

MDM7000

Operation Manual

V4.2



MICROSENSOR



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Micro Sensor also reserves the final interpretation right of this manual. See the cover for version number.

Thanks for your using products from MICROSENSOR. To make the most of this product, it is recommended that you carefully read this manual before using it.

1 Introduction

1.1 Introduction

MDM7000 series smart pressure transmitters utilize high-performance sensor technology. They measure liquid, gas, or steam levels, density, pressure, and flow, converting pressure signals into a 4–20 mA DC analog output. Remote configuration and monitoring are also available via communication devices. The products are suitable for demanding process-industrial environments.

1.2 Release notes

- a) All rights reserved. This manual may not be modified, copied, or excerpted in any form without written permission from Micro Sensor Co., Ltd.
- b) This manual is delivered to the user as an attachment to the product.
- c) Please use the current version of the manual. Other versions are not guaranteed to be applicable to the current product unless otherwise specified.
- d) For any errors, omissions, or misunderstandings in this manual, please contact Micro Sensor Co., Ltd.
- e) For customized instrument, this manual may not fully apply, and can serve as a supplementary reference.

1.3 Quality assurance

- a) The warranty period is 18 months from the date of shipment or as specified in the contract. Failures occurring within the warranty period that are not caused by the user will, in principle, be repaired free of charge.

- b) In the event of a failure, the user may contact the distributor or Micro Sensor. Please provide the instrument model and specifications, product nameplate information (including ID), order details, failure description, site conditions to facilitate prompt and effective troubleshooting.
- c) The following causes of failure will incur repair costs, even within the warranty period:
- The instrument installation site does not meet the environmental conditions described in Chapter 4, Section 4.1 of this manual.
 - Incorrect installation, improper operation, or unauthorized repair by non-designated personnel.
 - The on-site pressure exceeds the maximum operating pressure of the instrument.
 - Failures caused by irresistible incidents, such as earthquake, fire, war, etc.
 - Faults caused by long-term high temperatures (ambient temperature > 60°C , medium temperature > 85°C), lightning strikes, water hammer impacts, diaphragm corrosion of wetted part, and operation not in accordance with the manual.

2 Precautions for use

- a) The pressure transmitter should be installed, debugged, and maintained by professional engineers or technical personnel. Before installation, carefully read this manual, understand, and adhere to its various regulations.
- b) The pressure transmitter is powered by an external power supply, and the power supply circuit should comply with the energy-limiting circuit specified by relevant standards, while also being mindful of the potential presence of high voltage in the circuit.
- c) When using the pressure transmitter in hazardous environments, installation, operation, and maintenance should adhere to the relevant regulations in this manual and national standards.

c) Disassembly of the instrument is permitted only under atmospheric pressure.

The manual employs several symbols to provide specific information, which are explained as follows:



Warning

Indicates danger, which may result in serious personal accidents or significant property damage.



Caution

Indicates general faults that may result in minor personal injury or some property damage.



Prompt

Important information about the product, or a certain part of the manual needs prompting.

Disclaimer

We have verified the consistency of the printed materials with the hardware and software. However, deviations may still exist; therefore, we do not guarantee complete alignment between the printed content and the hardware or software. All data in the printed materials have been tested according to standards, and any necessary corrections will be included in the next version.

Note

When the product is decommissioned or no longer in use, dispose of waste properly. Electronic components and circuit boards are considered hazardous waste and must be correctly classified for recycling or safely treated to prevent environmental contamination.

3 Specifications

3.1 Transmitter nameplate

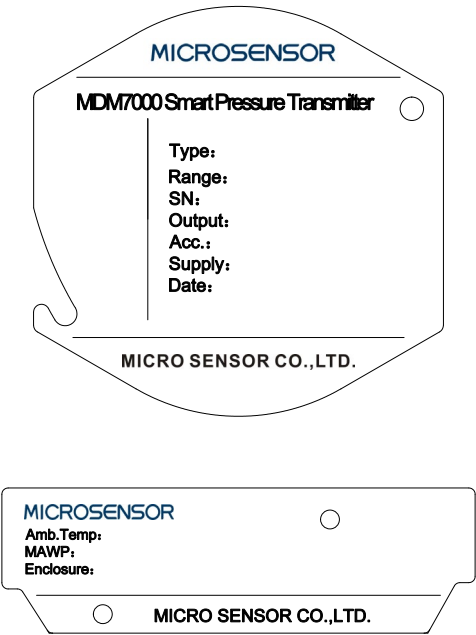


Figure 1 Nameplate

Note 1: Nameplate certifications are based on the selected configuration; nameplate specifications are for reference only.

Note 2: For differential pressure transmitters, the maximum operating pressure refers to the maximum static pressure: 420bar.

3.2 Main specifications

Range ^①	DP	20mbar ~ 100bar
	GP	0.4bar ~ 400bar
	AP	0.4bar ~ 100bar
	DGP	60mbar ~ 400bar
	DAP	0.4bar ~ 100bar
	GP-T	0.4bar ~ 100bar
	AP-T	0.4bar ~ 10bar
	LT	0.4bar ~ 2.5bar
	LP	0.4bar ~ 2.5bar
Accuracy class	DP	0.05/0.075
	GP	0.075/0.1/0.2
	AP	0.1/0.2
	DGP	0.075/0.1/0.2
	DAP	0.1/0.2
	GP-T	0.1/0.2
	AP-T	0.1/0.2
	LT	0.2
	LP	0.2
Power supply	Intrinsically safe HART	18.3V ~ 30V DC
	Non intrinsically safe HART ^② /RS485	18.3V ~ 44V DC
Output signal	4mA ~ 20mA, HART	
Long-term stability	±0.1% SPAN/10years	
ATEX mark	II 1G Ex ia IIC T4 Ga/II 2G Ex db IIC T6 Gb/II 2D Ex tb IIIC T80°C Db	
ATEX Certificate No.	CSANe 24ATEX1178X CSANe 25ATEX1107X	

IECEX mark	Ex ia IIC T4 Ga/Ex db IIC T6 Ga /Ex tb IIIC T80°C Db
IECEX Certificate No.	IECEX CSA 24.0045X IECEX CSA 25.0059X
CSA Intrinsically safe mark	Class I, Division 1, Groups A, B, C, D T4/ Ex ia IIC T4 Ga/ Class I, Zone 0, AEx ia IIC T4 Ga
CSA Certificate No.	CSA24CA80156531X
PCEC mark	Ex ia IIC T4 Ga/Ex db IIIC T6 Gb
PCEC Intrinsically safe Certificate No.	CE23.7688X/CE23.6650
NEPSI Dust explosion-proof mark	Ex tb IIIC T85°C Db
NEPSI Dust explosion-proof Certificate No.	GYB24.1215X
Note ①: Detailed range specifications are provided in Chapter 12, Model selection table.	
Note ②: NWhen HART communication is not used, the supply voltage can be 13 V.	

4 Outline construction and installation

4.1 Installation environment

4.1.1 Ambient conditions

Ambient temperature without LCD display	-50°C ~+85°C
Storage temperature without LCD display	-50°C ~+100°C
Ambient temperature for Explosion-proof type	-40°C ~+70°C
Ambient temperature with LCD display	-40°C ~+70°C
Storage temperature with LCD display	-40°C ~+85°C
Ambient humidity	5%RH~100%RH @40°C

Ambient humidity	5%RH~10%RH @40°C
Atmospheric pressure	86kPa~106kPa
Note: See Section 10.5.1(6) for medium temperature	

*For explosion-proof / intrinsically safe transmitters, the applicable ambient temperature shall comply with the temperature class specified in the local certificate.

Temperature Class IEC/EN/GB3836	Max. Surface Temperature of Equipment[°C]	Ignition Temperature of Combustible Substances[°C]
T4	135	$200 \geq T > 135$
T5	100	$135 \geq T > 100$
T6	85	$100 \geq T > 85$

4.1.2 Electromagnetic conditions

Radiated interference: $\leq 1000\text{MHz}$

RF electromagnetic field interference: $\leq 10\text{V/m}$ (80MHz~1GHz)

Electrostatic discharge immunity: $\leq 8\text{kV}$

Power-frequency magnetic field interference: $\leq 30\text{A/m}$

4.1.3 Mechanical conditions

Vibration acceleration: $\leq 3\text{g}$

4.1.4 Installation position

- Avoid locations with large temperature fluctuations or significant temperature gradients. If the transmitter is exposed to radiant heat, provide thermal insulation and ventilation.
- Do not install the transmitter in a corrosive environment. If unavoidable, ensure adequate ventilation and prevent rainwater from entering the cable conduits.
- Although the transmitter is designed to resist shock and vibration, excessive mechanical disturbance should still be avoided to prevent damage to the pressure transmitter.



Caution

Avoid installing the transmitter in areas with large temperature differences, condensation, icing, or high vibration.

4.2 Installation of explosion-proof transmitters

4.2.1

This instrument has been type-tested for intrinsic-safety and/or flameproof protection. Pay attention to construction, installation, external wiring, and maintenance/repair — all activities must strictly comply with applicable regulations. Non-compliance or disregard of limitations may create hazardous conditions.

4.2.2

To ensure the safety of explosion-proof equipment, special care should be taken during installation, wiring, and piping. Strict safety precautions are required during maintenance and repair. Read the following instructions carefully.

The MDM7000 Series Smart Transmitters have obtained intrinsically safe and explosion-proof certificates, allowing them to be used in atmospheres containing explosive gases as well as flammable vapors.

4.2.3 Flameproof transmitters

The MDM7000 series smart pressure transmitters comply with the requirements of GB/T3836.1-2021 Explosive Atmospheres - Part 1: Equipment - General Requirements and GB/T3836.2-2021 Explosive atmospheres - Part 2: Equipment protection by flameproof enclosures "d",

making them suitable for use in hazardous areas containing explosive gases or flammable vapors.

Explosion-proof mark: Ex db IIC T6 Gb

- Ex: Explosion-proof mark
- db: Indicates that the electrical equipment complies with the “db” flameproof protection type.
- IIC: Group II equipment is suitable for explosive gas atmospheres other than coal mines. Group II equipment is further classified as IIA, IIB, and IIC according to the explosive gas environment. IIC represents gases such as hydrogen and acetylene.
- T6: Temperature class T6, with a maximum surface temperature of 85°C .
- Gb: EPL Gb — equipment for explosive gas atmospheres with a high level of protection, ensuring no ignition in normal operation or in expected fault conditions.

The installation, use, and maintenance of the transmitter shall also comply with the requirements of GB/T 3836.13-2021 Explosive atmospheres - Part 13: Equipment repair, overhaul, reclamation and modification, GB/T 3836.15-2024 Explosive atmospheres - Part 15: Specification of electrical installations design, selection and erection and GB/T 3836.16- 2022 Explosive atmospheres - Part 16: Electrical installations inspection and maintenance.

4.3 Outline construction

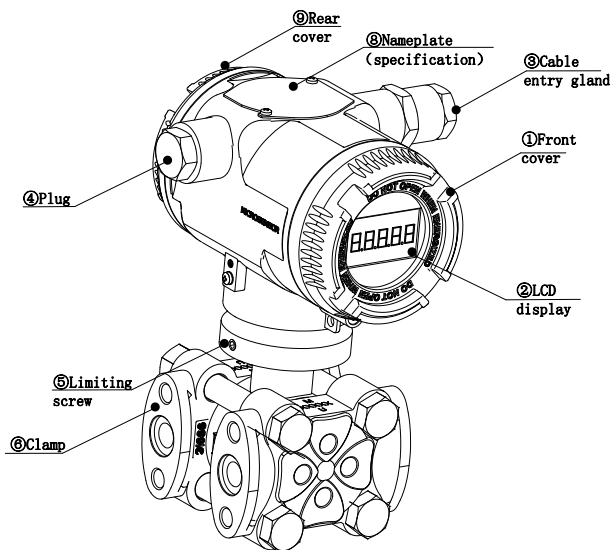


Figure 2 Transmitter outline construction

* The equipment includes different components based on the selected model in the order.

* Other models differ only in connection methods.

a) The electronic enclosure is made of die-cast aluminum or precision-cast stainless steel.

b) The enclosure has removable circular protective covers on both the front and rear sides. The front cover is secured with screws to prevent loosening or detachment.

c) Based on the model, the front cover (1) can be designed as a viewing window, allowing direct reading of measured values from the LCD display (2). See Figure 47 for details.

d) Limiting screw (5): prevents loosening and fixes the relative position of the sensor and enclosure. When loosened by half a turn, the enclosure can rotate 300°.

e) The interior of the rear cover (9) is the electrical terminal compartment. See Figure 40 for details.

- f) The cable entry gland (3) for the electrical terminal compartment is on one side: the left or right entry can be used, and any unused conduit are sealed with stainless steel plug (4). The cable entry gland (3) and stainless steel plug (4) are provided as accessories and should be installed by first removing the plastic protective cap and then assembling the accessories.
- g) The three buttons below the nameplate (8) are used for local operation.

*Based on the specific order, the equipment comprises various components.

4.4 Installation

The transmitter enclosure can rotate approximately 300° relative to the sensor and can be fixed at any position without affecting performance or internal wiring. When rotating the enclosure, do not force the sensor to rotate. Loosen the fixing screw with a 2 mm hex wrench by about one turn (do not fully remove the screw; see the installation dimension diagram). After positioning the enclosure, retighten the screw to minimize impact on the electronic connections and output display.

Installation is illustrated as follows:

4.4.1 Outline construction and overall dimensions

Unit: mm

MDM7000-DP

With Display

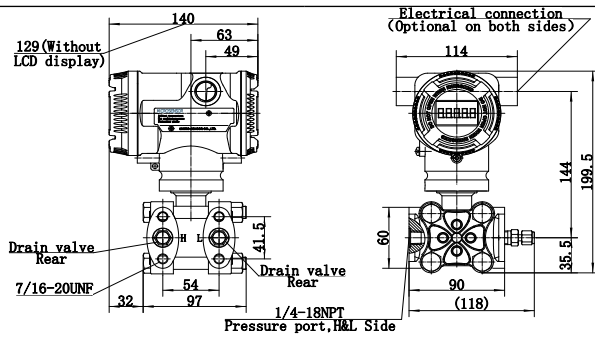


Figure 3

With D1 Adapter

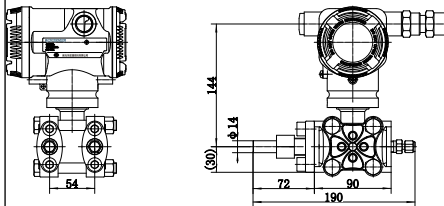


Figure 4

With D2 Adapter

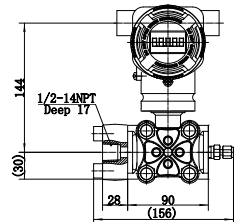


Figure 5

MDM7000-GP&AP

With Display(F)

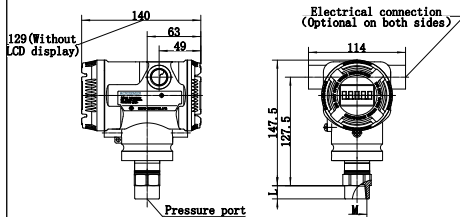


Figure 6

With Display(M)

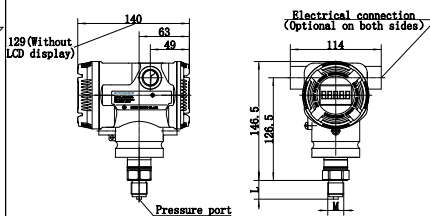


Figure 7

Process connection (M)

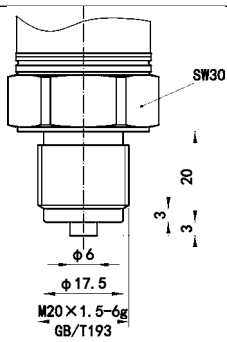


Figure 8

Process connection (G)

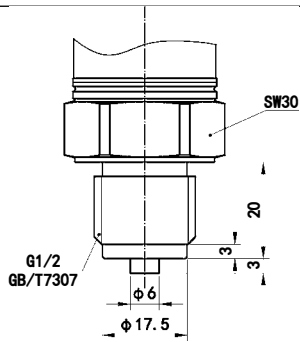


Figure 9

Process connection (A)

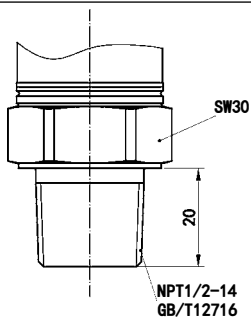


Figure 10

Process connection (N)

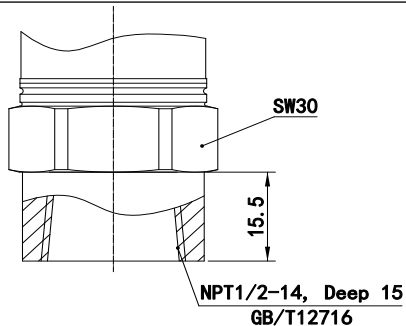


Figure 11

MDM7000-LP	
Side Mounted Movable Flange + Remote Fixed Flange With Display	Side Mounted Movable Extended Flange + Remote Fixed Flange With Display
Figure 22	Figure 23
Side Mounted Extended Flange + Remote Extended Flange With Display	Remote Flange + Remote Flange With Display
Figure 24	Figure 25
Remote Extended Flange + Remote Flange With Display	Remote Extended Flange + Remote Extended Flange With Display

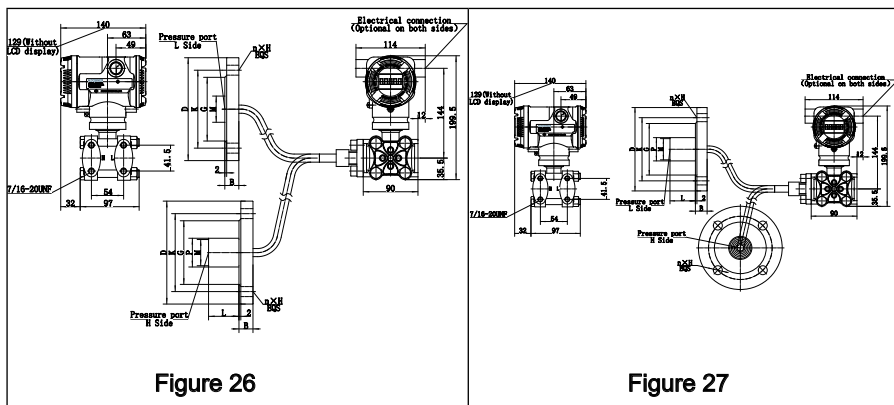


Figure 26

Figure 27



Warning

Ensure proper protection of the diaphragm during transportation of the diaphragm flange. For DGP/DAP models, protect the vent plug to prevent damage or impact.

4.4.2 Valve manifold options and description

Various valve manifolds are available, as illustrated below:

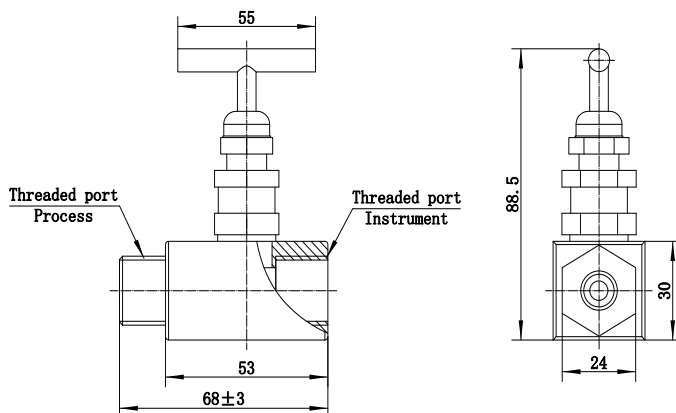


Figure 28 Shut-off valve

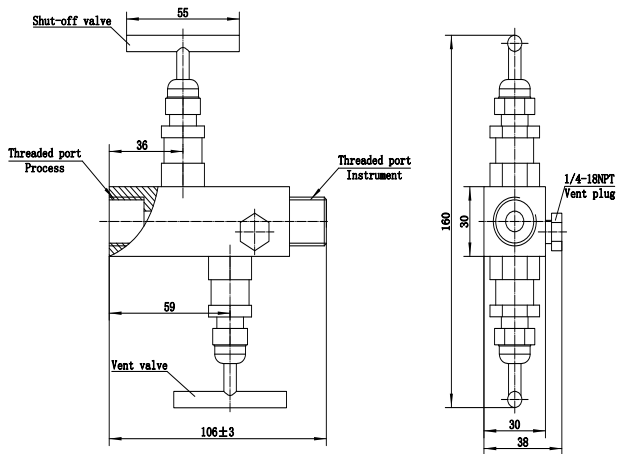


Figure 29 In-line two-valve manifold

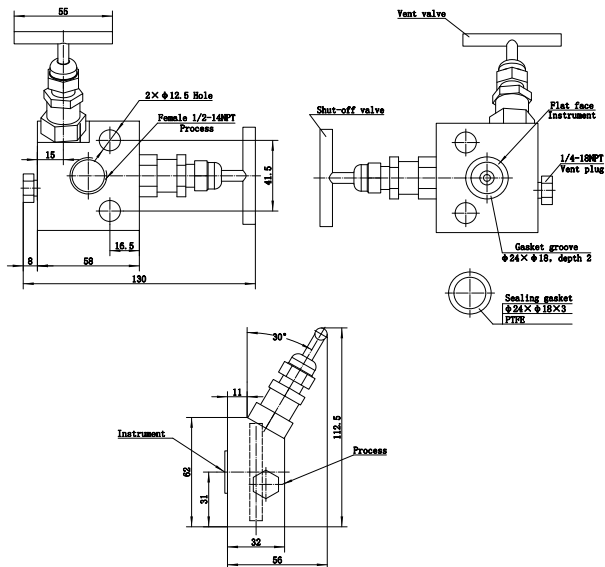


Figure 30 Flat type two-valve manifold

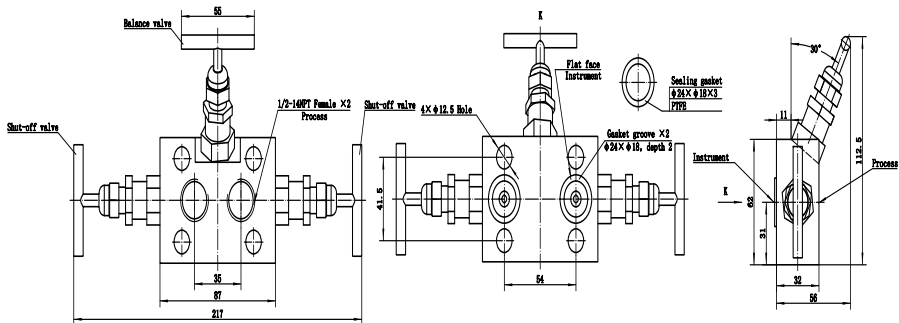


Figure 31 Three-valve manifold

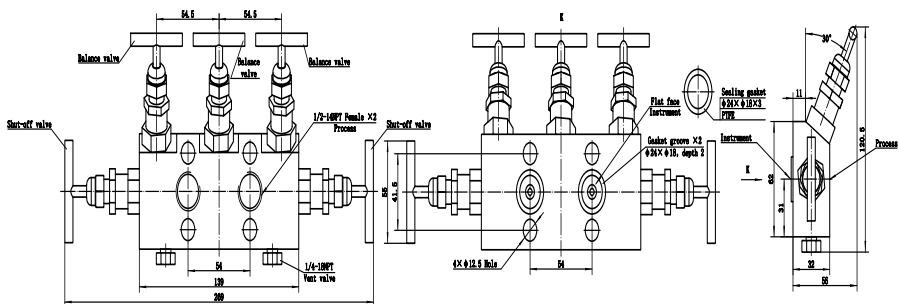


Figure 32 Five-valve manifold

The shut-off valve opens or shuts off the flow in the pipeline. Ensure the medium's flow direction matches the arrow on the valve body during installation.

In-line two-valve manifold comprises a shut-off (block) valve and a vent (bleed) valve for debris, water, or gas. It opens or shuts off the flow in the pipeline, with the valves positioned 180° apart.

Flat type two-valve manifold comprises a shut-off (block) valve and a vent (bleed) valve for debris, water, or gas. It opens or shuts off the flow in the pipeline, with the valves positioned 90° apart.

Operating procedures

- a) Check that all valves are closed.
- b) To prevent pressure fluctuations, slowly open the shut-off valve to allow the transmitter to operate normally.

To deactivate, follow the reverse steps.

The three-valve manifold consists of a valve body, two shut-off valves, and a balancing valve. Valves are classified by function: high-pressure side shut-off valve, low-pressure side shut-off valve, and a balancing valve in between. The three-valve manifold is used with a differential pressure transmitter to connect or isolate the high and low pressure chambers from the process lines, or to isolate the high-pressure chamber from the low-pressure chamber.

The five-valve manifold extends the three-valve manifold by adding vent valves to both the high- and low-pressure sides.

Operating procedures

- a) Close the drain valve (five-valve manifold) and open the balancing valve.
- b) To avoid pressure fluctuations, slowly open the high-pressure side shut-off valve and the high-pressure side vent valve to purge air from the impulse line. If the medium is liquid, close the vent valve when liquid flows out. If the medium is gas, vent for approximately 20 seconds before closing the vent valve.

- c) Close the balancing valve.
- d) To avoid pressure fluctuations, slowly open the low-pressure side shut-off valve and the low-pressure side vent valve to purge air from the impulse line. If the medium is liquid, close the vent valve when liquid flows out. If the medium is gas, vent for approximately 20 seconds before closing the vent valve.

Installation recommendations:

- The vent tube shall be kept as short as possible and avoid sharp bends.
- Maintain a slope of at least 1:12 to prevent sediment accumulation.
- Before connecting to the transmitter, purge the vent tubes with compressed air; flushing with the process medium is preferred.
- If the medium is liquid, the vent tube shall be thoroughly vented.
- Arrange the vent tubes so that bubbles in liquids or condensate in gases can flow back into the process pipeline.
- Ensure high- and low-pressure side connections are correct, secure, and leak-free.
- Prior to the pressure process connection, confirm that the relevant pipeline is clear and the construction components are sufficiently robust.
- Ensure all relevant valves are closed during the pressure connection.
- After connection, verify the integrity of all seals. When venting or draining is required, take appropriate safety precautions to avoid injury or damage from high-pressure or corrosive media.

4.4.3 Flange assembly

The waist-shaped flange is available, as illustrated in Figure 33. The T-shaped flange is also available, as illustrated in Figure 34.

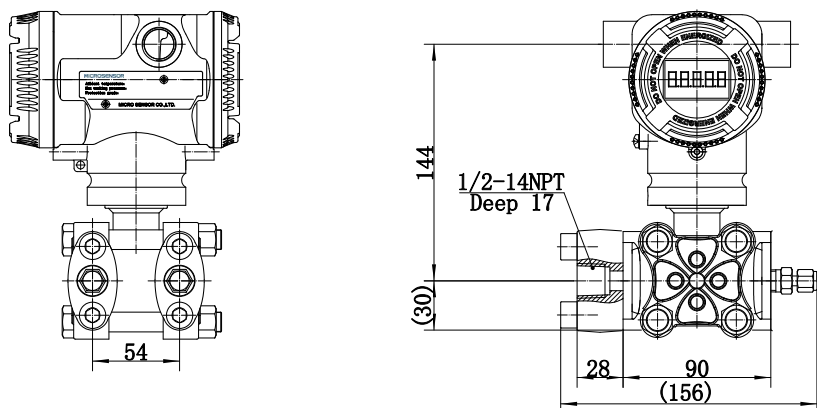


Figure 33 Transmitter with oval flange

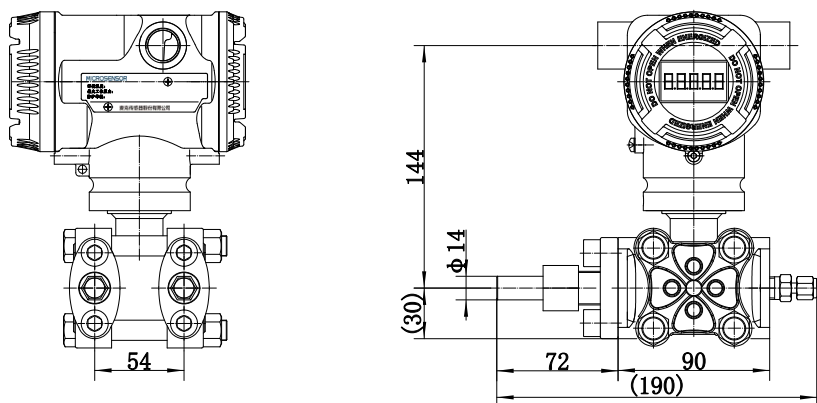


Figure 34 Transmitter with traditional (T-type) flange

4.4.4 Vent tube assembly

(1) System pressure port

Sediment, residual liquid, or other deposits in the process line may enter the vent tube, causing measurement errors. To avoid such effects, mounting the vent valve within the angular ranges shown in Figure 35.

