

Flexible & Customizable

Pressure Transmitter

MPM489S



Applications

- Oil & gas / Petrochemical
- Specialized equipment (OEM)
- Hydraulic & pneumatic control
- Water resources & hydrology

Features

- Intrinsically safe, Ex ia IIC T4 Ga
- IECEx certified, Ex II 1 G Ex ia IIC T4 Ga
- CE certified

Introduction

MPM489S Pressure Transmitter is designed for general industrial applications, featuring compact construction, high accuracy, and wide measuring ranges. The instrument utilizes digital temperature compensation and non-linearity correction. Its integrated structure, supporting multiple standardized output signals, process connections, and electrical connections, is suitable for automation and control systems with high measurement requirements. The explosion-proof design ensures operational stability in hazardous areas.



Specifications

Range	-100kPa...0kPa ~ 10kPa...100MPa		
Overpressure	≤ 2 times FS or 110MPa (min. Value is valid)		
Pressure type	Gauge G, Absolute A, Gauge S, Compound N		
Measurement accuracy	Range	Accuracy ^①	Total Error Band ^②
	Gauge G (0kPa ~ 10kPa≤Range <20kPa)	±0.5%FS	±0.5%FS
	Absolute A (0kPa ~ 40kPa≤Range ≤0kPa ~ 100kPa)		
	Compound N (-25kPa ~ 0kPa≤Range ≤-100kPa ~ 150kPa)		
	All other ranges	±0.25%FS	±0.5%FS ^③
① Accuracy: Includes non-linearity (terminal point method), repeatability, and hysteresis. See the Measuring Range & Accuracy for details.			
② Total Error Band: Includes accuracy and temperature effects within the compensated temperature range.			
③ For higher total error specs , please contact the MICROSENSOR.			
Long-term stability	±0.2%FS/year		
Operating temperature	-40°C ~ 100°C (B1, B4, B8)		
	-20°C ~ 70°C (B2, PE cable)		
	-20°C ~ 80°C (B2, PUR cable)		
	-30°C ~ 80°C (Ex ia, B1, B4, B8)		
	-20°C ~ 70°C (Ex ia, B2)		
Storage temperature	-40°C ~ 120°C (B1, B4, B8)		
	-20°C ~ 70°C (B2)		
Vibration	10g, 55Hz ~ 2000Hz		
Shock	100g, 11ms		
IP rating	IP65(B1, B8)		
	IP67(B4)		
	IP68(B2)		
Weight	≤270g		

Measuring Range & Accuracy

Gauge Pressure G									
Unit	Measuring Range	Accuracy	Overpressure	Code	Unit	Measuring Range	Accuracy	Overpressure	Code
kPa	0 ~ 10	±0.5%FS	20	K010	mbar	0 ~ 100	±0.5%FS	200	m100
	0 ~ 20	±0.25%FS	40	K020		0 ~ 200	±0.25%FS	500	m200
	0 ~ 25		50	K025		0 ~ 250		500	m250
	0 ~ 40		100	K040		0 ~ 400		1000	m400
	0 ~ 50		100	K050		0 ~ 500		1000	m500
	0 ~ 60		100	K060		0 ~ 600		1200	m600
	0 ~ 70		100	K070		0 ~ 700		1400	m700
	0 ~ 80		200	K080		0 ~ 800		1600	m800
	0 ~ 90		200	K090		0 ~ 900		1800	m900
	0 ~ 100		200	K100	bar	0 ~ 1	±0.25%FS	2	B001
	0 ~ 160		300	K160		0 ~ 1.6		3	B1D6
	0 ~ 200		400	K200		0 ~ 2		4	B002
	0 ~ 250		500	K250		0 ~ 2.5		5	B2D5
	0 ~ 300		600	K300		0 ~ 3		6	B003
	0 ~ 400		1000	K400		0 ~ 4		10	B004
	0 ~ 500		1000	K500		0 ~ 5		10	B005
	0 ~ 600		1000	K600		0 ~ 6		10	B006
	0 ~ 700		1400	K700		0 ~ 7		14	B007
	0 ~ 800		1600	K800		0 ~ 8		16	B008
	0 ~ 900		1800	K900		0 ~ 9		18	B009
MPa	0 ~ 1	±0.25%FS	2	M1D0		0 ~ 10		20	B010
	0 ~ 1.6		3	M1D6		0 ~ 16		30	B016
	0 ~ 2		4	M2D0		0 ~ 20		40	B020
	0 ~ 2.5		5	M2D5		0 ~ 25		50	B025
	0 ~ 3		6	M3D0		0 ~ 30		60	B030
	0 ~ 3.5		6	M3D5		0 ~ 35		60	B035
psi	0 ~ 1.5	±0.5%FS	3	P1D5					
	0 ~ 3	±0.25%FS	6	P003					
	0 ~ 5		10	P005					
	0 ~ 10		15	P010					
	0 ~ 15		20	P015					
	0 ~ 30		45	P030					
	0 ~ 60		150	P060					
	0 ~ 100		150	P100					
	0 ~ 160		300	P160					
	0 ~ 200		300	P200					
	0 ~ 300		450	P300					
	0 ~ 400		750	P400					
	0 ~ 500		750	P500					

