

HPM718 Flat Diaphragm Hygienic Pressure Transmitter



Nanjing Hangjia Electronic Technology Co., Ltd.

Overview

HPM718 flat diaphragm pressure transmitter uses ceramic capacitor pressure sensor as sensitive element, threaded installation, flat diaphragm structure design. Ceramics have the characteristics of high elasticity, wear resistance, corrosion resistance, fast heat dissipation, etc., which makes the transmitter have very good thermal stability, so that it can be used normally in the range of -40 to 100 degrees Celsius, with low temperature drift. At the same time, the product range can be as small as 2.5kPa, and the overload resistance can reach dozens of times the full range at a small range, which solves the problem of poor overload capacity in a small range and is very suitable for micro-pressure measurement.

Ceramic sensors do not have any filling liquid, so they will not cause process pollution, and their dry ceramic diaphragms are not affected by the installation direction. The end face of the product is exposed to directly sense the pressure, which can solve the problems of scaling, unsanitary and viscous pressure blockage. It is widely used in food, medicine, brewing and other sanitary industries and pressure tests on occasions where the measuring medium may be blocked or scaled.

Features

- ◆ All stainless-steel shell
- ◆ Ceramic capacitor dry core, corrosion-resistant and wear-resistant
- ◆ Micro-pressure measurement, high overload pressure
- ◆ Flat membrane structure, easy to clean, anti-clogging and scaling
- ◆ Wide applicable medium temperature range, -40~100℃, low temperature drift
- ◆ Support negative pressure, absolute pressure or compound pressure measurement
- ◆ Support multiple output signals and multiple electrical interfaces

Technical Parameters

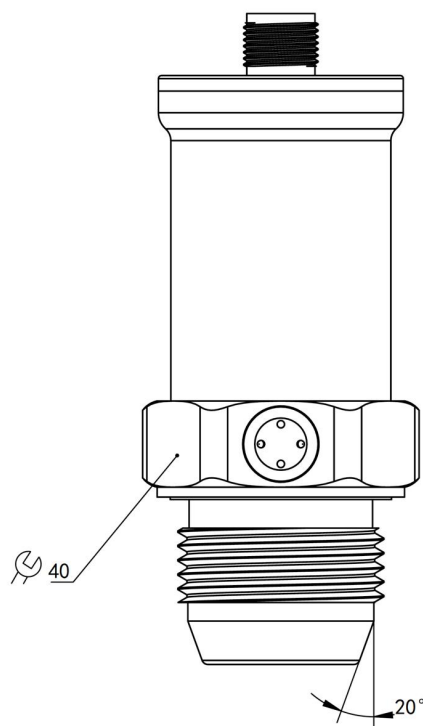
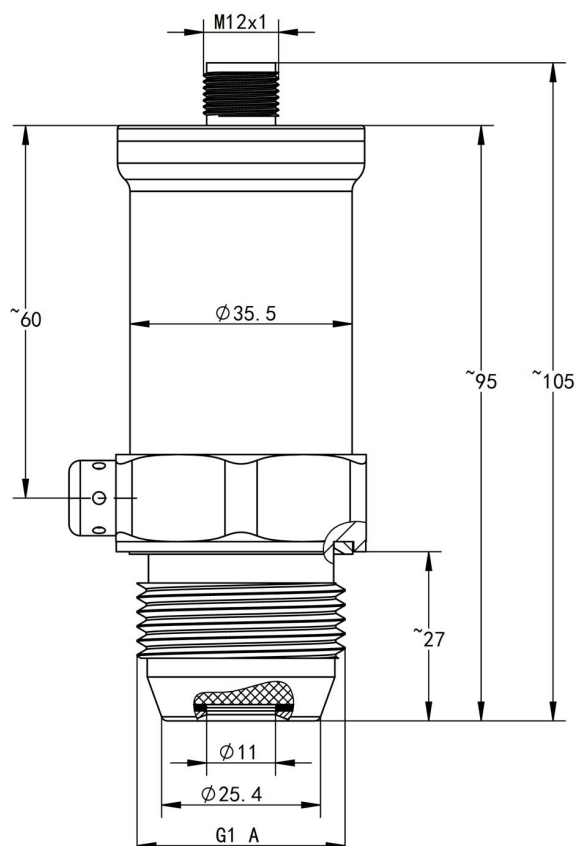
Measuring range (Gauge pressure)										
Rated range (bar)	0.1	0.2	0.4	1	2	4	10	20	40	100
Minimum range (bar)	0.025	0.05	0.1	0.25	0.5	1	2.5	5	10	25
Overload(bar)	4	5	6	10	15	25	40	40	60	150
Vacuum resistance (bar)	0.7	0.5	0	0	0	0	0	0	0	0
Note: Supports compound pressure range, such as -1~10bar										
Measuring range (Absolute pressure)										
Rated range (bar)	0.1	0.2	0.4	1	2	4	10	20	40	100