For liquid medium: the pressure port shall be horizontal or angled downward within 45°;

For gas medium: the pressure port shall be vertical upward or within 45° of vertical upward;

For steam medium: the pressure port shall be horizontal or angled upward within 45° .

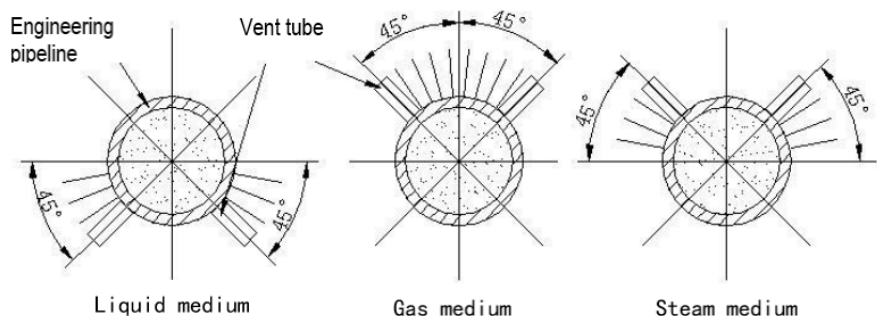


Figure 35 Pressure port position

Vent tube shall be arranged vertically or at an inclined angle. Even in horizontal arrangements, there shall be a moderate inclination to prevent process medium from being retained in the tube.

(2) Transmitter position

When the process medium is liquid or steam, in principle, the position of the transmitter is lower than the vent valve;

When the process medium is gas, in principle, the position of the transmitter is higher than the vent valve.

(3) Temperature difference, condensation, antifreeze, windproof

When piping, try to ensure that there is no temperature difference between the two vent tubes, because the temperature difference may cause changes in the density of the medium and lead to measurement errors.

When measuring steam, liquid in the impulse line may repeatedly condense and evaporate due to changes in process temperature or ambient conditions. This can create liquid columns of different heights on the high and low sides, leading to measurement errors. Therefore, a condensing pot should be used for steam measurement.

Appropriate measures should be taken to prevent the transmitter and vent tube from freezing. Frozen process media may damage the

isolation diaphragm.

When using a differential pressure transmitter to measure very low pressures, the low-pressure side must have a stable reference pressure. If the reference pressure is atmospheric, wind must be avoided; in this case, the transmitter can be placed in an enclosure or the low-pressure side can be routed into a wind shield.

4.4.5 Horizontal piping installation

For horizontal piping of the transmitter (pressure process connection), use a pipe-mounted flat bracket with U-bolts and the field-installed pipe. The installation pipe should have a diameter of $\Phi 50$ mm to $\Phi 60$ mm. The bracket is secured to the transmitter with screws, tightened to a torque of 40 N·m.

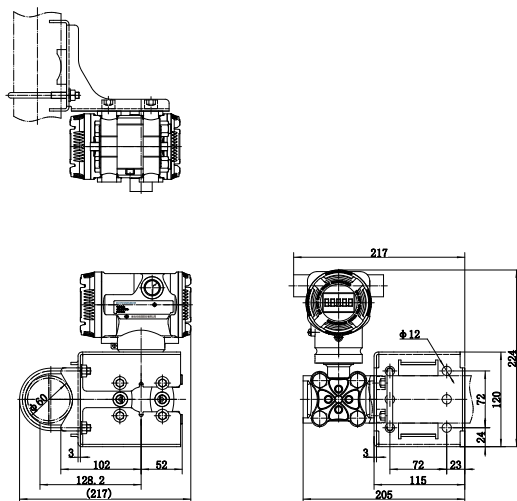


Figure 36 DP horizontal piping installation (horizontal installation pipe)

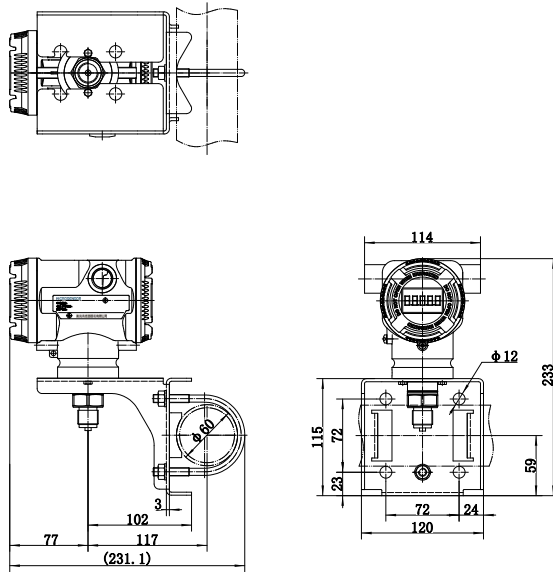


Figure 37 GP horizontal piping installation (horizontal installation pipe)

4.4.6 Vertical piping installation

For vertical piping of the transmitter (pressure process connection), use a pipe-mounted or plate-mounted angled bracket with U-bolts and the field-installed pipe. The installation pipe should have a diameter of $\Phi 50$ mm to $\Phi 60$ mm. The bracket is secured to the transmitter with screws, tightened to a torque of 40 N·m.

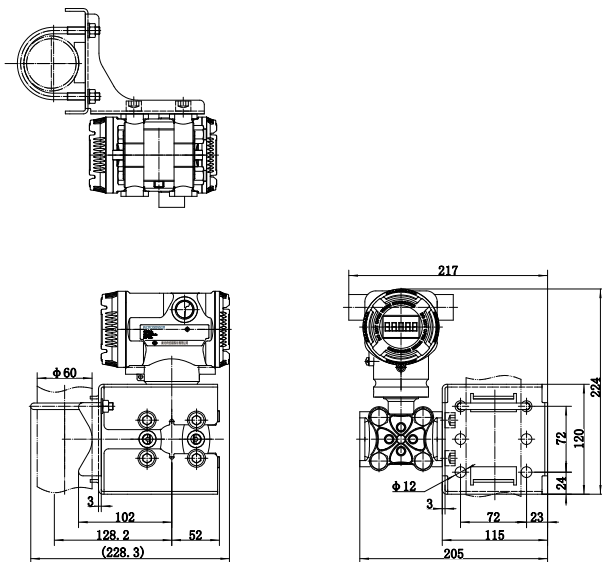


Figure 38 DP vertical piping installation (horizontal installation pipe)

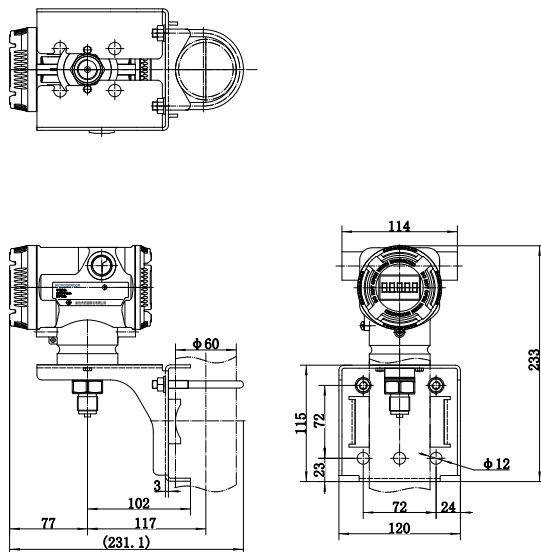


Figure 39 GP vertical piping installation (horizontal installation pipe)



Prompt

After mounting of the transmitter, the positive and negative pressure ports shall be at the same level as possible.

5 Electrical connection

5.1 Electrical connection

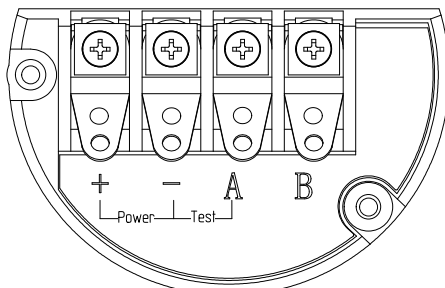


Figure 40

Electrical installation shall comply with applicable regulations. Since the transmitter does not have a power switch, overcurrent protection or a power cutoff device shall be configured.

Verify that the operating voltage matches the value specified on the nameplate. Electrical connections can be made through NPT 1/2 or M20×1.5 cable entries to the terminal blocks.

Explosion-proof type and mark

Explosion-proof type: Intrinsically safe, flameproof, dust-explosion-proof

Explosion-proof mark: II 1G Ex ia IIC T4 Ga/Ex ia IIC T4 Ga

Ex db IIC T6 Gb/Ex tb IIIC T85°C Db

Class I, Division 1, Groups A, B, C, D T4

Ex ia IIC T4 Ga

Class I, Zone 0, AEx ia IIC T4 Ga

IP Rating: IP67



Warning

Flameproof transmitter must be disconnected from power before wiring. After wiring, tighten the back cover and rotate the connector to compress the cable, ensuring dust and water resistance as well as cable fixation.

5.1.1 2-wire electrical connection

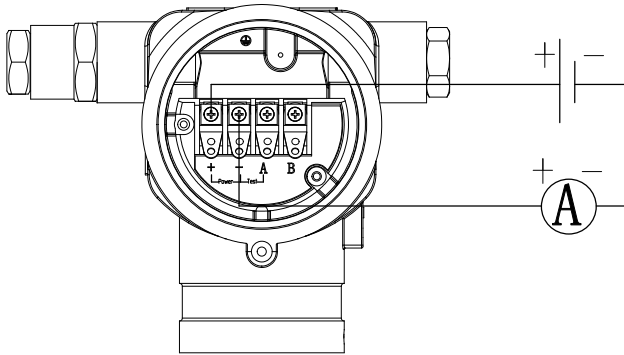


Figure 41 Electrical connection between transmitter and external power supply
Precautions:

- a) Keep the circuit connections as short as possible;
- b) Select shielded twisted-pair signal cables for optimal grounding. To avoid ground loop, the shield layer should be single-ended grounded, with the pressure transmitter side being insulated and floating, and the control cabinet side being grounded.
- c) Devices equipped with surge protectors must be grounded to ensure proper function. The most effective way to ground the transmitter housing is to directly connect the protective ground terminal to an impedance $\leq 5\Omega$ to the ground.
- d) Try to avoid direct proximity to user devices or wiring of electrical and electronic devices that may cause interference.
- e) The cable entry thread hole on the housing is M20×1.5, and the matching cable entry device shall be used;
- f) Flameproof transmitter must be disconnected from power before wiring. After wiring, tighten the back cover and rotate the connector to compress the cable, ensuring dust and water resistance as well as cable fixation;
- g) Avoid nearby high-power electrical equipment and utilize shielded cables (the shielding layer is well grounded at both ends).



Warning

For flameproof transmitters, the back cover or front glass cover must never be opened while the device is powered. Therefore, on-site calibration using a handheld terminal is prohibited. Calibration may only be performed using the transmitter's built-in buttons.

5.1.2 2-wire HART communication connection

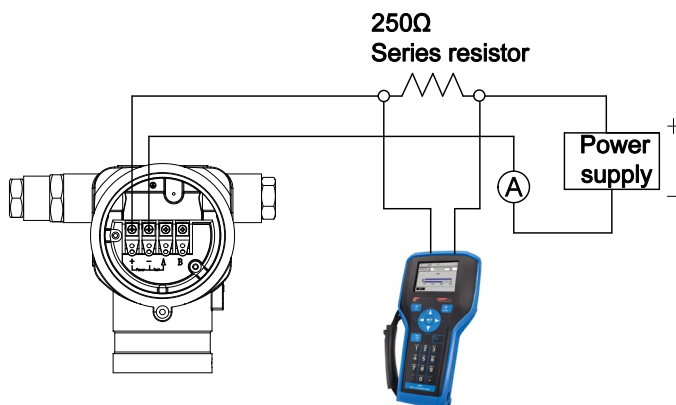


Figure 42

The transmitter uses HART communication. A brief overview of HART connectivity is provided below.

The output of a HART transmitter superimposes a digital HART signal on the standard 4–20 mA signal. In the electrical connection diagram shown in Figure 42 (transmitter connected to external power), a HART terminal device can be connected across the transmitter “+” and “–” terminals or across the load resistor. The transmitter is compatible with all HART-enabled devices in the system, such as actuators and valve positioners. Each device can be individually monitored and operated using a HART terminal.

5.1.3 LCD screen rotation

The transmitter may be optionally equipped with an LCD display, installed inside the housing behind the front glass cover. After on-site installation, the display orientation can be adjusted. The LCD can be rotated freely up to 350° to suit the installation requirements.



Warning

For flameproof transmitters, do not open the front glass cover or rotate the LCD display while the device is powered.

5.2 Cable protection system

a) Standard protection system:

To prevent liquid from flowing along the cable and accumulating at the waterproof joint or entering the junction box, a U-shaped loop shall be formed between the junction box and the pressure transmitter, as shown in the diagram. The bottom of the U-shaped loop should be positioned below the pressure transmitter. Additionally, sufficient cable length should be reserved to allow for maintenance or replacement.

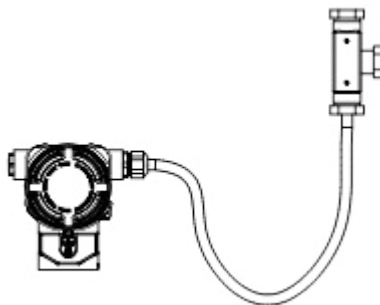


Figure 43

b) Explosion-proof flexible conduit protection system:

In hazardous areas, when installing a flameproof pressure transmitter, a metal explosion-proof flexible conduit shall be used to connect the signal cable to the junction box and route it to a safe area.

area.

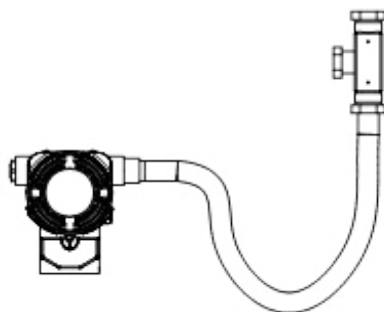


Figure 44

5.3 Power supply

It is recommended to use a dedicated linear DC power supply to power the pressure transmitter. Voltage drop may occur across the resistive load; therefore, the total resistance of the signal cable, display module, and any other recording or display devices must be calculated to ensure the terminal voltage requirements are met.

- For current signal output with HART / RS 485: 18.3V~44V DC.
- For intrinsically safe current signal output with HART: 18.3V~30V DC.

6 Use of intrinsically safe type

The nameplate of the intrinsically safe transmitter indicates the explosion-proof type, level, and temperature class in accordance with GB 3836.12021 “Explosive Atmospheres — Part 1: Equipment — General Requirements”.

An intrinsically safe transmitter shall be used in conjunction with a safety barrier when installed in areas containing explosive atmospheres. The safety barrier shall comply with GB 3836.42021 “Explosive Atmospheres — Part 4: Equipment Protection by Intrinsic Safety ‘i’”, and shall be tested and certified by the relevant explosion-proof authority.

The installation shall be carried out according to the requirements of its manual. The system wiring is shown in Figure 45.

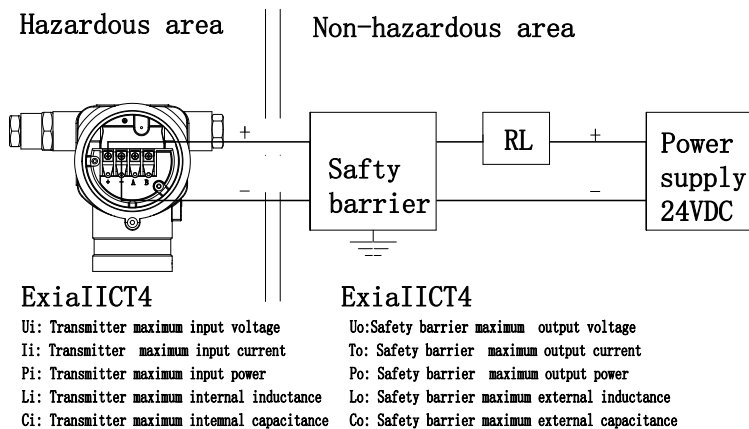


Figure 45 Intrinsically safe electrical connection

An intrinsically safe transmitter shall be used in conjunction with a safety barrier to ensure its intrinsic safety. The explosion-proof parameters of both devices must be properly matched as follows:

Intrinsically safe parameters: U_i : 30V, I_i : 100mA, P_i : 0.7W, C_i : 0μF; L_i : 14.52μH

$U_o \leq U_i$ $I_o \leq I_i$ $P_o \leq P_i$ $C_o \geq C_i + C_c$ $L_o \geq L_i + L_c$

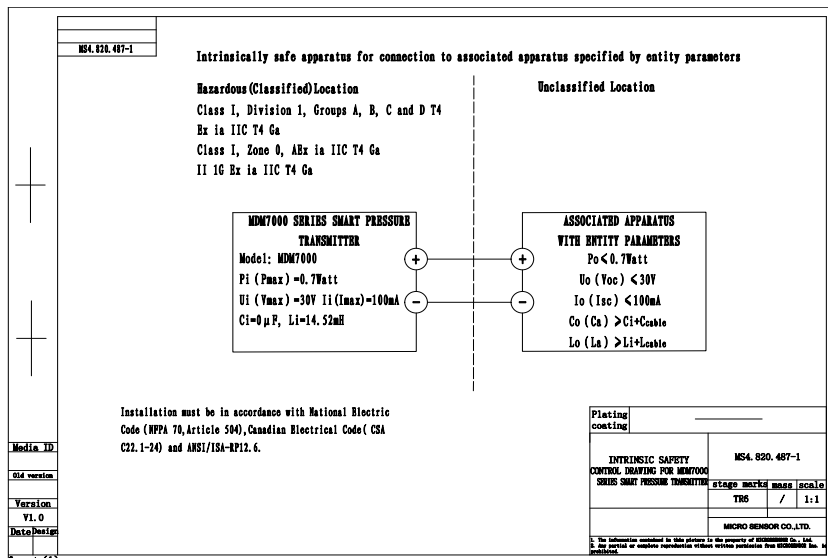


Figure 46 ATEX/IECEx/CSA Intrinsically safe electrical connection

Where: U_o -- Maximum output voltage of safety barrier;
 I_o -- Maximum output current of safety barrier;
 C_o -- Maximum external capacitance of safety barrier;
 L_o -- Maximum external inductance of safety barrier;
 U_i -- Transmitter maximum input voltage;
 I_i -- Transmitter maximum input current;
 C_i -- Transmitter maximum internal capacitance;
 L_i -- Transmitter maximum internal inductance;
 C_c -- Maximum allowable distributed capacitance of connecting cable;
 L_c -- Maximum allowable distributed inductance of connecting cable

When using intrinsically safe instruments in hazardous areas, maintenance shall be limited to zero and span adjustments. Inspection and repair of other components must be performed in non-hazardous locations. Maintenance of intrinsically safe instruments shall follow the manufacturer's instructions. If users perform repairs themselves, they must adhere to all relevant safety precautions. Maintenance is permitted only with general-purpose tools; the use of soldering irons is strictly prohibited. Repairs shall be carried out after power has been disconnected and external wiring removed, and the faulty equipment must be taken to a non-hazardous area.

Upon completion of maintenance and inspection, all screws, covers, and junction boxes must be securely fastened; otherwise, the explosion-proof integrity may be compromised.

Products that have passed explosion-proof certification must not have components or structures affecting explosion-proof performance replaced or altered without authorization.

For safety, intrinsically safe circuits must be clearly distinguished from non-intrinsically safe circuits, and their wiring should be routed separately from other circuits.

7 Menu operation

Note: Buttons S, Z, and M are located below the nameplate.

7.1 Button definition

The local buttons S, Z, and M are defined as follows:

7.1.1 “Enter/Confirm”

Press and hold the M button for 0.1 s and then release. Each press executes the Enter / Confirm function once.

7.1.2 “Set/Switch”

Press and hold the Z button for 0.1 s and then release. Each press executes the Set / Switch function once.

7.1.3 “Modify”

Press and hold the S or Z button for 0.1 s and then release. Each press executes the Modify function once.

7.2 LCD display

The transmitter’s LCD screen is used for variable display and local configuration. The primary variable setting mode is shown in Figure 47.



Figure 47 PV setting mode

7.3 Overall process for button operation

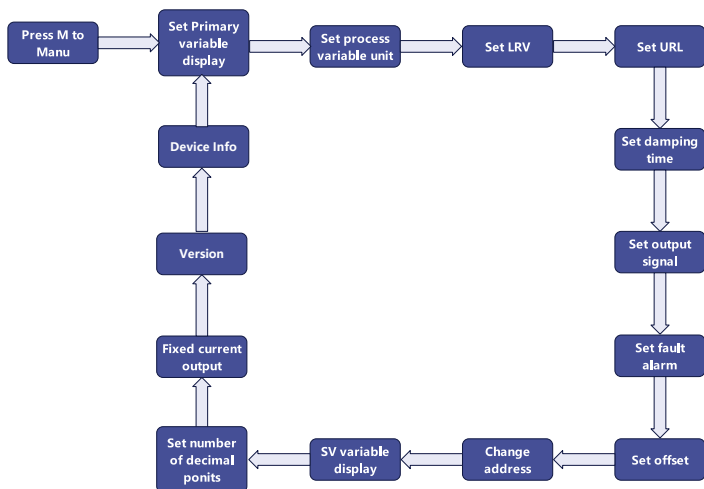
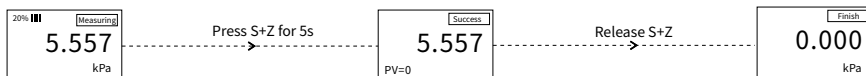


Figure 48

7.4 Quick operation menu

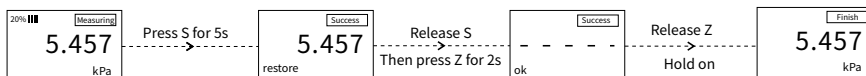
7.4.1 HART Quick operation menu

PV zero

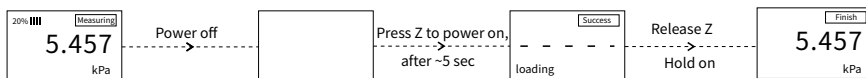


Factory reset

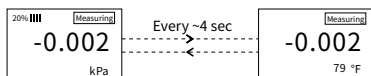
Method 1:



Method 2

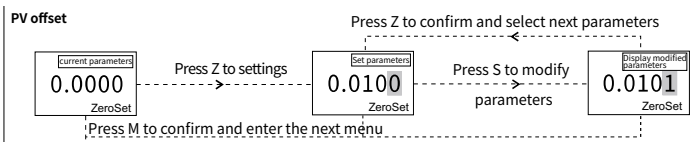


Temperature display (SV/PV toggle; default °F)

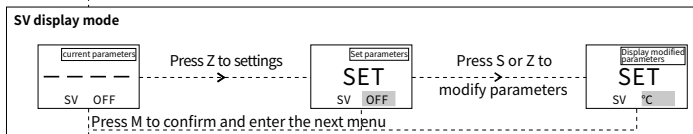
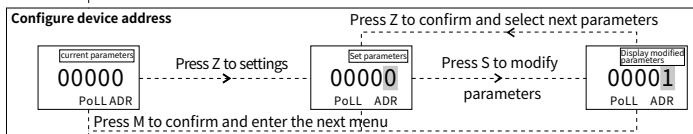


Temperature variable display mode



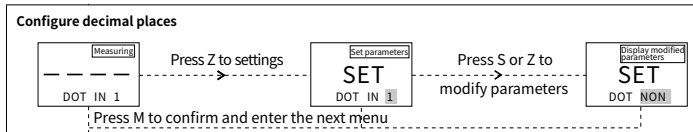


Optional address: 0-15
0: Broadcast address
1-15: Non-broadcast address
(Analog fixed output 4mA)



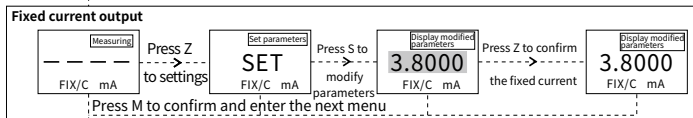
SV display mode

OFF	Do not display
Mems°C	Mainboard temperature (°C)
Mems°F	Mainboard temperature (°F)
Mems K	Mainboard temperature (K)
Room°C	Ambient temperature (°C)
Room°F	Ambient temperature (°F)
Room K	Ambient temperature (K)



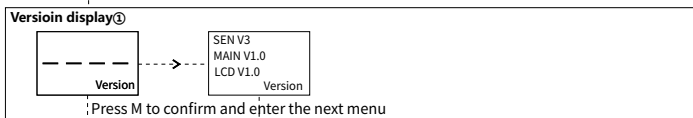
Decimal

NON	No decimals
1	Max 1 decimal
2	Max 2 decimal
3	Max 3 decimal



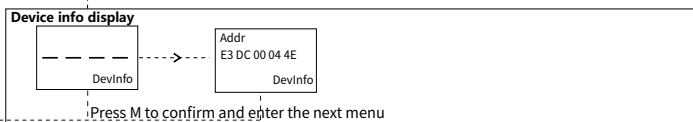
Loop output current

NON	Non-fixed value
3.8000	3.8mA
4.0000	4mA
8.0000	8mA
12.000	12mA
16.000	16mA
20.000	20mA
20.800	20.8mA



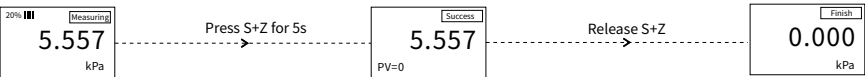
Version display

SEN	sensor
MAIN	main board
LCD	LCD display board



7.4.2 RS485 Quick operation menu

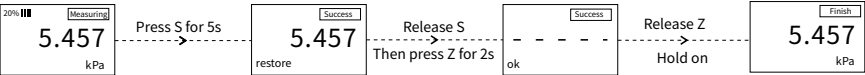
PV zero



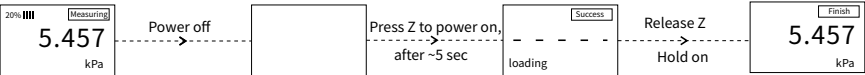
Factory reset

>

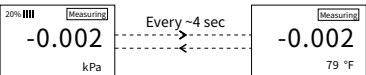
Method 1:



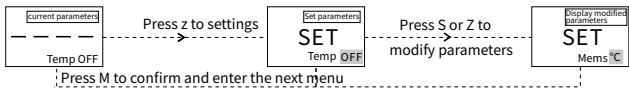
Method 2



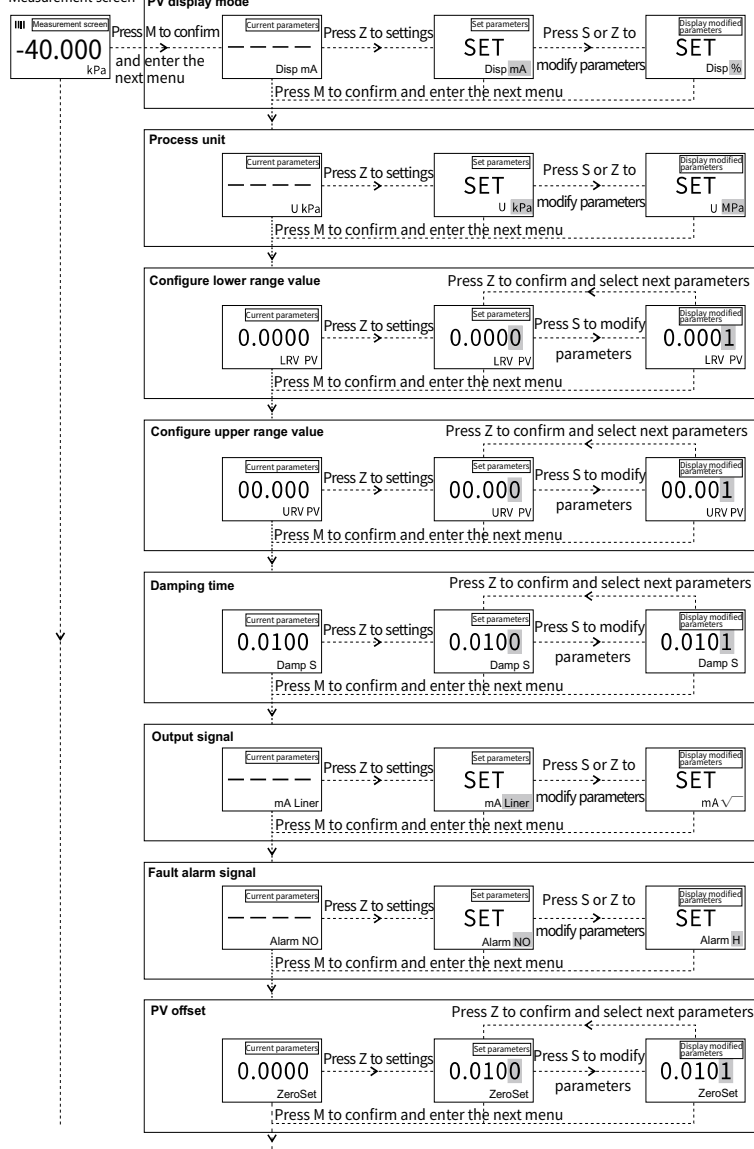
Temperature display (SV/PV toggle; default °F)



