

# 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 (custom protocol) or HART® communication protocol
- Networking applications
- Intrinsically safe, Ex ia IICT4 Ga
- CE, EAC, RoHS and CCS 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	-100kPa...0kPa ~ 10kPa...100MPa
Overpressure	≤ 2 times FS or 110MPa (min. Value is valid)
Pressure type	Gauge G, Absolute A, Sealed Gauge S, Positive/Negative N
Accuracy	Refer to "Measuring Range & Accuracy Table"
Long-term stability	±0.2%FS/year
Compensation temperature	-10°C ~ 70°C
Operating temperature	-30°C ~ 80°C (B1, B3)
	-20°C ~ 70°C (B2, cable material: PE, PVC)
Storage temperature	-20°C ~ 80°C (B2, cable material: PUR)
	-40°C ~ 120°C (B1)
Storage temperature	-20°C ~ 85°C (B2, B3)
Vibration	20g, 20Hz ~ 5000Hz
Shock	20g, 11ms
IP rating	IP65
Weight	≤230g

## Measuring Range & Accuracy Table

Gauge Pressure G					
Unit	Measuring Range	Accuracy	Overpressure	Code	
kPa	0 - 7	±0.5%FS	15	K007	
	0 - 10		20	K010	
	0 - 20	±0.25%FS	40	K020	
	0 - 25		50	K025	
	0 - 40		100	K040	
	0 - 50		100	K050	
	0 - 60		100	K060	
	0 - 70		100	K070	
	0 - 80		±0.1%FS	200	K080
	0 - 90	200		K090	
	0 - 100	200		K100	
	0 - 160	300		K160	
	0 - 200	400		K200	
	0 - 250	500		K250	
	0 - 300	600		K300	
	0 - 400	1000		K400	
	0 - 500	1000		K500	
	0 - 600	1000		K600	
	0 - 700	1400	K700		
0 - 800	1600	K800			
0 - 900	1800	K900			
MPa	0 - 1	±0.1%FS	2	M1D0	
	0 - 1.6		3	M1D6	
	0 - 2		4	M2D0	
	0 - 2.5		5	M2D5	
	0 - 3		6	M3D0	
	0 - 3.5		6	M3D5	
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	±0.1%FS	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 - 500		750	P500	
mbar	0 - 70	±0.5%FS	150	m070	
	0 - 100		200	m100	
	0 - 200	±0.25%FS	500	m200	
	0 - 250		500	m250	
	0 - 400		1000	m400	
	0 - 500		1000	m500	
	0 - 600		1200	m600	
	0 - 700		1400	m700	
	0 - 800		±0.1%FS	1600	m800
	0 - 900	1800		m900	
	bar	0 - 1	±0.1%FS	2	B001
		0 - 1.6		3	B1D6
		0 - 2		4	B002
0 - 2.5		5		B2D5	
0 - 3		6		B003	
0 - 4		10		B004	
0 - 5		10		B005	
0 - 6		10		B006	
0 - 7		14		B007	
0 - 8		16		B008	
0 - 9		18		B009	
0 - 10		20		B010	
0 - 16		30		B016	
0 - 20		40		B020	
0 - 25		50		B025	
0 - 30		60		B030	
0 - 35		60		B035	