Minimum range (bar)	0.025	0.05	0.1	0.25	0.5	1	2.5	5	10	25
Overload(bar)	4	4	4	10	15	25	40	40	60	150
Vacuum resistance (bar)	0	0	0	0	0	0	0	0	0	0
Measuring medium										
Medium type	Various liquids and gases compatible with contact materials									
Output signal/power										
Typical	2-wire: 4~20mA _{DC} / V _s =10~30 V _{DC}									
Typical	3-wire: 0 ~ 5V _{DC} / V _s =8.5~30 V _{DC}									
Typical	3-wire: 0 ~ 10V _{DC} / V _s =12~30 V _{DC}									
Typical	4-wire: Modbus-RTU/RS485 / V _s =3 ~ 8 V _{DC} 或 10 ~ 30 V _{DC}									
Performance										
Accuracy*	±0.25%FS (typical) ±0.1%FS (improved)									
Long-term stability	±0.2%FS/year									
Resolution	Unlimited, affected only by output noise level, typically ≤0.01%									
Response time	About 5ms									
Start-up time	≤3s									
*Accuracy complies with IEC 60770 (non-linearity, hysteresis, repeatability)										
Temperature drift characteristics										
Compensation temperature range	-20 ~ 80℃									
Zero temperature drift	±1.0%FS (Within temperature compensation range)									
Full temperature drift	±1.25%FS (Within temperature compensation range)									
Environmental conditions										
Temperature range	Measuring medium temperature: -40 ~ 100℃; +125℃, max 120 minutes Ambient operating temperature: -40 ~ 85℃ Storage temperature: -40 ~ 85℃									
Protection level	IP65									
Electrical protection										
Short circuit protection	With									
Reverse polarity protection	No damage, the circuit does not work									
Mechanical stability										
Vibration	20g(20~5000Hz)									
Shock resistance	50g(11ms)									
Insulation										
Insulation resistance	>20MΩ @100VDC									
Dielectric strength	<2mA 500VAC 1min									

Structural Materials

Ordering Code	Part	Notes
S4	Shell	304
S6		316L
S6	Process connection	316L
HC		Hastelloy C276
DF		PVDF (upper limit of range 2MPa)
M6	Sensor	Ceramic Al ₂ O ₃ ≥99.7%; range ≤1bar Ceramic Al ₂ O ₃ ≥96.0%; range ≥2bar
F1	O-ring	Fluorine rubber FKM
F2		Perfluoro rubber FFKM
EP		EPDM
SI		Silicone rubber

