

Flexible & Customizable Pressure Transmitter MPM489



Applications

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

Features

- Intrinsically safe, Ex ia IIC T6 Ga
- Flameproof, Ex db IIC T6 Gb
- ATEX,  II 1 G Ex ia IIC T4 Ga
- CE, EAC, RoHS and CCS approved

Introduction

MPM489 Pressure Transmitter is developed for general industry. The transmitter incorporates a highly stable piezoresistive sensor, specialized circuitry, and a high-strength stainless steel housing, featuring an integrated construction with standardized output. It offers multiple thread ports and electrical connection options, meeting the precise measurement requirements of automation control systems. The transmitter is rugged and durable, suitable for operation in harsh environments. It is available with intrinsically safe and explosion-proof configurations, making it suitable for use 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, Sealed Gauge S, Positive/Negative N
Accuracy	Refer to "Measuring Range & Accuracy Table"
Long-term stability	±0.3%FS/year
Operating temperature	-30°C~ 80°C (B1, B4)
	-20°C~ 70°C (B2, cable material: PE)
	-20°C~ 80°C (B2, cable material: PUR)
	-30°C~ 60°C (Intrinsically safe explosion-proof, B1)
	-20°C~ 60°C (Intrinsically safe explosion-proof, B2)
Storage temperature	-20°C~ 60°C (Flameproof)
	-40°C~ 120°C (B1)
Storage temperature	-20°C~ 85°C (B2, B4)
Vibration	10g, 55Hz ~ 2000Hz
Shock	100g, 11ms
IP rating	IP65
Weight	≤270g

Measuring Range & Accuracy Table

Gauge Pressure G

Unit	Measuring Range	Accuracy	Overpressure	Code	Unit	Measuring Range	Accuracy	Overpressure	Code
kPa	0 - 7	±1%FS	15	K007	mbar	0 - 70	±1%FS	150	m070
	0 - 10		20	K010		0 - 100		200	m100
	0 - 20		40	K020		0 - 200		500	m200
	0 - 25	±0.5%FS	50	K025		0 - 250	±0.5%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		200	K080		0 - 800		1600	m800
	0 - 90		200	K090		0 - 900		1800	m900
	0 - 100		200	K100					
	0 - 160	±0.25%FS	300	K160	bar	0 - 1	±0.5%FS	2	B001
	0 - 200		400	K200		0 - 1.6		3	B1D6
	0 - 250		500	K250		0 - 2		4	B002
	0 - 300		600	K300		0 - 2.5	±0.25%FS	5	B2D5
	0 - 400		1000	K400		0 - 3		6	B003
	0 - 500		1000	K500		0 - 4		10	B004
	0 - 600		1000	K600		0 - 5		10	B005
	0 - 700		1400	K700		0 - 6		10	B006
	0 - 800		1600	K800		0 - 7		14	B007
	0 - 900		1800	K900		0 - 8		16	B008
MPa	0 - 1	±0.25%FS	2	M1D0		0 - 9		18	B009
	0 - 1.6		3	M1D6		0 - 10		20	B010
	0 - 2		4	M2D0		0 - 16		30	B016
	0 - 2.5		5	M2D5		0 - 20		40	B020
	0 - 3		6	M3D0		0 - 25		50	B025
	0 - 3.5		6	M3D5		0 - 30		60	B030
psi	0 - 1.5	±1%FS	3	P1D5		0 - 35		60	B035
	0 - 3		6	P003	psi	0 - 1.5	±1%FS	3	P1D5
	0 - 5		10	P005		0 - 3		6	P003
	0 - 10	±0.5%FS	15	P010		0 - 5	±0.5%FS	10	P005
	0 - 15		20	P015		0 - 10		15	P010
	0 - 30		45	P030		0 - 15	±0.25%FS	20	P015
	0 - 60	±0.25%FS	150	P060		0 - 30		45	P030
	0 - 100		150	P100		0 - 60		150	P060
	0 - 160		300	P160		0 - 100		150	P100
	0 - 200		300	P200		0 - 160		300	P160
	0 - 300		450	P300		0 - 200		300	P200
	0 - 500		750	P500		0 - 300		450	P300
						0 - 500		750	P500