Temperature variable display mode



Measurement screen



Parameters table

Display type

%	Percentage
PV	Process variable
mA	Current value

Square root output display

%	Percentage
PV	Process variable
mA	Current value

Process unit

kPa
MPa
Bar
psi
psf
mmHg
cmHg
mmH2O
cmH2O
inH2O
ftH2O
mmHg
mmHg
TOOR
mbar
kg/cm2
Pa
ATM
psi
mm
in

LRV

-19999-99999

URV

-19999-99999

Damping time

0-100

Output signal type

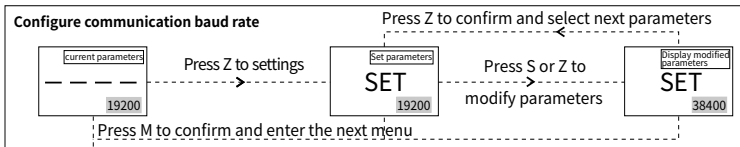
√	Square root
Linear	Linear

Fault alarm signal

NO	Saturated output
H	20.8mA/3.8mA
L	3.8mA

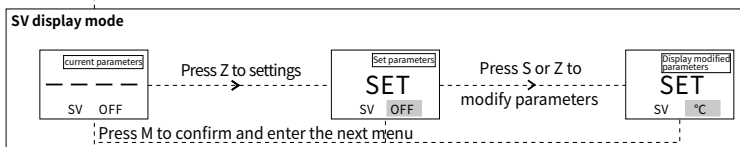
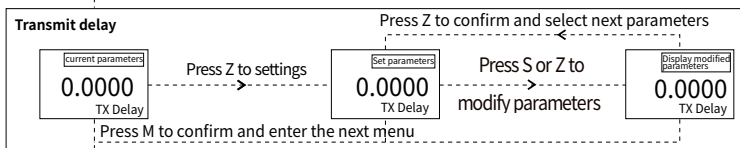
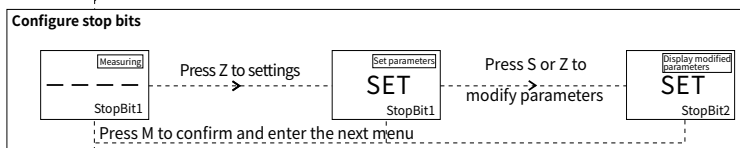
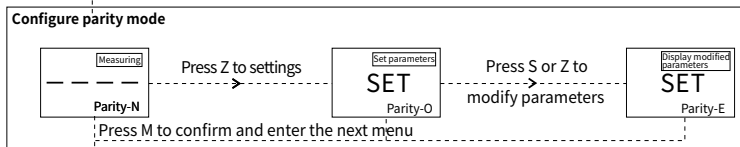
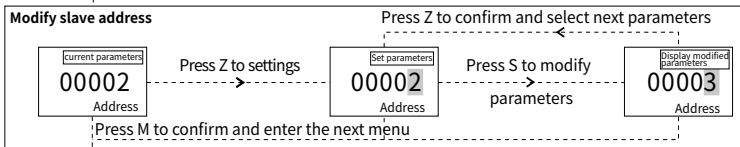
Range

- 1) -1.2 | URL-LRL | ≤ZeroSet ≤1.2 | URL-LRL |
- 2) When current pressure <ZeroSet, and ZeroSet=0, the current pressure=ZeroSet;
- 3) When current pressure>0, and ZeroSet=0, the current pressure=0; (URL: upper range limit LRL: lower range limit)



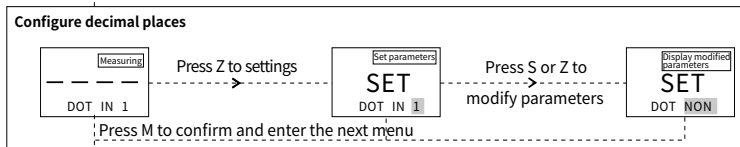
Baud rate

4800	38400
9600	57600
19200	115200



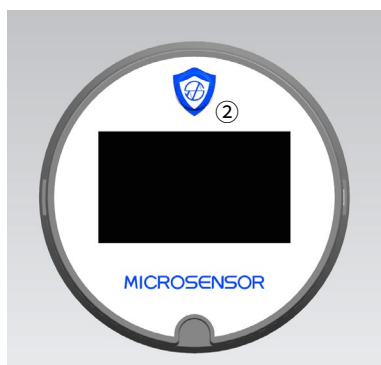
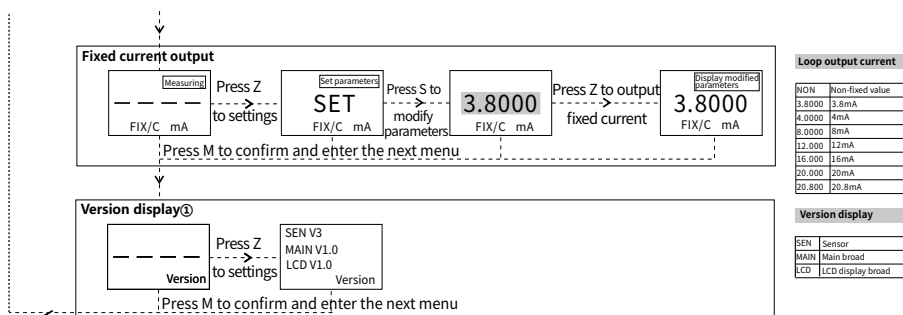
SV display mode

OFF	Do not display
Mems°C	Mainboard temperature (°C)
Mems°F	Mainboard temperature (°F)
Mems K	Mainboard temperature (K)
Room°C	Ambient temperature (°C)
Room°F	Ambient temperature (°F)
Room K	Ambient temperature (K)



Decimal

NON	No decimals
1	Max.1 decimal
2	Max.2 decimals
3	Max.3 decimals



Note ① : This version number is for reference only; please refer to the instrument for the actual version number.

Note ② : It is MICROSENSOR Shield-Shaped Button, this button acts as the screen backlight switch. Pressing this button can turn the backlight on or off.

8 HART function

The transmitter's HART communication function can be accessed via HART-enabled devices, such as a HART handheld communicator or a host computer with HART-compatible software.

8.1 HART basic functions

The basic functions of HART are the same as the "Menu operation" function in Chapter 7. The following functions will not be described in detail in this chapter. Please refer to "Menu operation" for the external environment of its operation and the results of its implementation.

- 1) Set display mode
- 2) Set primary variable display mode
- 3) Set process variable unit
- 4) Set SV variable unit
- 5) Set the number of decimal points
- 6) Set lower range value (LRV)
- 7) Set upper range value (URV)
- 8) Set active zero output with reference pressure
- 9) Set active full scale output with reference pressure
- 10) Set damping time
- 11) Set fault alarm current
- 12) Set whether to alarm when the range exceeds the limit
- 13) Set simulation current fixed output
- 14) Change HART address
- 15) Primary variable zero adjustment
- 16) Set square root output
- 17) Set absolute pressure mode
- 18) Set cut-off ratio
- 19) Factory resetting
- 20) Display device information



Prompt

For the specific operation of the HART function in the transmitter, please refer to the manuals of the HART-related equipment (HART handheld communicator or a host computer with HART-compatible software)

9 RS485 Communication protocol

9.1 Overview

The MDM7000 Smart Pressure Transmitter communicates as a slave via the Modbus RTU protocol over RS485. It supports remote pressure and temperature reading, parameter read/write, and data recovery. The protocol uses a Modbus RTU subset with CRC-16 verification and supports baud rates from 4.8 kbps to 115.2 kbps, ensuring reliable communication.

9.2 Hardware connection

Use a standard serial cable with an RS232-RS485 converter or a USB-RS485 module to connect the PC to the transmitter, as shown below:

Micro Sensor Transmitter	RS485 Module
A(RS485)	A
B(RS485)	B

9.3 Communication settings

- Data transmission mode

Asynchronous, 10 / 11 / 12 bits: 1 start bit, 8 data bits, 1 or 2 stop bits, with no parity or 1 parity bit. Default: no parity. Odd and even parity are supported.

- Baud rate

4800, 9600, 19200, 38400, 57600, 115200 bps.

Default: 19200 bps (configurable).

- Address
1–247 (default: 2, configurable)
- Default communication parameters
Slave address: 2 Baud rate: 19200 Data bits: 8
Parity: None Stop bits: 1
- Pressure data format
Pressure output in float format. The default byte order is ABCD (big-endian).
- Message frame format
Refer to GB/T 19582-2008 for details.

Start	Device Address	Function Code	Data	CRC16 Check	End
T1-T2-T3-T4	8bit	8bit	n * 8bit	16bit	T1-T2-T3-T4

- Bit sequence for a single character transmission

Start	BIT0	BIT1	BIT2	BIT3	BIT4	BIT5	BIT6	BIT7	Parity	End
-------	------	------	------	------	------	------	------	------	--------	-----

9.4 Communication commands

No.	Function Code	Start Address	Register Count	Byte Count	Register Value	Description
1	03H	0000H	0004H	-	-	Read pressure and temperature values (see Tables 1–3)
		0000H	0002H			Read pressure value
		0004H				Read temperature value
2	04H	0004H	0002H	-	-	Read parameter – Lower Range Value (LRV) (register: SLL), read only

No.	Function Code	Start Address	Register Count	Byte Count	Register Value	Description
2	04H	0008H	0002H	-	-	Read parameter – Upper Range Value (URV) (register: SLH), read only
		0028H				Read parameter – Baud Rate (BT)
		002CH				Read parameter – Slave/Device Address (DE)
		0030H				Read parameter – Parity (OddP)
		0034H				Read parameter – Stop Bits (Stop)
		003CH				Read parameter – Pressure data float format (FFT)
		3				06H
0001H	Zero-point fine adjustment					
0002H	Full-scale fine adjustment					
00DEH	Software reset					
00A5H	Restore factory settings					
0004H						
4	10H	0028H	0002H	04H	float data	Write parameter – Baud Rate (BT) (see Tables 10–13)
		002CH				Write parameter – Slave Address (DE)
		0030H				Write parameter – Parity (OddP)

No.	Function Code	Start Address	Register Count	Byte Count	Register Value	Description
4	10H	0034H	0002H	04H	float data	Write parameter – Stop Bit (Stop)
		003CH				Write parameter – Pressure Data Float Format (FFT)

9.4.1 Read current pressure and temperature values command (function code 03H)

Slave Address	Function Code	Start Address	Register Count	CRC	
XXH	03H	XXXXH	YYYYH	CRCL	CRCH

Table 1 Master request frame

Slave Address: 1–247 (applies to all following tables)

Start Address: 0000H or 0004H. Use 0000H to read both pressure and temperature values, or only pressure. Use 0004H to read only the temperature value.

Register Count: 0004H or 0002H. Use 0004H to read both pressure and temperature simultaneously. Use 0002H to read pressure and temperature separately.

CRC: CRC16 Little-Endian (low byte first, high byte second). See section 9.5.4 for calculation method.

Slave Address	Function Code	Byte Count	float Data	CRC	
XXH	03H	XXH	Pressure + Temperature, Pressure only, or Temperature only	CRCL	CRCH

Table 2 Slave response frame (normal)

When the slave responds correctly, it returns pressure + temperature, pressure only, or temperature only depending on the Master's request. Byte Count: 04H or 08H. If the Master reads both pressure and temperature simultaneously, the slave returns 08H. If the Master reads only pressure or only temperature, the slave returns 04H.

Slave Address	Function Code	Error Code	CRC	
XXH	83H	XXH	CRCL	CRCH

Table 3 Slave response frame (error)

Error code range: 00H–05H

00H: CRC error

01H: Invalid function code

02H: Invalid start address

03H: Invalid register count

04H: Invalid register value

05H: Parameter error

Example 1:

When the slave address is 2, the pressure value is 100.500, and the temperature value is 25.5, the Master sends the following command frame to read both pressure and temperature:

02H 03H 00H 00H 00H 04H 44H 3AH

The slave responds with:

02H 03H 08H 42H C9H 00H 00H 41H CCH 00H 00H 92H 75H
 42C90000H → Pressure value 100.500, in IEEE 754 floating-point format; 41CC0000H → Temperature value 25.5, in IEEE 754 floating-point format

Example 2:

When the slave address is 2, the pressure value is 100.500, and the temperature value is 25.5, the Master sends the following command frame to read only the pressure value:

02H 03H 00H 00H 00H 02H C4H 38H

The slave responds with:

02H 03H 04H 42H C9H 00H 00H 0DH 75H

42C90000H → Pressure value 100.500, in IEEE 754 floating-point format

Example 3:

When the slave address is 2, the pressure value is 100.500, and the temperature value is 25.5, the Master sends the following command frame to read only the temperature value:

02H 03H 00H 04H 00H 02H 85H F9H

The slave responds with:

02H 03H 04H 41H CCH 00H 00H 1DH 30H

41CC0000H → Temperature value 25.5, in IEEE 754 floating-point format

9.4.2 Read parameter values command (function code: 04H)

Slave Address	Function Code	Start Address	Register Count	CRC	
XXH	04H	XXXXH	0002H	CRCL	CRCH

Table 4 Master request frame

Start address: 0004H, 0008H, 0028H, 002CH, 0030H, 0034H, 003CH.

Slave Address	Function Code	Byte Count	float Data				CRC	
XXH	04H	04H	Byte1	Byte2	Byte3	Byte4	CRCL	CRCH

Table 5 Slave response frame (normal)

Note: The mapping of parameter values for “Baud rate,” “Parity,” and “Floating pressure data format” refers to Sections 9.5.1–9.5.2.

Slave Address	Function Code	Error Code	CRC	
XXH	84H	XXH	CRCL	CRCH

Table 6 Slave response frame (error)

9.4.3 Trim, software reset, and restore factory settings command (function code: 06H)

Slave Address	Function Code	Start Address	Register Count	CRC	
XXH	06H	XXXXH	YYYYH	CRCL	CRCH

Table 7 Master request frame

Start address: 0000H, 0002H, 0004H

Slave Address	Function Code	Start Address	Register Count	CRC	
XXH	06H	XXXXH	YYYYH	CRCL	CRCH

Table 8 Slave response frame (normal)

Slave Address	Function Code	Error Code	CRC	
XXH	86H	XXH	CRCL	CRCH

Table 9 Slave response frame (error)

The slave responds with:

02H 03H 04H 41H CCH 00H 00H 1DH 30H

41CC0000H → Temperature value 25.5, in IEEE 754 floating-point format

9.4.4 Write parameter values command (function code 10H)

Slave Address	Function Code	Start Address	Register Count	Byte Count
XXH	10H	XXXXH	02H	04H

Float Data				CRC	
Byte1	Byte2	Byte3	Byte4	CRCL	CRCH

Table 10 Master request frame

Start Address: 0004H, 0008H, 0028H, 002CH, 0030H, 0034H, 003CH.

Slave Address	Function Code	Start Address	Register Count	CRC	
XXH	10H	XXXXH	0002H	CRCL	CRCH

Table 11 Slave response frame (normal)

Slave Address	Function Code	Error Code	CRC	
XXH	84H	XXH	CRCL	CRCH

Table 12 Slave response frame (error)

Error code 04H: Invalid byte count

The mapping of parameter values for “Baud rate,” “Parity,” and “Floating pressure data format” refers to Sections 9.5.1–9.5.3.

After modifying “Baud rate”, “Parity”, or “Stop bits”, the device must be reset for the changes to take effect.

9.5 Appendix

9.5.1 Baud rate

Parameter value	0	1	2	3	4	5
Baud Rate (bps)	4800	9600	19200	38400	57600	115200

Table 13 Baud rate

9.5.2 Parity

Parameter Value	0	1	2
Parity	None	Odd	Even

Table 14 Parity

9.5.3 Float pressure data format

Parameter Value	0	1	2	3
Float pressure data format	ABCD	CDAB	BADC	DCBA

Table 15 Float pressure data format

9.5.4 Communication command response time

No.	Communication Command	Response Time	Test Conditions
1	Read pressure and temperature values command	≤50ms	Baud rate: 19200 bps Data bits: 8 Parity: None Stop bits: 1 Note: Response time is affected by baud rate, communication module, control software, etc., and is for reference only.
2	Read parameter values command	≤50ms	
3	Write parameter values command	≤100ms	
4	PV zeroing and trim command	≤100ms	
5	Restore factory settings command	≤500ms	

10 Operation, maintenance and fault diagnosis

10.1 Preparation and inspection before operation

After installation, it is recommended to perform an initial zero adjustment (applicable only to gauge pressure and differential pressure transmitters, with the measuring diaphragm exposed to atmospheric pressure and no process medium applied).

Since the installation position may affect the zero point, a second zero adjustment is recommended approximately three weeks after installation to ensure maximum accuracy. Thereafter, annual zero adjustment is advised.

Before powering on, verify the following:

- Process connections are properly tightened and sealed;
- Electrical connections are correctly wired;
- The vent tube and measuring chamber are completely filled with the process medium.

10.2 Startup and operation procedures and precautions

- To start up and shut down the pressure transmitter, the valve manifold shall be operated in accordance with section 4.3.2.

- If the measured pressure is within the range specified on the nameplate, the output current signal should be within the range of 4mA to 20mA. If the pressure is below the calibrated measuring range, the output signal displays 3.8mA(HART5)/3.6mA(HART7). Conversely, if the pressure is over the calibrated measuring range, the output signal displays 20.8mA(HART5)/21mA(HART7).

10.3 Maintenance and cleaning

10.3.1 Routine maintenance

Zero adjustment

After a certain period of time (determined by the specific operating conditions), it may be necessary to adjust the zero point of the transmitter to ensure measurement accuracy. Zero adjustment can be performed on-site using the transmitter's buttons following the instructions in section 7.4 of this manual, or it can be done using a HART handheld communicator or a host computer with HART-compatible software.

Range adjustment

If the operating conditions change, the range may need to be adjusted. Adjustment can be made with or without a reference pressure. button adjustment can be done by referring to section 7.4 of this manual; while for HART handheld communicator or host computer with HART-compatible software, refer to the relevant manual.

10.3.2 Cleaning

Regularly inspect the instrument output signal based on the on-site operating conditions. Under normal circumstances, the instrument may accumulate residues and, therefore, should be periodically cleaned based on the on-site application conditions. It is recommended to perform the cleaning indoors following these steps:

- Loosen the bolts of the process flange in a diagonal direction with care;

- Carefully remove the flange to avoid causing mechanical damage to the sensor isolated diaphragm;
- Clean the sensor diaphragm with a soft-bristled brush and an appropriate solvent, which can be done along with cleaning the flange;
- Replace the O-ring of the process flange;
- Use a torque wrench to tighten the bolts and nuts diagonally and inspect for any leaks;
- When using a pressure washer, do not direct the nozzle at the electrical connections, vent holes, or diaphragm.

10.4 Fault diagnosis

- Throughout the entire operation, all relevant safety regulations should be strictly observed. The transmitter may only be disassembled for cleaning, inspection, repair, or replacement of failed components.
- In case of abnormal measurement signals, first determine whether the cause is abnormal process pressure, measurement system errors, environmental influences at the installation site, or a transmitter malfunction. Identify the root cause and take appropriate corrective actions.
- If there is no signal output, or if the output does not respond to or correspond with process pressure changes, the transmitter may be faulty. Check the polarity and wiring of the power supply, and verify that voltage, power consumption, and load resistance meet the operating requirements. Also inspect for pressure leaks, blocked impulse lines, or unopened shut-off valves.
- If the output signal shows significant deviation or falls outside the normal range, verify the supply voltage, power consumption, and load resistance. Confirm that the measurement range and calibration settings are correct. Check for pressure leaks, impulse line blockages, unopened shut-off valves, and rapid temperature fluctuations at the installation site.

- The sensor shall only be serviced by the manufacturer. Faulty transmitters should be returned to the manufacturer for repair. If possible, provide details of the fault and its possible cause.

10.5 Specifications

10.5.1 Functional specifications

(1) Process medium

Gas, liquid or vapor.

(2) Output

Two-wire system, 4mA~20mA DC+ HART communication protocol digital signal.

(3) Power Supply

4–20 mA DC with HART protocol, two-wire connection. Linear or square root output is available. With a 250 Ω load, the required supply voltage is 18.3–44 V DC (18.3–30 V DC for intrinsically safe applications). RS485 communication: supply voltage 18.3–44 V DC. Insulation resistance: 10 MΩ at 500 V (power); 100 V (signal).

For intrinsically safe transmitters, the power supply shall be routed through an intrinsically safe barrier certified for explosion protection. The power supply voltage shall comply with the barrier specifications.

(4) Load features

$$R_L \leq (V_S - V_M) / 0.021A$$

Where R_L ——maximum load resistance, V_S ——power supply, $V_M=13V$.

4mA~20mA DC two-wire load (including signal receiving resistance and transmission wire resistance), 0Ω~1476Ω.

4mA~20mA DC + HART two-wire load (including signal receiving resistance and transmission wire resistance), 250Ω~800Ω.

(5) Turn down (range ratio)

The ratio of maximum range to minimum range can be up to 100:1.

(6) Applicable temperature

Medium temperature: -40°C ~+105°C (Standard silicone oil)

-55°C ~+85°C (Fluorocarbon oil 2)

-55°C ~+120°C (Low temperature silicone oil)

0°C ~+315°C (High temperature silicone oil)

(7) Applicable humidity

5%RH ~ 100%RH@40°C (depending on whether the wiring cavity and cables are sealed or not)

(8) Overpressure and static pressure limit

Differential pressure transmitter overpressure: 25MPa

Static pressure: 16MPa(-40°C ~85°C), 42MPa(-20°C ~85°C)

(9) Fault alarm

When a fault occurs in transmitter component, the self-diagnosis program drives the output of a warning message or a settable alarm current according to the user's selection.

(10) Configuration

Configuration can be realized through button settings or HART protocol digital communication.

(11) Damping settings

0~100 seconds (set via communication or transmitter).

(12) Explosion-proof certificate

China's explosion-proof mark and performance

Intrinsically safe explosion-proof standards: GB/T 3836.1-2021, GB/T 3836.4-2021, intrinsically safe mark: Ex ia IIC T4 Ga;

Flameproof and explosion-proof standards: GB/T 3836.1-2021, GB/T 3836.2-2021, flameproof mark: Ex db IIC T6 Gb;

Dust explosion-proof standards: GB/T 3836.1-2021, GB/T 3836.31-2021, dust explosion-proof mark: dust explosion-proof mark: Ex tb IIC T85°C Db;

IP rating reference standard: GB/T 4208. Housing: IP67.

ATEX explosion-proof mark and performance

Intrinsically safe explosion-proof standards: En 60079-0, En 60079-11;

Intrinsically safe explosion-proof mark: II 1G Ex ia IIC T4 Ga;

Flameproof and explosion-proof standards: En 60079-0, En 60079-1;

Flameproof mark: II 2G Ex db IIC T6 Gb;

Dust explosion-proof standards: EN IEC 60079-0, EN 60079-31;

Dust explosion-proof mark: II 2D Ex tb IIIC T80°C Db

IECEx explosion-proof mark and performance

Intrinsically safe explosion-proof standards: IEC 60079-0, IEC 60079-11;

Intrinsically safe explosion-proof mark: Ex ia IIC T4 Ga;

Flameproof and explosion-proof standards: IEC 60079-0, IEC 60079-1;

Flameproof mark: Ex db IIC T6 Gb;

Dust explosion-proof standards: IEC 60079-0, IEC 60079-31;

Dust explosion-proof mark: Ex tb IIIC T80°C Db;

Canada's explosion-proof mark and performance

Division system intrinsically safe

Division system intrinsically safe standard: CSA C22.2 No. 60079-0:19, CAN/CSA C22.2 No. 60079-11:14,

ANSI/UL 913-2019

Division system intrinsically safe mark: Class I, Division 1, Groups A, B, C, D T4

Zone system intrinsically safe

Zone system intrinsically safe standard: CSA C22.2 No. 60079-0:19, CAN/CSA C22.2 No. 60079-11:14,

ANSI/UL 60079-0-2020, ANSI/UL 60079-11-2018

Zone system intrinsically safe mark: Class I, Zone 0, AEx ia IIC T4 Ga

Division system flameproof

Division system flameproof standards: CSA C22.2 No.30:20, CSA C22.2 No.25:17,

CSA C22.2 No.213:17+UPD01+UPD02+UPD03:2021,

FM 3600, FM 3615, FM 3616, FM 3611

Division system flameproof mark:

Class I, Division 1, Group A, B, C and D T6

Class II, Division 1 Group E, F and G T80°C

Class III

Zone system flameproof

Zone system flameproof standards:

CAN/CSA-C22.2 No. 60079-0:19,

CAN/CSA-C22.2 No. 60079-1:16,

CAN/CSA-C22.2 No. 60079-31:15,

ANSI/UL 60079-0-2020 Seventh Edition,

ANSI/UL 60079-1-2020 Seventh Edition,

ANSI/UL 60079-31-2015 Second Edition

Zone system flameproof mark:

Ex db IIC T6 Gb

Class I, Zone 1, AEx db IIC T6 Gb

Ex tb IIIC T80°C Db

Zone 21, AEx tb IIIC T80°C Db

Specific conditions of use

- When used in gas atmosphere, the cable entry hole shall be fitted with suitably certified cable gland or blanking element. For metric threads, at least eight engaged threads should be guaranteed.
- When used in dust atmosphere, the cable entry hole shall be fitted with suitably certified cable gland or blanking element to maintain IP6X in accordance with IEC 60079-0:2017 and EN IEC 60079-0:2018.
- When used in dust atmosphere, under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
- When the ambient temperature is 70°C, the service temperature of branching point and entry point is 71.95°C and 71.55°C. Cable, cable gland and blanking element should be suitably selected based on the maximum service temperature.

- Temperature code depends on ambient temperature and process temperature as follows:

T-code for gas	Maximum surface temperature for dust	Ambient Temperature	Process temperature
T6	T80°C	-40/-20°C to 70°C	-40/-20°C to 70°C

- The equipment has flameproof joints, when maintaining the flameproof joints, manufacturer shall be contacted for guidance.

Conditions of Acceptability

- When used in gas atmosphere, the cable entry hole shall be fitted with suitably certified cable gland or blanking element. For metric threads, at least eight engaged threads should be guaranteed.
- When used in dust atmosphere, the cable entry hole shall be fitted with suitably certified cable gland or blanking element to maintain IP6X in accordance with CSA/UL 60079-0.
- When used in dust atmosphere, under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
- When the ambient temperature is 70°C, the service temperature of branching point and entry point is 72.1°C and 71.55°C. Cable, cable gland and blanking element should be suitably selected based on the maximum service temperature.
- All threaded openings are not for conduit use or conduit fitting use.
- This equipment shall not be operated in hazardous locations where “Acetone, Ethyl Acetate or Acetic Acid” might be present.
- The equipment has flameproof joints, when maintaining the flameproof joints, manufacturer shall be contacted for guidance.
- Temperature code depends on ambient temperature and process temperature as follows:

T-code for gas	Maximum surface temperature for dust	Ambient Temperature	Process temperature
T6	T80°C	-40/-20°C to 70°C	-40/-20°C to 70°C

- Wiring to or from this equipment, which enters or leaves the explosion-proof enclosure, must utilize wiring methods suitable for Class I, Division 1 Hazardous Locations in accordance to the Canadian Electrical Code or National Electrical Code.
- The device may only be powered by a power supply unit with a limited energy circuit max. 30 Vdc output in accordance with CAN/CSA-C22.2 No. 61010-1 / UL Std. No. 61010-1 and double insulated or reinforced insulated from hazardous live circuits or class 2 according to CSA 223/ UL 1310.
- Equipment has only been tested for electrical safety. No evaluation of functional safety and performance characteristics have been performed.
- Equipment is only to be installed by trained personal in accordance with the installation, set-up, operation and maintenance of comparable devices and certified as being capable of such work.



Warning

POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS.



Warning

RISQUE DE CHARGE ÉLECTROSTATIQUE POTENTIEL - VOIR LES INSTRUCTIONS.



Warning

NE PAS OUVRIR EN PRÉSENCE D'UNE ATMOSPHÈRE EXPLOSIVE.