**Sealed Gauge Pressure S**

Unit	Measuring Range	Accuracy	Overpressure	Code	Unit	Measuring Range	Accuracy	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	Overpressure	Code	Unit	Measuring Range	Accuracy	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		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	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	
							0-40	100	B040
					0-50	100	B050		
				0-60	100	B060			
				0-70	140	B070			
				0-80	160	B080			
				0-90	180	B090			
				0-100	200	B100			
				0-160	300	B160			
				0-200	300	B200			
				0-250	375	B250			
				0-300	350	B300			
				0-350	525	B350			
				0-400	600	B400			
				0-500	750	B500			
				0-600	900	B600			
				0-700	1000	B700			
				0-800	1000	B800			
				0-900	1000	B900			
				0-1000	1100	B01K			
MPa	0 - 1	±0.25%FS	2	M1D0	psi	0 - 5	±0.5%FS	10	P005
	0 - 1.6		3	M1D6		0 - 10		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		
	0 - 30	45	M030	0 - 2000		3000	P02K		
	0 - 35	52.5	M035	0 - 3000		4500	P03K		
	0 - 40	60	M040	0 - 4000		6000	P04K		
	0 - 50	75	M050	0 - 5000		7500	P05K		
0 - 60	90	M060	0 - 6000	9000	P06K				
0 - 70	100	M070	0 - 7000	10500	P07K				
0 - 80	100	M080	0 - 8000	12000	P08K				
0 - 90	100	M090	0 - 9000	13500	P09K				
0 - 100	110	M100	0 - 10000	15000	P10K				
mbar	0 - 400	±0.5%FS	1000	m400					
	0 - 500		1000	m500					
	0 - 600		1200	m600					
	0 - 700		1400	m700					
	0 - 800		1600	m800					
	0 - 900		1800	m900					

Positive/Negative Pressure N				
Unit	Measuring Range	Accuracy	Overpressure	Code
kPa	- 25 - 0	±0.5%FS	50	V025
	- 40 - 0		100	V040
	- 60 - 0		100	V060
	- 100 - 0		150	V100
	- 3 - +3		10	C033
	- 5 - +20		30	C520
	- 5 - +25		30	C525
	- 15 - +15		30	C015
	- 20 - +20		30	C020
	- 25 - +25		50	C025
	- 30 - +30	50	C030	
	- 50 - +50	100	C050	
	- 100 - +60	150	C16B	
	- 100 - +100	300	C11B	
	- 100 - +150	300	C1B5	
	- 100 - +300	500	C13B	
	- 100 - +500	1000	C15B	
	- 100 - +900	2000	C19B	
	- 100 - +1000	2500	C11K	
	- 100 - +1500	3000	C1K5	
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

Unit	Measuring Range	Accuracy	Overpressure	Code
bar	- 0.25 - 0	±0.5%FS	0.5	VD25
	- 0.4 - 0		1	V0D4
	- 0.6 - 0		1	V0D6
	- 1 - 0		1.5	V1D0
	- 0.03 - +0.03		0.1	C0D3
	- 0.05 - +0.2		0.3	C052
	- 0.05 - +0.25		0.3	C5D5
	- 0.15 - +0.15		0.3	CD15
	- 0.2 - +0.2		0.3	C0D2
	- 0.25 - +0.25		0.5	CD25
	- 0.3 - +0.3	0.5	C003	
	- 0.5 - +0.5	1	C005	
	- 1 - +0.6	1.5	C0D6	
	- 1 - +1	2	C101	
	- 1 - +1.5	3	C1D5	
	- 1 - +3	±0.25%FS	5	C103
	- 1 - +5		10	C105
	- 1 - +9		20	C109
	- 1 - +10		25	C110
	- 1 - +15		30	C115
- 1 - +16	30		C116	
- 1 - +20	30		C120	
- 1 - +24	50		C124	
- 1 - +25	50		C125	
- 1 - +30	60		C130	
- 1 - +35	70	C135		

