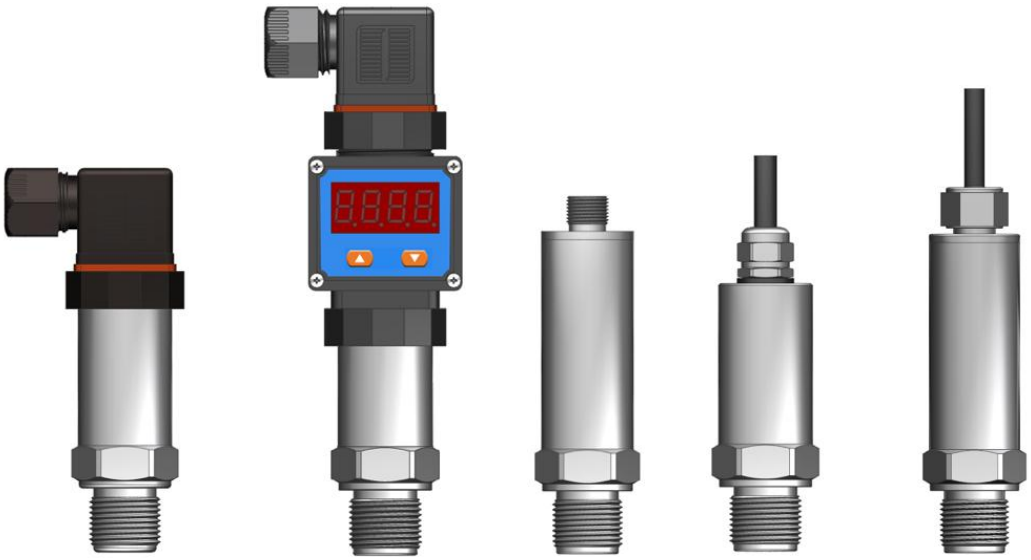
HPM180 Universal Pressure Transmitter



Nanjing Hangjia Electronic Technology Co., Ltd.

Overview

HPM180 universal pressure transmitter uses high-precision and high-stability diffused silicon pressure core 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. This product has a sturdy stainless-steel shell, a variety of output signals to choose from, wide temperature range compensation, strong anti-interference, and good long-term stability.

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 in the industrial field.

Features

- Wide measuring range, can measure gauge pressure, absolute pressure and sealed gauge pressure
- Universal for oil, water and gas
- Multiple pressure interfaces available
- Multiple output signals available
- Wide temperature range compensation, small temperature drift
- Good long-term stability

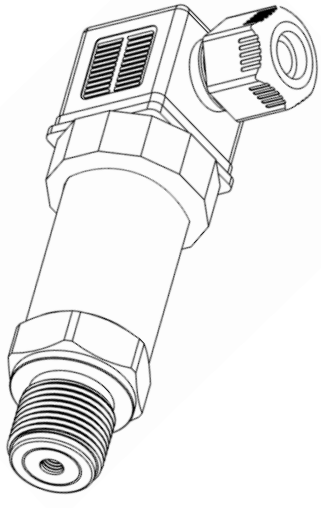
Technical Parameters

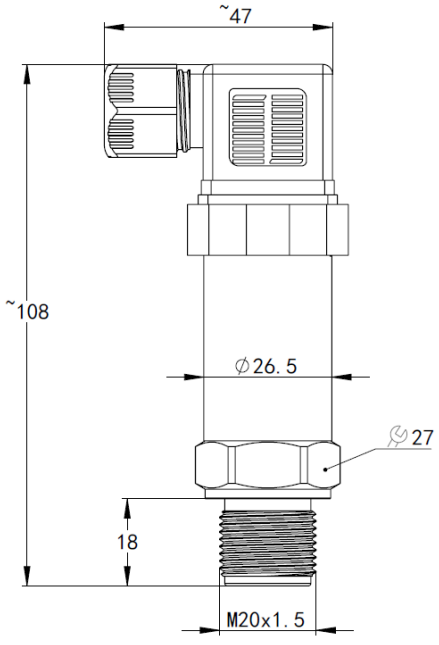
Pressure Range (Gauge pressure)	-100kPa…0~2kPa…100MPa
Pressure Range (Absolute pressure)	0~10kPa…60MPa
Overload	1.5x of full scale
Measuring medium	Various liquids and gases compatible with contact materials
Output Signal/Power supply	● 2-wire 4~20mA/ Vs=8~30V ● 2-wire 4~20mA +HART/ Vs=12~32V ● 3-wire 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
Accuracy	±0.5%FS @25℃ (default) ±0.2%FS @25℃ (Customized) ±0.1%FS @25℃ (Customized)
Long-term Stability	±0.25%FS/year (0.5% accuracy) ±0.2%FS/year (0.2% accuracy) ±0.1%FS/year (0.1% accuracy)
Current resolution	affected only by output noise level, typically ≤0.01%
Boot time	≤200ms