Gauge Pressure S

Unit	Measuring Range	Accuracy	Overpressure	Code	Unit	Measuring Range	Accuracy	Overpressure	Code
MPa	0 ~ 3.5	±0.25%FS	7	M3D5	bar	0 ~ 35	±0.25%FS	70	B035
	0 ~ 4		10	M4D0		0 ~ 40		100	B040
	0 ~ 5		10	M5D0		0 ~ 50		100	B050
	0 ~ 6		10	M6D0		0 ~ 60		100	B060
	0 ~ 7		10	M7D0		0 ~ 70		100	B070
	0 ~ 8		15	M8D0		0 ~ 80		150	B080
	0 ~ 9		15	M9D0		0 ~ 90		150	B090
	0 ~ 10		15	M010		0 ~ 100		150	B100
	0 ~ 16		30	M016		0 ~ 160		300	B160
	0 ~ 20		30	M020		0 ~ 200		300	B200
	0 ~ 25		37.5	M025		0 ~ 250		450	B250
	0 ~ 30		45	M030		0 ~ 300		525	B300
	0 ~ 35		52.5	M035		0 ~ 350		375	B350
	0 ~ 40		60	M040		0 ~ 400		600	B400
	0 ~ 50		75	M050		0 ~ 500		750	B500
	0 ~ 60		90	M060		0 ~ 600		900	B600
	0 ~ 70		100	M070		0 ~ 700		1000	B700
	0 ~ 80		100	M080		0 ~ 800		1000	B800
	0 ~ 90		100	M090		0 ~ 900		1000	B900
	0 ~ 100		110	M100		0 ~ 1000		1100	B01K

psi	0 ~ 500	±0.25%FS	750	P500
	0 ~ 600		1500	P600
	0 ~ 700		1500	P700
	0 ~ 800		1500	P800
	0 ~ 900		1500	P900
	0 ~ 1000		1500	P01K
	0 ~ 2000		3000	P02K
	0 ~ 3000		4500	P03K
	0 ~ 4000		6000	P04K
	0 ~ 5000		7500	P05K
	0 ~ 6000		9000	P06K
	0 ~ 7000		10500	P07K
	0 ~ 8000		12000	P08K
	0 ~ 9000		13500	P09K
	0 ~ 10000		15000	P10K