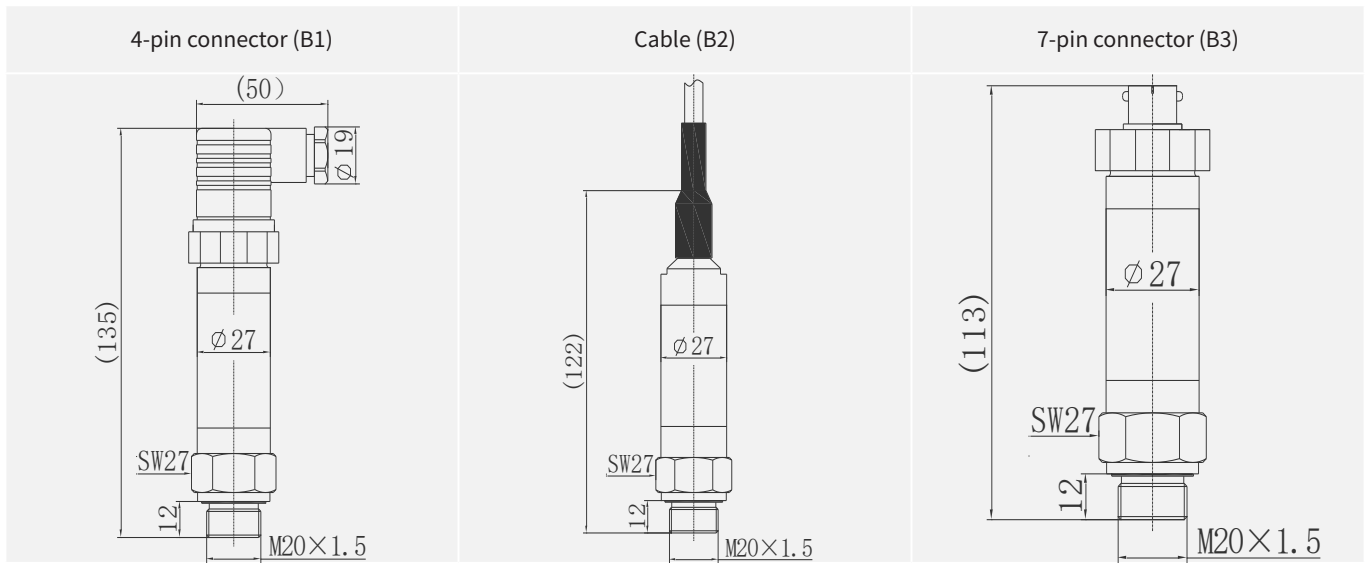
Note: The specified accuracy applies within the compensation temperature range (-10°C ~ 70°C). 0.1% accuracy is not supported for HART output models.  
 Test standard: GB/T 17614.1-2015/IEC60770-1:2010  
 For other measurement ranges, please contact MICROSENSOR.

## Output Signals

Output signal	Supply voltage	Output type	Load resistance
4mA~20mA DC (E)	10V~28V DC (standard, intrinsically safe)	2-wire	$\leq (U-10)/0.02 (\Omega)$
RS485, ASCII communication protocol (R4) RS485, MODBUS_RTU communication protocol (R8)		4-wire	The RS485 bus supports up to 99 devices.
HART® communication protocol (H, non-explosion-proof)	12V~30V DC	2-wire	$\leq (U-12)/0.02 (\Omega)$

## Outline Construction

Unit: mm

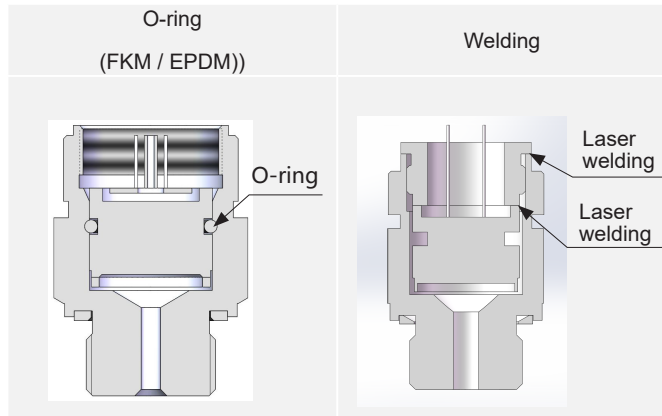


## Electrical Connection

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
(+OUT)/(-V)	2	2	Black	Black	2	2
Ground wire (explosion proof type)		-	Blue	Blue	7	7
RS485A	-	3	-	Yellow / Green	-	4
RS485B	-		-	White	-	5

Note: Only current output is available for explosion-proof type when selecting the B1 cable wiring.

