

Smart Digital Pressure Transmitter for General and Hazardous Environments

MPM483DM



Applications

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

Features

- Intrinsically safe, Ex ia IICT4 Ga
- Flameproof, Ex d IICT6 Gb
- High accuracy, High stability
- Advanced EMC performance
- LCD display
- RS485 and 4mA~20mA

Introduction

MPM483DM Smart Digital Pressure Transmitter features high accuracy and stability. It features advanced digital temperature compensation and nonlinear correction to ensure accurate and stable measurements.

Certified for intrinsically safe and explosion-proof, it is suitable for hazardous environments. The transmitter has a wide-temperature LCD display and a metal cast housing for harsh conditions. It also supports RS485 communication with MODBUS RTU and customizable ASCII protocols for networked applications.

Specifications

Range	-1bar...0bar ~ 100mbar...1000bar
Overpressure	≤ 2 times FS or 110MPa (min. Value is valid)
Pressure type	Absolute (A), Sealed Gauge (S), Positive/Negative (N), Gauge (G) (For explosion-proof, Gauge (G) and Positive/Negative (N) are not recommended.) ^①
Accuracy	Refer to Measuring Range & Accuracy
Long-term stability	±0.25%FS/year
Compensation temperature	-10°C ~ 70°C
Operating temperature	-30°C ~ 80°C (Standard and Intrinsically safe)
	-30°C ~60°C (Flameproof)
Storage temperature	-40°C ~ 85°C
Insulation resistance	100MΩ@100V
Vibration	10g, 20Hz ~ 2000Hz (Base bonded to housing; standard for Flameproof) ^②
Shock	20g,11ms
IP rating	IP65

Measuring Range

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	±0.5%FS	40	K020		0 - 200	±0.5%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	±0.5%FS	2	B001
	0 - 160	±0.25%FS	300	K160		0 - 1.6		3	B1D6
	0 - 200		400	K200		0 - 2	±0.25%FS	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	±1%FS	3	P1D5		0 - 3	±0.5%FS	6	P003
	0 - 3	±0.5%FS	10	P005		0 - 5		15	P010
	0 - 10		20	P015		0 - 15		45	P030
	0 - 30		150	P060		0 - 60	±0.25%FS	150	P100
	0 - 100		150	P160		0 - 160		300	P200
	0 - 200		300	P300		0 - 300		450	P500
	0 - 500		750						

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	±1%FS	2	B001
	0 - 50		100	K050		0-1.6	±0.5%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	±0.5%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	psi	0-400	±1%FS	600	B400
	0 - 16		30	M016		0-500		750	B500
	0 - 20		30	M020		0-600	±0.5%FS	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		0 - 5	±1%FS	10	P005
	0 - 60		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
mbar	0 - 400	±1%FS	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	±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
	- 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	±0.25%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

Note: The specified accuracy applies within the compensation temperature range of -10°C to 70°C.
 Test standard: GB/T 17614.1-2015/IEC60770-1:2010.

EMC

SN	Test Item	Standard	Test Condition	Performance Level
1	Electrostatic discharge immunity test	GB/T 17626.2-2018	±4kV (contact); ±8kV (air)	B
2	Radiated, radio-frequency, electromagnetic field immunity test	GB/T 17626.3-2016	80MHz ~ 6GHz 10V/m	A
3	Power frequency magnetic field immunity test	GB/T 17626.8-2006	100A/V	A
4	Electrical fast transient/burst immunity test	GB/T 17626.4-2018	2kV 5kHz 5/50ns	A
5	Surge immunity test	GB/T 17626.5-2019	Line to line: 1 kV Line to ground: 2 kV	B
6	Immunity to conducted disturbances, induced by radio frequency fields	GB/T 17626.6-2017	150kHz ~ 80MHz	A

