MPM5581 Intelligent Pressure Switch

Features

- Pressure measurement for gas and liquid
- Optional for PNP, current output
- Peak value display
- Ranges drift function
- PNP switch point seetting, time delay setting for action
- Modbus communication
- OLED display
- Display rotate 180°
- Body rotate 330°
- Change-over of different units

Introduction

MPM5581 is an intelligent pressure switch combining pressure measurement, local display and control together. It uses advanced industrial-grade MCU as core and high quality pressure sensor as sensing element. With well-designation and adjustment, MPM5581 has quick reaction and good electro-magnetic compatibility for pressure control at the premise of accuracy. It can be widely used for industrial site pressure control in pump, hydraulic and pneumatic equipments.

MPM5581 is able to visually process the process pressure and switch contacts status through switch output, analog output and display screen. It has various output signals for different application. MPM5581 switch has functions such as time delay setting, ranges drift setting (scales: 25%FS~100%FS), as well setting: clear zero, base point, peak display. With special designation and construction, it can be installed vertically, horizontally or rack mounting. The body can rotate 330°; display can rotate 180° in order for viewer to face up to the display screen. OLED display is very clear to read.

Specification

Range: (bar)

1, 3.5, 7, 16, 35, 70,100, 250, 400, 600

Range drift: 25%FS~100%FS

Pressure Type: Gauge, Absolute

Overpressure: 2×FS or 100MPa(min. value is valid)

Accuracy: ±0.5%FS

Hysteresis: ±0.2%FS

Thermal error: ±0.02%FS/℃ (Zero/FS)

Power supply: 12V~30VDC

Long Time Stability: ±0.3%FS/year

Outputs:

2 switches+current output: 2×PNP +0mA/4mA~20mADC

Switch current: 1.0A(Max.)
Switch life time: >100 times
Switch reaction: <10ms
Switch time delay: 0.0s~99.9s
Switch action pattern: Hys.Mode/Win.Mode
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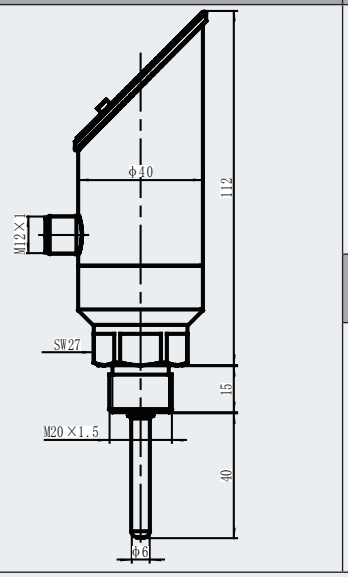
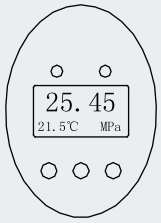
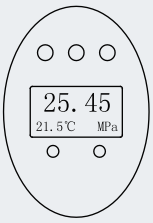
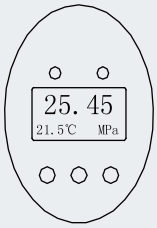
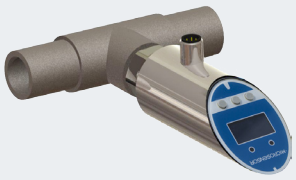
Screen display: Blue 128×64 OLED
Switch display: 2 red LED
Display units : MPa|kPa|bar|psi|kgf/cm2
Key: 3 silicone rubber keys, pleas operate according to instructions on the screen.
Temperature display: referenced environment temperature
Peak display: Pressure peak in process