Absolute Pressure A

Unit	Measuring Range	Accuracy	Overpressure	Code	Unit	Measuring Range	Accuracy	Overpressure	Code	
kPa	0 ~ 40	±0.25%FS	100	K040	bar	0 ~ 1	±0.25%FS	2	B001	
	0 ~ 50		100	K050		0 ~ 1.6		3	B1D6	
	0 ~ 60		100	K060		0 ~ 2		4	B002	
	0 ~ 70		100	K070		0 ~ 2.5		5	B2D5	
	0 ~ 80		200	K080		0 ~ 3		6	B003	
	0 ~ 90		200	K090		0 ~ 4		10	B004	
	0 ~ 100		200	K100		0 ~ 5		10	B005	
	0 ~ 160		300	K160		0 ~ 6		10	B006	
	0 ~ 200		400	K200		0 ~ 7		14	B007	
	0 ~ 250		500	K250		0 ~ 8		16	B008	
	0 ~ 300		600	K300		0 ~ 9		18	B009	
	0 ~ 400		1000	K400		0 ~ 10		20	B010	
	0 ~ 500		1000	K500		0 ~ 16		30	B016	
	0 ~ 600		1000	K600		0 ~ 20		40	B020	
	0 ~ 700		1400	K700		0 ~ 25		50	B025	
	0 ~ 800		1600	K800						
	0 ~ 900		1800	K900						
MPa	0 ~ 1	±0.25%FS	2	M1D0	psi	0 ~ 5	±0.5%FS	10	P005	
	0 ~ 1.6		3	M1D6		0 ~ 10	±0.25%FS	15	P010	
	0 ~ 2		4	M2D0		0 ~ 15		20	P015	
	0 ~ 2.5		5	M2D5		0 ~ 30		45	P030	
	0 ~ 3		6	M3D0		0 ~ 60		150	P060	
	0 ~ 3.5		6	M3D5		0 ~ 100		150	P100	
	0 ~ 4		6	M4D0		0 ~ 160		300	P160	
	0 ~ 5		10	M5D0		0 ~ 200		300	P200	
	0 ~ 6		10	M6D0		0 ~ 300		450	P300	
	0 ~ 7		14	M7D0		0 ~ 400		750	P400	
	0 ~ 8		16	M8D0		0 ~ 500		750	P500	
	0 ~ 9		18	M9D0		0 ~ 600		1500	P600	
	0 ~ 10		20	M010		0 ~ 700		1500	P700	
	0 ~ 16		30	M016		0 ~ 800		1500	P800	
	0 ~ 20		30	M020		0 ~ 900		1500	P900	
	0 ~ 25		37.5	M025	0 ~ 1000	1500		P01K		
	mbar		0 ~ 400	±0.25%FS	1000	m400	0 ~ 2000	3000	P02K	
0 ~ 500		1000	m500		0 ~ 3000	4500	P03K			
0 ~ 600		1200	m600							
0 ~ 700		1400	m700							
0 ~ 800		1600	m800							
0 ~ 900		1800	m900							

Compound Pressure N									
Unit	Measuring Range	Accuracy	Overpressure	Code	Unit	Measuring Range	Accuracy	Overpressure	Code
kPa	-25~0	±0.5%FS	50	V025	bar	-0.25~0	±0.5%FS	0.5	VD25
	-40~0		100	V040		-0.4~0		1	V0D4
	-60~0		100	V060		-0.6~0		1	V0D6
	-100~0		150	V100		-1~0		1.5	V1D0
	-5~20		30	C520		-0.05~0.2		0.3	C052
	-5~25		30	C525		-0.05~0.25		0.3	C5D5
	-15~15		30	C015		-0.15~0.15		0.3	CD15
	-20~20		30	C020		-0.2~0.2		0.3	C0D2
	-25~25		50	C025		-0.25~0.25		0.5	CD25
	-30~30		50	C030		-0.3~0.3		0.5	C003
	-50~50		100	C050		-0.5~0.5		1	C005
	-100~60		150	C16B		-1~0.6		1.5	C0D6
	-100~100		300	C11B		-1~1		2	C101
	-100~150		300	C1B5		-1~1.5		3	C1D5
	-100~300	±0.25%FS	500	C13B		-1~3	±0.25%FS	5	C103
	-100~500		1000	C15B		-1~5		10	C105
	-100~900		2000	C19B		-1~9		20	C109
	-100~1000		2500	C11K		-1~10		25	C110
	-100~1500		3000	C1K5		-1~15		30	C115
	-100~1600		3000	C1K6		-1~16		30	C116
	-100~2000		3000	C12K		-1~20		30	C120
	-100~2400		5000	C24K		-1~24		50	C124
	-100~2500		5000	C25K		-1~25		50	C125
	-100~3000		6000	C30K		-1~30		60	C130
	-100~3500		7000	C35K		-1~35		70	C135

psi	-15~0	±0.5%FS	20	PF00
	-15~10		20	PF10
	-15~15		45	PF15
	-15~30	±0.25%FS	150	PF30
	-15~50		150	PF50
	-15~80		300	PF80
	-15~100		300	PF1B
	-15~150		450	P1B5

Compensation temperature: -20°C~60°C ;

Test standard: GB/T 17614.1-2015/IEC60770-1:2010;

Ambient temperature: 20°C ±5°C ;

For other measurement ranges, please contact MICROSENSOR.