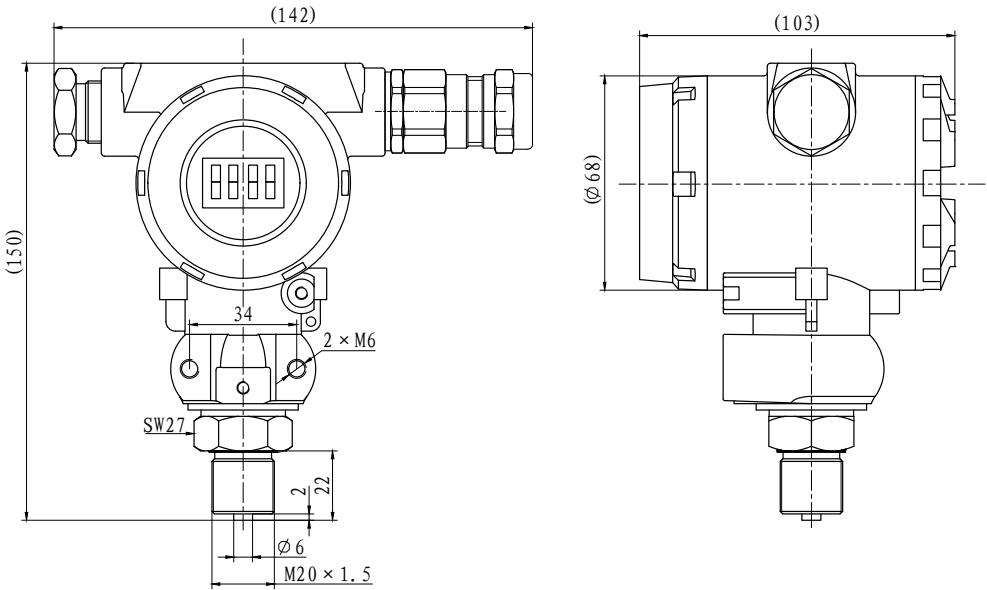
Output Signals

Output signal	Supply voltage	Output type	Load resistance
4mA ~20mA DC (E)	8V ~28V DC	2-wire	≤(U-8)/0.02A (Ω)
RS485, ASCII communication protocol (R4)		4-wire	The RS485 bus allows up to 99 devices to be connected.
RS485, MODBUS_RTU communication protocol (R8)			

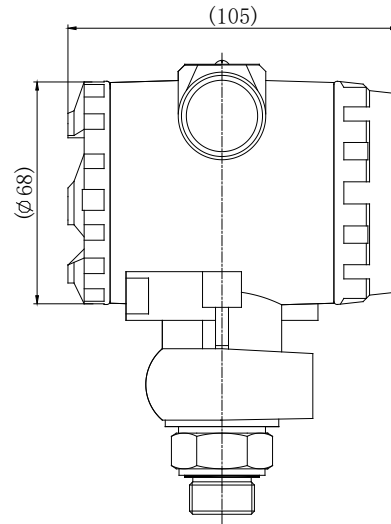
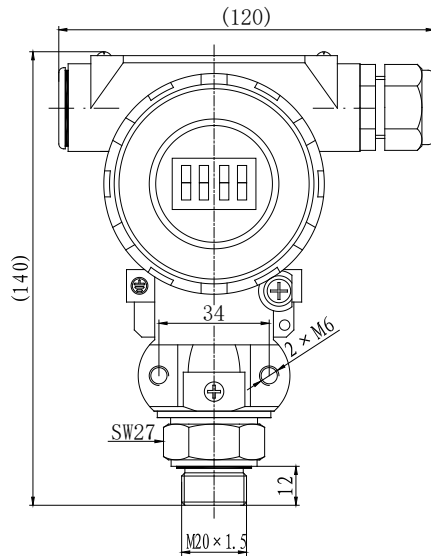
Outline Construction

Flameproof (d)