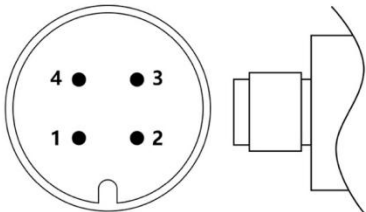
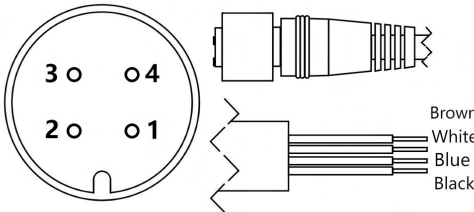
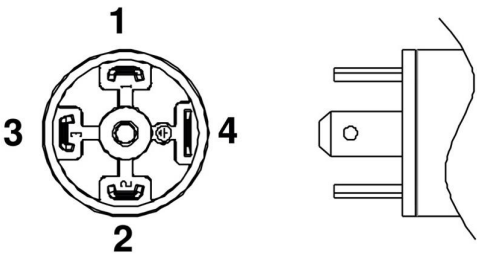
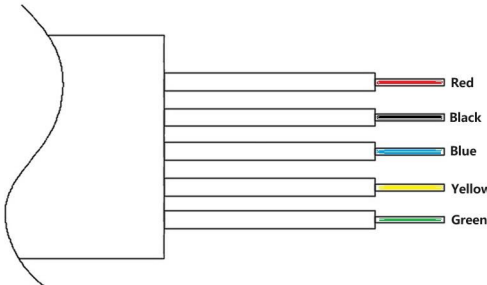
Dimensions (Unit: mm)



Note:

1. The dimensions listed in the figure may change with the update of the process
2. For other specifications, please consult the sales engineer

Electrical Connections

M12×1 (Ordering code: C5)	M12×1, with cable (Ordering code: C5X)
	
DIN43650 (Ordering code C1 or C1.1)	Cable outlet (Ordering code C2)
	

2-wire 4 ~ 20mA output

Signal Definition	Power supply+ (+V)	Power supply- (0V/+OUT)
M12×1	1	3
M12×1, with cable	Brown	Blue
DIN43650	1	2
Cable outlet	Red	Black

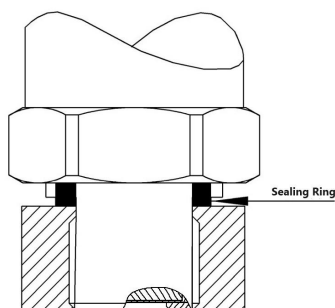
3-wire 0~5V/10V voltage output

Signal Definition	Power supply+ (+V)	Power supply- (GND)	Signal+ (+OUT)
M12×1	1	3	2
M12×1, with cable	Brown	Blue	White
DIN43650	1	2	3
Cable outlet	Red	Black	Blue

4-wire Modbus-RTU/RS485

Signal Definition	Power supply+ (+V)	Power supply- (GND)	RS485A	RS485B
M12×1	1	3	2	4
M12×1 with cable	Brown	Blue	White	Black
DIN43650	1	2	3	4
Cable outlet	Red	Black	Yellow	Green

Installation Diagram



Ordering Guide

Code	Type						
HPM718	Ceramic capacitor type pressure transmitter						
eg: HPM718	(0~10)bar	Range	Measuring Range				
		(X1~X2)bar	X ₁ is the lowest value X ₂ is the highest value				
				Code	Output Signal		
				B1	(4~20)mA		
				B3	(0~10)V		
				B4	(0~5)V		
				B5	(1~5)V		
				B7	RS485		
				Code	Process Connection		
					G 1" flush membrane		
				KG112	G 1 1/2" flush membrane		
				Code	Electronic Connection		
					normal Hirschmann		
					little Hirschmann		
					Cable outlet		
					M12×1 4P		
					M12×1 with cable		
				Code	Housing Material		
					304		
				S6	316L		
				Code	Wetted parts Material		
					316L		
					PVDF		
					C276		
				Code	Others		
					G	Gauge (Default)	
					A	Absolute	
					QF	With factory report	
					FK	FKM o-ring	
					FF	FFKM o-ring	
					ED	EPDM o-ring	
					SI	Silicone Rubber o-ring	
						Other requests	
eg: HPM718	(0~10)bar	B1	KG1	C5	S4	S6	G FK