Output Signals

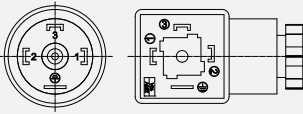
Output Signal	Supply Voltage	Output Configuration	Load Resistance
4mA ~ 20mA DC	8V ~ 28V DC	2-wire	$\leq (U-8)/0.02 \text{ (}\Omega\text{)}$
1V ~ 5V DC		3-wire	$\geq 10\text{k}\Omega$
0V ~ 5V DC			
0.5V ~ 4.5V DC			
0V ~ 10V DC	12V ~ 28V DC		
0.5V ~ 4.5V DC (ratiometric output included)	5V $\pm$ 0.1V DC		
RS485	8V ~ 28V DC	4-wire	$\leq (U-8)/0.02 \text{ (}\Omega\text{)}$

Outline Construction

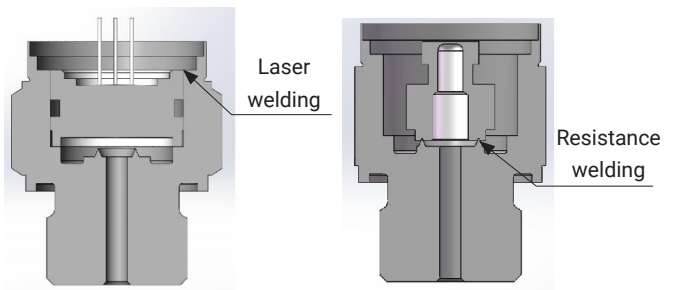
Unit: mm

4-pin Hirschmann connector (B1)	Cable (B2)	M12x1, 4-pin connector (B4)	4-pin mini-Hirschmann connector (B8)

Electrical Connection

Definition	4-pin Hirschmann connector (B1,B8)			Cable (B2)			M12×1, 4-pin connector (B4)		
									
	Current 2-wire	Voltage 3-wire	RS485 4-wire	Current 2-wire	Voltage 3-wire	RS485 4-wire	Current 2-wire	Voltage 3-wire	RS485 4-wire
+V	1	1	1	Red	Red	Red	1	1	1
OUT	2	3		Black	White	Null	3	3	
GND	Null	2	2	Null	Black	Black	Null	2	2
RS485A			3			Yellow			3
RS485B						Blue			4

Sensor Sealing



(Rang≤25MPa)

(Rang>25MPa(Absolute:N/A))

Construction Materials

Wetted parts

Isolated diaphragm: SS 316L/Hastelloy C-276/Titanium TA1/17-4PH

Pressure port: SS 316L/Hastelloy C-276/Titanium TC4

Non-wetted parts

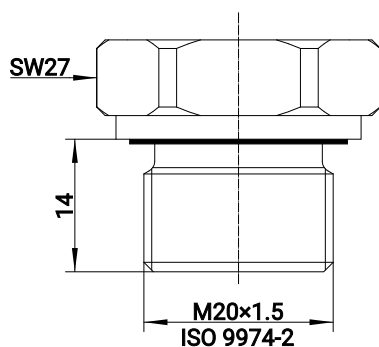
Housing: SS 316L/Titanium alloy

Cable: PE/PUR

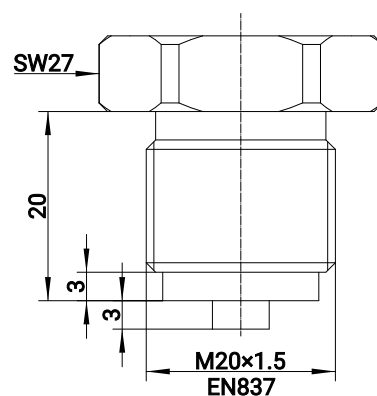
Process Connection

Unit: mm

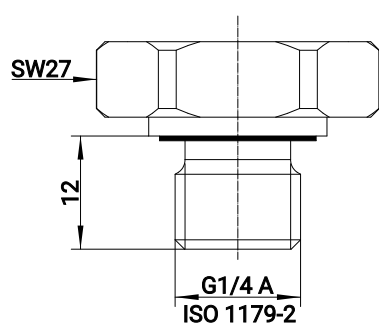
M20× 1.5 Male, face seal (C1)