Sealed 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	±1%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	±0.5%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	±0.25%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	±0.5%FS	2	M1D0		0-40		100	B040
	0 - 1.6	±0.25%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	±1%FS	10	P005
mbar	0 - 60	±1%FS	90	M060		0 - 10		15	P010
	0 - 70		100	M070		0 - 15		20	P015
	0 - 80		100	M080		0 - 30	±0.5%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	±0.25%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	Overpressure	Code		Unit	Measuring Range	Accuracy	Overpressure	Code
kPa	- 25 - 0	±1%FS	50	V025	bar	- 0.25 - 0	±1%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	
	- 3 - +3		10	C033		- 0.03 - +0.03		0.1	C0D3	
	- 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	±0.5%FS	500	C13B		- 1 - +3	±0.5%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	±1%FS	20	PF00
	-15 - +10		20	PF10
	-15- +15		45	PF15
	-15- +30	±0.5%FS	150	PF30
	-15 - +50		150	PF50
	-15 - +80		300	PF80
	-15- +100		300	PF1B
-15 - +150		450	P1B5	

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

Ambient temperature: 20°C ±5°C

Relative humidity: 45% ~ 75%

For other measurement ranges, please contact MICROSENSOR

Thermal Error

Zero thermal error	$\pm 0.05\%FS/^{\circ}C$ ($\leq 100kPa$)
	$\pm 0.03\%FS/^{\circ}C$ ($> 100kPa$)
Span thermal error	$\pm 0.05\%FS/^{\circ}C$ ($\leq 100kPa$)
	$\pm 0.03\%FS/^{\circ}C$ ($> 100kPa$)

Output Signals

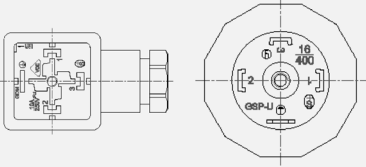
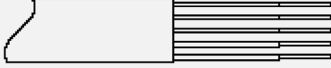
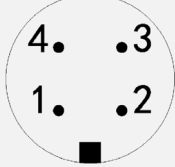
Output Signal	Supply Voltage	Output Type	Load Resistance
4mA~20mA DC	11V~28V DC	2-wire	≤(U-11)/0.02 (Ω)
1V~5V DC		3-wire	≥10kΩ
0V~5V DC			
0.5V~4.5V DC			
0V~10V DC	15V~28V DC		
0.5V~4.5V DC	5V±0.1V DC		
0.5V~2.5V DC			
0.5V~2.5V DC	3.3V±0.1V DC		

Outline Construction

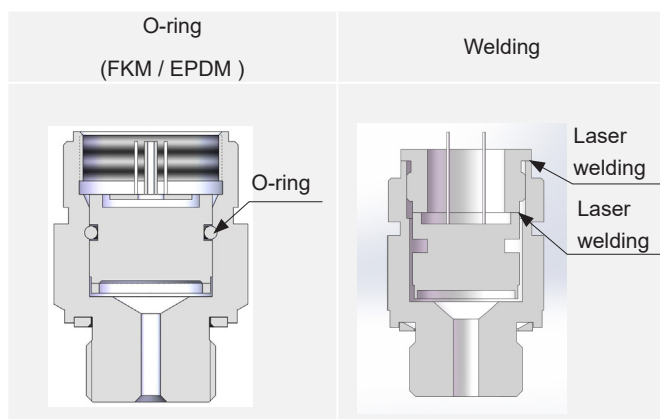
Unit: mm

Flameproof (d)	4-pin connector (B1)	Cable (B2)	M12×1 4-pin connector (B4)

Electrical Connection

Definition	4-pin connector (B1)		Cable (B2)		M12×1 4-pin connector (B4)	
						
	Current 2-wire	Voltage 3-wire	Current 2-wire	Voltage 3-wire	Current 2-wire	Voltage 3-wire
+V	1	1	Red	Red	1	1
OUT	2	3	Black	White	3	3
GND	Null	2	Null	Black	Null	2

Sensor Sealing



Construction Materials

Wetted parts

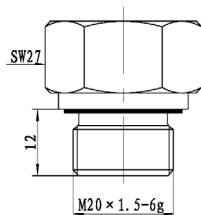
Isolated diaphragm SS 316L/Tantalum/Titanium alloy
Pressure port: SS 304/SS 316L/Hastelloy C/Titanium alloy

Non-wetted parts

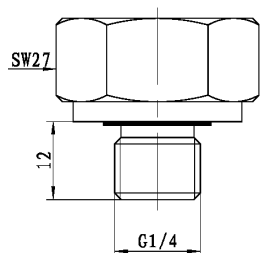
Housing: SS 304/ SS 316L/Titanium alloy
Cable: PE/PUR