Compensated temperature range	0~70℃ (0.5% accuracy) -10~80℃ (0.2% accuracy) -20~85℃ (0.1% accuracy) Note: Please consult if the measuring range is less than 20kPa
Temperature Coefficient of Zero	±1.0%FS ,Reference 25℃,Within temperature compensation range (10kPa range temperature drift ±2.0%FS, 0~60℃)
Temperature Coefficient of Full Scale	±1.0%FS,Reference 25℃,Within temperature compensation range (10kPa range temperature drift ±2.0%FS, 0~60℃)
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)

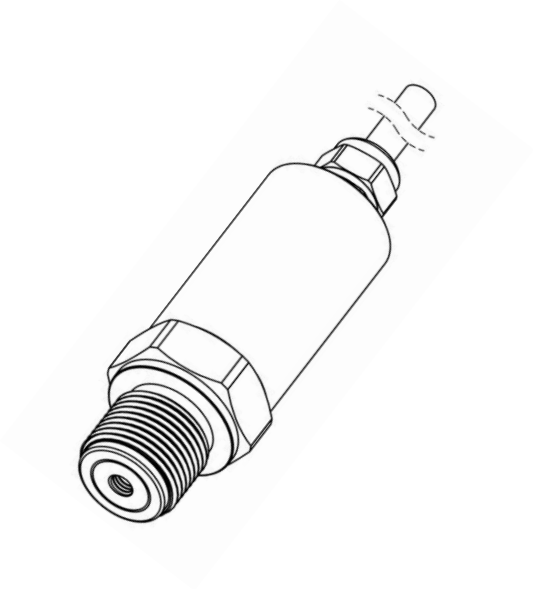
Structure Drawing (unit: mm)

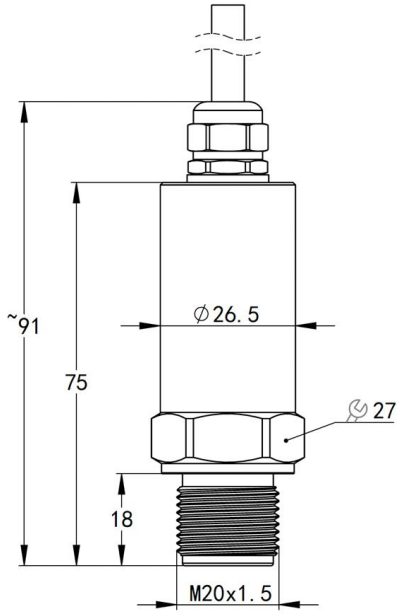
Hirschmann/DIN43650 (Ordering code C1)



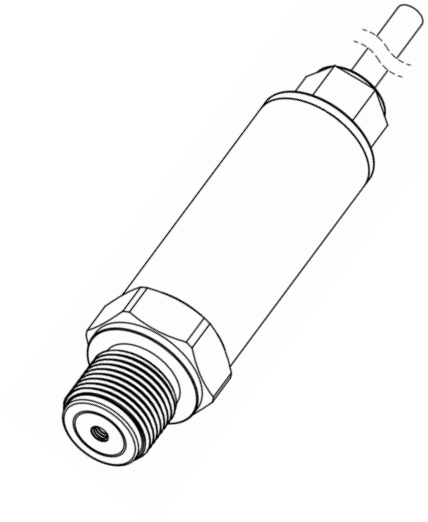


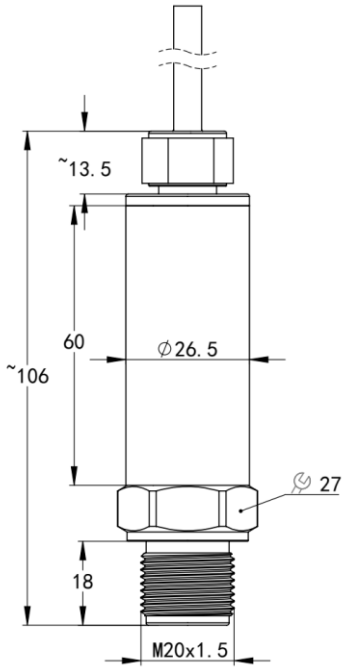
Cable outlet (Ordering code C2)