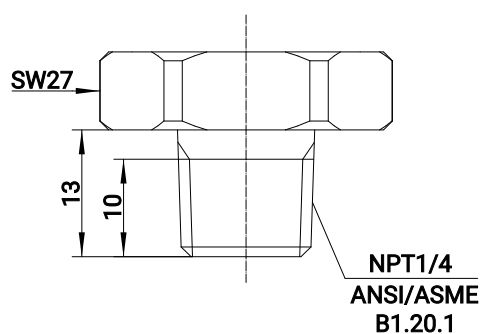
M20×1.5 Male,waterline seal (serrated face) (C5)



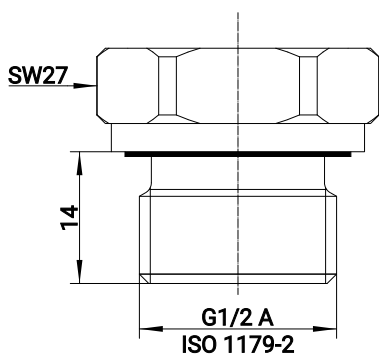
G1/ 4 Male, face seal (C2)



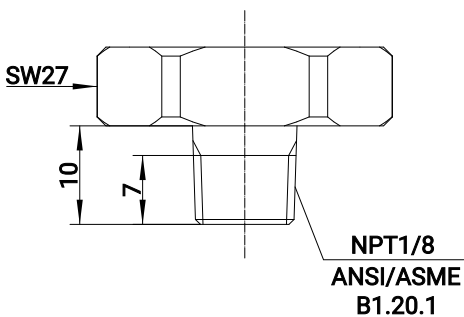
NPT1/4 Male (C6)



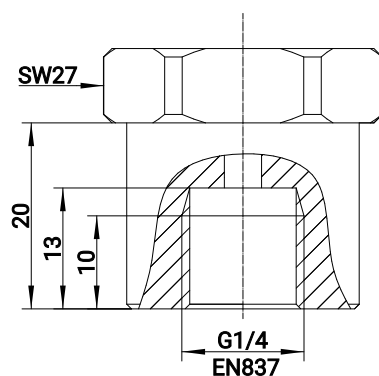
G1/ 2 Male, face seal (C3)



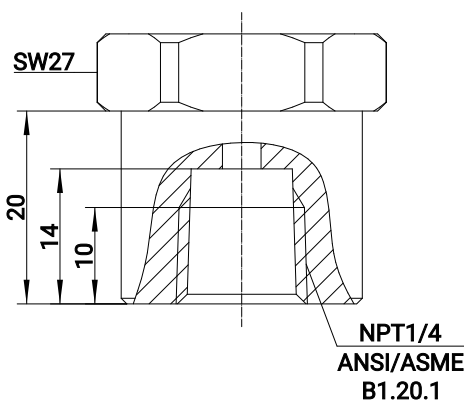
NPT1/8 Male (C7)



G1/ 4 Female (C4)



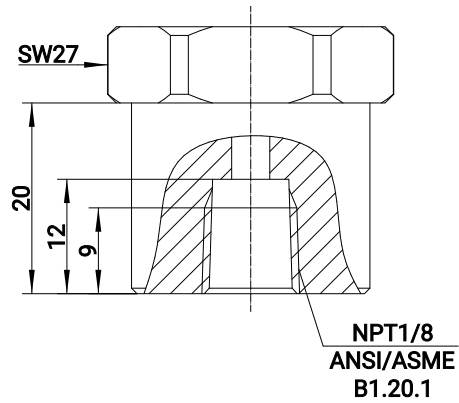
NPT1/ 4 Female(C8)