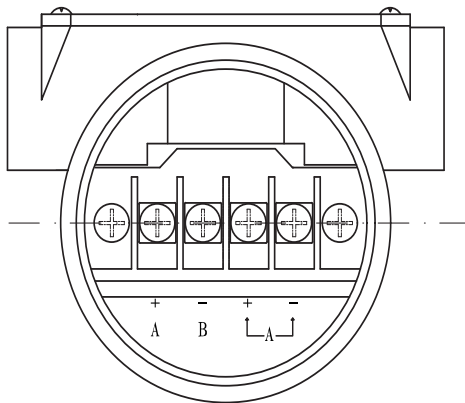
Unit: mm



Intrinsically Safe and Standard



Electrical Connection



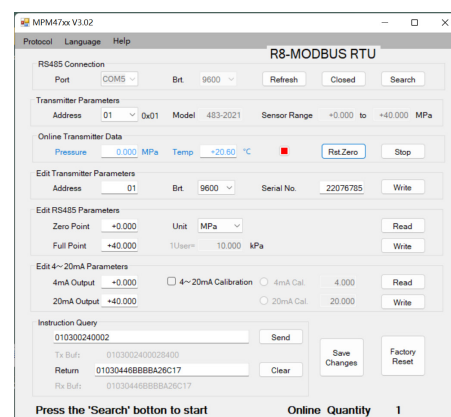
2-wire		4-wire	
Terminal	Definition	Terminal	Definition
+A	V+	+A	V+
-B	+OUT	-B	+OUT
		+A	RS485A
		-B	RS485B

Auxiliary Software

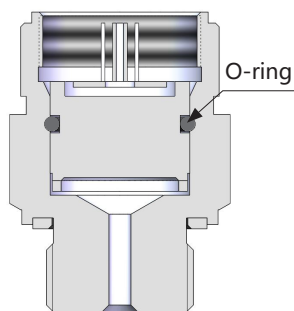
User configuration software – MS setonline

The MS SetOnline software can be installed on a PC and connected to the transmitter via an RS485 converter. It allows users to access basic internal information, including device address, real-time pressure, and temperature values.

Note: To download MS SetOnline, visit the official website at www.microssensorcorp.com, enter "MS SetOnline" in the top-right search bar, and follow the link to download.



Sensor Sealing



O-ring: FKM/EPDM

Construction Materials

Wetted Parts

Isolated diaphragm: SS 316L/Tantalum

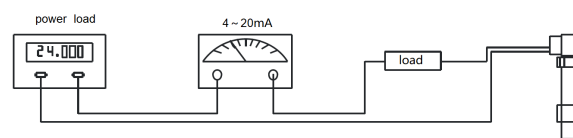
Pressure port: SS 304/SS 316L/Hastelloy C

Non-Wetted Parts

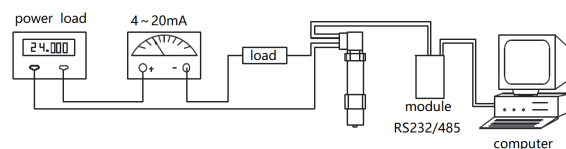
Housing: Aluminum alloy

Application Examples

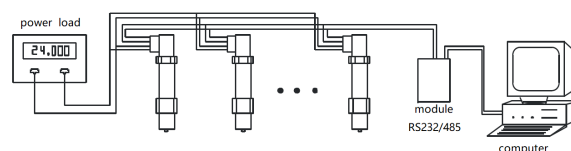
Field Pressure Measurement for Two-Wire Transmitters



Wiring for Field Calibration Using a Computer



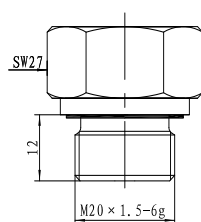
Network Application of Transmitter with RS485



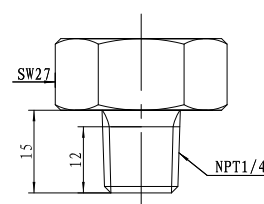
Process Connection

Unit: mm

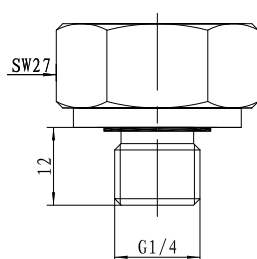
M20× 1.5 Male, face seal (C1)



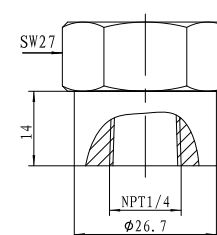
NPT1/4 Male (C6)



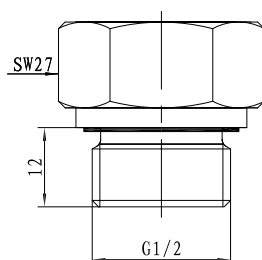
G1/ 4 Male, face seal (C2)