Process Connection

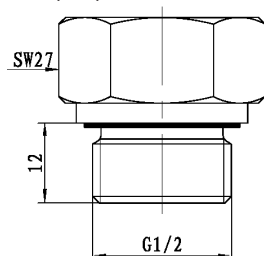
M20× 1.5 Male, face seal (C1)



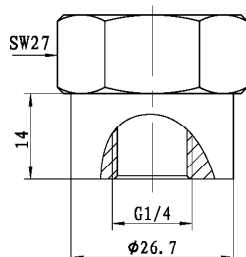
G1/ 4 Male, face seal (C2)



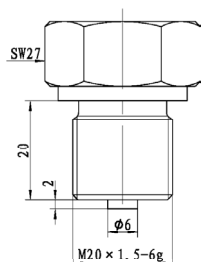
G1/ 2 Male, face seal (C3)



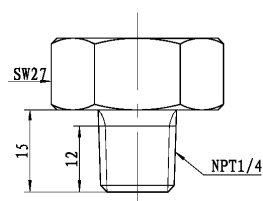
G1/ 4 Female, waterline seal (C4)



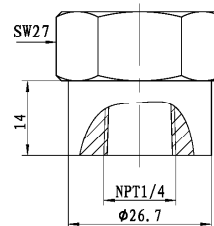
M20×1.5 Male, Waterline (C5)



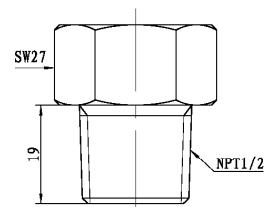
NPT1/4 Male (C6)



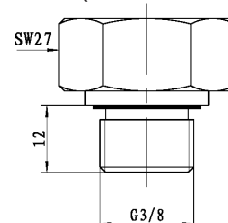
NPT1/ 4 Female (C8)



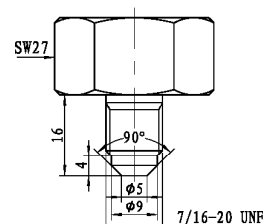
NPT1/2 Male (C10)



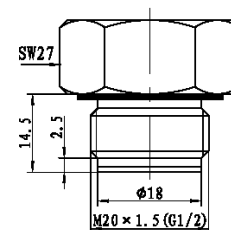
G3/ 8 Male, face seal (C16)



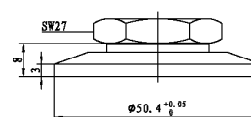
7/16- 20 UNF Male, 90° cone seal (C26)



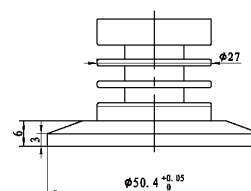
M20×1.5 or G1/2 flush diaphragm (PC1/PC3)



DN25 Clamp (PD1)



DN25 Clamp connection with heat sink (PD1s)



Order Guide

MPM489	Pressure Transmitter											
	Code	Pressure type										
	G	Gauge/Sealed gauge pressure										
	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									
		F	1V~5V DC									
		J	0V~5V DC									
		V	0V~10V DC									
		K	0.5V~4.5V DC									
		W	0.5V~2.5V DC									
			Code	Power supply								
			V5	11V~28V DC								
			V6	5V±0.1V DC								
			V7	3.3V±0.1V DC								
			V13	15V~28V DC								
			Code	Accuracy								
			A1	±0.25%FS								
			A2	±0.5%FS								
			A3	±1%FS								
				Construction material								
			Code	Isolated diaphragm			Pressure port			Housing		
			22	SS 316L			SS 304			SS 304		
			23	SS 316L			SS 316L			SS 304		
			24	SS 316L			SS 316L			SS 316L		
			25	Tantalum Ta1			SS 316L			SS 304		
			35	Tantalum Ta1			Hastelloy C-276			SS 304		
			40	Titanium TA1			Titanium TC4			Titanium TC4		
			Code	Sensor sealing								
			00	FKM (standard)								
			01	EPDM (optional for special media based on compatibility)								
			02	Welding (optional for special media based on 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 ~ 20kPa...35MPa		
			PC3	Flush diaphragm G1/ 2 Male								
			PD1	Hygienic DN25 clamp connection						0 k P a ~ 3 5 k P a ...		
			PD1s	Hygienic DN25 clamp connection with heat sink						3.5MPa		
MPM489	G	M1D6	E	V5	A1	22	00	C1	The complete spec.			

