

Smart Pressure Transmitter with High Accuracy & Digital Output

MPM4730



Applications

- Hydrology and water resources
- Petrochemical
- Electric power
- Machinery manufacturing
- Hydraulic and pneumatic control

Features

- Digital temperature compensation and non-linear correction technology
- RS485 (Modbus protocol) or HART® communication protocol
- Networking applications
- Intrinsically safe, Ex ia IICT4 Ga
- CE, EAC, RoHS approved

Introduction

MPM4730 Smart Pressure Transmitter is a high-accuracy, high-stability instrument designed for accurate pressure measurement. It combines advanced digital technology with piezoresistive pressure sensing techniques and incorporates digital temperature compensation and nonlinear error correction. The transmitter features a compact, integrated design and provides a standard output signal. Key features include lightweight construction, a wide measurement range, and exceptional stability, making it ideal for fluid pressure measurement in various industrial applications. It operates on a two-wire system and is fully compatible as a direct replacement for traditional analog two-wire 4mA–20mA DC output transmitters.

Specifications

Range	Refer to "Measuring Range & Accuracy Table"		
Overpressure			
Pressure type	Gauge G, Absolute A, Sealed Gauge S, Positive/ Negative N		
Measurement error	Range	Accuracy ^① (20°C ±5°C)	Total error band ^② (-10°C ~70°C)
	Gauge G(0mbar~70mbar≤ Ranges0mbar~100mbar) Absolute A(0mbar~400mbar≤ Ranges0mbar~1bar) Positive/Negative N(- 0.25bar~0bar≤ Ranges-1bar~1.5bar)	±0.5%FS	±0.5%FS
	Gauge G(0mbar~100mbar≤ Ranges0mbar~700mbar) Absolute A(0mbar~1bar≤ Ranges0mbar~10bar) Positive/Negative N(- 1bar~3bar≤ Ranges-1bar~35bar)	±0.25%FS	±0.25%FS
	Other Range	±0.1%FS	±0.1%FS
	① Accuracy comprises nonlinearity (end-point basis), repeatability, and hysteresis.For detailed accuracy specifications, please refer to the Measuring Range and Accuracy Table. ② Total error band encompasses both accuracy and temperature-induced errors (within the compensated temperature range).		
Compensation temperature	-10°C ~ 70°C		
Long-term stability	±0.2%FS/year		
Operating temperature	-30°C ~ 80°C (B1, B3)		
	-20°C~ 70°C (B2, cable material: PE, PVC)		
	-20°C~ 80°C(B2, cable material: PUR)		
	If you require error values at temperatures outside the compensation range (-10°C to 70°C), please contact our company.		
Storage temperature	-40°C ~ 85°C (B1)		
	-20°C ~ 85°C (B2、B3)		
Vibration	20g, 20Hz ~ 2000Hz		
Shock	100g, 11ms		
IP rating	IP65		
Weight	≤230g		

Gauge Pressure G									
Unit	Measuring Range	Accuracy (20±5°C)	Overpressure	Code	Unit	Measuring Range	Accuracy (20±5°C)	Overpressure	Code
kPa	0 - 7	±0.5%FS	15	K007	mbar	0 - 70	±0.5%FS	150	m070
	0 - 10		20	K010		0 - 100		200	m100
	0 - 20		40	K020		0 - 200		500	m200
	0 - 25	±0.25%FS	50	K025		0 - 250	±0.25%FS	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	±0.1%FS	200	K080		0 - 800	±0.1%FS	1600	m800
	0 - 90		200	K090		0 - 900		1800	m900
	0 - 100		200	K100	bar	0 - 1	±0.1%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	±0.1%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 - 1.5	±0.25%FS	3	P1D5
	0 - 3	±0.25%FS	6	P003		0 - 3		6	P003
	0 - 5		10	P005		0 - 5		10	P005
	0 - 10		15	P010		0 - 10	±0.1%FS	15	P010
	0 - 15	±0.1%FS	20	P015		0 - 15		20	P015
	0 - 30		45	P030		0 - 30		45	P030
	0 - 60		150	P060		0 - 60		150	P060
	0 - 100		150	P100		0 - 100		150	P100
	0 - 160		300	P160		0 - 160		300	P160
	0 - 200		300	P200		0 - 200		300	P200
	0 - 300		450	P300		0 - 300		450	P300
	0 - 500		750	P500		0 - 500		750	P500