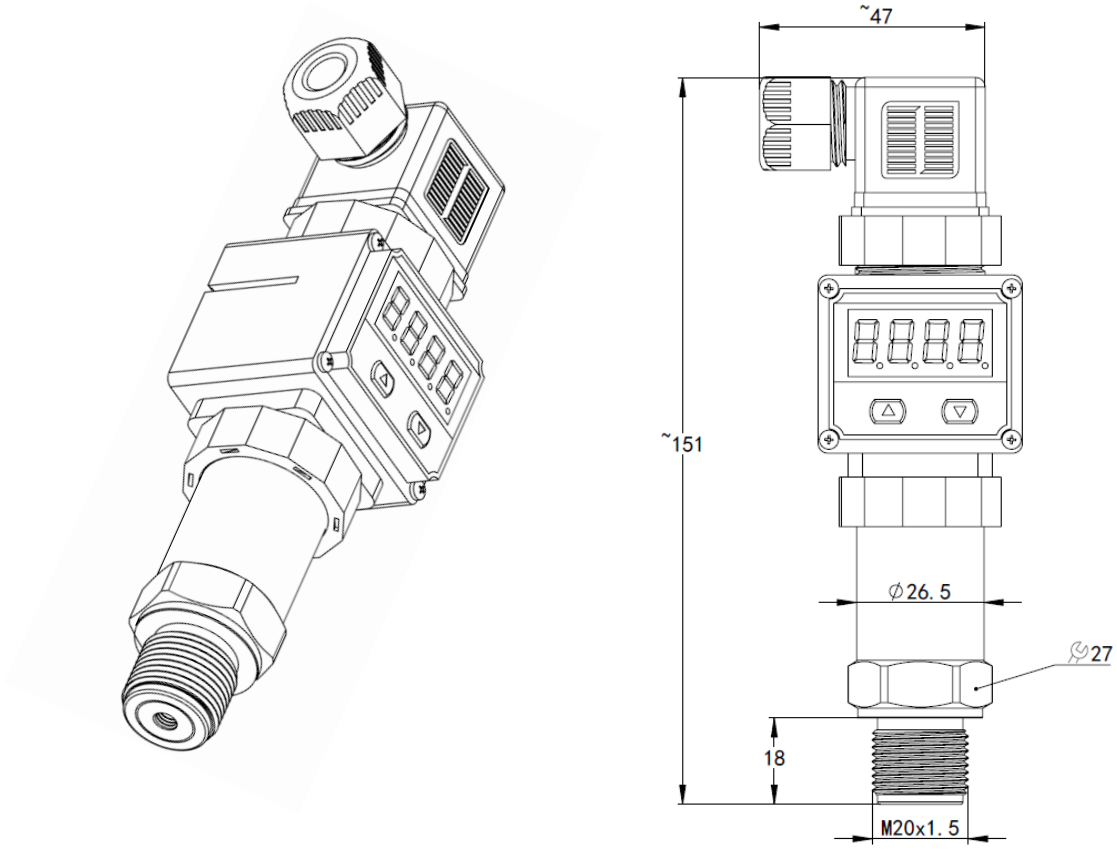


Cable outlet (Ordering code C2P)