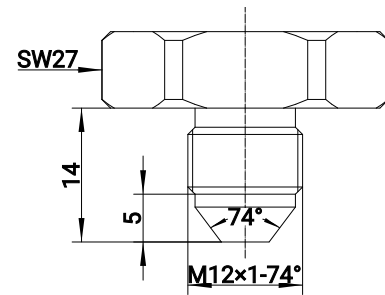
Process Connection

Unit: mm

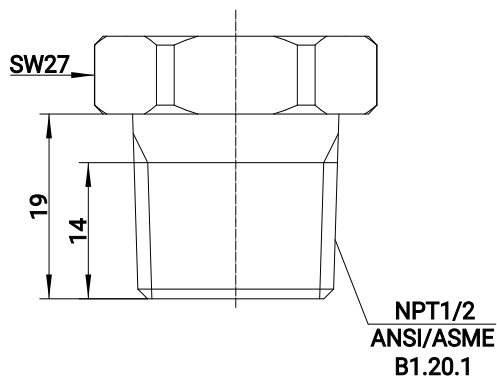
NPT1/8 Female (C9)



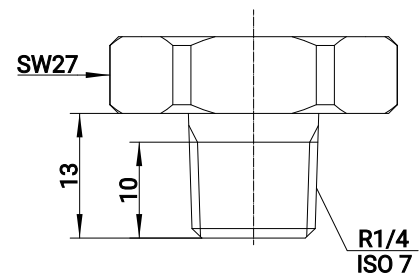
M12×1 Male, 74° cone (C14)



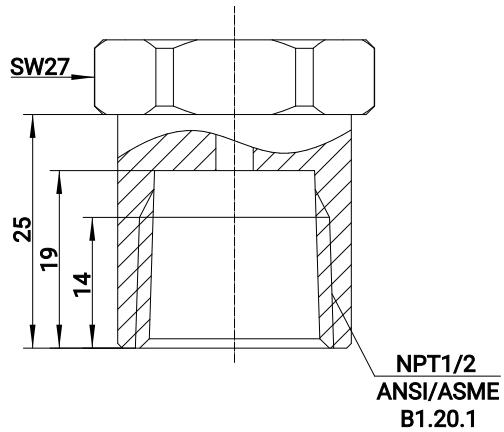
NPT1/2 Male (C10)



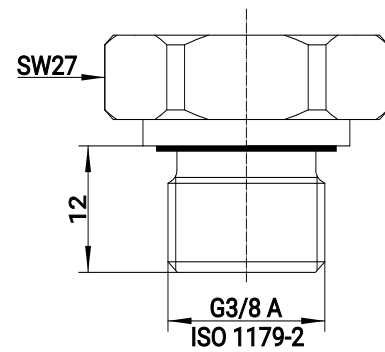
R1/4 Male (C15)



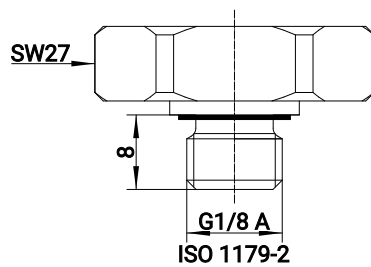
NPT1/2 Female (C11)



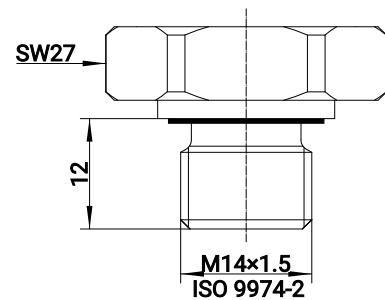
G3/8 Male, face seal (C16)



G1/8 Male (C13)



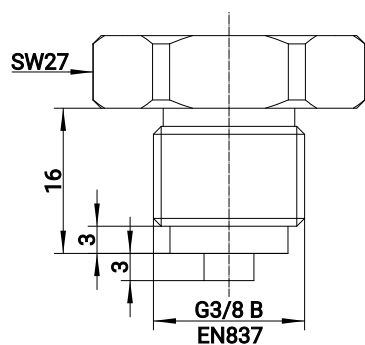
M14×1.5 Male, face seal (C18)



