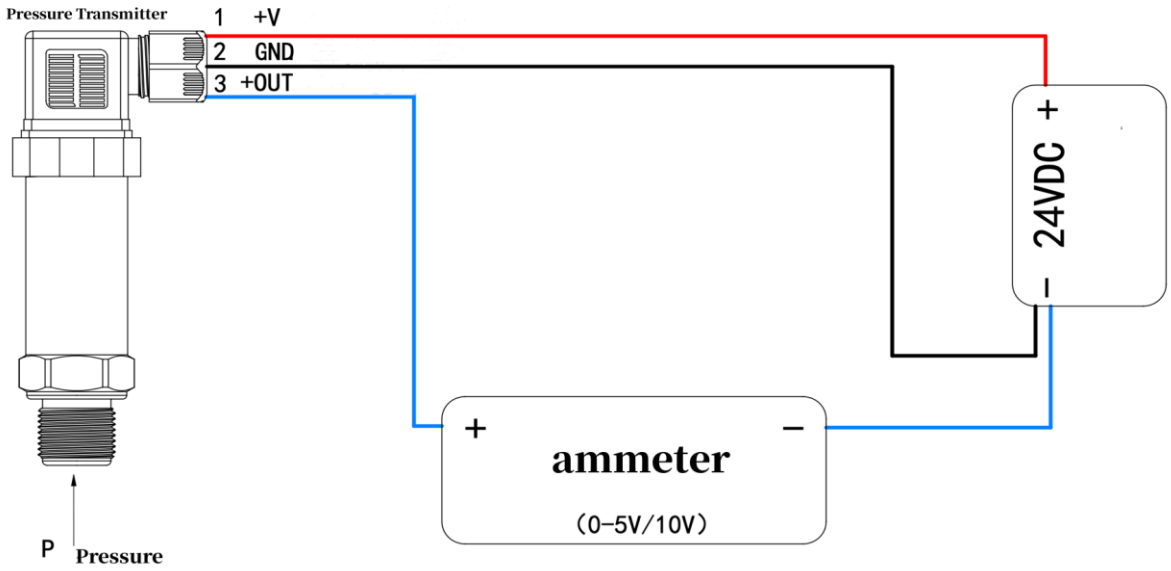
4-wire Modbus-RTU/RS485				
Signal definition	**Power+(+V)**	**Power- (GND)**	**RS485A**	**RS485B**
Hirschmann DIN43650	1	2	3	⏚
Cable outlet	Red	Black	Yellow	Green
M12×1-4P	1	3	2	4
M12×1-4P, with cable	Brown	Blue	White	Black

Electrical Connection Diagram

2-wire 4~20mA current output



3-wire voltage output



Ordering Guide

Model Name	Type						
HPM180S	Hard Flush Diaphragm Pressure Transmitter						
	Pressure range	Measuring range					
	(0~X)MPa	X is the higher limit					
		Code	Output Signal				
		B1	(4~20)mA				
		B3	(0~10)V				
		B4	(0~5)V				
		B5	(1~5)V				
		B7	RS485				
		B15	(1~10)V				
			Code	Pressure Connection			
			P1	M20×1.5 male			
			G12	G1/2 male			
			G14	G1/4 male			
				Code	Electrical Connection		
				C1	DIN43650		
				C2	Cable outlet		
				C2P	Cable outlet, IP68		
				C5	M12x1		
				C5X	M12x1 with cable		
					Code	Sensor	
					MS	17-4PH diaphragm	
						Code	Pressure port interface
						S4	304
						S6	316L
						X	Customized
							Code / Additional Functions
							G: Gauge pressure
							S: Sealed gauge pressure
							A: Absolute pressure
							NB: NBR Nitrile sealing ring
							FK: FKM Viton sealing ring
							ED: EPDM sealing ring
							HB: HNBR Hydrogenated nitrile seal ring
							D1: LED display
							D2: LCD display
							QF: Factory report
							R1: CE certificate
							Other requests
Eg: HPM180S	(0~10)MPa	B1	P1	C1	MS	S4	S FK

Certification Information

Factory certification	
Certification organization	CQM
Quality management system	ISO 9001:2015
Certification scope	Research, development and manufacture of pressure transmitter and temperature transmitter
Certificate No.	00226Q01784R201

CE	
Certification organization	ECM
Certification scope	Pressure Transmitter
Mark	CE
Electromagnetic Compatibility Directive	2014/30/EU
Certificate No.	6G241223.NHEWC83