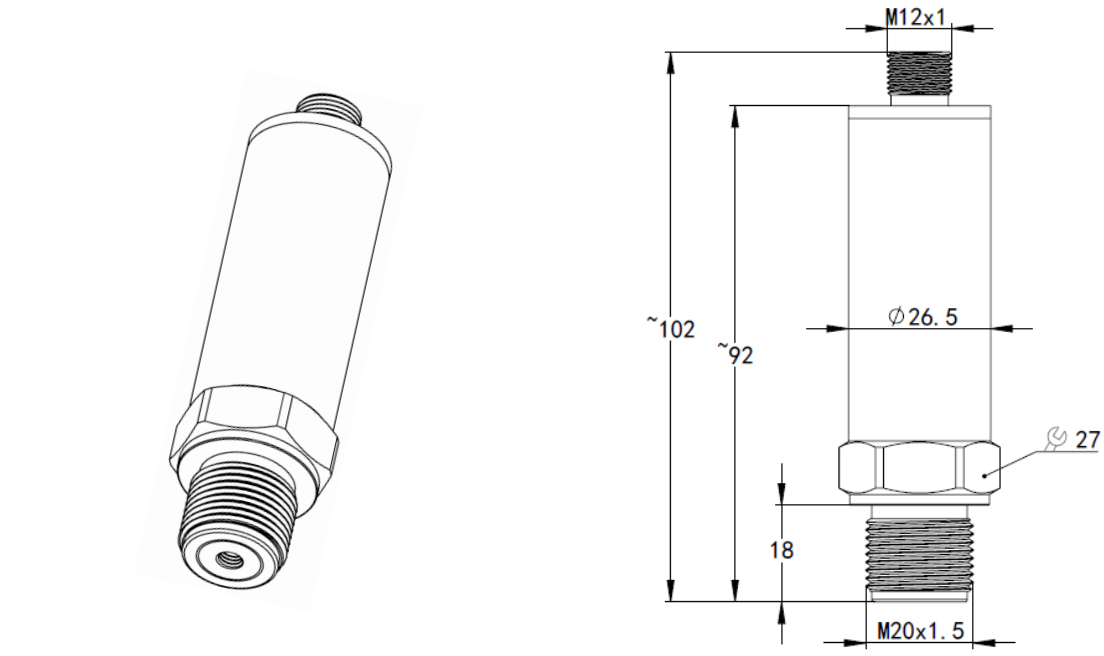




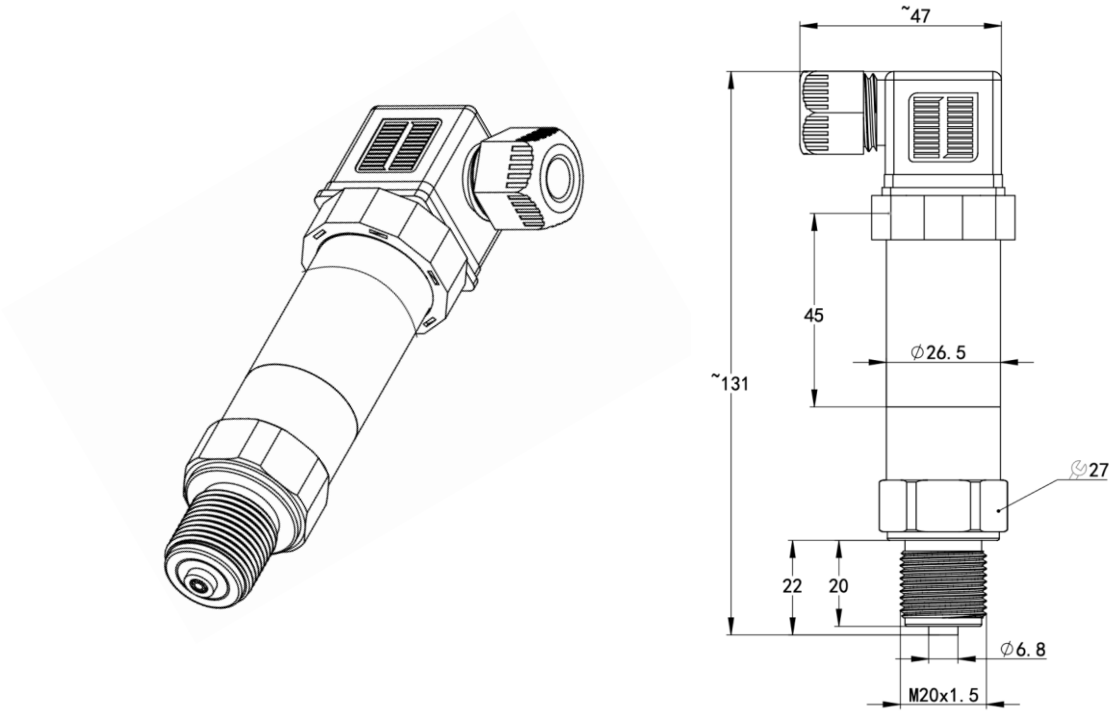
Hirschmann/DIN43650 with LED Display (Ordering code C1+D1)



M12x1 (Ordering code C5)