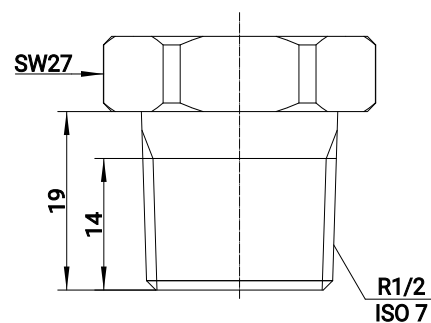
Process Connection

Unit: mm

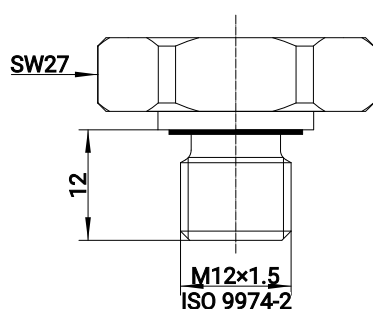
G3/8 Male, waterline seal (serrated face) (C21)



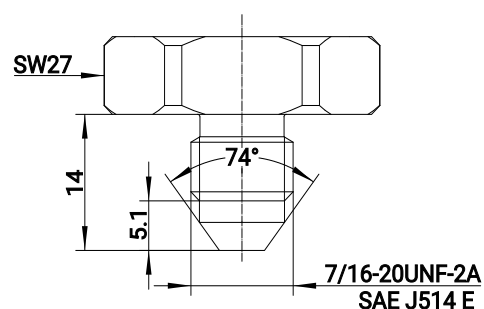
R1/2 Male (C31)



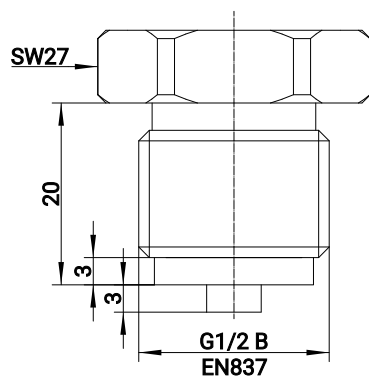
M12×1.5 Male, face seal (C23)



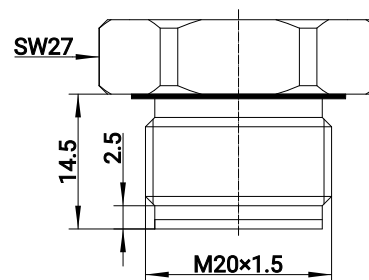
7/16-20 UNF-74° cone (C38)



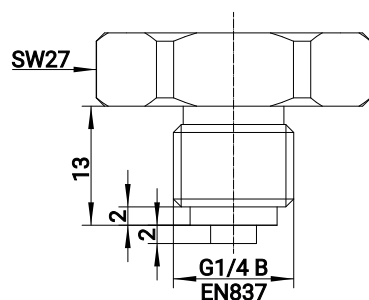
G1/2 Male, waterline seal (serrated face) (C25)



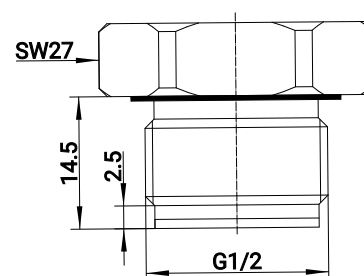
M20×1.5 Male, flush diaphragm (PC1)



G1/4 Male, waterline seal (serrated face) (C30)



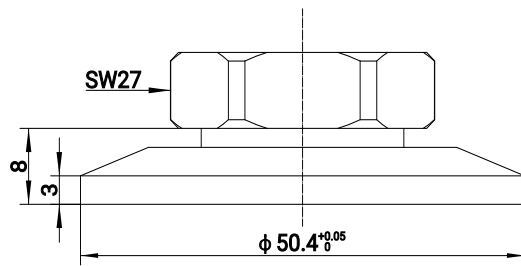
G1/2 Male, flush diaphragm (PC3)



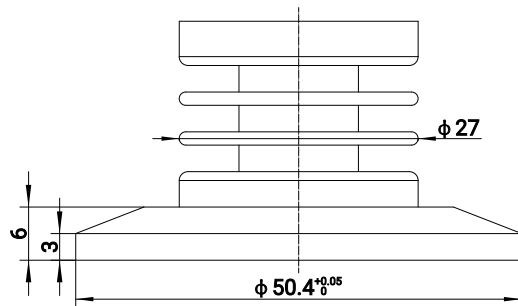
Process Connection

Unit: mm

Hygienic DN25 clamp connection (PD1)



Hygienic DN25 clamp connection with heat sink (PD1s)