### Sensor Sealing

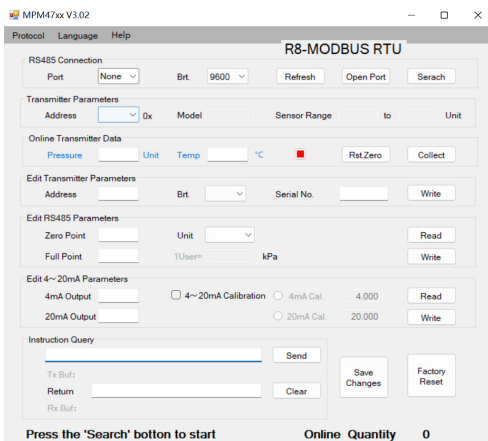


### Construction Material

- 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

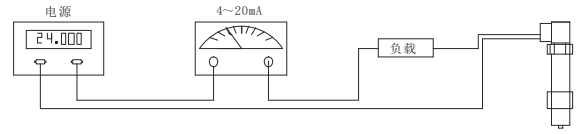
### Auxiliary Software

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](http://www.microsensorcorp.com).

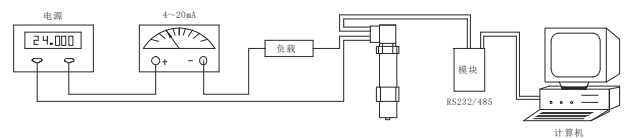


### Application Examples

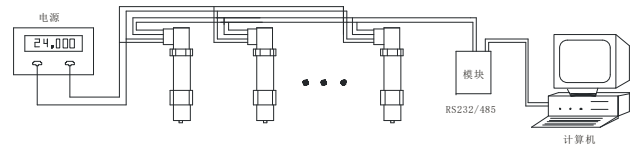
#### Pressure Measurement for Two-Wire Transmitters



#### Wiring for On-Site Calibration Using a Computer

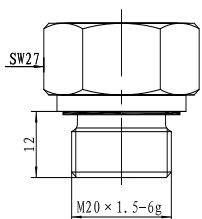


#### Network Application of Transmitter with RS485 Interface

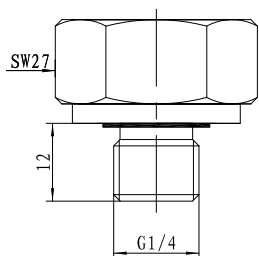


## Process Connection

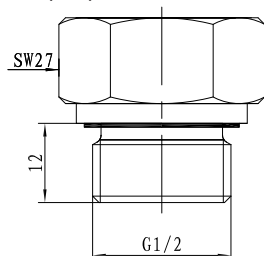
M20× 1.5 Male, face seal (C1)



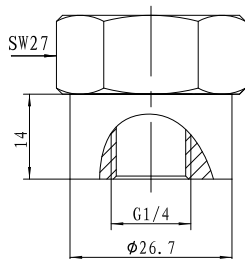
G1/4 Male, face seal (C2)



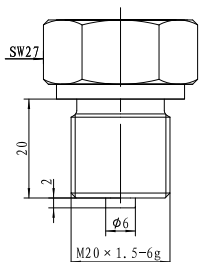
G1/2 Male, face seal (C3)



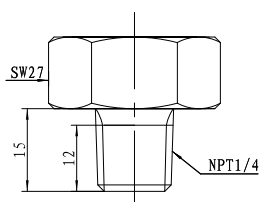
G1/4 Female, waterline seal (C4)



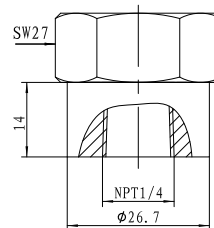
M20×1.5 Male, waterline seal (C5)