Code	Process connection sealing		
N	None (not optional for C6, C8, C10, PD1, PD1s)		
1	NBR		
2	FKM (standard, except for C5, C6, C8, C10, PD1, PD1s)		
3	EPDM		
4	Copper (C5 required)		
1	Code	Electrical connection ^①	
	B1	4-pin connector	
	B11	4-pin connector with 1.5 m PVC cable	
	B2	Cable	
	B21	Cable connection with M20×1.5 fixed thread	
	B22	Cable connection with NPT1/ 2 fixed thread	Flameproof only, select one
	B23	Cable connection with G1/ 2 fixed thread	
	B4	M12×1 4-pin connector	
	B41	M12× 1 4-pin connector with 2m PVC straight cable	
	B42	M12×1 4-pin connector with 2m PVC angled cable	
B2	Code	Cable material (optional only for B2 cable)	
	N	None (non-cable connection option)	
	P1	PE (Standard)	
	P2	PUR	
	Code	Cable length (Unit: m) (optional only for B2 cable)	
	N	None (non-cable connection option)	
	L001	1	
	L1D5	1.5	
	L002	2	
	L003	3	
P1	L004	4	
	L005	5	
	L006	6	
	L007	7	
	L008	8	
	L009	9	
	L010	10	
	Code	Certification requirement ^②	
	N	None	
	i	Intrinsically safe Ex ia IIC T6 Ga	
L001	T	Ship-use Ex ia IIC T6 Ga、 Ex d IIC T6 Gb	
	y	ATEX Ex ia IIC T4 Ga	
	d	Flameproof Ex db IIC T6 Gb	
	Code	Accessory	
	N	No accessory	
	M6	4-digit LED indicator (only for 4mA~20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)	
	M7	4-digit LCD indicator (only for 4mA~20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)	
	Yb3	Yb junction box (3-core terminals)	
	Yc3	MS200 (3-core terminals)	Polymer plug (default)
	Yd	PD140	
y	YeM6	Ye (M6)	
	YeM7	Ye (M7)	
	Ye	Ye (Without indicator)	
	MS01	Polymer plug (except for Yb3, Yc3, Yd)	
	D01	Damping gasket	
	Code	Accessory	
	N	No accessory	
	M6	4-digit LED indicator (only for 4mA~20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)	
	M7	4-digit LCD indicator (only for 4mA~20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)	
	Yb3	Yb junction box (3-core terminals)	
	Yc3	MS200 (3-core terminals)	Polymer plug (default)
	Yd	PD140	
	YeM6	Ye (M6)	
	YeM7	Ye (M7)	
	Ye	Ye (Without indicator)	
	MS01	Polymer plug (except for Yb3, Yc3, Yd)	
	D01	Damping gasket	
M6	Code	Accessory	
	N	No accessory	
	M6	4-digit LED indicator (only for 4mA~20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)	
	M7	4-digit LCD indicator (only for 4mA~20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)	
	Yb3	Yb junction box (3-core terminals)	
	Yc3	MS200 (3-core terminals)	Polymer plug (default)
	Yd	PD140	
	YeM6	Ye (M6)	
	YeM7	Ye (M7)	
	Ye	Ye (Without indicator)	
	MS01	Polymer plug (except for Yb3, Yc3, Yd)	
	D01	Damping gasket	
The complete spec.	Code	Accessory	
	N	No accessory	
	M6	4-digit LED indicator (only for 4mA~20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)	
	M7	4-digit LCD indicator (only for 4mA~20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)	
	Yb3	Yb junction box (3-core terminals)	
	Yc3	MS200 (3-core terminals)	Polymer plug (default)
	Yd	PD140	
	YeM6	Ye (M6)	
	YeM7	Ye (M7)	
	Ye	Ye (Without indicator)	
	MS01	Polymer plug (except for Yb3, Yc3, Yd)	
	D01	Damping gasket	

Notes

- 1、"②", refers to certification requirements.
For the intrinsically safety type, current output is available only.
The product can be intrinsically safe explosion-proof/flameproof and suitable for ship-use simultaneously.
- 2、Refer to the "Measuring Range" on page 2 for product accuracy.
- 3、The minimum operating temperature of FKM O-ring is -20°C, while EPDM O-ring is -40°C.
- 4、Please note that for 5V DC/3.3V DC powered products, the cable length must be less than 10m if connected.
- 5、The 4mA ~ 20mA transmitter can use the M6 or M7 indicator, with a power supply $\geq 16V$ DC.
- 6、The ambient temperature of transmitter should be -20°C~ 70°C with M6 indicator, while -10°C~ 60°C with M7 indicator. Indicator settings refer to its order guide, which can be obtained from the MICROSENSOR website.
- 7、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.