Sealed Gauge Pressure S

Unit	Measuring Range	Accuracy (20±5°C)	Overpressure	Code	Unit	Measuring Range	Accuracy (20±5°C)	Overpressure	Code
MPa	0 - 3.5	±0.1%FS	7	M3D5	bar	0 - 35	±0.1%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	±0.1%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 (20°C ±5°C)	Overpressure	Code	Unit	Measuring Range	Accuracy (20°C ±5°C)	Overpressure	Code
kPa	0 - 40	±0.5%FS	100	K040	bar	0-1	±0.5%FS	2	B001
	0 - 50		100	K050		0-1.6	±0.25%FS	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	±0.25%FS	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	±0.1%FS	30	B016
	0 - 600		1000	K600		0-20		40	B020
	0 - 700		1400	K700		0-25		50	B025
	0 - 800		1600	K800		0-30		60	B030
	0 - 900		1800	K900		0-35		60	B035
MPa	0 - 1	±0.25%FS	2	M1D0		0-40		100	B040
	0 - 1.6	±0.1%FS	3	M1D6		0-50		100	B050
	0 - 2		4	M2D0		0-60		100	B060
	0 - 2.5		5	M2D5		0-70		140	B070
	0 - 3		6	M3D0		0-80		160	B080
	0 - 3.5		6	M3D5		0-90		180	B090
	0 - 4		6	M4D0		0-100		200	B100
	0 - 5		10	M5D0		0-160		300	B160
	0 - 6		10	M6D0		0-200		300	B200
	0 - 7		14	M7D0		0-250		375	B250
	0 - 8		16	M8D0		0-300		350	B300
	0 - 9		18	M9D0		0-350		525	B350
	0 - 10		20	M010		0-400		600	B400
	0 - 16		30	M016		0-500		750	B500
	0 - 20		30	M020		0-600		900	B600
	0 - 25		37.5	M025		0-700		1000	B700
	0 - 30		45	M030		0-800		1000	B800
	0 - 35		52.5	M035		0-900		1000	B900
	0 - 40		60	M040		0-1000		1100	B01K
	0 - 50		75	M050	psi	0 - 5	±0.5%FS	10	P005
mbar	0 - 60	±0.5%FS	90	M060		0 - 10		15	P010
	0 - 70		100	M070		0 - 15		20	P015
	0 - 80		100	M080		0 - 30	±0.25%FS	45	P030
	0 - 90		100	M090		0 - 60		150	P060
	0 - 100		110	M100		0 - 100		150	P100
	0 - 400		1000	m400		0 - 160		300	P160
	0 - 500		1000	m500		0 - 200	±0.1%FS	300	P200
	0 - 600		1200	m600		0 - 300		450	P300
	0 - 700		1400	m700		0 - 400		750	P400
	0 - 800		1600	m800		0 - 500		750	P500
	0 - 900		1800	m900		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

