Digital Pressure Transmitter for General Industries

MPM3801GRF

Applications

- Process industry control
- Gas flowmeter industry
- Intelligent pressure instrument
- Medical equipment
- IoT

Features

- Low power consumption with temperature compensation
- Compact structure with full stainless steel
- Standard I²C or SPI protocols
- Suitable for gas roots flowmeter, waistwheel flowmeter
- RoHS approved

Introduction

The MPM3801GRF digital pressure transmitter adopts the MPM3801 stainless steel oil-filled sensor as the sensing element, has the stainless-steel housing. Its wetted material is stainless steel, which has excellent corrosion resistance and long-term stability. The sensor is temperature compensated to ensure that the technical parameters such as zero point, sensitivity, linearity and stability are well maintained within the operating temperature range.

Specifications

Range	0mbar ~ 70mbar/200mbar/350mbar/700mbar/1bar/ 2bar/3.5bar/5bar/7bar/10bar/16bar/20bar/35bar/70bar
Overpressure	≤2 times FS
Pressure Type	gauge, absolute, sealed gauge
Pressure Accuracy	see Accuracy on page 2
Temperature Accuracy	±1.5°C (tested in constant temperature for reference)
Long-term Stability	±0.2%FS/year
Compensated Temperature	-10°C ~ 50°C
Application Temperature	-20°C ~ 80°C
Storage Temperature	-20°C ~ 85°C
Vibration	10g, 20Hz ~ 2000Hz
Shock	100g, 11ms
Housing Protection	IP67
Weight	≤100g

Accuracy

Pressure Type			Accuracy
Gauge (G)	Absolute (A)	Sealed Gauge (S)	
0mbar ~ 70mbar			±1%FS
0mbar ~ 200mbar			
0mbar ~ 350mbar	0mbar ~ 350mbar		
0mbar ~ 700mbar	0mbar ~ 700mbar		±0.5%FS
0bar ~ 1bar	0bar ~ 1bar		
0bar ~ 2bar	0bar ~ 2bar		±0.25%FS
0bar ~ 3.5bar	0bar ~ 3.5bar		
0bar ~ 5bar	0bar ~ 5bar		
0bar ~ 7bar	0bar ~ 7bar		
0bar ~ 10bar	0bar ~ 10bar		
0bar ~ 16bar	0bar ~ 16bar		
0bar ~ 20bar	0bar ~ 20bar		
0bar ~ 35bar	0bar ~ 35bar	0bar ~ 35bar	
	0bar ~ 70bar	0bar ~ 70bar	±0.5%FS

When the range <70bar, the accuracy is the accuracy between the compensated temperature(-10°C ~ 50°C),
when the range ≥70bar, the accuracy is the accuracy at 20±5°C
Test standrad: GB/T 17614.1-2015/IEC60770-1:2010

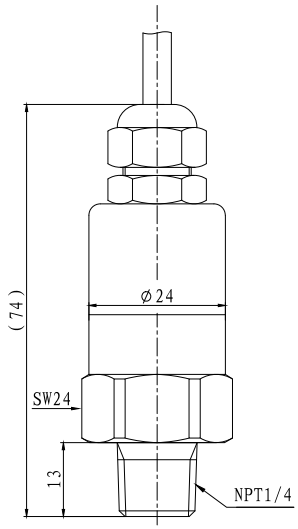
Output Signals

Output Signal	Power Supply	Output Digits	Output Digital Value	Comsumption
I^2C	3.3V±0.1V DC (default)	14 digits (maximum is 16383)	1638 (zero) ~ 14746 (span)	5uA (standby)@25°C
	5V±0.1V DC			
SPI	3.3V±0.1V DC (default)			
	5V±0.1V DC			

Note: There are 14-digits for sensor pressure output digital value. The maximum digital value is 16383, but in order to reserve a certain value for overpressure, 10%~90% of span value is chosen for output zone, its zero and full values are 1638 and 14746 respectively.

Outline Dimensions

unit: mm



Electrical Connection

Color	I²C	SPI
Black	V-	V-
Red	V+	V+
Green	SCL	SCLK
White	SDA	MISO
Yellow	null	SS

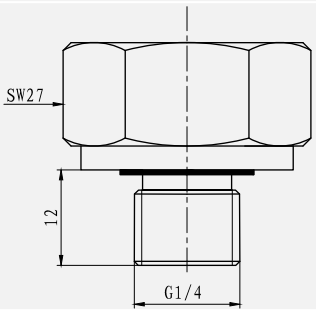
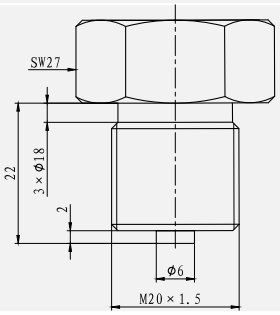
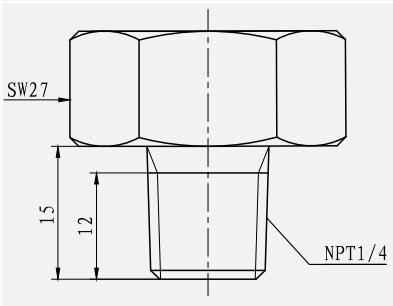
Materials

Wetted Parts
Isolated Diaphragm: SS 316L
Pressure Port: SS 304/SS 316L
Non-wetted Parts
Housing: SS 304/SS 316L
Cable: PUR

Process Connection

Process Connection Dimensions

unit: mm

G1/4 Male, End Face Seal (C2)	M20×1.5 Male, Waterline (C5)	NPT1/4 Male (C6)
		

Ordering Guide

MPM3801GRF	Digital Pressure Transmitter						
	Range	measurement range: 0mbar ~ 70mbar/200mbar/350mbar/700mbar/1bar/2bar/3.5bar/5bar/7bar/10bar/16bar/20bar/35bar/70bar					
	[0 ~ X]mbar or bar	X: actual measurement range					
		Code	Power Supply				
		3	3.3V±0.1V DC (default)				
		5	5V±0.1V DC				
			Code	Communication Interface			
			C	I²C			
			D	SPI			
				Code	Pressure Type		
				G	gauge		
				A	absolute		
				S	seales gauge		
					Code	Material	
						Isolated Diaphragm	Pressure Port	Housing
					22	SS 316L	SS 304	SS 304
					24	SS 316L	SS 316L	SS 316L
						Code	Process Connection
						C2	G1/4 male, end face seal
						C5	M20×1.5 male, waterline
						C6	NPT1/4 male

MPM3801GRF	[0 ~ 10]bar	3	C	G	22	C2	Complete Type Specification

Ordering Notes

1. MPM3801GRF cable material is PUR, the recommended cable length ≤2m.
2. For special requirements, please contact us and specify it in the order.