Warning

NE PAS OUVRIR EN PRÉSENCE D'UNE ATMOSPHÈRE EXPLOSIVE.



Warning

THIS EQUIPMENT SHALL NOT BE OPERATED IN HAZARDOUS LOCATIONS WHERE “ACETONE, ETHYL ACETATE OR ACETIC ACID” MIGHT BE PRESENT.

Russian EAC explosion-proof mark performance

Intrinsically safe explosion-proof standards: TP TC012/2011, GOST 31610.0-2019, GOST 31610.11-2014, Intrinsically safe mark: 0Ex ia IIC T4 Ga

Flameproof explosion-proof standards: TP TC012/2011, GOST 31610.0-2019, GOST IEC 60079-1-2013, Flameproof mark: 1Ex db IIC T6 Gb

(13) Housing protection

IP67, IP66, TYPE 4X

10.5.2 Performance specifications

Turn down (range ratio): $TD = \text{maximum range} / \text{current range}$.

Error: δ = relative error to the optimal value.

(1) Accuracy

DP	TD ≤ 5	±0.075%	20mbar, 60mbar *
		±0.05%、±0.075%	0.4bar, 2.5bar, 10bar, 30bar, 100bar
	TD > 5	$\pm (0.001 + 0.0148TD) \%$	20mbar, 60mbar
		$\pm (0.0275 + 0.0095TD) \%$	0.4bar, 2.5bar, 10bar, 30bar, 100bar
GP	TD ≤ 5	±0.1%	0.4bar,
		±0.075%	2.5bar, 10bar, 30bar, 100bar, 400bar
	TD > 5	$\pm (0.025 + 0.015TD) \%$	0.4bar
		$\pm (0.0025 + 0.0145TD) \%$	2.5bar, 10bar, 30bar, 100bar, 400bar

AP	TD≤5	±0.2%	0.4bar,
		±0.1%	2.5bar, 10bar, 100bar
	TD > 5	± (0.025+0.035TD) %	0.4bar
		± (0.025+0.015TD) %	2.5bar, 10bar, 100bar
DGP	TD≤5	±0.075%SPAN	60mbar*
		±(0.001+0.0148TD) %SPAN	0.4bar,2.5bar,10bar, 30bar, 100bar, 400bar 60mbar*
	TD > 5	±(0.025+0.035TD) %SPAN	0.4bar,2.5bar,10bar, 30bar, 100bar, 400bar
		±0.2%SPAN	0.4bar
DAP	TD≤5	±0.1%SPAN	2.5bar,10bar, 30bar, 100bar
		± (0.0025+0.035TD) %SPAN	0.4bar
	TD > 5	± (0.0275+0.0195TD) %SPAN	2.5bar,10bar,100bar
GP-T	TD≤5	±0.1%SPAN	0.4bar,2.5bar,10bar,30bar, 100bar
	5 < TD < 10	±0.2%SPAN	
AP-T	TD≤5	±0.1%SPAN	0.4bar,2.5bar,10bar
	5 < TD < 10	±0.2%SPAN	
LP<	TD≤5	±0.075% + Diaphragm seal system effects	0.4bar, 2.5bar
	TD>5	± (0.025%+0.045TD) % + Diaphragm seal system effects	0.4bar, 2.5bar

Note ① : The linear output accuracy for 60mbar is ±0.075%SPAN, applicable only for TD ≤ 2.

Note ② : Accuracy improvements from performance enhancements will not be separately notified.

(2) Long-term stability

$\delta \leq \pm 0.1\%$ SPAN/10 years

(3) Temperature effects

Model	Ambient temperature effects
DP	At 60mbar, the total effect per 10°C is $(0.1+0.05TD)\%$ SPAN; For other ranges: total effect per 10°C : $(0.075+0.0375TD)\%$ SPAN
DGP	$\pm (0.075+0.0375TD) \%$ /10°C of SPAN
DAP	$\pm (0.085+0.0625TD) \%$ /10°C of SPAN
GP	$\pm (0.075+0.0375TD) \%$ /10°C of SPAN
AP	$\pm (0.125+0.075TD) \%$ /10°C of SPAN at 0.4bar $\pm (0.115+0.065TD) \%$ /10°C of SPAN at other ranges
Note: The specification is only for base products. Diaphragm sealed products are affected by the diaphragm seal system and have no specific value.	

(4) Static pressure effects

Range ≤ 0.1 bar $\delta \leq \pm 0.5\%$ F.S./100bar

$0.1\text{bar} < \text{Range} \leq 0.4\text{bar}$ $\delta \leq \pm 0.1\%$ F.S./100bar

$2.5\text{bar} \leq \text{Range} \leq 10\text{bar}$ $\delta \leq \pm 0.075\%$ F.S./100bar

$30\text{bar} \leq \text{Range} \leq 100\text{bar}$ $\delta \leq \pm 0.15\%$ F.S./100bar

(5) Power supply effects

In the specified operating area, the effect of power supply changes does not exceed 0.04% of the calibrated range.

(6) EMC effects

Under the electromagnetic environmental conditions specified in Chapter 4, the effect does not exceed 0.1% of the set range.

9.5.3 Physical specifications

(1) Electrical connection

M20×1.5 Female;

1/2NPT Female.

(2) Process connection

Specifications	Drain/vent valve position	Thread
Female 1/4-18NPT	Rear end of flange	7/16-20UNF(F)
Female 1/4-18NPT	Above the side of flange	7/16-20UNF(F)
Female 1/4-18NPT	Under the side of flange	7/16-20UNF(F)
Female 1/4-18NPT	Side drain/vent valve	7/16-20UNF(F)

(3)Wetted parts

- Diaphragm
SUS316L, HC-276, Tantalum, Titanium, Monel
- Vent valve/plug
SUS316
- Chamber, joint flange
SUS316
- O-rings
Nitrile rubber, FKM or PTFE.

(4)Installation

Use brackets to install horizontally/vertically on pipes.

(5)Weight

Model	Weight/kg	Model	Weight/kg
DP	4.0	GP&AP	1.56
LT (DN50)	12.6	DGP&DAP	4
LT (DN80)	15.5	GP-T&AP-T	1.6
LP	6.35		

11 Bluetooth function (optional)

If your product is equipped with Bluetooth functionality, please refer to the following instructions for usage.

10.1 Function overview

The MDM7000 Smart Pressure Transmitter is optionally available with a Bluetooth module, enabling configuration and diagnostics via the WeChat Mini Program “MS Bluetooth.”

Bluetooth communication is stable within a 25-meter line-of-sight range under the following conditions:

- Outdoor environment with no obstructions or strong electromagnetic interference;
- The sensor is oriented within 45° toward the operator;
- The operator’s mobile device is facing the sensor;
- Power supply: 21V to 44V DC.

Note: The maximum range is 29 meters; actual performance may vary in complex environments.

11.2 Operating instructions

11.2.1 Device connection

Scan the QR code below using WeChat to access the Mini Program, or swipe down from the WeChat home screen, tap the search icon in the top-right corner, and enter “MS Bluetooth” to launch the application.



Figure 49 – Mini Program QR Code

11.2.2 Account login

Upon opening the Mini Program, you will be prompted to log in. Choose either “Log In” or “Guest Mode.”

11.2.3 Login Process

Tap “Log In” to enter the login screen. New users can select “Register Now,” verify their phone number via SMS, and set a password to create an account. Once registered, enter the credentials to log in.

If the password is forgotten, it can be reset by verifying the phone number through SMS verification.

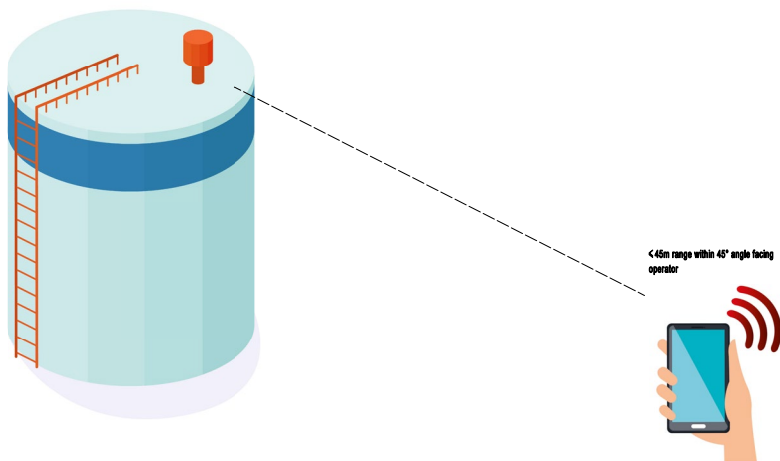


Figure 50 Communication range illustration

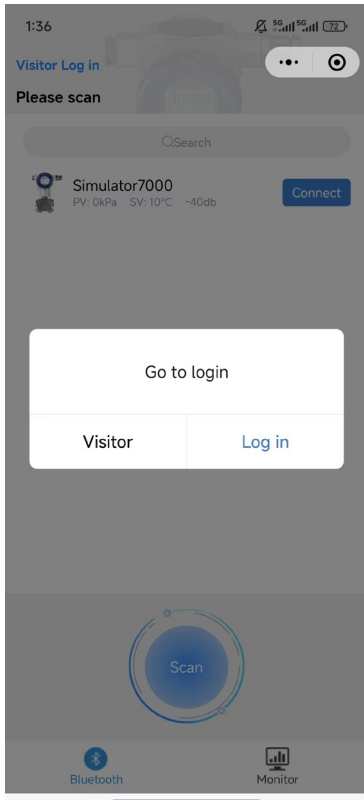


Figure 51 Login Page

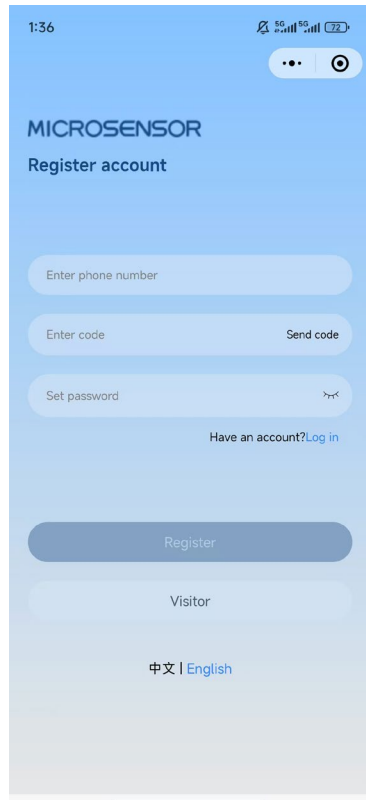


Figure 52 Registration Page

11.2.2.1 Guest Mode

Guest mode does not require account registration or login. It supports basic Bluetooth connection and process monitoring only.

Note: Device must be connected before using the process monitoring function.



Figure 53 Guest Mode

11.2.3 Function Usage

10.2.3.1 Device Connection

After login, the app will redirect automatically. Users can select a simulated device or tap the scan button to search for nearby BLE devices.

Connect to the target device using the last 5 digits of the serial number (SN) shown on the nameplate.

Once connected, features such as device parameters, process monitoring, and toolbox become available.

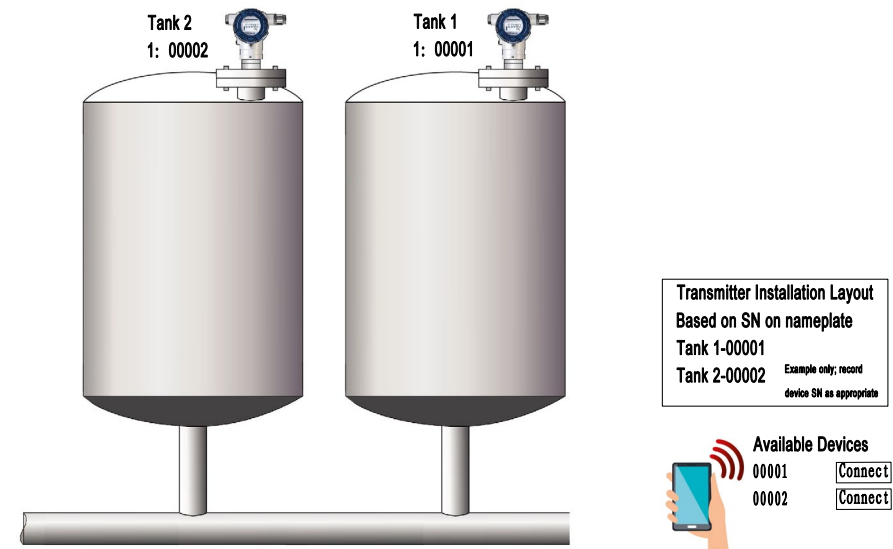


Figure 54 Bluetooth Code Identification

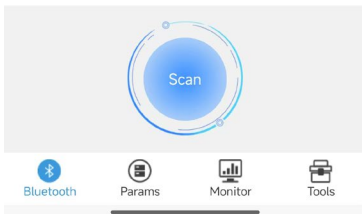
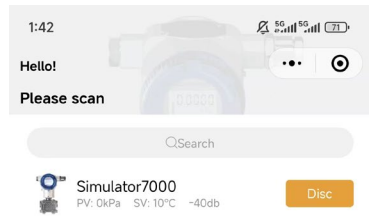
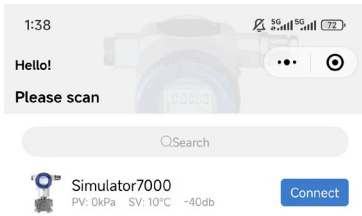


Figure 55 Device Scanning

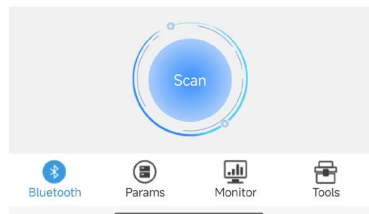


Figure 56 Connection Successful

11.2.3.2 Device Parameters

Includes device SN, basic information, configuration settings, and diagnostic tools. Tap to enter corresponding pages to view or edit parameters.

Editable fields are displayed in black, non-editable fields in gray.
To modify parameters, enter values as prompted.

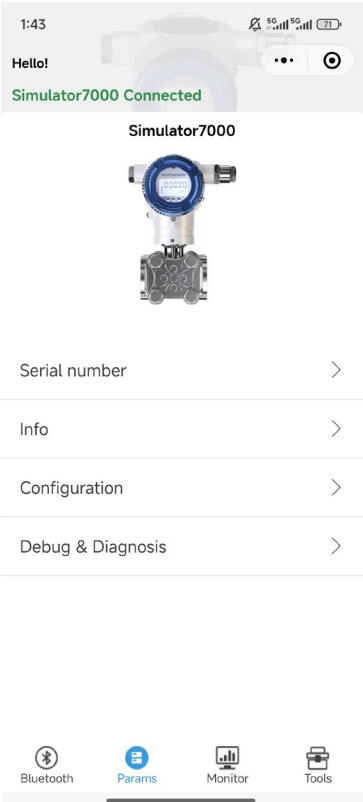


Figure 57 Device Parameters

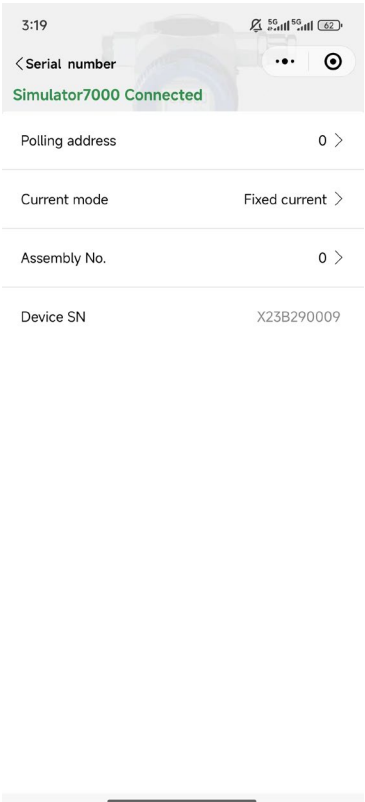


Figure 58 Serial number

Configuration: Transmitter parameter display and configuration.

Debug & Diagnosis: Functions include reset, sensor data reading, and factory reset.

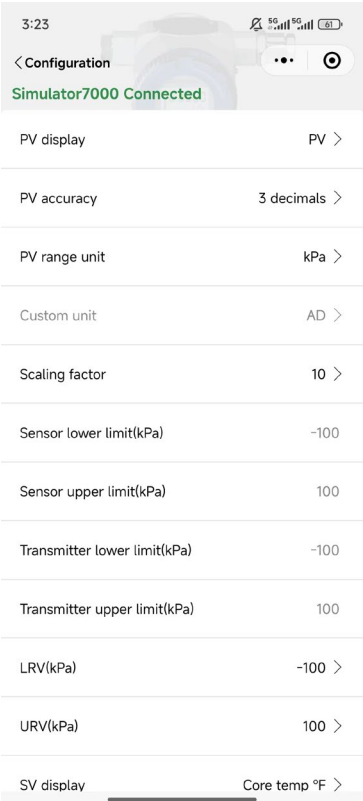


Figure 59 Configuration

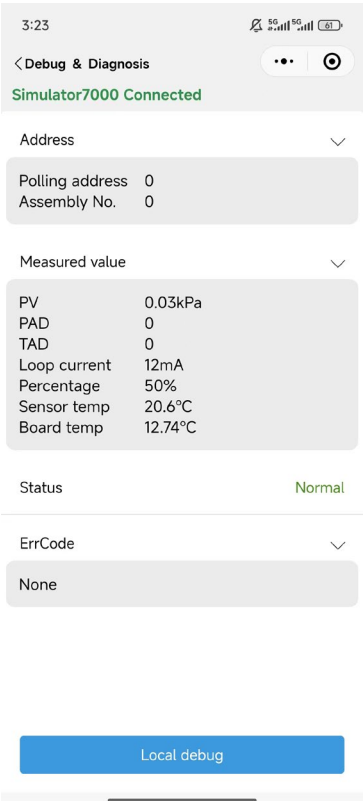


Figure 60 Debug & Diagnosis

11.2.3.3 Process Monitoring

Real-Time Data: Displays live sensor readings.

Data Curve: Shows trend of collected data over the past one minute.

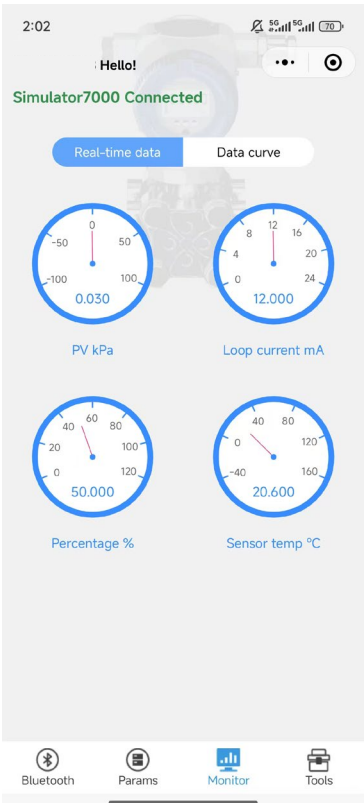


Figure 61 Real-time Data

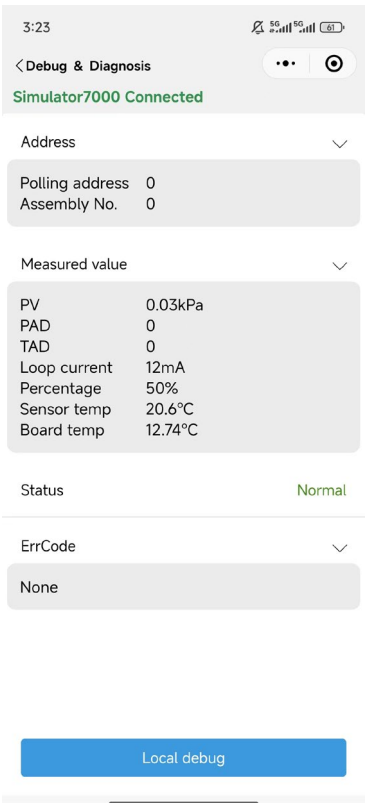


Figure 62 Date curve

12 Unpacking, components and storage

12.1 Precautions for unpacking

- a) First, check whether the packaging is intact and the product and all components are complete. The box should be positioned according to the "↑" mark;
- b) Avoid excessive impact when opening the box to prevent damage to the instrument or accessories.

The pressure transmitter shipped from the factory shall include:

MDM7000 Smart Pressure Transmitter	1 unit
Operation Manual	1 copy
Certificate of Conformity	1 copy

Other accessories (provided according to customer requirements and relevant contract terms)

12.3 Storage

The storage temperature for transmitters with LCD display should be maintained between $-40\text{ }^{\circ}\text{C} \sim 85\text{ }^{\circ}\text{C}$, while for transmitters without LCD display, the storage temperature should be maintained between $-50^{\circ}\text{C} \sim 100^{\circ}\text{C}$.

13 Warning

- a) During installation, it is essential to ensure reliable grounding of the housing.
- b) The product's housing material contains aluminum. When used in 0 area, precautions must be taken to prevent ignition hazards caused by impact or friction.

14 Model selection table

MDM7000-DGP/DAP Smart Pressure Transmitter

Items	Code	Description
MDM7000-DGP	—	Smart Pressure Transmitter
MDM7000-DAP	—	Smart Pressure Transmitter



Basic options

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEx, Flameproof, Intrinsically safe	
	M	EAC, Explosion-proof, RU C-CN.AK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
Output signal	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEX standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.

Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C
	L	With LCD display, explosion proof type/non-explosion proof -40°C ~70°C

DGP Sensor module range	Nominal range	Minimum range	Lower (LRL)	Upper (URL)	Overload	
1	60mbar	2mbar	-60mbar	60mbar	160bar	
2	0.4bar	4mbar	-0.4bar	0.4bar	160bar	
3	2.5bar	25mbar	-1bar	2.5bar	160bar	
4	10bar	0.1bar	-1bar	10bar	160bar	
5	30bar	0.3bar	-1bar	30bar	160bar	
6	100bar	1bar	-1bar	100bar	200bar	
7	400bar	4bar	-1bar	400bar	800bar	※

DAP Sensor module range	Nominal range	Minimum range	Lower (LRL)	Upper (URL)	Overload	
2	0.4bar	0.2bar	0bar	0.4bar	160bar	
3	2.5bar	0.5bar	0bar	2.5bar	160bar	
4	10bar	2bar	0bar	10bar	160bar	
5	30bar	6bar	0bar	30bar	160bar	
6	100bar	10bar	0bar	100bar	200bar	

Note: When the nominal range is 100bar or 400bar, no vent plug is required.

High pressure side wetted parts material	Diaphragm	Flange block	Discharge valve/plug	Sealings	
A	316L	316	316	FKM (-20°C ~120°C)	
B	316L	316	316	Stainless steel frame PTFE (-60°C ~180°C)	
E	316L	316	316	Modified FKM (-40°C ~180°C)	
C	HC-276	316	316	FKM (-20°C ~120°C)	
D	HC-276	316	316	Stainless steel frame PTFE (-60°C ~180°C)	
F	HC-276	316	316	Modified FKM (-40°C ~180°C)	
G	Tantalum	316	316	FKM (-20°C ~120°C)	※
H	Tantalum	316	316	Stainless steel frame PTFE (-60°C ~180°C)	※
I	Tantalum	316	316	Modified FKM (-40°C ~180°C)	※

Note: Tantalum diaphragm is not available when the range is below 0.4 bar.

High pressure side process connection	Specifications	Drain/vent valve position	Thread	Mounting method
1	Female 1/4-18NPT	Rear end of flange	7/16-20UNF(F)	Horizontal
2	Female 1/4-18NPT	Above the side of flange	7/16-20UNF(F)	Horizontal
3	Female 1/4-18NPT	Under the side of flange	7/16-20UNF(F)	Horizontal
4	Female 1/4-18NPT	Side drain/vent valve*	7/16-20UNF(F)	Vertical

Note: The side drain/vent valve is not specified as left or right when it leaves the factory.

Oil filling	S	Silicone oil: -40°C ~200°C	
	L	Low temperature silicone oil: -55°C ~120°C	※
	E	Fluorocarbon oil 2: -55°C ~85°C	※
Note: The medium operating temperature must be within the ranges of ① oil filling temperature, ② sensor operating temperature, and ③ O-ring temperature.			
Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo	
Clamp block mounting	H	Horizontal mounting	
	E	Vertical mounting	※
Factory calibration range	CAL	Provide MICROSENSOR standard verification report based on the range, default linear output Contract specifics: LRL - URL, display unit*	

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
Mounting bracket accessories	/G7	L-shaped brackets (sq), 316 SS	
	/G8	L-shaped brackets (sq), Q235 carbon steel	
Process connection accessories	/D1	T-shaped adapter(M) M20×1.5 and vent tube Φ14mm×2mm×30mm, 316 SS, ×1	
	/D2	Waist-shaped adapter, 1/2-14NPT (F), 316 SS, ×1	
	/K1	KF flange adapter, DIN28403-10, welding with clamp blocks, 316 SS	※
	/K2	KF flange adapter, DIN28403-16, welding with clamp blocks, 316 SS	※
	/K3	KF flange adapter, DIN28403-25, welding with clamp blocks, 316 SS	※
	/K4	KF flange adapter, DIN28403-40, welding with clamp blocks, 316 SS	※
	/K5	KF flange adapter, DIN28403-50, welding with clamp blocks, 316 SS	※
Note: KF flange adapter only for DAP			
Output signal mode	/SQ	Both the output signal and display are in "square root" format, with the LRL set to zero	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit and other requirements*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters*	

Integrated value manifold	/VT	Transmitter is factory assembled with MICROSENSOR valve manifold. See attachment for order guide of valve manifold. Contract specifics: Complete model of MICROSENSOR valve manifold*	
Leakage test report	/QS4	Nitrogen (N ₂) or air, 150bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 60mbar~30bar)	※
	/QS5	Nitrogen (N ₂) or air, 200bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 100bar)	※
	/QS6	Water or hydraulic oil, 800bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 400bar)	※
Note: Test pressure is equal to the sensor range			
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J1	Single diaphragm with gold plated (5μ)	 ※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	※
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.	
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.	
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.			
Example: MDM7000-DGP-0HS1L-1A1S6H/G1- 【CAL: 0-50mbar】			



MDM7000-DP Smart Differential Pressure Transmitter

Items	Code	Description
MDM7000-DP	—	Smart Differential Pressure Transmitter

Basic options

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	※
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	※
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	※
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	※
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	※
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEx, Flameproof, Intrinsically safe	※
Output signal	M	EAC, Explosion-proof, RU C-CN.AX58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

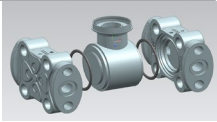
Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67

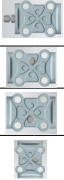
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEX standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.

Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C
	L	With LCD display, explosion proof type/non-explosion proof -40°C ~70°C

Range	Nominal range	Minimum range	Lower (LRL)	Upper (URL)	Static pressure range	One-sided high/low pressure overload
0	20mbar	2mbar	-20mabr	20mbar	420bar	250bar
1	60mbar	2mbar	-60mbar	60mbar	420bar	250bar
2	0.4bar	4mbar	-0.4bar	0.4bar	420bar	250bar
3	2.5bar	25mbar	-2.5bar	2.5bar	420bar	250bar
4	10bar	0.1bar	-10bar	10bar	420bar	250bar
5	30bar	0.3bar	-30bar	30bar	420bar	250bar
6	100bar	1bar	-30bar	100bar	420bar	200bar

Wetted parts material	Diaphragm	Flange block	Discharge valve/plug	Sealings	
A	316L	316	316	FKM	
B	316L	316	316	Stainless steel frame PTFE	
E	316L	316	316	Modified FKM	
C	HC-276	316	316	FKM	
D	HC-276	316	316	Stainless steel frame PTFE	
F	HC-276	316	316	Modified FKM	
G	Tantalum	316	316	FKM	
H	Tantalum	316	316	Stainless steel frame PTFE	
I	Tantalum	316	316	Modified FKM	

Note: FKM (-20°C ≤Medium temperature ≤120°C) , PTFE (-60°C ≤Medium temperature ≤180°C) , Modified FKM (-40°C ≤Medium temperature ≤180°C) , Tantalum diaphragm is not available when the range is below 0.4 bar.

Process connection	Specifications	Drain/vent valve position	Thread	Mounting method	
1	Female 1/4-18NPT	Rear end of flange	7/16-20UNF(F)	Horizontal	
2	Female 1/4-18NPT	Above the side of flange	7/16-20UNF(F)	Horizontal	
3	Female 1/4-18NPT	Under the side of flange	7/16-20UNF(F)	Horizontal	
4	Female 1/4-18NPT	Side drain/vent valve*	7/16-20UNF(F)	Vertical	

Note: The side drain/vent valve is not specified as left or right when it leaves the factory.