Positive/Negative Pressure N

Unit	Measuring Range	Accuracy (20°C ±5°C)	Overpressure	Code	Unit	Measuring Range	Accuracy (20°C ±5°C)	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		- 0.03 - +0.03		0.1	C0D3
	- 5 - +25		30	C525		- 0.05 - +0.2		0.3	C052
	- 15 - +15		30	C015		- 0.05 - +0.25		0.3	C5D5
	- 20 - +20		30	C020		- 0.15 - +0.15		0.3	CD15
	- 25 - +25		50	C025		- 0.2 - +0.2		0.3	C0D2
	- 30 - +30		50	C030		- 0.25 - +0.25		0.5	CD25
	- 50 - +50		100	C050		- 0.3 - +0.3		0.5	C003
	- 100 - +60		150	C16B		- 0.5 - +0.5		1	C005
	- 100 - +100		300	C11B		- 1 - +0.6		1.5	C0D6
	- 100 - +150		300	C1B5		- 1 - +1		2	C101
	- 100 - +300	±0.25%FS	500	C13B		- 1 - +1.5		3	C1D5
	- 100 - +500		1000	C15B		- 1 - +3	±0.25%FS	5	C103
	- 100 - +900		2000	C19B		- 1 - +5		10	C105
	- 100 - +1000		2500	C11K		- 1 - +9		20	C109
	- 100 - +1500		3000	C1K5		- 1 - +10		25	C110
	- 100 - +1600		3000	C1K6		- 1 - +15		30	C115
	- 100 - +2000		3000	C12K		- 1 - +16		30	C116
	- 100 - +2400		5000	C24K		- 1 - +20		30	C120
	- 100 - +2500		5000	C25K		- 1 - +24		50	C124
	- 100 - +3000		6000	C30K		- 1 - +25		50	C125
	- 100 - +3500		7000	C35K		- 1 - +30		60	C130
						- 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					

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

Test environment: Temperature 20 °C ± 5 °C, relative humidity 45%–75%, measured under atmospheric pressure.

Best accuracy for HART output products: 0.25%.

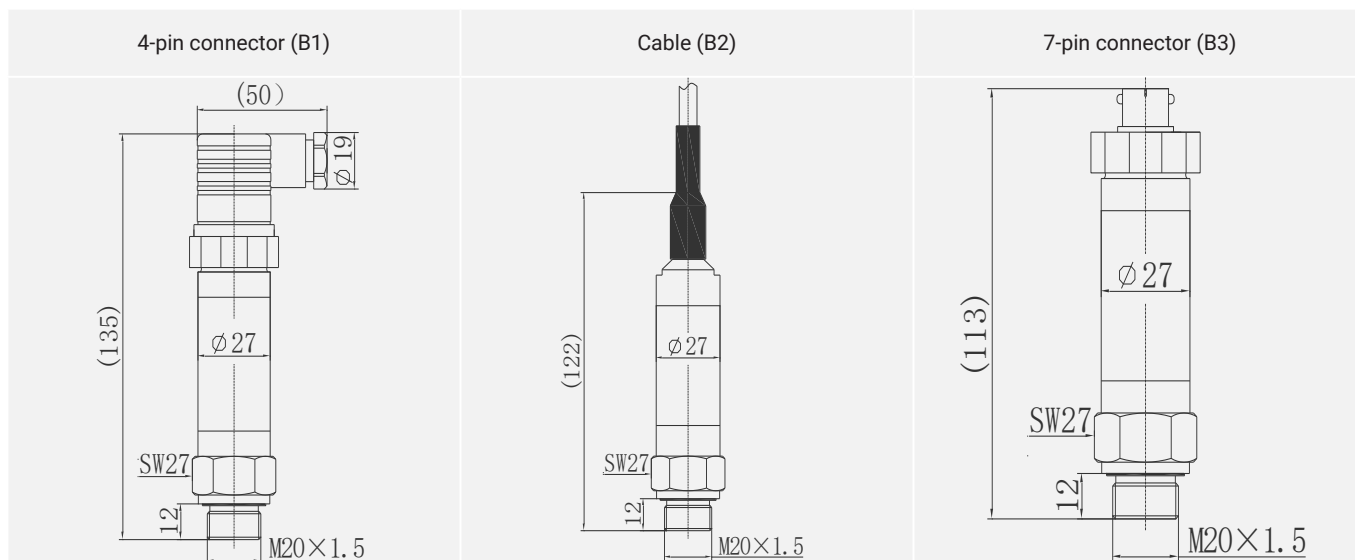
For other measurement ranges, please contact MICROSENSOR.