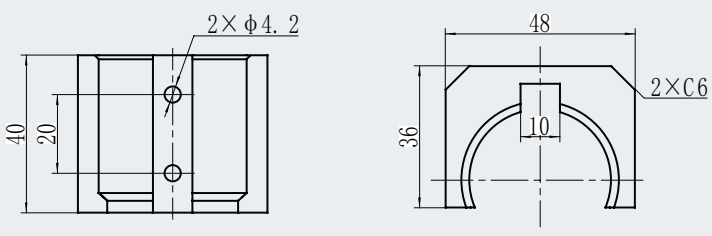
Working Temperature: -20℃ ~80℃
Storage Temperature: -40℃ ~80℃
Relative Humidity: 0%~85%
EMC: GB/T 17626.2/3/4
Shoc: ≤10g/10Hz...500Hz(IEC 60068-2-6)
Impact: ≤50g/11ms(IEC 60068-2-27)
Protection: IP65

Housing: SS
Display board: PMMA
Diaphragm: SS 17-4/316L
Electric connection: M12×1 round plug
Gross weight: 300g

Outline Construction(Unit: mm)

Integrated Construction	Forward up display	Reversal display	Forward up display
			
	Rack Mounting Installation	Pipe horizontal installation	Pipe vertical installation
			

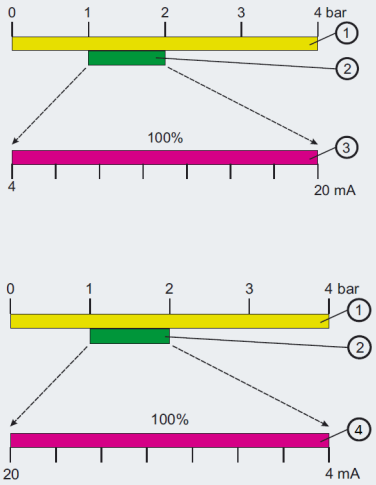
MS801mounting bracket (optional components):



Note: MCU core working temperature is for reference.

Ranges Drift

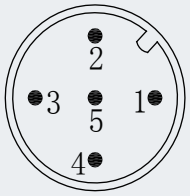
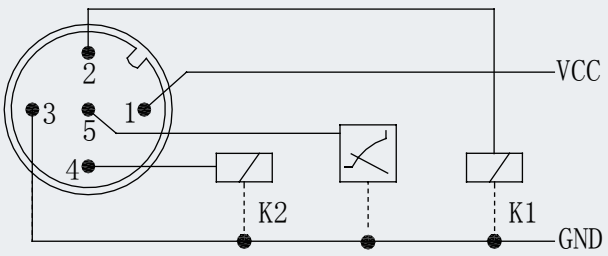
MPM5581 is able for ranges drift between 25%FS and 100%FS. Analog output changes along with range scale. And also, analog output can be reversal. E.g, 4mA~20mADC can be changed into 20mA~4mA; . Take 4bar current output as an example:

Range	Range Drift percent	New range	New range scale	
0bar~4bar ①	25%FS ②	1bar ②	0bar~1bar 1bar~2bar ③ 2.1bar~3.1bar 3bar~4bar	
	50%FS	2bar	0bar~2bar 1.5bar~3.5bar 2bar~4bar	
	75%FS	3bar	0bar~3bar 1bar~4bar	
	100%FS	4bar	0bar~4bar	
0bar~4bar ①	25%FS ②	1bar ② reversal output	1bar~2bar ④	

Note: Accuracy will decrease for ranges drift.

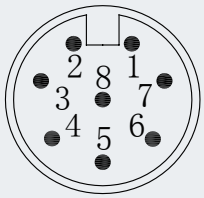
Electrical Connection

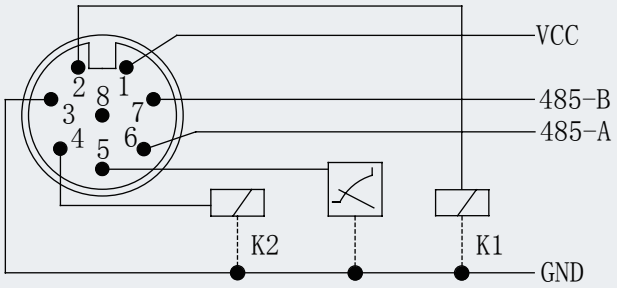
5-pin plug pin definition and wire connection:

Wire	Color	2×PNP+ Current
1	Red	VCC
2	Yellow	K1-Output
3	Black	GND
4	Blue	K2-Output
5	Green	0/4mA~20mA
		

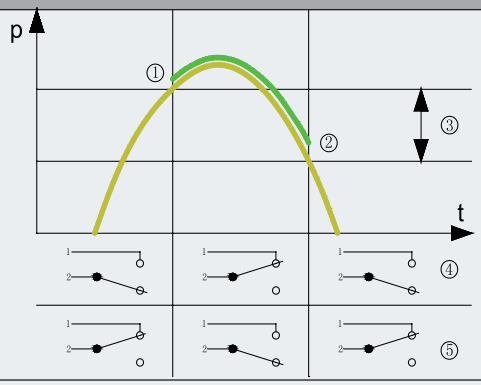
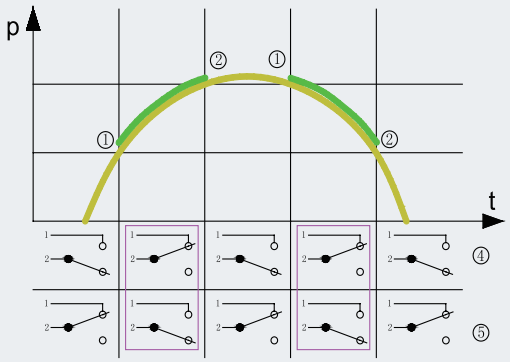
8-pin plug pin definition and wire connection:

Code	Wire color	2×PNP+Current
1	Red	VCC
2	Yellow	K1-Output
3	Black	GND
4	Blue	K2-Output
5	Green	0/4mA~20mA
6	Brown	485-A
7	White	485-B
8	-	





Switch Action:

Hys. Mode	Win. Mode
	
① Action Value ② Release Value ③ Difference between ① and ② /hysteresis ④ Output status of NO ⑤ Output status of NC	① Upper action value ② Lower action value ④ Output status of NO ⑤ Output status of NC
Setting range for switch points: Action Value: 1.5%FS~100%FS Release Value: 1%~99.5%FS Action Value-Release Value≥0.5%FS	Switch point setting ranges: Upper Action Value: 1.5%FS~100%FS Lower Action Value: 1%~99.5%FS Upper Action Value-Lower Action Value≥0.5%FS
Switch action time delay can be set: 0.0s~99.9s	

Optional Components

MS801 Mounting Bracket

MS901 2m RVVP cable with 5-pin M12X1 female right angle plug

MS902 2m RVVP cable with 8-pin M12X1 female right angle plug

Order Guide

MPM5581	Intelligent Pressure Switch					
	Code	Pressure Range	Type	Code	Pressure Range	Type
	G1	0bar~1bar	G	A1	0bar~1bar	A
	G2	0bar~3.5bar	G	A2	0bar~3.5bar	A
	G3	0bar~7bar	G	A3	0bar~7bar	A
	G4	0bar~16bar	G	A4	0bar~16bar	A
	G5	0bar~35bar	G	A5	0bar~35bar	A
	G6	0bar~70bar	G	A6	0bar~70bar	A
	G7	0bar~100bar	G			
	G8	0bar~200bar	G			
	G9	0bar~400bar	G			
	G10	0bar~600bar	G			

Code	Output
2KA	2×PNP+0/4mA~20mADC

Code	Thread
C1	M20X1.5 male, face-seal
C2	G1/4 male
C3	G1/2 male
C5	M20X1.5 male, waterline seal
C6	1/4NPT male

Code	Others
R5	5-pin M12X1 male plug
R8	8-pin M12X1 male plug for Modbus communication

MPM5581	G4	2KA	C2	R5	the whole spec.

Notes

1. MPM5581 standard electric connection is 5-pin M12X1 male plug without Modbus communication.
2. Thread can be customized according to user's request. Please make clear note in purchase order.
3. If users have special request for specifications and functions, please contact our company.