Oil filling	S	Silicone oil: -40°C ~200°C	
	L	Low temperature silicone oil: -55°C ~120°C	※
	E	Fluorocarbon oil 2: -55°C ~85°C	※

Note: The medium operating temperature must be within the ranges of ① oil filling temperature, ② sensor operating temperature, and ③ O-ring temperature.

Clamp block fastener	1	Bolts, nuts, and other components, 35CrMo	
Clamp block mounting	H	Horizontal mounting	
	E	Vertical mounting	※
Factory calibration range	CAL	Provide MICROSENSOR standard verification report based on the range, default linear output Contract specifies: LRL - URL, display unit*	

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAI50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certificates in Russia and CIS	/PAC	Pattern Approval Certificate of Measuring Instruments, Russian, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-specifications		Description (Detailed specifications as following, multiple options or null)	
Mounting bracket accessories	/G7	L-shaped brackets (sq), 316 SS	
	/G8	L-shaped brackets (sq), Q235 carbon steel	
Process connection accessories	/D3	T-shaped adapter(M) M20×1.5 and vent tube Φ14mm×2mm×30mm, 316 SS, ×2	
	/D4	Waist-shaped adapter, 1/2-14NPT (F), 316 SS, ×2	
Output signal mode	/SQ	Both the output signal and display are in "square root" format, with the LRL set to zero	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit and other requirements*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters*	
Integrated valve manifold	/VT	Differential pressure transmitter is factory assembled with MICROSENSOR valve manifold. See attachment for order guide of valve manifold. Contract specifics: Complete model of MICROSENSOR valve manifold*	
Leakage test report	/QD1	Nitrogen (N ₂) or air, 200bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 100bar)	※
	/QD2	Nitrogen (N ₂) or air, 250bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 60mbar~30bar)	※
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J2	High and low pressure side diaphragm with gold plated (5μ)	 ※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Notes: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	

Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)
Warranty period	/Y2	2-year warranty
	/Y3	3-year warranty
	/Y5	5-year warranty
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.		
Example: MDM7000-DP-0HS1L-1A1S6H/G1- 【CAL: 0-50mbar】		

MDM7000-GP/AP Smart Pressure Transmitter

Items	Code	Description
MDM7000-GP	—	Smart Gauge Pressure Transmitter
MDM7000-AP	—	Smart Absolute Pressure Transmitter



Basic options

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	
	J	IECEX, Flameproof, IECEX CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	
	K	IECEX, Intrinsically safe, IECEX CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEX, Flameproof, Intrinsically safe	
	M	EAC, Explosion-proof, RU C-CN.AJK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
Output signal	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20×1.5 (M) to M20×1.5 (F) , with plug	316 SS	6mm~8mm	IP67

	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67	
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67	
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67	
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.						
Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C				
	L	With LCD display, explosion proof type/non-explosion proof -40°C ~70°C				
—						
Range		Nominal range	Minimum range	Lower (LRL)	Upper(URL)	Overload
GP	2	0.4bar	20mbar	-0.4bar	0.4bar	10bar
	3	2.5bar	125mbar	-1bar	2.5bar	40bar
	4	10bar	0.5bar	-1bar	10bar	60bar
	5	30bar	1.5bar	-1bar	30bar	150bar
	6	100bar	5bar	-1bar	100bar	200bar
	7	400bar	50bar	-1bar	400bar	800bar
						※
AP	C	0.1bar	50mbar	0bar	0.1bar	6bar
	D	0.2bar	0.1bar	0bar	0.2bar	10bar
	2	0.4bar	0.2bar	0bar	0.4bar	10bar
	3	2.5bar	0.5bar	0bar	2.5bar	40bar
	4	10bar	2bar	0bar	10bar	60bar
	5	30bar	3bar	0bar	30bar	150bar
	6	100bar	10bar	0bar	100bar	200bar
Sensor structure	T	Single flange diaphragm seal				
Wetted parts material		Diaphragm	Process connection thread			
	A	316L	316L			
	B	HC-276	316L			
	C	Tantalum	316L		※	
	E	Ceramic	316L			
Note: The material connection with the case is 304. When the AP range is 0.1bar or 0.2bar, the measuring diaphragm is ceramic.						
Process connection	M	M20×1.5 Male, Φ3 vent hole, GB/T 193-2003				
	G	G1/2 Male, Φ3 vent hole, GB/T 7307-2001 ⑧				
	A	1/2-14NPT Male, Φ6 vent hole, GB/T 12716-2011				
	N	1/2-14NPT Female, Φ14 vent hole, GB/T 12716-2011				
	H	Flange - Non-diaphragm (See Options for detailed specifications)				
					※	
Note: Only code G is optional for the ceramic diaphragm, and the pressure port diameter must be Φ10.						
Oil filling	N	No oil filling (only optional for ceramic diaphragm)				
	S	Silicone oil: -40°C ~105°C				
	L	Low temperature silicone oil:-55°C ~120°C				
	E	Fluorocarbon oil 2: -55°C ~85°C				
					※	
Note: The medium operating temperature must be within the ranges of ① oil filling temperature, ② sensor operating temperature, and ③ O-ring temperature						
Factory calibration range	CAL	Provide MICROSENSOR standard verification report based on the range, default linear output. Contract specifics: LRL - URL, display unit*				

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	 
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	

	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
Mounting bracket accessories	/G7	L-shaped brackets (sq), 316 SS	
	/G8	L-shaped brackets (sq), Q235 carbon steel	
Flange (non-diaphragm)	/H01	HG/T 20592-2009 DN50PN10-PN40 RF Raised face flange	※
	/H02	HG/T 20592-2009 DN25PN10-PN40 RF Raised face flange	※
	/H08	HG/T 20592-2009 DN20PN10-PN40 RF Raised face flange	※
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit and other requirements*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA(HART5), 21mA(HART7)	
	/WL	Low alarm current value, 3.8mA(HART5), 3.7mA(HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters*	
Integrated valve manifold	/VT	Transmitter is factory assembled with MICROSENSOR valve manifold. See attachment for order guide of valve manifold. Contract specifics: Complete model of MICROSENSOR valve manifold*	
Leakage test report	/QS1	Nitrogen (N ₂) or air, 10bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 0.4bar)	※
	/QS2	Nitrogen (N ₂) or air, 40bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 2.5bar)	※
	/QS3	Nitrogen (N ₂) or air, 60bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 10bar)	※
	/QS4	Nitrogen (N ₂) or air, 150bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 30bar)	※
	/QS5	Nitrogen (N ₂) or air, 200bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 100bar)	※
	/QS6	Water or hydraulic oil, 800bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 400bar)	※
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J1	Single diaphragm with gold plated (5μ)	 ※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.	
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.	
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	

***Note:** The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.

Example: MDM7000-GP-0HS1L-2TAMS/G1- 【CAL: 0-0.4bar】

MDM7000-GP-T/AP-T —□□□□□— □ — SF —□□□□□□□



		Body	Remote Fixed Flange Diaphragm	
Items	Code	Description		
MDM7000-GP-T	—	Monocrystalline Silicon Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange)		
MDM7000-AP-T	—	Monocrystalline Silicon Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange)		
■ Basic options				
Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021		
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021		
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021		
	4	China, Flameproof, Intrinsically safe		
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe		
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb		
		Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db		※
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga		
		Class I, Zone 0, AEx ia IIC T4 Ga		※
	C	CSA, Flameproof, Intrinsically safe		
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db		
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga		
	G	ATEX, Flameproof, Intrinsically safe		※
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db		
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga		
	L	IECEx, Flameproof, Intrinsically safe		※
	M	EAC, Explosion-proof, RU C-CN.AXK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga		
	0	Non-hazardous area		
Output signal	H	4mA~20mA DC, HART		
	B	4mA~20mA DC, HART, Bluetooth		
	R	Modbus-RS485		

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.					
Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C			
	L	With LCD display, explosion proof type/non-explosion proof -40°C ~70°C			

Range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)	Overload
GP-T	2	0.4bar	20mbar	-0.4bar	0.4bar	10bar
	3	2.5bar	125mbar	-1bar	2.5bar	40bar
	4	10bar	0.5bar	-1bar	10bar	60bar
	5	30bar	1.5bar	-1bar	30bar	150bar
	6	100bar	5bar	-1bar	100bar	200bar
AP-T	2	0.4bar	0.2bar	0bar	0.4bar	10bar
	3	2.5bar	0.5bar	0bar	2.5bar	40bar
	4	10bar	2bar	0bar	10bar	60bar
Sensor structure	T	Single flange diaphragm seal				

■ Diaphragm seal options

Diaphragm connection position	S	Pressure transmitter				
Diaphragm seal system code	F	Remote fixed flange				
Flange standard	2	HG/T-20592				
	1	EN1092-1				
	5	HG/T-20615				
	6	ANSI/ASME B16.5				
Flange diameter		Applicable standard				
	A	DN25	HG/T-20592, EN1092-1 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)			※
	J	DN40	HG/T-20592, EN1092-1			※
	B	DN50	HG/T-20592, EN1092-1			
	C	DN80	HG/T-20592, EN1092-1			
	D	DN100	HG/T-20592, EN1092-1			
	1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)			※
	2	2inch	HG/T-20615, ANSI/ASME B16.5			
	3	3inch	HG/T-20615, ANSI/ASME B16.5			
	4	4inch	HG/T-20615, ANSI/ASME B16.5			
Pressure class		Applicable standard			Applicable flange diameter	
	1	PN10/PN16	HG/T-20592, EN1092-1		DN25, DN40, DN50, DN80, DN100	
	2	PN25/PN40	HG/T-20592, EN1092-1		DN25, DN40, DN50, DN80, DN100	
	3	PN63	HG/T-20592, EN1092-1		DN25, DN40, DN50, DN80, DN100	
	4	PN100	HG/T-20592, EN1092-1		DN25, DN40, DN50, DN80, DN100	
	A	Class 150	HG/T-20615, ANSI/ASME B16.5		1inch, 2inch, 3inch, 4inch	
	B	Class 300	HG/T-20615, ANSI/ASME B16.5		1inch, 2inch, 3inch, 4inch	
	C	Class 600	HG/T-20615, ANSI/ASME B16.5		1inch, 2inch, 3inch, 4inch	

Note: The maximum static pressure or overload depends on the flange pressure class.

Flange material	6	316 SS
Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)

Note: For details about FM, M, RJ faces, please consult MICROSENSOR.

Wetted parts material	Flange	Measuring diaphragm	
	6A	316 SS	316L
	6B	316 SS	Hastelloy C-276
	6C	316 SS	Tantalum (Only available for range > 2.5bar)
	6D	316 SS	Titanium
	6E	316 SS	Monel(Only available for range > 2.5bar)
Capillary connection location	K	Rear connection	
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath	
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath	

Capillary length		Applicable flange diameter				
		DN25/1inch	DN40	DN50/2inch	DN80/3inch	DN100/4inch
	1	1m				
	2	2m				
	3	3m				
	4	4m				
	5	5m				
	6	6m				※
	7	7m				※
	8	8m				※
	9	9m				※
	A	10m				※

Note: For high and low-temperature conditions with capillary lengths of 6m-10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters.

Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C ,ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C ,ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C ,ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C ,ambient temperature:-40°C ~85°C)	※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifics: LRL - URL, display unit*	

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	   
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	

	/CS6	KR, Korean Register, NAI50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Mounting bracket accessories	/G7	L-shaped brackets (sq), 316 SS	
	/G8	L-shaped brackets (sq), Q234 carbon steel	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit and other requirements*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters	
Leakage test report	/QS1	Nitrogen (N ₂) or air, 10bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable to nominal range 0.4bar)	※
	/QS2	Nitrogen (N ₂) or air, 40bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable to nominal range 2.5bar)	※
	/QS3	Nitrogen (N ₂) or air, 60bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable to nominal range 10bar)	※
	/QS4	Nitrogen (N ₂) or air, 150bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable to nominal range 30bar)	※
	/QS5	Nitrogen (N ₂) or air, 200bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable to nominal range 100bar)	※
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J1	Single diaphragm with gold plated (8μ)	 ※
Diaphragm spraying	/T1	High pressure side single flange PTFE coating	※
	/T7	High pressure side single flange PFA coating	※
Diaphragm sticking	/PFA	The diaphragm is covered with PFA film (protective cover), applicable to corrosion-resistant conditions (non-vacuum, pressure ≥ 0)	※
Note: Only available for diaphragm selection with flange size ≥ 50mm			
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.	
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.	
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	

***Note:** The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.

Example: MDM7000-GP-T-0HP1L-2T-SF-2B1616AKU3S/CS1- 【CAL: 0-0.4bar】

MDM7000-GP-T/AP-T —□□□□□— □ — SE —□□□□□□□

		Body	Remote Fixed Flange Insertion Sleeve Diaphragm	
Items	Code	Description		
MDM7000-GP-T	—	Monocrystalline Silicon Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange Insertion Sleeve)		
MDM7000-AP-T	—	Monocrystalline Silicon Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange Insertion Sleeve)		
■ Basic options				
Application of hazardous area	1	China, Flameproof, No.CE23.6650		
		Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021		
	2	China, Intrinsically safe, No.CE23.7688X		
		Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021		
	3	China, Dust explosion-proof, GYB24.1215X		
		Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021		
	4	China, Flameproof, Intrinsically safe		
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe		
	A	CSA, Flameproof, CSA 25CA80192884X		
		Class I, Division 1, Group A, B, C and D T6		
		Class II, Division 1 Group E, F and G T80°C		
		Class III		
		Ex db IIC T6 Gb		※
		Class I, Zone 1, AEx db IIC T6 Gb		
		Ex tb IIIC T80°C Db		
		Zone 21, AEx tb IIIC T80°C Db		
		Zone 21, AEx tb IIIC T80°C Db		
	B	CSA, Intrinsically safe, CSA24CA80156531X		
		Class I, Division 1, Groups A, B, C and D T4		
		Ex ia IIC T4 Ga		
	Class I, Zone 0, AEx ia IIC T4 Ga			
C	CSA, Flameproof, Intrinsically safe		※	
E	ATEX, Flameproof, CSANe 25ATEX1107X			
	II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db		※	
F	ATEX, Intrinsically safe, CSANe 24ATEX1178X			
	II 1G Ex ia IIC T4 Ga			
G	ATEX, Flameproof, Intrinsically safe		※	
J	IECEX, Flameproof, IECEX CSA 25.0059X			
	Ex db IIC T6 Gb, Ex tb IIIC T80°C Db		※	
K	IECEX, Intrinsically safe, IECEX CSA 24.0045X			
	Ex ia IIC T4 Ga		 	
L	IECEX, Flameproof, Intrinsically safe		※	
M	EAC, Explosion-proof, RU C-CN.AX58.B.05884/24			
	1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga			
	0	Non-hazardous area		
Output signal	H	4mA~20mA DC, HART		
	B	4mA~20mA DC, HART, Bluetooth		
	R	Modbus-RS485		





Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
	0	Without cable glands		
	A	Single-ended with a flameproof metal plug	316 SS	
	1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm IP67
	2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm IP67



	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug		316 SS	6mm~12mm	IP67
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug		316 SS	6mm~12mm	IP67
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug		316 SS	6mm~12mm	IP67
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.						
Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C				
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C				
—						
Range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)	Overload
GP-T	2	0.4bar	20mbar	-0.4bar	0.4bar	10bar
	3	2.5bar	125mbar	-1bar	2.5bar	40bar
	4	10bar	0.5bar	-1bar	10bar	60bar
	5	30bar	1.5bar	-1bar	30bar	150bar
	6	100bar	5bar	-1bar	100bar	200bar
AP-T	2	0.4bar	0.2bar	0bar	0.4bar	10bar
	3	2.5bar	0.5bar	0bar	2.5bar	40bar
	4	10bar	2bar	0bar	10bar	60bar
Sensor structure	T	Single flange diaphragm seal				
—						
■ Diaphragm seal options						
Diaphragm connection position	S	Pressure transmitter				
Diaphragm seal system code	E	Remote fixed flange insertion sleeve				
—						
Flange standard	2	HG/T-20592				
	1	EN1092-1				
	5	HG/T-20615				
	6	ANSI/ASME B16.5				
Flange diameter			Applicable standard			
	B	DN50	HG/T-20592, EN1092-1			
	C	DN80	HG/T-20592, EN1092-1			
	D	DN100	HG/T-20592, EN1092-1			
	2	2inch	HG/T-20615, ANSI/ASME B16.5			
	3	3inch	HG/T-20615, ANSI/ASME B16.5			
	4	4inch	HG/T-20615, ANSI/ASME B16.5			
Pressure class			Applicable standard		Applicable flange diameter	
	1	PN10/PN16	HG/T-20592, EN1092-1		DN50, DN80, DN100	
	2	PN25/PN40	HG/T-20592, EN1092-1		DN50, DN80, DN100	
	3	PN63	HG/T-20592, EN1092-1		DN50, DN80, DN100	
	4	PN100	HG/T-20592, EN1092-1		DN50, DN80, DN100	
	A	Class 150	HG/T-20615, ANSI/ASME B16.5		2inch, 3inch, 4inch	
	B	Class 300	HG/T-20615, ANSI/ASME B16.5		2inch, 3inch, 4inch	
C	Class 600	HG/T-20615, ANSI/ASME B16.5		2inch, 3inch, 4inch		
Flange material	6	316 SS				
Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)				
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)				
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)				

C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)				
Note: For details about FM, M, RJ faces, please consult MICROSENSOR.					
Insertion sleeve diameter		Applicable flange diameter			
	4	46mm	DN50, 2inch		
	6	66mm	DN80, 3inch		
	7	77mm	DN100, 4inch		
Insertion sleeve length		A	50mm		
	B	100mm			
	C	150mm			
	D	200mm			
Insertion sleeve material		6	316 SS		
Wetted parts material		Flange	Measuring diaphragm		
	6A	316 SS	316L		
	6B	316 SS	Hastelloy C-276		
	6C	316 SS	Tantalum(Only available for range > 2.5bar)		
	6D	316 SS	Titanium		
	6E	316 SS	Monel(Only available for range > 2.5bar)		
Capillary connection location		K	Rear connection		
Capillary type		U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath		
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath			
Capillary length		Insertion sleeve diameter		Adaptable measuring diaphragm	
			6A-316L	6B-HastelloyC-276	6C-Tantalum 6D-Titanium 6D-Monel
1	1m	S-46mm			
		M-66mm			
		L-77mm			
2	2m	S-46mm			
		M-66mm			
		L-77mm			
3	3m	S-46mm			
		M-66mm			
		L-77mm			
4	4m	S-46mm			
		M-66mm			
		L-77mm			
5	5m	S-47mm			
		M-66mm			
		L-77mm			
6	6m	M-66mm			※
		L-77mm			※
7	7m	M-66mm			※
		L-77mm			※
8	8m	M-66mm			※
		L-77mm			※
9	9m	M-66mm			※
		L-77mm			※

A	10m	M-66mm	※
		L-77mm	※

Note: For high and low-temperature conditions with capillary lengths of 6m-10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters.

High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C ,ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C ,ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55 °C ~120 °C , ambient temperature:-40 °C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C ,ambient temperature:-40°C ~85°C)	※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifics: LRL - URL, display unit*	

Options-Certificates

		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBK	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

Options-Specifications

		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Mounting bracket accessories	/G7	L-shaped brackets (sq), 316 SS	
	/G8	L-shaped brackets (sq), Q235 carbon steel	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters	
Leakage test report	/QS1	Nitrogen (N ₂) or air, 10bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 0.4bar)	※
	/QS2	Nitrogen (N ₂) or air, 40bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 2.5bar)	※
	/QS3	Nitrogen (N ₂) or air, 60bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 10bar)	※
	/QS4	Nitrogen (N ₂) or air, 150bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 30bar)	※
	/QS5	Nitrogen (N ₂) or air, 200bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 100bar)	※
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	

Diaphragm with gold plated	/J1	Single diaphragm with gold plated (8μ)		※
Diaphragm spraying	/T3	High pressure side single insertion sleeve PTFE coating		※
	/T9	High pressure side single insertion sleeve PFA coating		※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts		※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)				
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry		
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.		
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.		
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)		
Warranty period	/Y2	2-year warranty		
	/Y3	3-year warranty		
	/Y5	5-year warranty		
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.				
Example: MDM7000-GP-T-0HP1L-2T-SE-2B1614A66AKU3S/G1- 【CAL: 0-0.4bar】				

MDM7000-GP-T/AP-T — □□□□□ — □ — ST — □□□□□□□



		Body	Direct Mounted Flange	
Items	Code	Description		
MDM7000-GP-T	—	Monocrystalline Silicon Pressure Transmitter Direct Mounted Seal		
MDM7000-AP-T	—	Monocrystalline Silicon Pressure Transmitter Direct Mounted Seal		
Basic options				
Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021		PCEC
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021		
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021		Ex nPS
	4	China, Flameproof, Intrinsically safe		
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe		SP US
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db		
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga		※
	C	CSA, Flameproof, Intrinsically safe		
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db		Ex
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga		
	G	ATEX, Flameproof, Intrinsically safe		※
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db		
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga		IEC IECEx
	L	IECEx, Flameproof, Intrinsically safe		
	M	EAC, Explosion-proof, RU C-CN.AK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga		※
	0	Non-hazardous area		
Output signal	H	4mA~20mA DC, HART		HART COMMUNICATION PROTOCOL
	B	4mA~20mA DC, HART, Bluetooth		
	R	Modbus-RS485		
Note: The default is HART5, please select in Options-Specifications if HART7 is required.				
Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5		Image of 316L stainless steel case
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT		
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5		Image of aluminum alloy case
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT		
Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.				
Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
	0 Without cable glands			
	A Single-ended with a flameproof metal plug	316 SS		
	1 M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
	2 Non-flameproof adapter M20×1.5 (M) to M20×1.5 (F) , with plug	316 SS	6mm~8mm	IP67

3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEX standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.

Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C

Range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)	Overload
GP-T	2	0.4bar	20mbar	-0.4bar	0.4bar	10bar
	3	2.5bar	125mbar	-1bar	2.5bar	40bar
	4	10bar	0.5bar	-1bar	10bar	60bar
	5	30bar	1.5bar	-1bar	30bar	150bar
	6	100bar	5bar	-1bar	100bar	200bar
AP-T	2	0.4bar	0.2bar	0bar	0.4bar	10bar
	3	2.5bar	0.5bar	0bar	2.5bar	40bar
	4	10bar	2bar	0bar	10bar	60bar

Sensor structure	T	Single flange diaphragm seal
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■ Diaphragm seal options

Diaphragm connection position	S	Pressure transmitter
Diaphragm seal system code	T	Direct mounted flange

Flange standard	2	HG/T-20592
	1	EN1092-1
	5	HG/T-20615
	6	ANSI/ASME B16.5

Flange diameter	Applicable standard		
	A	DN25	HG/T-20592, EN1092-1 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR) ※
	J	DN40	HG/T-20592, EN1092-1 ※
	B	DN50	HG/T-20592, EN1092-1
	C	DN80	HG/T-20592, EN1092-1
	1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR) ※
	2	2inch	HG/T-20615, ANSI/ASME B16.5
	3	3inch	HG/T-20615, ANSI/ASME B16.5

Pressure class	Applicable standard		Applicable flange diameter	
	1	PN10/PN16	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80
	2	PN25/PN40	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80
	3	PN63	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80
	4	PN100	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80 ※
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch ※

Flange material	6	316 SS
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Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10-PN160 or Class 150~Class 2500)		
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)		
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)		
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)		
Note: For details about FM, M, RJ faces, please consult MICROSENSOR				
Wetted parts material		Blind	Measuring diaphragm	
	6A	316 SS	316L	
	6B	316 SS	Hastelloy C-276	
	6C	316 SS	Tantalum	※
	6D	316 SS	Titanium	※
	6E	316 SS	Monel	※
Capillary type	0	Normal temperature		
	1	High-temperature heat exchange parts, ≤ 150°C		
	2	Ultra-high temperature heat exchange parts, ≤ 300°C (only high-temperature silicone oil (code: H) option is available)		
Oil filling	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)		
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)		
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature:-40°C ~85°C)		
	E	Fluorocarbon oil 2: (Medium temperature : -55°C ~85°C , ambient temperature: -40°C ~85°C)		
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifics: LRL - URL, displav unit*		

Options-Certificates

		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAIJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

Options-Specifications

		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit and other requirements*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	

Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifies: Identification number, not exceeding 16 characters	
Leakage test report	/QS1	Nitrogen (N ₂) or air, 10bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable nominal range 0.4bar)	※
	/QS2	Nitrogen (N ₂) or air, 40bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable nominal range 2.5bar)	※
	/QS3	Nitrogen (N ₂) or air, 60bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable nominal range 10bar)	※
	/QS4	Nitrogen (N ₂) or air, 150bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable nominal range 30bar)	※
	/QS5	Nitrogen (N ₂) or air, 200bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report(Applicable nominal range 100bar)	※
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J1	Single diaphragm with gold plated (8μ)	 ※
Diaphragm spraying	/T1	High pressure side single flange PTFE coating	※
	/T7	High pressure side single flange PFA coating	※
Diaphragm sticking	/PFA	The diaphragm is stuck with PFA film, applicable to non-vacuum situations (pressure ≥ 0)	※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.	
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.	
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	

***Note:** The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.

Example: MDM7000-GP-T-0HP1L-2T-ST-2B1616AS/CS1- 【CAL: 0-0.4bar】

MDM7000-GP-T/AP-T — □□□□□ — □ — SR — □□□□□□□□



		Body	Direct Mounted Thread		
Items	Code	Description			
MDM7000-GP-T	—	Monocrystalline Silicon Pressure Transmitter Direct Mounted Single Thread Diaphragm Seal			
MDM7000-AP-T	—	Monocrystalline Silicon Pressure Transmitter Direct Mounted Single Thread Diaphragm Seal			
■ Basic options					
Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021			
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021			
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021			
	4	China, Flameproof, Intrinsically safe			
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe			
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db		※ 	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga			
	C	CSA, Flameproof, Intrinsically safe		※	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db		※	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga			
	G	ATEX, Flameproof, Intrinsically safe		※	
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db		 	
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga			
	L	IECEx, Flameproof, Intrinsically safe		※	
	M	EAC, Explosion-proof, RU C-CN.AK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga			
	0	Non-hazardous area			
	Output signal	H	4mA~20mA DC, HART		
		B	4mA~20mA DC, HART, Bluetooth		
		R	Modbus-RS485		

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67	
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67	
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67	
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.						
Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C				
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C				
Range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)	Overload
GP-T	2	0.4bar	20mbar	-0.4bar	0.4bar	10bar
	3	2.5bar	125mbar	-1bar	2.5bar	40bar
	4	10bar	0.5bar	-1bar	10bar	60bar
	5	30bar	1.5bar	-1bar	30bar	150bar
	6	100bar	5bar	-1bar	100bar	200bar
AP-T	2	0.4bar	0.2bar	0bar	0.4bar	10bar
	3	2.5bar	0.5bar	0bar	2.5bar	40bar
	4	10bar	2bar	0bar	10bar	60bar
Sensor structure	T	Single flange diaphragm seal				
■ Diaphragm seal options						
Diaphragm connection position	S	Pressure transmitter				
Diaphragm seal system code	R	Direct mounted thread				
Process connection	1M	Male M44×1.25, GB/T193-2003, ISO261				
	1G	Male G1, GB/T7307, ISO228, DIN16288, BS2779				
	2G	Male G2, GB/T7307, ISO228, DIN16288, BS2779				
	3G	Male G1-1/2, GB/T7307, ISO228, DIN16288, BS2779				
	4G	Male G1/2 (Integrated)				
Sealing type	R	Root				
	A	Axial				
	U	Root and axial				
Wetted parts material		Measuring diaphragm	Thread	Sealings		
	6A	316L	316	FKM(-20°C ~120°C)		
	6B	HC-276	316	FKM(-20°C ~120°C)		
Capillary / vent tube	0	Normal temperature				
	1	High-temperature heat exchange parts, ≤ 150°C				
	2	Ultra-high temperature heat exchange parts, ≤ 300°C (only high-temperature silicone oil (code: H) option is available)				
High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)				
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)				
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)				※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)				※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifics: LRL - URL, display unit"				

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

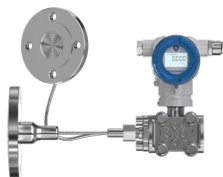
■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifies: LRL - URL, display unit and other requirements*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifies: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifies: Identification number, not exceeding 16 characters	
Leakage test report	/QS1	Nitrogen (N ₂) or air, 10bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 0.4bar)	※
	/QS2	Nitrogen (N ₂) or air, 40bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 2.5bar)	※
	/QS3	Nitrogen (N ₂) or air, 60bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 10bar)	※
	/QS4	Nitrogen (N ₂) or air, 150bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 30bar)	※
	/QS5	Nitrogen (N ₂) or air, 200bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report (Applicable to nominal range 100bar)	※
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J1	Single diaphragm with gold plated (8μ)	 ※
Diaphragm spraying	/T6	Thread diaphragm spraying PTFE coating	※
	/T12	Thread diaphragm spraying PFA coating	※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	

Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)
Warranty period	/Y2	2-year warranty
	/Y3	3-year warranty
	/Y5	5-year warranty
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.		
Example: MDM7000-GP-T-0HP1L-2T-SR-1MR6A0S/WP1- 【CAL: 0-0.4bar】		

MDM7000-LP—□□□□□—□—HF—□□□□□—LF—□□□□□

Body Remote Flange+Remote Flange Diaphragm

Item	Code	Description
MDM7000-LP	—	Monocrystalline Silicon Differential Pressure Transmitter with Diaphragm Seals(Remote Fixed Flange + Remote Fixed Flange)

**Basic options**

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEx, Flameproof, Intrinsically safe	
	M	EAC, Explosion-proof, RU C-CN.AXK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
Output signal	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEX standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.

Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C

Sensor module range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)
	2	0.4bar	0.1bar	-0.4bar	0.4bar
	3	2.5bar	0.25bar	-2.5bar	2.5bar

Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo
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Diaphragm seal options - high pressure side

Diaphragm connection position	H	Differential pressure transmitter high pressure side
Diaphragm seal system code	F	Remote fixed flange

Flange standard	2	HG/T-20592
	1	EN1092-1
	5	HG/T-20615
	6	ANSI/ASME B16.5

Flange diameter		Applicable standard	
A	DN25	HG/T-20592, EN1092-1(Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)	※
J	DN40	HG/T-20592, EN1092-1	※
B	DN50	HG/T-20592, EN1092-1	
C	DN80	HG/T-20592, EN1092-1	
D	DN100	HG/T-20592, EN1092-1	
1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)	※
2	2inch	HG/T-20615, ANSI/ASME B16.5	
3	3inch	HG/T-20615, ANSI/ASME B16.5	
4	4inch	HG/T-20615, ANSI/ASME B16.5	

Pressure class		Applicable standard	Applicable flange diameter	
	1	PN10/PN16	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	2	PN25/PN40	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	3	PN63	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	4	PN100	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch

Note: The maximum static pressure or overload depends on the flange pressure class

Flange material	6	316 SS
Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class2500)
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Wetted parts material		Flange	Measuring diaphragm			
	6A	316 SS	316L			
	6B	316 SS	Hastelloy C-276			
	6C	316 SS	Tantalum			
	6D	316 SS	Titanium			
	6E	316 SS	Monel			
Capillary connection location	K	Rear connection				
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath				
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath				
Capillary length		Applicable flange diameter				
		DN25/1inch	DN40	DN50/2inch	DN80/3inch	DN100/4inch
	1	1m				
	2	2m				
	3	3m				
	4	4m				
	5	5m				
	6	6m				
	7	7m				
	8	8m				
	9	9m				
	A	10m				

Note: For high and low-temperature conditions with capillary lengths of 6m~10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters.

High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature: -40°C ~85°C)	※

■ Diaphragm seal options - low pressure side

Diaphragm connection position	L	Differential pressure transmitter low pressure side	
Diaphragm seal system code	F	Remote fixed flange	
Flange standard	2	HG/T-20592	
	1	EN1092-1	
	5	HG/T-20615	
	6	ANSI/ASME B16.5	
Flange diameter	Applicable standard		
	A	DN25	HG/T-20592, EN1092-1(Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR) ※
	J	DN40	HG/T-20592, EN1092-1 ※
	B	DN50	HG/T-20592, EN1092-1
	C	DN80	HG/T-20592, EN1092-1
	D	DN100	HG/T-20592, EN1092-1

	1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)	※		
	2	2inch	HG/T-20615, ANSI/ASME B16.5			
	3	3inch	HG/T-20615vANSI/ASME B16.5			
	4	4inch	HG/T-20615, ANSI/ASME B16.5			
Pressure class			Applicable standard	Applicable flange diameter		
	1	PN10/PN16	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
	2	PN25/PN40	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
	3	PN63	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
	4	PN100	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100 ※		
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch		
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch		
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch ※		
Note: The maximum static pressure or overload depends on the flange pressure class						
Flange material	6	316 SS				
Blind sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)				
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)				
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)				
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)				
Note: For details about FM, M, RJ faces, please consult MICROSENSOR						
Wetted parts material		Flange	Measuring diaphragm			
	6A	316 SS	316L			
	6B	316 SS	Hastelloy C-276			
	6C	316 SS	Tantalum	※		
	6D	316 SS	Titanium	※		
	6E	316 SS	Monel	※		
Capillary connection location	K	Rear connection				
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath				
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath				
Capillary length		Applicable flange diameter				
		DN25/1inch	DN40	DN50/2inch	DN80/3inch	DN100/4inch
	1	1m				
	2	2m				
	3	3m				
	4	4m				
	5	5m				
	6	6m				※
	7	7m				※
	8	8m				※
	9	9m				※
	A	10m				※
Note: For high and low-temperature conditions with capillary lengths of 6m~10m, flanges of DN80 or above are recommended.; the part beyond the length will be selected according to the next level of meters.						

Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2: (Medium temperature : -55°C ~85°C , ambient temperature: -40°C ~85°C)	※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifics: LRL - URL, display unit*	

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certificates in Russia and CIS	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Mounting bracket	/G7	L-shaped brackets (sq), 316 SS	
	/G8	L-shaped brackets (sq), Q235 carbon steel	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Complete model of MICROSENSOR valve manifold*	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD5	PN25/PN40 (class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100 (class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
Note: The test pressure is the same as the flange pressure class			
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side (8μ)	 ※
	/J4	Double diaphragms on high and low pressure sides (8μ)	※

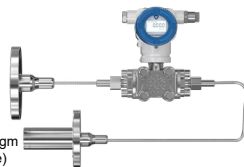
Diaphragm spraying	/T1	High pressure side single flange PTFE coating	※
	/T2	High-low pressure side double flanges PTFE coating	※
Diaphragm sticking	/PFA	The diaphragm is covered with PFA film (protective cover), applicable to corrosion-resistant conditions (non-vacuum, pressure ≥ 0)	※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.	
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.	
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.			
Example: MDM7000-LP-1HP1L-26-HF-2B1614AKU3S-LF-2B1614AKU3S/G1- 【CAL: 0-0.4bar】			

MDM7000-LP — □□□□□ — □ — HE — □□□□□□ — LF — □□□□□□

Body

Remote Fixed Flange Insertion Sleeve + Remote Fixed Flange Diaphragm

Item	Code	Description
MDM7000-LP	—	Monocrystalline Silicon Differential Pressure Transmitter with Diaphragm Seals(Remote Fixed Flange Insertion Sleeve + Remote Fixed Flange)



Basic options

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEx, Flameproof, Intrinsically safe	
	M	EAC, Explosion-proof, RU C-CN.AXK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
Output signal	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEX standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.

Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C

Sensor module range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)
	2	0.4bar	0.1bar	-0.4bar	0.4bar
	3	2.5bar	0.25bar	-2.5bar	2.5bar

Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo
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Diaphragm seal options - high pressure side

Diaphragm connection position	H	Differential pressure transmitter high pressure side
Diaphragm seal system code	E	Remote fixed flange insertion sleeve

Flange standard	2	HG/T-20592
	1	EN1092-1
	5	HG/T-20615
	6	ANSI/ASME B16.5

Flange diameter		Applicable standard
	B	DN50
	C	DN80
	D	DN100
	2	2inch
	3	3inch
	4	4inch

Pressure class		Applicable standard	Applicable flange diameter
	1	PN10/PN16	DN50, DN80, DN100
	2	PN25/PN40	DN50, DN80, DN100
	3	PN63	DN50, DN80, DN100
	4	PN100	DN50, DN80, DN100
	A	Class 150	2inch, 3inch, 4inch
	B	Class 300	2inch, 3inch, 4inch
	C	Class 600	2inch, 3inch, 4inch

Note: The maximum static pressure or overload depends on the flange pressure class

Flange material	6	316 SS
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Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Insertion sleeve diameter			Applicable flange diameter				
	4	46mm	DN50, 2inch				
	6	66mm	DN80, 3inch				
	7	77mm	DN100, 4inch				
Insertion sleeve length	A	50mm					
	B	100mm					
	C	150mm					
	D	200mm					
Insertion sleeve material	6	316 SS					
Wetted parts material		Flange	Insertion sleeve	Measuring diaphragm			
	6A	316 SS	316 SS	316L			
	6B	316 SS	316 SS	Hastelloy C-276			
	6C	316 SS	316 SS	Tantalum ※			
	6D	316 SS	316 SS	Titanium ※			
	6E	316 SS	316 SS	Monel ※			
Capillary connection location	K	Rear connection					
Capillary type	U	3.5mm OD (or 1ss/8 inch), armored 316L SS, PVC gray sheath					
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath					
Capillary length		Insertion sleeve diameter	Adaptable measuring diaphragm				
			6A-316L	6B-HastelloyC-276	6C-Tantalum	6D-Titanium	6E-Monel
1	1m	S-46mm					
		M-66mm					
		L-77mm					
2	2m	S-46mm					
		M-66mm					
		L-77mm					
3	3m	S-46mm					
		M-66mm					
		L-77mm					
4	4m	S-46mm					
		M-66mm					
		L-77mm					
5	5m	S-47mm					
		M-66mm					
		L-77mm					
6	6m	M-66mm					※
		L-77mm					※
7	7m	M-66mm					※
		L-77mm					※
8	8m	M-66mm					※
		L-77mm					※
9	9m	M-66mm					※
		L-77mm					※

A	M-66mm	※
	L-77mm	※

Note: For high and low-temperature conditions with capillary lengths of 6m~10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters.

High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature: -40°C ~85°C)	※

■ Diaphragm seal options - low pressure side

Diaphragm connection position	L	Differential pressure transmitter low pressure side
Diaphragm seal system code	F	Remote fixed flange
	—	

Flange standard	2	HG/T-20592
	1	EN1092-1
	5	HG/T-20615
	6	ANSI/ASME B16.5

Flange diameter			Applicable standard	
A	DN25	HG/T-20592, EN1092-1(Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)		※
J	DN40	HG/T-20592, EN1092-1		※
B	DN50	HG/T-20592, EN1092-1		
C	DN80	HG/T-20592, EN1092-1		
D	DN100	HG/T-20592, EN1092-1		
1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)		※
2	2inch	HG/T-20615, ANSI/ASME B16.5		
3	3inch	HG/T-20615, ANSI/ASME B16.5		
4	4inch	HG/T-20615, ANSI/ASME B16.5		

Pressure class	Applicable standard		Applicable flange diameter	
	1	PN10/PN16	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	2	PN25/PN40	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	3	PN63	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	4	PN100	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
				※

Note: The maximum static pressure or overload depends on the flange pressure class

Flange material	6	316 SS
Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Wetted parts material		Flange	Measuring diaphragm					
	6A	316 SS	316L					
	6B	316 SS	Hastelloy C-276					
	6C	316 SS	Tantalum				※	
	6D	316 SS	Titanium				※	
	6E	316 SS	Monel				※	
Capillary connection location	K	Rear connection						
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath						
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath						
Capillary length		Applicable flange diameter						
			DN25/1inch	DN40	DN50/2inch	DN80/3inch	DN100/4inch	
	1	1m						
	2	2m						
	3	3m						
	4	4m						
	5	5m						
	6	6m						※
	7	7m						※
	8	8m						※
	9	9m						※
	A	10m						※
Note: For high and low-temperature conditions with capillary lengths of 6m~10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters								
Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)						
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)						
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)						※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)						※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output						※
Contract specifics: LRL - URL, display unit*								

Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society XA25PTB00010	       
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	

Metrological certificates in Russia and CIS	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Mounting bracket accessories	/G7	L-shaped brackets (sq), 316 ss	
	/G8	L-shaped brackets (sq), Q235 carbon steel	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICRO-SENSOR standard leakage test report	※
	/QD5	PN25/PN40 (class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICRO-SENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100 (class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
Note: The test pressure is the same as the flange pressure class			
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side (8μ)	※
	/J4	Double diaphragms on high and low pressure sides (8μ)	※
Diaphragm spraying	/T3	High pressure side single insertion sleeve PTFE coating	※
	/T4	High pressure side single insertion sleeve and low pressure side single flange PTFE coating	※
	/T9	High pressure side single insertion sleeve PFA coating	※
	/T10	High pressure side single insertion sleeve and low pressure side single flange PFA coating	※
Diaphragm sticking	/PFA	The diaphragm is covered with PFA film (protective cover), applicable to corrosion-resistant conditions (non-vacuum, pressure ≥ 0)	※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
Language	/LE	English nameplate, operation manual, certificate of conformity, etc.	
	/LR	Russian nameplate, operation manual, certificate of conformity, etc.	
Delivery service	/XM	Provide customer requested content according to project delivery standards	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	

***Note:** The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.

Example: MDM7000-LP-1HP1L-26-HE-2B1614A6AKU3S-LF-2B1616AKU3S/G1- [CAL: 0-40kPa]

MDM7000-LP — □□□□□ — □ — HE — □□□□□□ — LE — □□□□□□

Body

Remote Fixed Flange Insertion Sleeve+Remote Fixed Flange Insertion Sleeve Diaphragm



Item	Code	Description
MDM7000-LP	—	Monocrystalline Silicon Differential Pressure Transmitter with Diaphragm Seals (Remote Fixed Flange Insertion Sleeve+Remote Fixed Flange Insertion Sleeve)
Basic options		
Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021
	4	China, Flameproof, Intrinsically safe
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIC T80°C Db Zone 21, AEx tb IIIC T80°C Db
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga
	C	CSA, Flameproof, Intrinsically safe
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga
	G	ATEX, Flameproof, Intrinsically safe
	J	IECEX, Flameproof, IECEX CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db
	K	IECEX, Intrinsically safe, IECEX CSA 24.0045X Ex ia IIC T4 Ga
	L	IECEX, Flameproof, Intrinsically safe
	M	EAC, Explosion-proof, RU C-CN.AK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga
	0	Non-hazardous area
Output signal	H	4mA~20mA DC, HART
	B	4mA~20mA DC, HART, Bluetooth
	R	Modbus-RS485



Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5
	N	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) 1/2NPT



Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.

Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C

Sensor module range	Nominal range	Minimum range	Lower (LRL)	Upper (URL)
2	0.4bar	0.1bar	-0.4bar	0.4bar
3	2.5bar	0.25bar	-2.5bar	2.5bar

Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo
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■ Diaphragm seal options - high pressure side

Diaphragm connection position	H	Differential pressure transmitter high pressure side
Diaphragm seal system code	E	Remote fixed flange insertion sleeve

Flange standard	2	HG/T-20592
	1	EN1092-1
	5	HG/T-20615
	6	ANSI/ASME B16.5

Flange diameter		Applicable standard
B	DN50	HG/T-20592, EN1092-1
C	DN80	HG/T-20592, EN1092-1
D	DN100	HG/T-20592, EN1092-1
2	2inch	HG/T-20615, ANSI/ASME B16.5
3	3inch	HG/T-20615, ANSI/ASME B16.5
4	4inch	HG/T-20615, ANSI/ASME B16.5

Pressure class		Applicable standard	Applicable flange diameter
1	PN10/PN16	HG/T-20592, EN1092-1	DN50, DN80, DN100
2	PN25/PN40	HG/T-20592, EN1092-1	DN50, DN80, DN100
3	PN63	HG/T-20592, EN1092-1	DN50, DN80, DN100
4	PN100	HG/T-20592, EN1092-1	DN50, DN80, DN100 ※
A	Class 150	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch
B	Class 300	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch
C	Class 600	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch ※

Note: The maximum static pressure or overload depends on the flange pressure class

Flange material	6	316 SS
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Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Insertion sleeve diameter			Applicable flange diameter			
	4	46mm	DN50, 2inch			
	6	66mm	DN80, 3inch			
	7	77mm	DN100, 4inch			
Insertion sleeve length	A	50mm				
	B	100mm				
	C	150mm				
	D	200mm				
Insertion sleeve material	6	316 SS				
Wetted parts material		Flange	Insertion sleeve	Measuring diaphragm		
	6A	316 SS	316 SS	316L		
	6B	316 SS	316 SS	Hastelloy C-276		
	6C	316 SS	316 SS	Tantalum	※	
	6D	316 SS	316 SS	Titanium	※	
	6E	316 SS	316 SS	Monel	※	
Capillary connection location	K	Rear connection				
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath				
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath				
Capillary length		Insertion sleeve diameter	Adaptable measuring diaphragm			
			6A-316L	6B-HastelloyC-276	6C-Tantalum	6D-Titanium
1	1m	S-46mm				
		M-66mm				
		L-77mm				
2	2m	S-46mm				
		M-66mm				
		L-77mm				
3	3m	S-46mm				
		M-66mm				
		L-77mm				
4	4m	S-46mm				
		M-66mm				
		L-77mm				
5	5m	S-47mm				
		M-66mm				
		L-77mm				
6	6m	M-66mm				
		L-77mm	※			
7	7m	M-66mm	※			
		L-77mm	※			
8	8m	M-66mm	※			
		L-77mm	※			
9	9m	M-66mm	※			
		L-77mm	※			

A	10m	M-66mm	※
		L-77mm	※
Note: For high and low-temperature conditions with capillary lengths of 6m~10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters.			
High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)	※

■ Diaphragm seal options - low pressure side

Diaphragm connection position	L	Differential pressure transmitter low pressure side		
Diaphragm seal system code	E	Remote fixed flange insertion sleeve		
Flange standard	2	HG/T-20592		
	1	EN1092-1		
	5	HG/T-20615		
	6	ANSI/ASME B16.5		
Flange diameter		Applicable standard		
	B	DN50	HG/T-20592, EN1092-1	
	C	DN80	HG/T-20592, EN1092-1	
	D	DN100	HG/T-20592, EN1092-1	
	2	2inch	HG/T-20615, ANSI/ASME B16.5	
	3	3inch	HG/T-20615, ANSI/ASME B16.5	
	4	4inch	HG/T-20615, ANSI/ASME B16.5	
Pressure class		Applicable standard	Applicable flange diameter	
	1	PN10/PN16	HG/T-20592, EN1092-1	DN50, DN80, DN100
	2	PN25/PN40	HG/T-20592, EN1092-1	DN50, DN80, DN100
	3	PN63	HG/T-20592, EN1092-1	DN50, DN80, DN100
	4	PN100	HG/T-20592, EN1092-1	DN50, DN80, DN100
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch
C	Class 600	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch	

Note: The maximum static pressure or overload depends on the flange pressure class

Flange material	6	316 SS	
Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)	
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)	
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)	
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)	

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Insertion sleeve diameter		Applicable flange diameter	
	4	46mm	DN50, 2inch
	6	66mm	DN80, 3inch
	7	77mm	DN100, 4inch

Insertion sleeve length	A	50mm		
	B	100mm		
	C	150mm		
	D	200mm		
Insertion sleeve material	6	316 SS		
Wetted parts material	Flange	Insertion sleeve		Measuring diaphragm
	6A	316 SS	316 SS	316L
	6B	316 SS	316 SS	Hastelloy C-276
	6C	316 SS	316 SS	Tantalum ※
	6D	316 SS	316 SS	Titanium ※
	6E	316 SS	316 SS	Monel ※
Capillary connection location	K	Rear connection		
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath		
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath		
Capillary length	Insertion sleeve diameter		Adaptable measuring diaphragm	
			6A-316L	6B-HastelloyC-276 6C-Tantalum 6D-Titanium 6E-Monel
1	1m	S-46mm		
		M-66mm		
		L-77mm		
2	2m	S-46mm		
		M-66mm		
		L-77mm		
3	3m	S-46mm		
		M-66mm		
		L-77mm		
4	4m	S-46mm		
		M-66mm		
		L-77mm		
5	5m	S-47mm		
		M-66mm		
		L-77mm		
6	6m	M-66mm		※
		L-77mm		※
7	7m	M-66mm		※
		L-77mm		※
8	8m	M-66mm		※
		L-77mm		※
9	9m	M-66mm		※
		L-77mm		※
A	10m	M-66mm		※
		L-77mm		※

Note: For high and low-temperature conditions with capillary lengths of 6m~10m, flanges of DN80 or above are recommended, the part beyond the length will be selected according to the next level of meters.

Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	※
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature: -40°C ~85°C)	※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output	
		Contract specifics: LRL - URL, display unit*	

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, TJ23PTB00014	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certificates in Russia and CIS	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus	 ※

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Mounting bracket accessories	/G7	L-shaped brackets (sq), 316 SS	
	/G8	L-shaped brackets (sq), Q235 carbon steel	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD5	PN25/PN40 (class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100 (class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※

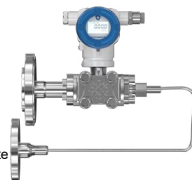
Note: The test pressure is the same as the flange pressure class

HART configuration	/H5	HART5 configuration, default		
	/H7	HART7 configuration		
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side (8μ)		※
	/J4	Double diaphragms on high and low pressure sides (8μ)		※
Diaphragm spraying	/T3	High pressure side single insertion sleeve PTFE coating		※
	/T5	High-low pressure side double insertion sleeve PTFE coating		※
	/T9	High pressure side single insertion sleeve PFA coating		※
	/T10	High-low pressure side double insertion sleeve PFA coating		※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts		※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)				
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry		
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.		
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.		
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)		
Warranty period	/Y2	2-year warranty		
	/Y3	3-year warranty		
	/Y5	5-year warranty		
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.				
Example: MDM7000-LP-1HP1L-26-HE-2B1614A6AKU3S-LE-2B1614A6AKU3S/G1- 【CAL: 0-0.4bar】				

MDM7000-LP

□□□□□ — □ — HN — □□□□ — LF — □□□□□

Body

Side Mounted Movable Flange+Remote
Fixed Flange Diaphragm

Item	Code	Description
MDM7000-LT	—	Monocrystalline Silicon Differential Pressure Transmitter Side Mounted Remote Diaphragm Seals (Side Mounted Movable Flange + Remote Fixed Flange)

Basic options

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEx, Flameproof, Intrinsically safe	
	M	EAC, Explosion-proof, RU C-CN.AXK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	

Output signal	H	4mA~20mA DC, HART
	B	4mA~20mA DC, HART, Bluetooth
	R	Modbus-RS485



Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEX standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.					
Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C			
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C			
Sensor module range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)
	2	0.4bar	0.1bar	-0.4bar	0.4bar
	3	2.5bar	0.25bar	-2.5bar	2.5bar
Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo			

■ Diaphragm seal options - high pressure side

Diaphragm connection position	H	Differential pressure transmitter high pressure side			
Diaphragm seal system code	N	Side mounted movable flange			
Flange standard	2	HG/T-20592			
	1	EN1092-1			
	5	HG/T-20615			
	6	ANSI/ASME B16.5			
Flange diameter		Applicable standard			
	A	DN25	HG/T-20592, EN1092-1(Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)		※
	J	DN40	HG/T-20592, EN1092-1		※
	B	DN50	HG/T-20592, EN1092-1		
	C	DN80	HG/T-20592, EN1092-1		
	D	DN100	HG/T-20592, EN1092-1		
	1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)		※
	2	2inch	HG/T-20615, ANSI/ASME B16.5		
	3	3inch	HG/T-20615, ANSI/ASME B16.5		
	4	4inch	HG/T-20615, ANSI/ASME B16.5		
	Pressure class		Applicable standard		Applicable flange diameter
1		PN10/PN16	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100	
2		PN25/PN40	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100	
3		PN63	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100	
4		PN100	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100	
A		Class 150	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch	
B		Class 300	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch	
C		Class 600	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch	
				※	

Note: The maximum static pressure or overload depends on the flange pressure class

Flange material	6	316 SS			
Blind sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)			
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)			
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)			
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)			

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Wetted parts material		Blind	Measuring diaphragm	
	6A	316 SS	316L	
	6B	316 SS	Hastelloy C-276	
	6C	316 SS	Tantalum	※
	6D	316 SS	Titanium	※
	6E	316 SS	Monel	※
High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40°C ~200°C , ambient temperature: -40°C ~85°C)		
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)		
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)		
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature: -40°C ~85°C)		

■ Diaphragm seal options - low pressure side

Diaphragm connection position	L	Differential pressure transmitter low pressure side				
Diaphragm seal system code	F	Remote fixed flange				
Flange standard	2	HG/T-20592				
	1	EN1092-1				
	5	HG/T-20615				
	6	ANSI/ASME B16.5				
Flange diameter		Applicable standard				
	A	DN25	HG/T-20592, EN1092-1(Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)		※	
	J	DN40	HG/T-20592, EN1092-1		※	
	B	DN50	HG/T-20592, EN1092-1			
	C	DN80	HG/T-20592, EN1092-1			
	D	DN100	HG/T-20592, EN1092-1			
	1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)		※	
	2	2inch	HG/T-20615, ANSI/ASME B16.5			
	3	3inch	HG/T-20615, ANSI/ASME B16.5			
	4	4inch	HG/T-20615, ANSI/ASME B16.5			
	Pressure class		Applicable standard		Applicable flange diameter	
1		PN10/PN16	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
2		PN25/PN40	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
3		PN63	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
4		PN100	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		※
A		Class 150	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch		
B		Class 300	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch		
C		Class 600	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch		※
Note: The maximum static pressure or overload depends on the flange pressure class						
Flange material	6	316 SS				

Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)	
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)	
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)	
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)	

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Wetted parts material		Flange	Measuring diaphragm	
	6A	316 SS	316L	
	6B	316 SS	Hastelloy C-276	
	6C	316 SS	Tantalum	※
	6D	316 SS	Titanium	※
	6E	316 SS	Monel	※

Capillary connection location	K	Rear connection
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Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath

Capillary length		Applicable flange diameter				
		DN25/1inch	DN40	DN50/2inch	DN80/3inch	DN100/4inch
1	1m					
2	2m					
3	3m					
4	4m					
5	5m					
6	6m					※
7	7m					※
8	8m					※
9	9m					※
A	10m					※

Note: For high and low-temperature conditions with capillary lengths of 6m-10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters.

Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40℃ ~200℃ , ambient temperature: -40℃ ~85℃)	
	H	High temperature silicone oil (Medium temperature: 0℃ ~315℃ , ambient temperature: 0℃ ~85℃)	
	L	Low temperature silicone oil (Medium temperature: -55℃ ~120℃ , ambient temperature: -40℃ ~85℃)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55℃ ~85℃ , ambient temperature: -40℃ ~85℃)	※

Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output		
		Contract specifies: LRL - URL, display unit*		

Options-Certificates		Description (Detailed specifications as following, multiple options or null)
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010
	/CS2	DNV, Det Norske Veritas, TAA00000Y1
	/CS3	BV, Bureau Veritas, 77759/A0 BV
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA



/CS5	LR, Lloyd's Register, LR2520052TA	
/CS6	KR, Korean Register, NAJ50160-AE001	
/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24 
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634 

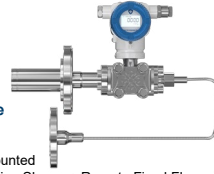
■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/VH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Provide data according to the customer's template requirements. Contract specifics: Identification number, not exceeding 16 characters	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD5	PN25/PN40 (class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100 (class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
Note: The test pressure is the same as the flange pressure class			
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side (8μ)	※ 
	/J4	Double diaphragms on high and low pressure sides (8μ)	※
Diaphragm spraying	/T1	High pressure side single flange PTFE coating	※
	/T2	High-low pressure side double flange PTFE coating	※
	/T7	High pressure side single flange PFA coating	※
	/T8	High-low pressure side double flange PFA coating	※
Diaphragm sticking	/PFA	The diaphragm is covered with PFA film (protective cover), applicable to corrosion-resistant conditions (non-vacuum, pressure ≥ 0)	※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.	
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.	
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	

***Note:** The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.

Example: MDM7000-LP-1HP1L-2A1S1-HN-22B1616AS-LF-2B1614AKU3S/CS1- 【CAL: 0-0.4bar】

MDM7000-LP

□□□□□ — □ — HM — □□□□□ LF — □□□□□



Item	Code	Description
MDM7000-LP	—	Monocrystalline Silicon Differential Pressure Transmitter Side Mounted Remote Diaphragm Seals (Side Mounted Movable Flange Insertion Sleeve + Remote Fixed Flange)

Basic options

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	
	J	IECEX, Flameproof, IECEX CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	
	K	IECEX, Intrinsically safe, IECEX CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEX, Flameproof, Intrinsically safe	
	M	EAC, Explosion-proof, RU C-CN.AXK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
Output signal	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.					
Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C			
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C			
Sensor module range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)
	2	0.4bar	0.1bar	-0.4bar	0.4bar
	3	2.5bar	0.25bar	-2.5bar	2.5bar
Clamp flange fastener	6	Bolts, nuts, and other components, 35CrMo			

■ Diaphragm seal options - high pressure side

Diaphragm connection position	H	Differential pressure transmitter high pressure side		
Diaphragm seal system code	M	Side mounted movable flange insertion sleeve		
—				
Flange standard	2	HG/T-20592		
	1	EN1092-1		
	5	HG/T-20615		
	6	ANSI/ASME B16.5		
Flange diameter			Applicable standard	
	B	DN50	HG/T-20592, EN1092-1	
	C	DN80	HG/T-20592, EN1092-1	
	D	DN100	HG/T-20592, EN1092-1	
	2	2inch	HG/T-20615, ANSI/ASME B16.5	
	3	3inch	HG/T-20615, ANSI/ASME B16.5	
	4	4inch	HG/T-20615, ANSI/ASME B16.5	
Pressure class			Applicable standard	Applicable flange diameter
	1	PN10/PN16	HG/T-20592, EN1092-1	DN50, DN80, DN100
	2	PN25/PN40	HG/T-20592, EN1092-1	DN50, DN80, DN100
	3	PN63	HG/T-20592, EN1092-1	DN50, DN80, DN100
	4	PN100	HG/T-20592, EN1092-1	DN50, DN80, DN100
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch
Note: The maximum static pressure or overload depends on the flange pressure class				
Flange material	6	316 SS		
Blind sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)		
	A	FM Female face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 300~Class 2500)		
	B	M Male face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 300~Class 2500)		
	C	RJ Ring joint face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class 150~Class 2500)		

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Insertion sleeve diameter			Applicable flange diameter		
	4	46mm	DN50, 2inch		
	6	66mm	DN80, 3inch		
	7	77mm	DN100, 4inch		
Insertion sleeve length	A	50mm			
	B	100mm			
	C	150mm			
	D	200mm			
Insertion sleeve material	6	316 SS			
Wetted parts material		Blind	Insertion sleeve	Measuring diaphragm	
	6A	316 SS	316 SS	316L	
	6B	316 SS	316 SS	Hastelloy C-276	
	6C	316 SS	316 SS	Tantalum	※
	6D	316 SS	316 SS	Titanium	※
	6E	316 SS	316 SS	Monel	※
High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40℃ ~200℃ , ambient temperature: -40℃ ~85℃)			
	H	High temperature silicone oil (Medium temperature:0℃ ~315℃ , ambient temperature: (0℃ ~85℃)			
	L	Low temperature silicone oil (Medium temperature:-55℃ ~120℃ , ambient temperature:-40℃ ~85℃)			
	E	Fluorocarbon oil 2 (Medium temperature: -55℃ ~85℃ , ambient temperature:-40℃ ~85℃)			

■ Diaphragm seal options - low pressure side

Diaphragm connection position	L	Differential pressure transmitter low pressure side		
Diaphragm seal system code	F	Remote fixed flange		
—				
Flange standard	2	HG/T-20592		
	1	EN1092-1		
	5	HG/T-20615		
	6	ANSI/ASME B16.5		
Flange diameter			Applicable standard	
	A	DN25	HG/T-20592, EN1092-1(Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)	※
	J	DN40	HG/T-20592, EN1092-1	※
	B	DN50	HG/T-20592, EN1092-1	
	C	DN80	HG/T-20592, EN1092-1	
	D	DN100	HG/T-20592, EN1092-1	
	1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)	※
	2	2inch	HG/T-20615, ANSI/ASME B16.5	
	3	3inch	HG/T-20615, ANSI/ASME B16.5	
	4	4inch	HG/T-20615, ANSI/ASME B16.5	
Pressure class			Applicable standard	Applicable flange diameter
	1	PN10/PN16	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	2	PN25/PN40	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100

3	PN63	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
4	PN100	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100 ※
A	Class 150	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
B	Class 300	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
C	Class 600	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch ※

Note: The maximum static pressure or overload depends on the flange pressure class

Flange material	6	316 SS
Flange sealing face	1	RF Raised face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)
	A	FM Female face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 300~Class 2500)
	B	M Male face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 300~Class 2500)
	C	RJ Ring joint face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class 150~Class 2500)

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Wetted parts material	Flange	Measuring diaphragm
6A	316 SS	316L
6B	316 SS	Hastelloy C-276
6C	316 SS	Tantalum ※
6D	316 SS	Titanium ※
6E	316 SS	Monel ※

Capillary connection location	K	Rear connection
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Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath

Capillary length		Applicable flange diameter				
		DN25/1inch	DN40	DN50/2inch	DN80/3inch	DN100/4inch
1	1m					
2	2m					
3	3m					
4	4m					
5	5m					
6	6m					※
7	7m					※
8	8m					※
9	9m					※
A	10m					※

Note: For high and low-temperature conditions with capillary lengths of 6m-10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters.

Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature: -40°C ~85°C)	※

Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output
		Contract specifics: LRL - URL, display unit*

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA0000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/N	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s	
		Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate	
		Contract specifics: Identification number, not exceeding 16 characters	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD5	PN25/PN40 (class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100 (class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※

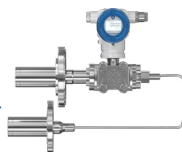
Note: The test pressure is the same as the flange pressure class

HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side (8μ)	 ※
	/J4	Double diaphragms on high and low pressure sides (8μ)	※
Diaphragm spraying	/T3	Single insertion sleeve on high pressure side PTFE coating	※
	/T4	Single insertion sleeve on high pressure side and single flange on low pressure side PTFE coating	※
	/T9	Single insertion sleeve on high pressure side PFA coating	※
	/T10	Single insertion sleeve on high pressure side and single flange on low pressure side PFA coating	※
Diaphragm sticking	/PFA	The diaphragm is stuck with PFA film, applicable to non-vacuum situations (pressure ≥ 0)	※
Note: Sticking is not available on the insertion sleeve			
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※

Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)

Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)
Warranty period	/Y2	2-year warranty
	/Y3	3-year warranty
	/Y5	5-year warranty
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.		
Example: MDM7000-LP-1HP1L-21-HM-2B14614A66AS-LF-2B1614AKU3S/CS1- 【CAL: 0-0.4bar】		

MDM7000-LP — □□□□□ — □ — HM — □□□□□□ — LE □□□□□□□



	Body	Side Mounted Movable Flange Insertion Sleeve + Remote Fixed Flange Insertion Sleeve
Item	Code	Description
MDM7000-LP	—	Monocrystalline Silicon Differential Pressure Transmitter Side Mounted Remote Diaphragm Seals (Side Mounted Movable Flange Insertion Sleeve + Remote Fixed Flange Insertion Sleeve)

Basic options

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	
	J	IECEX, Flameproof, IECEX CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	
	K	IECEX, Intrinsically safe, IECEX CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEX, Flameproof, Intrinsically safe	
	M	EAC, Explosion-proof, RU C-CN.AK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
Output signal	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
	0	Without cable glands		
	A	Single-ended with a flameproof metal plug	316 SS	
	1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm IP67

	2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67
	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.

Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C			
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C			

Sensor module range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)
	2	0.4bar	0.1bar	-0.4bar	0.4bar
	3	2.5bar	0.25bar	-2.5bar	2.5bar

Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo			
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■ Diaphragm seal options - high pressure side

Diaphragm connection position	H	Differential pressure transmitter high pressure side
Diaphragm system code	M	Side-mounted movable flange insertion sleeve

Flange standard	2	HG/T-20592
	1	EN1092-1
	5	HG/T-20615
	6	ANSI/ASME B16.5

Flange diameter		Applicable standard
	B	DN50 HG/T-20592, EN1092-1
	C	DN80 HG/T-20592, EN1092-1
	D	DN100 HG/T-20592, EN1092-1
	2	2inch HG/T-20615, ANSI/ASME B16.5
	3	3inch HG/T-20615, ANSI/ASME B16.5
	4	4inch HG/T-20615, ANSI/ASME B16.5

Pressure class		Applicable standard	Applicable flange diameter
	1	PN10/PN16 HG/T-20592, EN1092-1	DN50, DN80, DN100
	2	PN25/PN40 HG/T-20592, EN1092-1	DN50, DN80, DN100
	3	PN63 HG/T-20592, EN1092-1	DN50, DN80, DN100
	4	PN100 HG/T-20592, EN1092-1	DN50, DN80, DN100 ※
	A	Class 150 HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch
	B	Class 300 HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch
	C	Class 600 HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch ※

Note: The maximum static pressure or overload depends on the flange pressure class

Flange material	6	316 SS
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Flange sealing face	1	RF Raised face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)
	A	FM Female face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 300~Class 2500)
	B	M Male face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 300~Class 2500)
	C	RJ Ring joint face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class 150~Class 2500)

Note: For details about FM, M, RJ faces, please consult MICROSENSOR

Insertion sleeve diameter			Applicable flange diameter		
	4	46mm	DN50, 2inch		
	6	66mm	DN80, 3inch		
	7	77mm	DN100, 4inch		
Insertion sleeve length	A	50mm			
	B	100mm			
	C	150mm			
	D	200mm			
Insertion sleeve material	6	316 SS			
Wetted parts material		Blind	Insertion sleeve	Measuring diaphragm	
	6A	316 SS	316 SS	316L	
	6B	316 SS	316 SS	Hastelloy C-276	
	6C	316 SS	316 SS	Tantalum	※
	6D	316 SS	316 SS	Titanium	※
	6E	316 SS	316 SS	Monel	※
	High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40℃ ~200℃ , ambient temperature: -40℃ ~85℃)		
H		High temperature silicone oil (Medium temperature: 0℃ ~315℃ , ambient temperature: 0℃ ~85℃)			
L		Low temperature silicone oil (Medium temperature: -55℃ ~120℃ , ambient temperature: -40℃ ~85℃)			※
E		Fluorocarbon oil 2 (Medium temperature: -55℃ ~85℃ , ambient temperature: -40℃ ~85℃)			※

■ Diaphragm seal options - low pressure side

Diaphragm connection position	L	Differential pressure transmitter low pressure side		
Diaphragm seal system code	E	Remote fixed flange insertion sleeve		
Flange standard	2	HG/T-20592		
	1	EN1092-1		
	5	HG/T-20615		
	6	ANSI/ASME B16.5		
Flange diameter			Applicable standard	
	B	DN50	HG/T-20592, EN1092-1	
	C	DN80	HG/T-20592, EN1092-1	
	D	DN100	HG/T-20592, EN1092-1	
	2	2inch	HG/T-20615, ANSI/ASME B16.5	
	3	3inch	HG/T-20615, ANSI/ASME B16.5	
	4	4inch	HG/T-20615, ANSI/ASME B16.5	
Pressure class			Applicable standard	Applicable flange diameter
	1	PN10/PN16	HG/T-20592, EN1092-1	DN50, DN80, DN100
	2	PN25/PN40	HG/T-20592, EN1092-1	DN50, DN80, DN100
	3	PN63	HG/T-20592, EN1092-1	DN50, DN80, DN100
	4	PN100	HG/T-20592, EN1092-1	DN50, DN80, DN100
				※

	A	Class 150	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch		
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch		
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch	※	
Note: The maximum static pressure or overload depends on the flange pressure class						
Flange material	6	316 SS				
Flange sealing face	1	RF Raised face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)				
	A	FM Female face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 300~Class 2500)				
	B	M Male face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 300~Class 2500)				
	C	RJ Ring joint face(Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63-PN160 or Class 150~Class 2500)				
Note: For details about FM, M, RJ faces, please consult MICROSENSOR						
Insertion sleeve diameter		Applicable flange diameter				
	4	46mm	DN50, 2inch			
	6	66mm	DN80, 3inch			
	7	77mm	DN100, 4inch			
Insertion sleeve length	A	50mm				
	B	100mm				
	C	150mm				
	D	200mm				
Insertion sleeve material	6	316 SS				
Wetted parts material		Flange	Insertion sleeve	Measuring diaphragm		
	6A	316 SS	316 SS	316L		
	6B	316 SS	316 SS	Hastelloy C-276		
	6C	316 SS	316 SS	Tantalum		
	6D	316 SS	316 SS	Titanium		
	6E	316 SS	316 SS	Monel		
Capillary connection location	K	Rear connection				
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath				
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath				
Capillary length		Insertion sleeve diameter		Adaptable measuring diaphragm		
				6A-316L	6B-HastelloyC-276	6C-Tantalum
					6D-Titanium	6E-Monel
			S-46mm			
	1	1m	M-66mm			
			L-77mm			
			S-46mm			
	2	2m	M-66mm			
			L-77mm			
			S-46mm			
	3	3m	M-66mm			
			L-77mm			
			S-46mm			
	4	4m	M-66mm			
			L-77mm			
S-46mm						

5	5m	S-47mm	
		M-66mm	
		L-77mm	
6	6m	M-66mm	※
		L-77mm	※
7	7m	M-66mm	※
		L-77mm	※
8	8m	M-66mm	※
		L-77mm	※
9	9m	M-66mm	※
		L-77mm	※
A	10m	M-66mm	※
		L-77mm	※

Note: For high and low-temperature conditions with capillary lengths of 6m-10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters.

Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature:-40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)	※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifics: LRL - URL, display unit*	

Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBYP	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	

Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICRO-SENSOR standard leakage test report	※
	/QD5	PN25/PN40 (class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICRO-SENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100 (class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICRO-SENSOR standard leakage test report	※
Note: The test pressure is the same as the flange pressure class			
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side (8μ)	※
	/J4	Double diaphragms on high and low pressure sides (8μ)	※
Diaphragm spraying	/T3	High pressure side single insertion sleeve PTFE coating	※
	/T5	High-low pressure side double insertion sleeve PTFE coating	※
	/T9	High pressure side single insertion sleeve PFA coating	※
	/T11	High-low pressure side double insertion sleeve PFA coating	※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.	
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.	
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.			
Example: MDM7000-LP-1HP1L-21-HM-2B1614A6AKU3S-LE-2B1614A6AKU3S/CS1- 【CAL: 0-0.4bar】			



MDM7000-LT □□□□—□—HN—

Body**Side Mounted Movable Flange Diaphragm**

Item	Code	Description
MDM7000-LT	—	Monocrystalline Silicon Differential Pressure Transmitter Side Mounted Diaphragm Seal (Side Mounted Movable Flange Insertion Sleeve)

**Basic options**

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	※ 
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	※
	C	CSA, Flameproof, Intrinsically safe	※
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	※ 
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	※
	G	ATEX, Flameproof, Intrinsically safe	※
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	※ 
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga	※
	L	IECEx, Flameproof, Intrinsically safe	※
Output signal	M	EAC, Explosion-proof, RU C-CN.AK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
	0 Without cable glands			
	A Single-ended with a flameproof metal plug	316 SS		
	1 M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
	2 Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEX standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.					
Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C			
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C			
—					
Sensor module range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)
	2	0.4bar	0.1bar	-0.4bar	0.4bar
	3	2.5bar	0.25bar	-2.5bar	2.5bar
Low pressure side wetted parts		Diaphragm	Flange block	Discharge valve/plug	Sealings
	A	316L	316	316	FKM (-20°C ~120°C)
	B	316L	316	316	Stainless steel frame PTFE (-40°C ~120°C)
	E	316L	316	316	Modified FKM (-50°C ~120°C)
	C	HC-276	316	316	FKM (-20°C ~120°C)
	D	HC-276	316	316	Stainless steel frame PTFE (-40°C ~120°C)
	F	HC-276	316	316	Modified FKM (-50°C ~120°C)
	G	Tantalum	316	316	FKM (-20°C ~120°C)
	H	Tantalum	316	316	Stainless steel frame PTFE (-40°C ~120°C)
I	Tantalum	316	316	Modified FKM (-50°C ~120°C)	
Low pressure side clamp flange process connection		Specifications	Drain/vent valve position	Thread	Mounting method
	2	Female 1/4-18NPT	Above the side of flange	7/16-20UNF (F)	Horizontal
	3	Female 1/4-18NPT	Under the side of flange	7/16-20UNF(F)	Horizontal
Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40°C ~200°C , ambient temperature: -40°C ~85°C)			
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)			
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)			
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)			
Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo			
■ Diaphragm seal options - high pressure side					
Diaphragm connection position	H	Differential pressure transmitter high pressure side			
Diaphragm seal system code	N	Side mounted movable flange			
—					
Flange standard	2	HG/T-20592			
	1	EN1092-1			
	5	HG/T-20615			
	6	ANSI/ASME B16.5			
Flange diameter		Applicable standard			
	A	DN25	HG/T-20592, EN1092-1(Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)		
	J	DN40	HG/T-20592, EN1092-1		
	B	DN50	HG/T-20592, EN1092-1		
	C	DN80	HG/T-20592, EN1092-1		

	D	DN100	HG/T-20592, EN1092-1	
	1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)	※
	2	2inch	HG/T-20615, ANSI/ASME B16.5	
	3	3inch	HG/T-20615, ANSI/ASME B16.5	
	4	4inch	HG/T-20615, ANSI/ASME B16.5	
Pressure class			Applicable standard	Applicable flange diameter
	1	PN10/PN16	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	2	PN25/PN40	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	3	PN63	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	4	PN100	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch
Note: The maximum static pressure or overload depends on the flange pressure class				
Flange material	6	316 SS		
Blind sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)		
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)		
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)		
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)		
Note: For details about FM, M, RJ faces, please consult MICROSENSOR				
Wetted parts material	Blind	Measuring diaphragm		
	6A	316 SS	316L	
	6B	316 SS	Hastelloy C-276	
	6C	316 SS	Tantalum	※
	6D	316 SS	Titanium	※
	6E	316 SS	Monel	※
High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40°C ~200°C ,ambient temperature: -40°C ~85°C)		
	H	High temperature silicone oil (Medium temperature:0°C ~315°C ,ambient temperature:0°C ~85°C)		
	L	Low temperature silicone oil (Medium temperature:-55°C ~120°C ,ambient temperature:-40°C ~85°C)		※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)		※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifies: LRL - URL, display unit*		

Options-Certificates

	Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1 CCS, China Classification Society, XA25PTB00010	
	/CS2 DNV, Det Norske Veritas, TAA00000Y1	
	/CS3 BV, Bureau Veritas, 77759/A0 BV	
	/CS4 ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5 LR, Lloyd's Register, LR2520052TA	
	/CS6 KR, Korean Register, NAIJ50160-AE001	
	/CS7 NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8 RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	

Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Process connection accessories	/D1	T-shaped adapter (M) M20×1.5 and vent tube Φ14mm×2mm×30mm, 316 SS, ×1	
	/D2	Waist-shaped adapter, 1/2-14NPT (F), 316 SS, ×1	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters	
Integrated valve manifold	/VT	Pressure transmitter is factory assembled with MICROSENSOR valve manifold See attachment for order guide of valve manifold Contract specifics: Complete model of MICROSENSOR valve manifold*	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD5	PN25/PN40(class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100(class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
Note: The test pressure is the same as the flange pressure class			
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side(8μ)	 ※
	/J4	Double diaphragms on high and low pressure sides (8μ)	※
Diaphragm spraying	/T1	High pressure side single flange PTFE coating	※
	/T7	High pressure side single flange PFA coating	※
Diaphragm sticking	/PFA	The diaphragm is stuck with PFA film, applicable to non-vacuum situations (pressure ≥ 0)	※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.	
	/LR	English nameplate, operation manual, certificate of conformity, factory inspection report.	
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	

***Note:** The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.

Example : MDM7000-LT-0HP1L-2A2S1-HN-2B14616AS/D1- 【CAL: 0-0.4bar】

MDM7000-LT — ☐☐☐☐☐ — ☐ — HM — ☐☐☐☐☐☐☐☐ — ☐☐☐☐

Item	Body		Side Mounted Movable Flange Insertion Sleeve
	Code	Description	
MDM7000-LT	—	Monocrystalline Silicon Differential Pressure Transmitter Side Mounted Diaphragm Seal (Side Mounted Movable Flange Insertion Sleeve)	

**Basic options**

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	
	J	IECEX, Flameproof, IECEX CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	
	K	IECEX, Intrinsically safe, IECEX CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEX, Flameproof, Intrinsically safe	
	M	EAC, Explosion-proof, RU C-CNAK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
Output signal	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

	3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug		316 SS	6mm~12mm	IP67	
	4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug		316 SS	6mm~12mm	IP67	
	5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug		316 SS	6mm~12mm	IP67	
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.							
Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C					
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C					
—							
Sensor module range		Nominal range	Minimum range	Lower (LRL)	Upper (URL)		
	2	0.4bar	0.1bar	-0.4bar	0.4bar		
	3	2.5bar	0.25bar	-2.5bar	2.5bar		
Low pressure side wetted parts		Diaphragm	Flange block	Discharge valve/plug	Sealings		
	A	316L	316	316	FKM (-20°C ~120°C)		
	B	316L	316	316	Stainless steel frame PTFE(-40°C ~120°C)		
	E	316L	316	316	Modified FKM(-50°C ~120°C)		
	C	HC-276	316	316	FKM (-20°C ~120°C)		
	D	HC-276	316	316	Stainless steel frame PTFE(-40°C ~120°C)		
	F	HC-276	316	316	Modified FKM(-50°C ~120°C)		
	G	Tantalum	316	316	FKM (-20°C ~120°C)	※	
	H	Tantalum	316	316	Stainless steel frame PTFE(-40°C ~120°C)	※	
	I	Tantalum	316	316	Modified FKM(-50°C ~120°C)	※	
Low pressure side clamp flange process connection		Specifications	Drain/vent valve position	Thread	Mounting method		
	2	Female 1/4-18NPT	Above the side of flange	7/16-20UNF (F)	Horizontal		
	3	Female 1/4-18NPT	Under the side of flange	7/16-20UNF(F)	Horizontal		
Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40°C ~200°C ,ambient temperature: -40°C ~85°C)					
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C ,ambient temperature: 0°C ~85°C)					
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C ,ambient temperature: -40°C ~85°C)					※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)					※
Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo					



■ Diaphragm seal options - high pressure side

Diaphragm connection position	H	Differential pressure transmitter high pressure side	
Diaphragm seal system code	M	Side mounted movable flange insertion sleeve	
—			
Flange standard	2	HG/T-20592	
	1	EN1092-1	
	5	HG/T-20615	
	6	ANSI/ASME B16.5	
Flange diameter		Applicable standard	
	B	DN50	HG/T-20592, EN1092-1
	C	DN80	HG/T-20592, EN1092-1
	D	DN100	HG/T-20592, EN1092-1
	2	2inch	HG/T-20615, ANSI/ASME B16.5
	3	3inch	HG/T-20615, ANSI/ASME B16.5
	4	4inch	HG/T-20615, ANSI/ASME B16.5

Pressure class		Applicable standard		Applicable flange diameter	
	1	PN10/PN16	HG/T-20592, EN1092-1	DN50, DN80, DN100	
	2	PN25/PN40	HG/T-20592, EN1092-1	DN50, DN80, DN100	
	3	PN63	HG/T-20592, EN1092-1	DN50, DN80, DN100	
	4	PN100	HG/T-20592, EN1092-1	DN50, DN80, DN100	※
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch	
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch	
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch	※
Note: The maximum static pressure or overload depends on the flange pressure class					
Flange material	6	316 SS			
Blind sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)			
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)			
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)			
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)			
Note: For details about FM, M, RJ faces, please consult MICROSENSOR					
Insertion sleeve diameter		Applicable flange diameter			
	4	46mm	DN50, 2inch		
	6	66mm	DN80, 3inch		
	7	77mm	DN100, 4inch		
Insertion sleeve length	A	50mm			
	B	100mm			
	C	150mm			
	D	200mm			
Insertion sleeve material	6	316 SS			
Wetted parts material		Blind	Insertion sleeve	Measuring diaphragm	
	6A	316 SS	316 SS	316L	
	6B	316 SS	316 SS	Hastelloy C-276	
	6C	316 SS	316 SS	Tantalum	
	6D	316 SS	316 SS	Titanium	
	6E	316 SS	316 SS	Monel	
High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40°C ~200°C ,ambient temperature: -40°C ~85°C)			
	H	High temperature silicone oil (Medium temperature:0°C ~315°C ,ambient temperature:0°C ~85°C)			
	L	Low temperature silicone oil (Medium temperature:-55°C ~120°C ,ambient temperature:-40°C ~85°C)			
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)			
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifies: LRL - URL, display unit*			

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Process connection accessories	/D1	T-shaped adapter (M) M20×1.5 and vent tube Φ14mm×2mm×30mm, 316 SS, ×1	
	/D2	Waist-shaped adapter, 1/2-14NPT (F), 316 SS, ×1	
Verification report	/Q1	Provide the MICROSENSOR standard verification report according to the range, default linear output Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Product is shipped with an identification plate Contract specifics: Identification number, not exceeding 16 characters	
Integrated valve manifold	/VT	Pressure transmitter is factory assembled with MICROSENSOR valve manifold See attachment for order guide of valve manifold Contract specifics: Complete model of MICROSENSOR valve manifold*	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD5	PN25/PN40 (class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100 (class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
Note: The test pressure is the same as the flange pressure class			
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side (8μ)	 ※
	/J4	Double diaphragms on high and low pressure sides (8μ)	※
Diaphragm spraying	/T3	High pressure side single flange PTFE coating	※
	/T9	High pressure side single flange PFA coating	※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	

Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)
Warranty period	/Y2	2-year warranty
	/Y3	3-year warranty
	/Y5	5-year warranty
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.		
Example: MDM7000-LT-1HP1L-2A1S1-HM-2B14614A66AS/D1- 【CAL: 0-0.4bar】		

MDM7000-LT — ☐☐☐☐☐ — ☐ — HF — ☐☐☐☐☐☐☐☐☐☐

Body

Remote Fixed Flange Diaphragm



Item	Code	Description
MDM7000-LT	—	Monocrystalline Silicon Differential Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange)

Basic options

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	
	J	IECEX, Flameproof, IECEX CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	
	K	IECEX, Intrinsically safe, IECEX CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEX, Flameproof, Intrinsically safe	
Output signal	M	EAC, Explosion-proof, RU C-CN.AK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
	0 Without cable glands			
	A Single-ended with a flameproof metal plug	316 SS		
	1 M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
	2 Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEX standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.

Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C

Sensor module range	Nominal range	Minimum range	Lower (LRL)	Upper (URL)
2	0.4bar	0.1bar	-0.4bar	0.4bar
3	2.5bar	0.25bar	-2.5bar	2.5bar

Low pressure side wetted parts	Diaphragm	Flange block	Discharge valve/plug	Sealings
A	316L	316	316	FKM (-20°C ~120°C)
B	316L	316	316	Stainless steel frame PTFE(-40°C ~120°C)
E	316L	316	316	Modified FKM(-50°C ~120°C)
C	HC-276	316	316	FKM(-20°C ~120°C)
D	HC-276	316	316	Stainless steel frame PTFE(-40°C ~120°C)
F	HC-276	316	316	Modified FKM(-50°C ~120°C)
G	Tantalum	316	316	FKM(-20°C ~120°C) ※
H	Tantalum	316	316	Stainless steel frame PTFE(-40°C ~120°C) ※
I	Tantalum	316	316	Modified FKM(-50°C ~120°C) ※

Low pressure side clamp flange process connection	Specifications	Drain/vent valve position	Thread	Mounting method
2	Female 1/4-18NPT	Above the side of flange	7/16-20UNF (F)	Horizontal
3	Female 1/4-18NPT	Under the side of flange	7/16-20UNF(F)	Horizontal



Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)	※

Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo
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■ Diaphragm seal options - high pressure side

Diaphragm connection position	H	Differential pressure transmitter high pressure side
Diaphragm seal system code	F	Remote fixed flange

Flange standard	2	HG/T-20592
	1	EN1092-1
	5	HG/T-20615
	6	ANSI/ASME B16.5

Flange diameter		Applicable standard	
A	DN25	HG/T-20592, EN1092-1(Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)	※
J	DN40	HG/T-20592, EN1092-1	※
B	DN50	HG/T-20592, EN1092-1	
C	DN80	HG/T-20592, EN1092-1	
D	DN100	HG/T-20592, EN1092-1	

	1	1inch	HG/T-20615, ANSI/ASME B16.5 (Recommended diaphragm materials: 316L or HC. For others, please consult MICROSENSOR)	※		
	2	2inch	HG/T-20615, ANSI/ASME B16.5			
	3	3inch	HG/T-20615, ANSI/ASME B16.5			
	4	4inch	HG/T-20615, ANSI/ASME B16.5			
Pressure class			Applicable standard	Applicable flange diameter		
	1	PN10/PN16	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
	2	PN25/PN40	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
	3	PN63	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
	4	PN100	HG/T-20592, EN1092-1	DN25, DN40, DN50, DN80, DN100		
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch		
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch		
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	1inch, 2inch, 3inch, 4inch		
Note: The maximum static pressure or overload depends on the flange pressure class						
Flange material	6	316 SS				
Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)				
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)				
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)				
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)				
Note: For details about FM, M, RJ faces, please consult MICROSENSOR						
Wetted parts material		Flange	Measuring diaphragm			
	6A	316 SS	316L			
	6B	316 SS	Hastelloy C-276			
	6C	316 SS	Tantalum	※		
	6D	316 SS	Titanium	※		
	6E	316 SS	Monel	※		
Capillary connection location	K	Rear connection				
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath				
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath				
Capillary length		Applicable flange diameter				
		DN25/1inch	DN40	DN50/2inch	DN80/3inch	DN100/4inch
	1	1m				
	2	2m				
	3	3m				
	4	4m				
	5	5m				
	6	6m				※
	7	7m				※
	8	8m				※
	9	9m				※
	A	10m				※
Note: For high and low-temperature conditions with capillary lengths of 6m-10m, flanges of DN80 or above are recommended; the part beyond the length will be selected according to the next level of meters.						