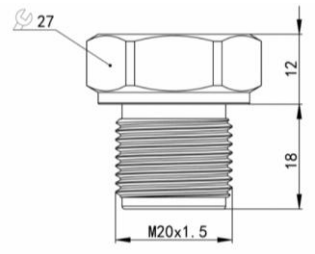
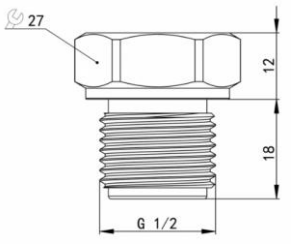
DIN43650, Ultra-High-Pressure Type (Ordering Code C1, Custom Range >60MPa)



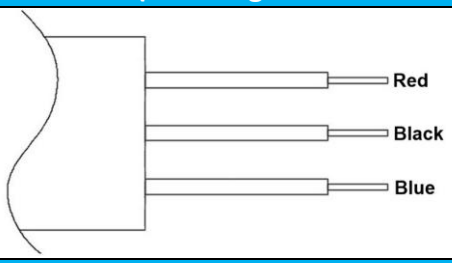
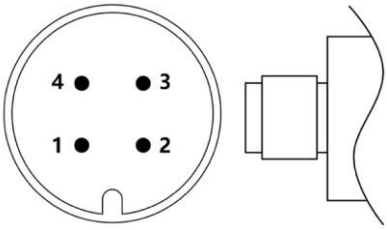
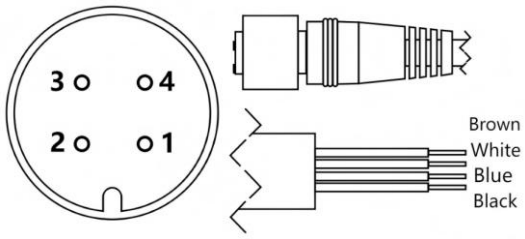
Structural Materials

Ordering Code	Part	Note
S4	Pressure interface	Stainless steel 304 (By default)
S6		Stainless steel 316L
X		Customized
M1	Sensor	Stainless steel 316L
M2		Titanium diaphragm TA1 and titanium shell TC4
M3		Tantalum Diaphragm Ta
M4		Hastelloy C-276
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℃)
HB		HNBR hydrogenated nitrile sealing ring (Applicable temperature range -40~150℃)

Process connection

M20x1.5 (Ordering code: P1)	G1/2(Ordering code: G12)
	

Electrical Connection

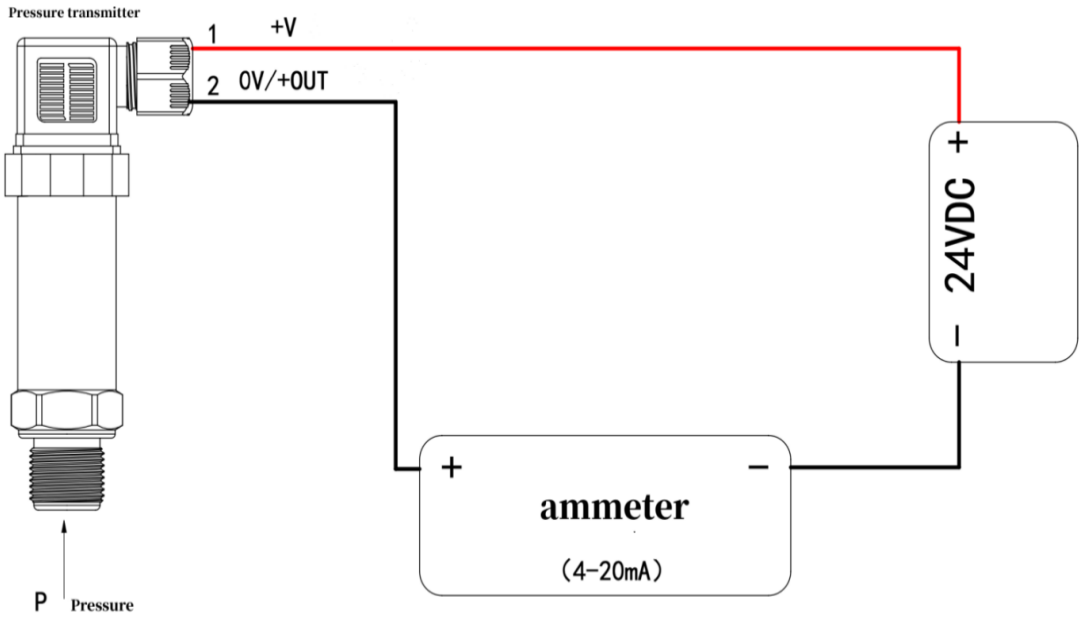
Hirschmann/DIN43650(Ordering code:C1)	Cable Outlet (Ordering code:C2 or C2P)
	