Order Guide

MPM489S Pressure Transmitter										
	Code	Pressure type								
	G	Gauge pressure								
	S									
	A	Absolute pressure								
	N	Compound pressure								
	Range	Measuring range -100kPa...0kPa ~ 10kPa...100MPa								
	XXXX	Range-specific code								
		Code	Output signal							
		E	4mA ~ 20mA DC							
		F	1V ~ 5V DC							
		J	0V ~ 5V DC							
		V	0V ~ 10V DC							
		K	0.5V ~ 4.5V DC							
		K3	0.5V ~ 4.5V DC (ratiometric)							
		R8	RS485							
			Code	Power supply						
			V8	8V ~ 28V DC						
			V11	12V ~ 28V DC						
			V6	5V DC						
				Code	Accuracy					
				A1	±0.25%FS					
				A2	±0.5%FS					
					Code	Construction material				
						Isolated diaphragm	Pressure port	Housing		
					24	SS 316L	SS 316L	SS 316L		
					352	Hastelloy C-276	Hastelloy C-276	SS 316L		
					40	Titanium TA1	Titanium TC4	Titanium TC4		
					212 (Measuring Range >25MPa)	17-4PH	SS 316L	SS 316L		
						Code	Sensor sealing			
						02	Welded (Available for specific media compatibility)			
						Code	Process connection			
						C1	M20×1.5Male, face seal			
						C2	G1/4 Male, face seal			
						C3	G1/2 Male, face seal			
						C4	G1/4 Female			
						C5	M20×1.5 Male, waterline seal (serrated face)			
						C6	NPT1/4 Male			
						C7	NPT1/8 Male			
						C8	NPT1/4 Female			
						C9	NPT1/8 Male			
						C10	NPT1/2 Male			
						C11	NPT1/2 Female			
						C13	G1/8 Male			
						C14	M12×1 Male,74°cone			
						C15	R1/4 Male			
						C16	G3/8 Male, face seal			
						C18	M14×1.5 Male, face seal			

Code	Process connection						
C21	G3/8 Male, waterline seal (serrated face)						
C23	M12×1.5 Male, face seal						
C25	G1/2 Male, waterline seal (serrated face)						
C30	G1/4 Male, waterline seal (serrated face)						
C31	R1/2 Male						
C38	7/16-20 UNF-74°cone						
PC1	M20×1.5 male, flush diaphragm						
PC3	G1/ 2 Male, flush diaphragm						
PD1	Hygienic DN25 clamp connection						
PD1s	Hygienic DN25 clamp connection with heat sink						
	Code	Process connection sealing					
	N	None(Available only for C4, C6, C7, C8, C9, C10, C11, C15, C31, PD1, PD1s)					
	1	NBR					
	2	FKM					
	3	EPDM					
	4	Copper (C5 required)					
		Code	Electrical connection				
		B1	4-pin Hirschmann connector				
		B2	Cable				
		B4	M12×1, 4-pin connector				
		B8	4-pin mini-Hirschmann connector				
			Code	Cable material (Only for B2)			
			N	Not applicable			
			P1	PE (Standard)			
			P2	PUR			
				Code	Cable length (Unit: m) (Only for B2)		
				N	Not applicable		
				L001	1		
				L1D5	1.5		
				L002	2		
				L003	3		
				L004	4		
				L005	5		
				L006	6		
				L007	7		
				L008	8		
				L009	9		
				L010	10		
					Code	Certification requirement	
					N	None	
					y	ATEX Ex ia IIC T4 Ga/IECEX Ex ia IIC T4 Ga	
						Code	Accessory
						N	No accessory

C1

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B1

N

N

N

N

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C1

1

B1

N

N

N

N

The complete spec.

Notes

- 1.Refer to the "Measuring Range" on page 2 for product accuracy.
- 2.Standard O-ring material is FKM (min. -20°C); for applications below -20°C , the operating temperature range must be specified, or optional O-rings such as EPDM (min. -40°C) are available upon request.
- 3.For 5V DC supply with cable outlet, the cable length must be less than 10m.
- 4.If a metrology verification certificate is required, or there are any other special requirements, please consult with the MICROSENSOR and specify them in the order.
- 5.Titanium material is not intrinsically safe certified.