Output Signals

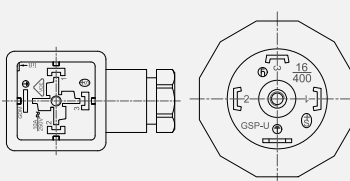
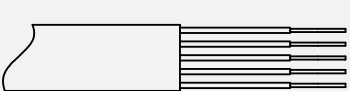
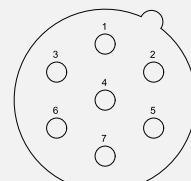
Output signal	Supply voltage	Output type	Load resistance
4mA~20mA DC(E) Non-intrinsically safe	12V~28V DC	2-wire	$\leq (U-12)/0.02 \ (\Omega)$
4mA~20mA DC(E) intrinsically safe	15V~28V DC		$\leq (U-15)/0.02 \ (\Omega)$
HART(H)	12V~30V DC		$\leq (U-12)/0.02 \ (\Omega)$
RS485, MODBUS_RTU(R8)/(ER8) Non-intrinsically safe	12V~28V DC	4-wire	The RS485 bus supports up to 99 devices.
RS485, MODBUS_RTU(R8)/(ER8) intrinsically safe	15V~28V DC		

Outline Construction

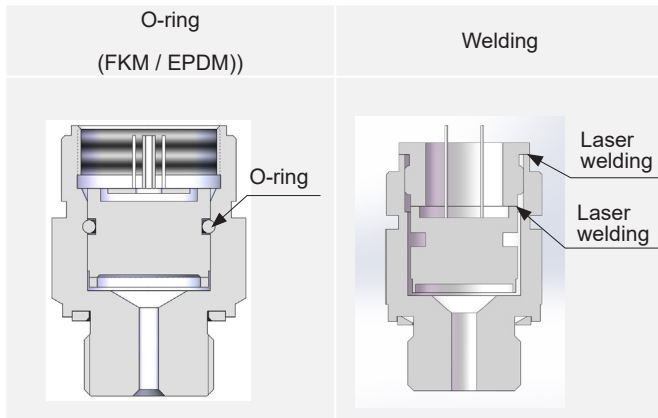
Unit: mm



Electrical Connection

Definition	4-pin connector (B1)		Cable (B2)		7-pin connector (B3)	
						
	Current 2-wire	RS485 4-wire	Current 2-wire	RS485 4-wire	Current 2-wire	RS485 4-wire
+V	1	1	Red	Red	1	1
-V	2	2	Black	Black	2	2
RS485A	-	3	-	Yellow / Green	-	4
RS485B	-		-	White	-	5

Sensor Sealing



Construction Material

Wetted parts

Isolated diaphragm: SS 316L/ Tantalum/Titanium

Pressure port: SS 304/SS 316L/Hastelloy C/Titanium;

Non-wetted parts

Housing: SS 304/ SS 316L/Titanium

Cable: PE/PUR

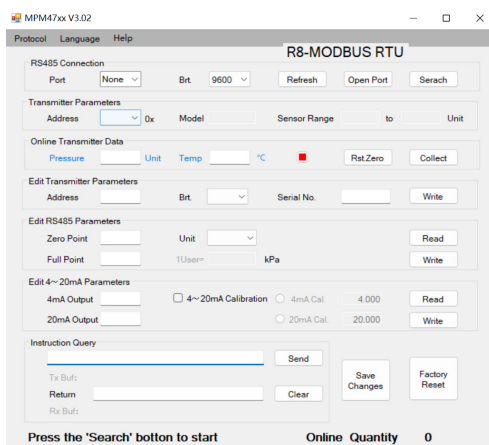
Auxiliary Software

RS485 Transmitter software

47XX software

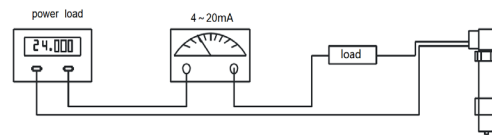
Used with an RS485 converter module, this software enables reading basic internal information from RS485 transmitters, including transmitter address, real-time pressure, and temperature values.

Note: The "47XX" programming software is available for download from our official website:
www.microsensorcorp.com.