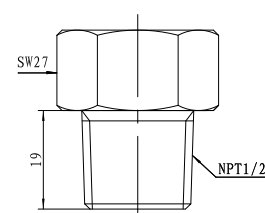
NPT1/ 4 Female (C8)



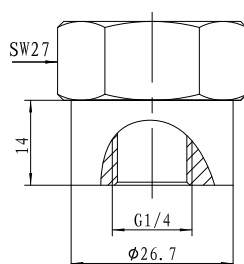
G1/2 Male, face seal (C3)



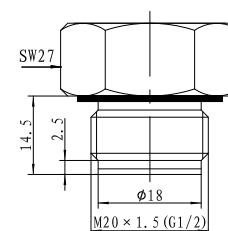
NPT1/2 Male (C10)



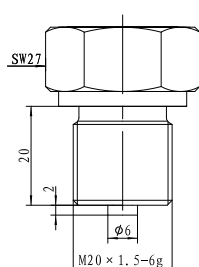
G1/4 Female, waterline seal (C4)



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



M20×1.5 Male, waterline seal (C5)



Order Guide

MPM483DM Smart Digital Pressure Transmitter											
		Code	Pressure type								
		G	Gauge, Sealed gauge pressure (Not recommended for explosion-proof)								
		S									
		A	Absolute pressure								
		N	Positive/Negative pressure (Not recommended for explosion-proof)								
		Range	Measurement Range: -1bar...0bar ~ 100mbar...1000bar								
		XXXX	Range-specific code								
			Code	Output signal							
			E	4mA~20mA DC							
			ER4	4mA~20mA DC (2-wire) +RS485, ASCII communication protocol							
			ER8	4mA~20mA DC (2-wire) +RS485, MODBUS RTU communication protocol							
			Code	Power supply							
			V8	8V ~ 28V DC							
			Code	Accuracy							
			A0	±0.1%FS							
			A1	±0.25%FS							
			A2	±0.5%FS							
			Code	Construction material							
				Isolated Diaphragm	Pressure Port			Housing			
			222	SS 316L	SS 304			Aluminum alloy			
			231	SS 316L	SS 316L						
			251	Tantalum	SS 304						
			351	Tantalum	Hastelloy C						
			Code	Sensor sealing							
			00	FKM (standard)							
			01	EPDM (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							
			PC1	M20×1.5 flush diaphragm			0bar ~ 400mbar...350bar				
			PC3	G1/2 flush diaphragm							
			Code	Process connection sealing							
			N	None (C4, C6, C8, and C10)							
			1	NBR							
			2	FKM (standard)							
			3	EPDM							
			4	Copper (C5)							
MPM483DM	G	M1D0	ER4	V8	A0	222	00	C1	2	The complete spec.	

Code	Cable gland		
LJ1	Waterproof gland (non-explosion-proof)		
LJ2	Cable gland (explosion-proof, without connection thread)		
LJ3	M20×1.5 Male to G1/2 Female (explosion-proof)		
LJ4	M20×1.5 Male to G1/2 Male (explosion-proof)		
LJ5	M20×1.5 Male to M20×1.5 Female (explosion-proof)		
LJ6	M20×1.5 Male to NPT1/2 Female (explosion-proof)		
LJ7	M20×1.5 Male to NPT1/2 Male (explosion-proof)		
	Code	Certification requirement ①	
	N	None	
	i	Intrinsically safe explosion-proof Ex ia IICT4 Ga	
	d	Flameproof Ex d IICT6 Ga	
		Code	Accessory
		N	None
		D01	Damping gasket
LJ1	N	N	The complete spec.

Notes

- ① : Explosion-proof products are not recommended for Gauge (G) or Positive/Negative (N) pressure types, as accuracy may be affected.
- ② Vibration: 10g, 20Hz–2000Hz. Explosion-proof products feature bonded bases and housings (default), preventing display head rotation after installation.
- 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.
- For other special requirements, please consult with the MICROSENSOR and specify them in the order.

ООО “РусАвтоматизация”

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