M12*1 (Ordering code:C5)	**M12*1, with cable (Ordering code:C5X)**
	

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

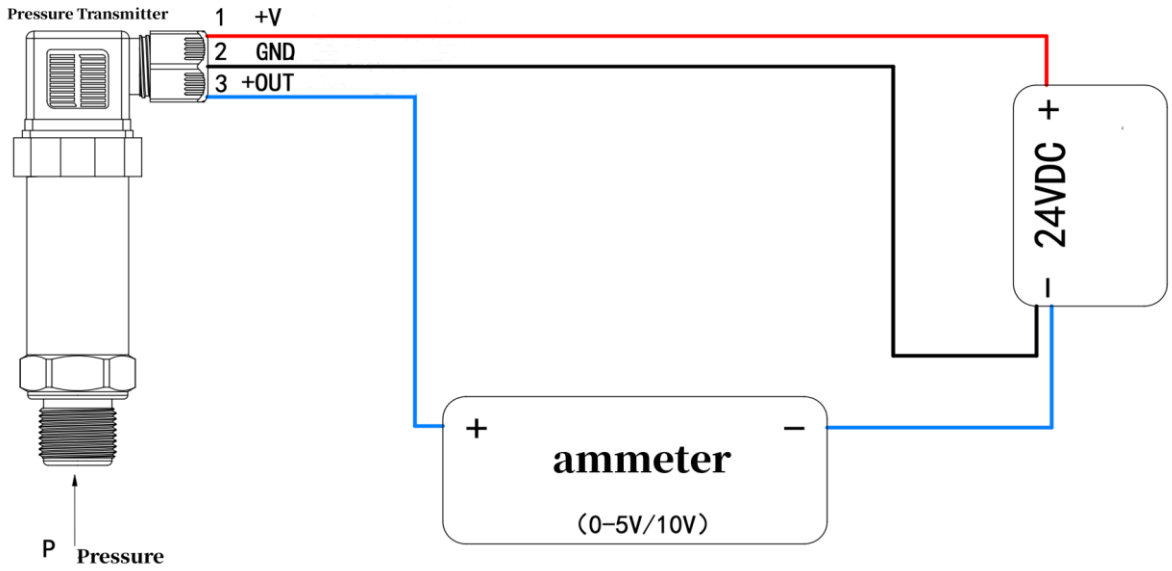
3-wire 0~5V/10V voltage output			
Signal definition	**Power+(+V)**	**Power- (GND）**	**Signal+(+OUT)**
Cable outlet	Red	Black	Blue
Hirschmann DIN43650	1	2	3
M12×1-4P	1	3	2
M12×1-4P, with cable	Brown	Blue	White

Electrical Connection Diagram

2-wire 4~20mA current output



3-wire voltage output



Ordering Guide

Model Name	Type							
HPM180	Universal Pressure Transmitter							
	Pressure range	Measuring range						
	(X_1～X_2)kPa	X1 is the lower limit X2 is the higher limit						
		Code	Output Signal					
		B1	(4～20)mA					
		B3	(0～10)V					
		B4	(0～5)V					
		B5	(1～5)V					
		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		
					M1	316L		
					M2	TA1 diaphragm and TC4 shell		
					M3	Ta diaphragm		
					M4	C-276 diaphragm		
						Code	Pressure port interface	
						S4	304	
						S6	316L	
						X	Customized	
							Code	Additional Functions
							G	Gauge pressure(Default)
							S	Sealed gauge pressure
							A	Absolute pressure
							NB	NBR Nitrile seal (default)
							FK	FKM Viton sealing ring
							ED	EPDM sealing ring
							HB	HNBR Hydrogenated nitrile seal ring
							D1	LED display
							D2	LCD display
							J1	0.1% accuracy
							J2	0.2%accuracy
							J5	0.5% accuracy(Default)
							QF	Factory report
							R1	CE certificate
								Other requests
Eg: HPM180	(0～200)kPa	B1	P1	C1	M1	S4	G NB J5	

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.	00223Q21711R1S

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