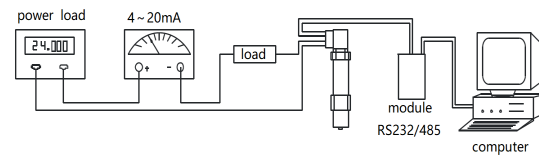


Application Examples

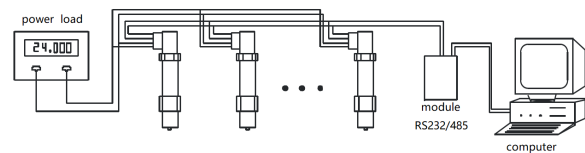
Pressure Measurement for Two-Wire Transmitters



Wiring for On-Site Calibration Using a Computer

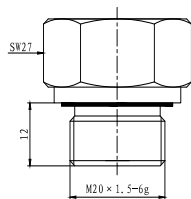


Network Application of Transmitter with RS485 Interface

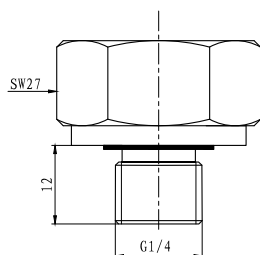


Process Connection

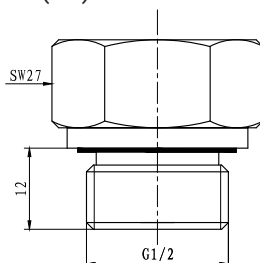
M20×1.5 Male, face seal (C1)



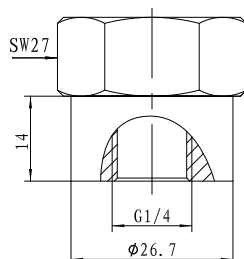
G1/4 Male, face seal (C2)



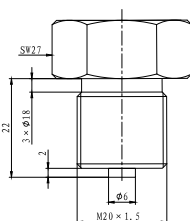
G1/2 Male, face seal (C3)



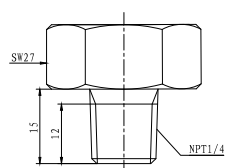
G1/4 Female, waterline seal (C4)



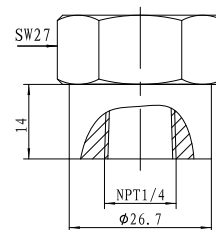
M20×1.5 Male, waterline seal (C5)



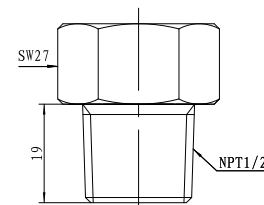
NPT1/4 Male (C6)



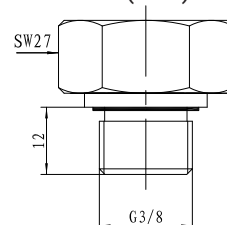
NPT1/4 Female (C8)



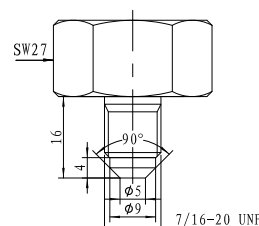
NPT1/2 Male (C10)



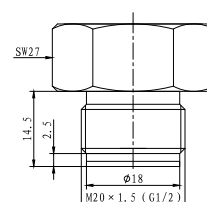
G3/8 Male, waterline seal (C16)



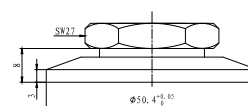
7/16-20 UNF Male, 90° cone seal (C26)



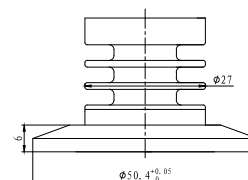
M20×1.5 or G1/2 flush diaphragm (PC1/PC3)



DN25 Clamp (PD1)



DN25 Clamp connection with heat sink (PD1s)