High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature : -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)	※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifics: LRL - URL, display unit*	

■ Options-Certificates		Description (Detailed specifications as following, multiple options or null)	
Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Mounting bracket accessories	/G7	L-shaped brackets (sq), 316 SS	
	/G8	L-shaped brackets (sq), Q235 carbon steel	
Process connection accessories	/D1	T-shaped adapter (M) M20×1.5 and vent tube Φ14mm× 2mm× 30mm, 30, 316 SS, ×1	
	/D2	Waist-shaped adapter, 1/2-14NPT (F), 316 SS, ×1	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters	
Integrated valve manifold	/VT	Pressure transmitter is factory assembled with MICROSENSOR valve manifold See attachment for order guide of valve manifold Contract specifics: Complete model of MICROSENSOR valve manifold*	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD5	PN25/PN40 (class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100 (class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※

Note: The test pressure is the same as the flange pressure class

HART configuration	/H5	HART5 configuration, default		
	/H7	HART7 configuration		
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side (8μ)		※
	/J4	Double diaphragms on high and low pressure sides (8μ)		※
Diaphragm spraying	/T1	High pressure side single flange PTFE coating		※
	/T7	High pressure side single flange PFA coating		※
Diaphragm sticking	/PFA	The diaphragm is stuck with PFA film, applicable to non-vacuum situations (pressure ≥ 0)		※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts		※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)				
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry		
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.		
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.		
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)		
Warranty period	/Y2	2-year warranty		
	/Y3	3-year warranty		
	/Y5	5-year warranty		
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.				
Example: MDM7000-LT-1HP1L-2A1S1-HF-2B1614AKU3S/D1- 【CAL: 0-0.4bar】				

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	Body	Remote Fixed Flange Insertion Sleeve Diaphragm
Item	Code	Description
MDM7000-LT	—	Monocrystalline Silicon Differential Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange Insertion Sleeve)

**Basic options**

Application of hazardous area	1	China, Flameproof, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof, Intrinsically safe	
	5	China, Flameproof, Dust explosion-proof, Intrinsically safe	
	A	CSA, Flameproof, CSA 25CA80192884X Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db	※ 
	B	CSA, Intrinsically safe, CSA24CA80156531X Class I, Division 1, Groups A, B, C and D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga	
	C	CSA, Flameproof, Intrinsically safe	※
	E	ATEX, Flameproof, CSANe 25ATEX1107X II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db	※
	F	ATEX, Intrinsically safe, CSANe 24ATEX1178X II 1G Ex ia IIC T4 Ga	
	G	ATEX, Flameproof, Intrinsically safe	※
	J	IECEx, Flameproof, IECEx CSA 25.0059X Ex db IIC T6 Gb, Ex tb IIIC T80°C Db	※ 
	K	IECEx, Intrinsically safe, IECEx CSA 24.0045X Ex ia IIC T4 Ga	
	L	IECEx, Flameproof, Intrinsically safe	※
	M	EAC, Explosion-proof, RU C-CN.AK58.B.05884/24 1Ex db IIC T6 Gb, 0Ex ia IIC T4 Ga	
	0	Non-hazardous area	
Output signal	H	4mA~20mA DC, HART	
	B	4mA~20mA DC, HART, Bluetooth	
	R	Modbus-RS485	

Note: The default is HART5, please select in Options-Specifications if HART7 is required.

Case	S	316L Stainless steel case with two outlet ports (F) M20×1.5	
	U	316L Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case (Polyester resin coating) with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case(Polyester resin coating) with two outlet ports (F) 1/2NPT	

Note: The outlet port, (F) 1/2NPT, without cable glands. The explosion-proof conduit is directly connected. The default material for the nameplate is 304 stainless steel. Please consult MICROSENSOR for other materials.

Waterproof/explosion-proof connector	Specification	Material	Applicable wire diameter	IP rating
0	Without cable glands			
A	Single-ended with a flameproof metal plug	316 SS		
1	M20×1.5 waterproof connector, with plug	PVC	6mm~12mm	IP67
2	Non-flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~8mm	IP67

3	Flameproof adapter M20x1.5 (M) to 1/2 NPT (F) , with plug	316 SS	6mm~12mm	IP67
4	Flameproof adapter M20x1.5 (M) to M20x1.5 (F) , with plug	316 SS	6mm~12mm	IP67
5	Flameproof adapter M20x1.5 (M) to G1/2 (F) , with plug	316 SS	6mm~12mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEX standards.Flameproof adapter obtained CCC certificate. Please contact MICROSENSOR if double sealing is required.

Display	N	Without LCD display, explosion proof type -40°C ~70°C , non-explosion proof type -50°C ~85°C
	L	With LCD display, explosion proof type/ non-explosion proof type -40°C ~70°C

Sensor module range	Nominal range	Minimum range	Lower (LRL)	Upper (URL)
2	0.4bar	0.1bar	-0.4bar	0.4bar
3	2.5bar	0.25bar	-2.5bar	2.5bar

Low pressure side wetted parts	Diaphragm	Flange block	Discharge valve/plug	Sealings	
A	316L	316	316	FKM(-20°C ~120°C)	
B	316L	316	316	Stainless steel frame PTFE(-40°C ~120°C)	
E	316L	316	316	Modified FKM(-50°C ~120°C)	
C	HC-276	316	316	FKM(-20°C ~120°C)	
D	HC-276	316	316	Stainless steel frame PTFE(-40°C ~120°C)	
F	HC-276	316	316	Modified FKM(-50°C ~120°C)	
G	Tantalum	316	316	FKM(-20°C ~120°C)	※
H	Tantalum	316	316	Stainless steel frame PTFE(-40°C ~120°C)	※
I	Tantalum	316	316	Modified FKM(-50°C ~120°C)	※

Low pressure side clamp flange process connection	Specifications	Drain/vent valve position	Thread	Mounting method	
2	Female 1/4-18NPT	Above the side of flange	7/16-20UNF (F)	Horizontal	
3	Female 1/4-18NPT	Under the side of flange	7/16-20UNF(F)	Horizontal	

Low pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40°C ~200°C , ambient temperature: -40°C ~85°C)			
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)			
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)			
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature: -40°C ~85°C)			

Clamp flange fastener	1	Bolts, nuts, and other components, 35CrMo
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■ Diaphragm seal options - high pressure side

Diaphragm connection position	H	Differential pressure transmitter high pressure side
Diaphragm seal system code	E	Remote fixed flange insertion sleeve

Flange standard	2	HG/T-20592
	1	EN1092-1
	5	HG/T-20615
	6	ANSI/ASME B16.5

Flange diameter		Applicable standard
	B	DN50 HG/T-20592, EN1092-1
	C	DN80 HG/T-20592, EN1092-1
	D	DN100 HG/T-20592, EN1092-1

	2	2inch	G/T-20615, ANSI/ASME B16.5				
	3	3inch	HG/T-20615, ANSI/ASME B16.5				
	4	4inch	HG/T-20615, ANSI/ASME B16.5				
Pressure class			Applicable standard	Applicable flange diameter			
	1	PN10/PN16	HG/T-20592, EN1092-1	DN50, DN80, DN100			
	2	PN25/PN40	HG/T-20592, EN1092-1	DN50, DN80, DN100			
	3	PN63	HG/T-20592, EN1092-1	DN50, DN80, DN100			
	4	PN100	HG/T-20592, EN1092-1	DN50, DN80, DN100			
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch			
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch			
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch			
Note: The maximum static pressure or overload depends on the flange pressure class							
Flange material	6	316 SS					
Flange sealing face	1	RF Raised face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class 150~Class 2500)					
	A	FM Female face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)					
	B	M Male face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN10~PN160 or Class300~Class2500)					
	C	RJ Ring joint face (Flange diameter DN25~DN100 or 1in~4in, flange pressure PN63~PN160 or Class150~Class2500)					
Note: For details about FM, M, RJ faces, please consult MICROSENSOR							
Insertion sleeve diameter			Applicable flange diameter				
	4	46mm	DN50, 2inch				
	6	66mm	DN80, 3inch				
	7	77mm	DN100, 4inch				
Insertion sleeve length	A	50mm					
	B	100mm					
	C	150mm					
	D	200mm					
Insertion sleeve material	6	316 SS					
Wetted parts material		Flange	Measuring diaphragm				
	6A	316 SS	316L				
	6B	316 SS	Hastelloy C-276				
	6C	316 SS	Tantalum				
	6D	316 SS	Titanium				
	6E	316 SS	Monel				
Capillary connection location	K	Rear connection					
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath					
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath					
Capillary length		Insertion sleeve diameter	Adaptable measuring diaphragm				
			6A-316L	6B-HastelloyC-276	6C-Tantalum		
			6D-Titanium	6E-Monel			
		S-46mm					
	1	1m	M-66mm				
		L-77mm					
		S-46mm					
	2	2m	M-66mm				
		L-77mm					

3	3m	S-46mm	
		M-66mm	
		L-77mm	
4	4m	S-46mm	
		M-66mm	
		L-77mm	
5	5m	S-46mm	
		M-66mm	
		L-77mm	
6	6m	M-66mm	※
		L-77mm	※
7	7m	M-66mm	※
		L-77mm	※
8	8m	M-66mm	※
		L-77mm	※
9	9m	M-66mm	※
		L-77mm	※
A	10m	M-66mm	※
		L-77mm	※

Note: For high and low-temperature conditions with capillary lengths of 6m-10m, flanges of DN80 or above are recommended.; the part beyond the length will be selected according to the next level of meters.

High pressure side fill oil	S	Normal temperature silicone oil (Medium temperature: -40°C ~200°C , ambient temperature: -40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , ambient temperature: 0°C ~85°C)	
	L	Low temperature silicone oil (Medium temperature: -55°C ~120°C , ambient temperature: -40°C ~85°C)	※
	E	Fluorocarbon oil 2 (Medium temperature: -55°C ~85°C , ambient temperature:-40°C ~85°C)	※
Factory calibration range	CAL	Provides MICROSENSOR standard verification report according to the range, and the default linear output Contract specifics: LRL - URL, display unit*	

Options-Certificates

Description (Detailed specifications as following, multiple options or null)

Approvals	/CS1	CCS, China Classification Society, XA25PTB00010	
	/CS2	DNV, Det Norske Veritas, TAA00000Y1	
	/CS3	BV, Bureau Veritas, 77759/A0 BV	
	/CS4	ABS, American Bureau of Shipping, 24-2536413-PDA	
	/CS5	LR, Lloyd's Register, LR2520052TA	
	/CS6	KR, Korean Register, NAJ50160-AE001	
	/CS7	NK, Nippon Kaiji Kyokai, TA24376M	
	/CS8	RS, Russian Maritime Register of Shipping, 24.44.01.01398.266	
Metrological certification (Russia & CIS)	/PAC	Pattern Approval Certificate of Measuring Instruments, Russia, 94159-24	
	/PBY	Pattern Approval Certificate of Measuring Instruments, Belarus, 18634	

■ Options-Specifications		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	※
Mounting bracket accessories	/G7	L-shaped brackets (sq), 316 SS	
	/G8	L-shaped brackets (sq), Q235 carbon steel	
Process connection accessories	/D1	T-shaped adapter (M) M20×1.5 and vent tube Φ14mm× 2mm× 30mm, 316 SS, ×1	
	/D2	Waist-shaped adapter, 1/2-14NPT (F), 316 SS, ×1	
Verification report	/Q1	Provide data according to the customer's template requirements. Contract specifics: LRL - URL, display unit*	※
Damping time setting	/ST	Adjustable range 0s~100s, default 0s Contract specifics: Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA (HART5), 21mA (HART7)	
	/WL	Low alarm current value, 3.8mA (HART5), 3.7mA (HART7), default	
Identification plate	/PT	Supplied with 316L SS hanging nameplate Contract specifics: Identification number, not exceeding 16 characters	
Integrated valve manifold	/VT	Pressure transmitter is factory assembled with MICROSENSOR valve manifold See attachment for order guide of valve manifold Contract specifics: Complete model of MICROSENSOR valve manifold*	
Leakage test report	/QD4	PN10/PN16 (class150), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD5	PN25/PN40 (class300), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD6	PN63, Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
	/QD7	PN100 (class600), Nitrogen (N ₂) or air, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report	※
Note: The test pressure is the same as the flange pressure class			
HART configuration	/H5	HART5 configuration, default	
	/H7	HART7 configuration	
Diaphragm with gold plated	/J3	Single diaphragm on high pressure side (8μ)	
	/J4	Double diaphragms on high and low pressure sides (8μ)	
Diaphragm spraying	/T3	High pressure side single insertion sleeve PTFE coating	※
	/T9	High pressure side single insertion sleeve PFA coating	※
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	※
Note: Select this item; fluorocarbon oil is needed in oxygen environments (code: D, E)			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
Language	/LE	English nameplate, operation manual, certificate of conformity, factory inspection report.	
	/LR	Russian nameplate, operation manual, certificate of conformity, factory inspection report.	
Delivery service	/XM	Additional acceptance documents (to be specified in the order), in addition to standard supply (product certificate, operation manual, factory verification report)	
Warranty period	/Y2	2-year warranty	
	/Y3	3-year warranty	
	/Y5	5-year warranty	
*Note: The specifications required for these options should be specified in the contract. Products with ※ have longer delivery times.			
Example: MDM7000-LT-1HP1L-2A1S1-HE-2B1614A6AKU3S/G1- 【CAL: 0-0.4bar】			

Appendix Anticorrosive Material Reference Table

A—Good B—Available C—Poor ×—Not recommend

Classification	Medium	Concentration /%	Temperature /°C	Carbon steel	316/316L	Hastelloy C	Monel	Tantalum
Inorganic acid	Vitriol	5	25	×	A	A	A	A
			100	×	C	B	B	A
		10	25	×	C	A	A	A
			100	×	C	B	B	A
		20	25	C	B	A	C	A
			100	×	C	C	×	A
		60	25	C	C	A	C	A
			100	×	×	C	×	A
		80	25	B	A	A	C	A
			100	C	C	C	×	B
		98	25	B	B	A	C	A
			100	×	×	A	×	A
	Fuming sulfuric acid	25	25	C	C	B	C	C
			100	×	C	B	C	C
	Nitric acid	10	25	C	A	B	C	A
			100	×	B	C	C	A
		30	25	C	A	B	C	A
			100	×	B	C	C	A
		68	25	C	A	A	×	A
			100	×	×	×	×	A
	Fuming nitric acid	25	25	×	×	×	×	A
	Hydrochloric acid	5	25	×	C	B	C	A
			100	×	C	C	C	A
		10	25	×	C	B	C	A
			100	×	C	C	C	A
		20	25	×	C	B	C	A
			100	×	C	C	C	A
		35	25	×	C	B	C	A
			100	×	C	C	C	A
	Phosphoric acid	20	25	C	A	A	C	A
			100	×	A	A	C	A
		30	25	C	A	A	C	A
			100	C	B	A	C	A
		50	25	C	A	A	C	A
			100	C	B	A	C	A
		70	25	C	A	A	C	A
			100	C	C	B	C	A
		85	25	C	A	A	C	A
			100	C	C	C	C	A
	Hydrofluoric acid	5	25	C	C	C	A	C
			100	C	C	C	B	C
		40	25	C	C	A	A	×
			100	×	C	C	A	×
		90	25	B	C	B	×	×
			100	C	C	×	×	×
	Hydrobromic acid	<60	25	C	C	×	C	A
			100	A	C	×	C	A

Classification	Medium	Concentration /%	Temperature /°C	Carbon steel	316/316L	Hastelloy C	Monel	Tantalum	
Inorganic acid	Hydrocyanic acid		25	B	B	B	B	A	
			100	A	B	B	B	A	
	Argon-sulfuric acid		25	C	B	B	C	A	
			100	×	B	B	C	A	
	Carbonic acid	10	25	B	B	A	A	A	
			100	×	C	×	A	A	
		100	25	B	A	A	B	A	
			100	×	A	×	A	A	
	Carbonic acid	< 50	25	C	C	B	C	A	
			100	×	C	B	C	A	
		> 50	25	A	C	B	C	A	
			100	×	C	×	C	A	
	Chloric acid	10	25	C	C	B	C	A	
	100		×	C	×	C	A		
	Hypochlorous acid		25	C	C	A	C	A	
			100	×	C	×	C	A	
	Boric acid		0~10	25	C	A	A	B	A
				100	C	A	A	B	A
	Chlorosulfonic acid	10	25	C	C	B	C	A	
			100	C	C	×	C	A	
		100	25	B	B	A	C	A	
			100	×	B	A	C	A	
	Chromium water	20	25	×	×	A	×	A	
	100		×	×	×	×	A		
	Aqua regia		25	C	C	C	C	A	
			100	C	C	C	C	×	
Organic acid	Formic acid	10	25	C	×	A	×	A	
			100	×	×	A	C	A	
		100	25	×	×	A	C	A	
			100	×	×	A	C	A	
	Acetic acid	<100	25	C	A	A	C	A	
			100	×	A	A	C	A	
		100	25		B	A	B	A	
			100		B	A	B	A	
	Propionic acid	60~90	25	C	B	A	B	A	
	100			B	A	B	A		
	Butyric acid		25	C	A	A	B	A	
	100			A	A	B	A		
	Crotonic acid		25	C	B	B	B	A	
	100			B	B	B	A		
	Stearic acid		25		A	A	B	A	
	100		C	A	A	×	A		
	Fatty acid		25	×	A	A	B	A	
	100		×	A	A	B	A		
	Glycolic acid		25	×	B	B	B	A	
	100		×	B	B	B	A		
	Pyroligneous acid	10	25	C	A	B	B	A	
			100	×	A	×	B	A	
		100	25	A	B	A	B	A	
			100	×	×	×	B	A	
	Monochloro-acetic acid	<70	25	C	C	B	B	A	
			100	×	C	B	B	A	
		100	25	B	B	A	B	A	
			100	×	×	A	B	A	

Classification	Medium	Concentration I/%	Temperature I/°C	Carbon steel	316/316L	Hastelloy C	Monel	Tantalum
Inorganic acid	Lactic acid	<20	25	C	A	B	C	A
			100	×	B	B	C	A
		>70	25	×	A	B	B	A
			100	×	B	B	B	A
	Oxalic acid	10	25	×	B	B	B	A
			100	×	C	B	B	B
	Succinic acid	<50	25	B	B	B	B	A
			100	B	B	B	B	A
		100	25	B	B	B	B	A
			100	B	B	B	B	A
	Benzoic acid	<70	25	C	B	A	B	A
			100	×	B	A	B	A
	Citric acid	0~100	25	C	A	A	B	A
			100	×	A	A	B	A
	Salicylic acid		25	C	B	B	B	A
			100	C	B	×	B	A
	Aminobenzoic acid		25	B	B	B	B	A
			100	B	B	B	B	A
	Benzene sulfonic acid	0~100	25	C	B	B	B	A
			100	C	×	B	B	A
		Naphthalene sulfonic acid	25	C	B	A	B	C
			100	×	×	A	B	C
Bases and hydroxides	Sodium hydroxide	10	25	A	A	A	A	C
			100	B	A	A	A	C
		20	25	A	A	B	A	A
			100	B	A	B	B	B
		40	25	A	A	B	A	C
			100	B	A	B	B	C
	potassium hydroxide	70	25	B	A	A	A	C
			100	C	B	A	A	C
		<60	25	B	A	B	A	C
			100	B	A	B	A	C
		100	25	B	A	B	A	C
			100	×	A	×	A	C
	Ammonium hydroxide	0~100	25	A	A	A	A	×
			100	B	B	A	A	×
	Calcium hydroxide	<50	25	B	A	A	B	A
			100	B	A	A	B	A
	Magnesium hydroxide	100	25	B	A	A	A	A
			100	B	A	A	A	A
	Lithium hydroxide	10	25	B	B	B	B	×
			100	B	B	B	B	×
	Aluminium hydroxide	10	25	B	A	B	B	A
			100	B	A	B	B	A
Salt	Ammonium sulfate	<40	25	×	B	B	B	A
			100	×	B	B	B	A
	Ammonium nitrate	10	25	A	A	B	C	A
			100	A	A	B	C	A
	Ammonium carbonate	100	25	B	B	B	B	A
			100	×	B	B	B	A
	Ammonium chloride	<40	25	C	A	A	B	A
			100	C	A	A	B	A
	Ammonium acetate	0~100	25	B	×	B	B	A
			100	×	×	B	B	A
			25	A	A	A	A	×
			100	×	A	A	A	×

Classification	Medium	Concentration /%	Temperature /°C	Carbon steel	316/316L	Hastelloy C	Monel	Tantalum
Salt	Ammonium sulfite	<30	25	C	B	B	C	A
			100	x	B	B	C	A
	Sodium sulfate	<40	25	B	x	x	A	A
			100	B	x	B	B	A
	Sodium carbonate	10	25	A	A	A	A	A
			100	A	A	A	A	A
			25	A	B	B	B	A
	Sodium hypochlorite	<20	100	A	B	B	B	A
			25	B	C	B	C	A
	Sodium chloride	<30	100	x	C	B	C	A
			25	C	B	B	x	A
	Sodium bicarbonate	<30	100	C	A	B	B	A
			25	C	C	B	B	A
	Sodium nitrite	<60	100	A	A	A	B	A
			25	A	A	A	B	A
	Sodium benzoate	<60	100	A	A	B	A	A
			25	B	B	B	B	B
	Potassium sulfate	<20	100	B	B	B	B	B
			25	B	A	A	A	A
	Potassium nitrate	<100	100	C	A	A	A	A
			25	B	B	B	B	A
	Potassium carbonate	<50	100	x	x	x	B	A
			25	x	B	B	B	x
	Potassium perchlorate	10	100	x	B	B	B	C
			25	C	B	B	B	x
	Potassium chloride	<30	100	B	B	B	B	x
			25	B	A	B	B	A
	Potassium bromide	<30	100	x	A	B	B	A
			25	x	B	B	B	A
	Potassium chromate	<30	100	x	B	B	B	A
			25	B	B	A	B	A
	Potassium permanganate	10	100	B	B	A	B	A
			25	B	B	B	B	x
	Aluminium sulfate	<50	100	C	A	A	B	A
			25	x	A	A	C	A
	Aluminium chloride	0~100	100	C	B	A	A	A
			25	x	x	A	C	A
	Magnesium sulfate	<50	100	A	A	A	A	A
			25	A	A	A	A	A
	Magnesium nitrate	<40	100	B	B	B	B	A
			25	B	B	B	B	A
	Magnesium chloride	10	100	x	B	A	B	A
			25	x	B	A	B	A
	Calcium sulfate	100	100	B	A	B	B	A
			25	B	A	B	B	A
	Calcium carbonate	100	100	B	B	B	B	A
			25	C	B	B	B	A
	Calcium phosphate	10	100	B	B	B	B	A
			25	B	B	B	B	A
	Calcium chloride	<80	100	A	B	A	A	A
			25	A	B	A	A	A
	Ferric chloride	30	100	C	C	B	C	A
			25	x	C	C	C	A

Classification	Medium	Concentration /%	Temperature /°C	Carbon steel	316/316L	Hastelloy C	Monel	Tantalum
Elements, gases and inorganic compounds thereof	Chlorine	Dry gas	25	B	B	A	B	A
			100	B	B	B	B	A
		Wet gas	25	C	C	B	C	A
			100	C	C	C	C	A
	Chlorine water	Saturation	RT	×	C	B	B	A
			25	C	C	A	A	A
	Bromine	Dry	100	C	C	B	A	A
			25	C	×	A	C	A
		Wet	100	C	×	A	C	A
			25	B	A	A	C	×
	Phosphorus		100		A	×	C	×
			370	A	A	A	A	A
	Sodium Hydrogen chloride	100	25	A	A	A	A	A
			100	A	A	A	A	A
	Sulfur dioxide	10	25	C	A	A	C	×
			100	C	A	A	C	×
		90~100	25	A	B	B	C	×
			100	B	B	B	C	×
	Phosphorus trichloride	Dry	25	A	A	A	A	A
			100	A		A	A	A
	Arsenic trichloride	10	25	C	C	B	C	×
			100	C	C	B	C	×
	Hydrogen peroxide	10	25	B	A	B	B	×
			100	B	A	B	B	×
Alcohol, aldehydes, ethers, ketones, lipids	Carbinol		25	B	A	A	A	A
			100	A	A	A	A	A
	Ethyl alcohol		25	A	A	A	A	A
			100	A	A	A	A	A
	Formaldehyde	,70	25	C	A	B	A	A
			100	C	A	B	A	A
	Acetaldehyde		25	A	A	A	A	A
			100	A	A	×	B	A
	(2) methyl ether		25	B	B	B	B	A
			100	B	B	B	B	A
	(2) Ether		25	A	A	B	A	A
			100	B	A	B	A	A
	Acetone		25	B	A	A	A	A
			100	B	A	A	A	A
	Butanone	<100	25	B	B	B	B	A
			100	B	B	B	B	A
	Methyl formate	<30	25	B	B	B	B	B
			100	B	B	B	B	B
	Ethyl acetate		25	A	A	B	A	A
			100	B	B	B	A	A
Hydrocarbons and petroleum products	Methane		25	A	A	A	A	A
			100	A	A	A	A	A
	Benzene		25	B	B	B	A	A
			100	B	B	B	A	A
	Toluene		25	A	A	A	A	A
			100	A	A	A	A	A
	Phenol	90	25	A	B	A	B	A
			100	×	B	A	B	A
	Acrylonitrile		25	A	A	A	A	A
			100	A	A	A	A	A

Classification	Medium	Concentration /%	Temperature /°C	Carbon steel	316/316L	Hastelloy C	Monel	Tantalum
Hydrocarbons and petroleum products	Urea	<50	25	B	B	B	B	A
			100	C	B	B	B	A
	Nitroglycerin		25	A	A	A	A	A
			100	x	A	x	x	A
	Nitrotoluene		25	A	A	B	B	A
			100	A	A	B	B	A
Another	Sea		25	C	A	A	A	A
			80	C	A	A	x	A
	Salt water		25	B	B	A	A	A
			80	x	B	A	x	A
Mixture	35%HCL+6 5%HNO3		25	x	x	x	x	A
	90%H2SO4 +10%HNO3		25	x	x	x	x	A
	70%H2SO4 +30%HNO3		RT	x	x	x	x	A
	50%H2SO4 +50%HNO3		RT	x	x	x	x	A



EU DECLARATION OF CONFORMITY

- 1) NO: MK2025-MDM7000
- 2) Issuer's name: MICRO SENSOR CO., LTD.
 Issuer's address: No.18 Yingda Road, Weibin District, Baoji City,
Shaanxi Province,China.
- 3) This declaration of conformity is issued under the sole responsibility of the manufacturer.
- 4) Object of the declaration: Pressure transmitters (MDM7000)
 Ex certificate: IECEX CSA 25.0059X
CSANe 25ATEX1107X
 Ex marking: Ex db IIC T6 Gb/Ex tb IIIC T80°C Db



II 2G Ex db IIC T6 Gb/II 2D Ex tb IIIC T80°C Db

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation.

References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared

ATEX Directive: 2014/34/EU

Harmonised standards: IEC 60079-0:2017
IEC 60079-1:2011
IEC 60079-31:2017
EN IEC 60079-0:2018
EN IEC 60079-1:2014
EN IEC 60079-31:2024

- 5) Signed for and on behalf of:

MICRO SENSOR CO., LTD.
No. 18 Yingda Road, Weibin District, Baoji City, Shaanxi Province, China.

(Place and date of issue)

(Head of quality department)

2025.07.28

(Date)

www.microsensorcorp.com



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