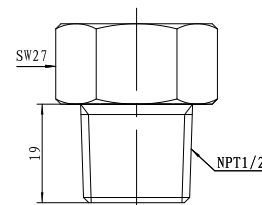
NPT1/4 Male (C6)



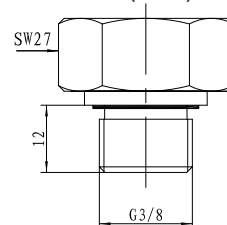
NPT1/4 Female (C8)



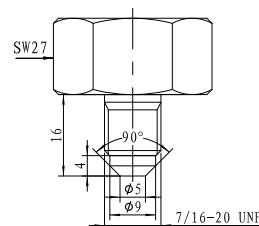
NPT1/2 Male (C10)



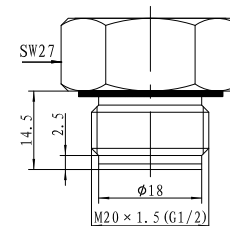
G3/8 Male, waterline seal (C16)



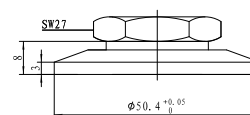
7/16-20 UNF Male, 90° cone seal (C26)



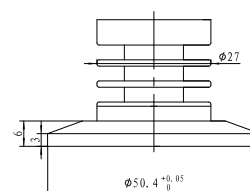
M20×1.5 or G1/2 flush diaphragm (PC1/PC3)



DN25 Clamp (PD1)



DN25 Clamp connection with heat sink (PD1s)



Order Guide

MPM4730	Smart Pressure Transmitter		
Code	Pressure type		
G	Gauge		
S			
A	Absolute pressure		
N	Negative pressure		
Range	Measuring range -100kPa...0kPa ~ 10kPa...100MPa		
XXXX	Range-specific code		
Code	Output signal		
E	4mA~20mA DC		
R4	RS485, ASCII		
R8	RS485, MODBUS_RTU		
H	HART communication protocol		
ER4	4mA ~ 20mA DC+RS485, ASCII		
ER8	4mA ~ 20mA DC+RS485, MODBUS_RTU		
Code	Power supply		
V10	12V ~ 30V DC		
V22	10V ~ 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	0kPa ~ 40kPa...35MPa	
PC3	Flush diaphragm G1/ 2 Male		

MPM4730 G M1D6 E V10 A1 22 00 C1

The complete spec.

## Order Guide

PD1	Hygienic DN25 clamp connection		0kPa ~ 40kPa...3.5MPa			
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)				
	L01	1				
	L1.5	1.5				
	L02	2				
	L03	3				
	L04	4				
	L05	5				
	L06	6				
	L07	7				
	L08	8				
	L09	9				
	L10	10				
	Code	Certification requirement <sup>①</sup>				
	N	None				
	i	Intrinsically safe explosion-proof Ex ia IICT4 Ga				
	T	ship-use				
	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				
2	B2	P1	L10	N	M6	The complete spec.

## Notes

1. "①" refers to certification requirements. The details are:  
For the intrinsically safe explosion-proof type, current output and RS485 output are available.  
The product can be intrinsically safe explosion-proof/flameproof and suitable for ship-use simultaneously.
2. The sensor O-ring material options are FKM and EPDM. The minimum operating temperature for FKM is  $-20^{\circ}\text{C}$ , while for EPDM, it is  $-40^{\circ}\text{C}$ .
3. When selecting the YeM6 or YeM7, only 4mA~20mA DC output is available, and requiring a power supply of  $\geq 15\text{VDC}$ .
4. The ambient temperature of transmitter should be  $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$  with YeM6 indicator, while  $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$  with YeM7 indicator. Indicator settings refer to its order guide, which can be obtained from the MICROSENSOR website.
5. 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.