Order Guide

MPM4730	Smart Pressure Transmitter											
	Code	Pressure type										
	G	Gauge/ Sealed gauge pressure										
	S											
	A	Absolute pressure										
	N	Negative pressure										
		Range	Measuring range -1bar...0bar ~ 70mbar...1000bar									
		XXXX	Range-specific code									
			Code	Output signal								
			E	4mA~20mA DC								
			R8	RS485, MODBUS_RTU								
			H	HART communication protocol								
			ER8	4mA ~ 20mA DC+RS485, MODBUS_RTU								
				Code	Power supply							
				V10	12V ~ 30V DC							
				V11	12V ~ 28V DC							
				V13	15V ~ 28V DC							
					Code	Accuracy						
					A0	±0.1%FS						
					A1	±0.25%FS						
					A2	±0.5%FS						
						Code	Construction material					
							Isolated diaphragm		Pressure port		Housing	
						22	Stainless steel 316L		Stainless steel 304		Stainless steel 304	
						23	Stainless steel 316L		Stainless steel 316L		Stainless steel 304	
						24	Stainless steel 316L		Stainless steel 316L		Stainless steel 316L	
						25	Tantalum Ta1		Stainless steel 316L		Stainless steel 304	
						35	Tantalum Ta1		Hastelloy C		Stainless steel 304	
						40	Titanium TA1		Titanium TC4		Titanium TC4	
							Code	Sensor sealing				
							00	FKM (standard)				
							01	EPDM (optional by operating temp. and medium compatibility)				
							02	Welding (optional by operating temp. and medium compatibility)				
							03	Integral sintering (optional only for PC1, PC3, PD1, and PD1s)				
								Code	Process connection			
								C1	M20× 1.5 Male, 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			
								C6	NPT1/4 Male			
								C8	NPT1/ 4 Female			
								C10	NPT1/2 Male			
								C16	G3/8 Male, face seal			
								C26	7/16-20 UNF Male, 90° cone seal			
								PC1	Flush diaphragm M20× 1.5 Male		0bar ~ 400mbar...350bar	
								PC3	Flush diaphragm G1/ 2 Male			
MPM4730	G	M1D6	E	V11	A1	22	00	C1	The complete spec.			

Order Guide

PD1	Hygienic DN25 clamp connection				0bar ~ 400mbar...35bar		
PD1S	Hygienic DN25 clamp connection with heat sink						
	Code	Process connection sealing					
	N	None (C4, C6, C8, C10, C26, PD1, PD1s)					
	1	NBR					
	2	FKM (standard)					
	3	EPDM					
	4	Copper (C5)					
		Code	Electrical connection				
		B1	4-pin connector				
		B11	4-pin connector with 1.5 m PVC cable				
		B2	Cable connection				
		B3	7-pin connector				
		B31	7-pin connector with 1.5 m PVC cable				
			Code	Cable material			
			N	None (non-cable connection option)			
			P1	PE (standard)			
			P2	PUR			
				Code	Cable length (Unit: m)		
				N	None (non-cable connection option)		
				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	
					i	Intrinsically safe explosion-proof Ex ia IIC T4 Ga	
						Code	Accessory
						N	No accessories required
						M6	M6 digital indicator
						M7	M7 digital indicator
						Yb5	Yb junction box (5-core terminals)
						Yc5	MS200 (5-core terminals)
						Yd	PD140
						YeM6	Ye (M6)
						YeM7	Ye (M7)
						Ye	Ye (without indicator)
						MS01	Polymer plug
						D01	Damping gasket
Table continued	2	B2	P1	L010	N	N	The complete spec.

Notes

1. The sensor O-ring material options are FKM and EPDM. The minimum operating temperature for FKM is -20°C, while for EPDM, it is -40°C.
2. When selecting the YeM6 or YeM7, only 4mA~20mA DC output is available, and requiring a power supply of $\geq 17\text{VDC}$.
3. The ambient temperature of transmitter should be -20°C~ 70°C with YeM6 indicator, while -10°C~ 60°C with YeM7 indicator. Indicator settings refer to its order guide, which can be obtained from the MICROSENSOR website.
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.