

# MDM7000-DGP/DAP

Smart Pressure Transmitter- Double Clamp Seals



Note: Some certificates are still pending.

## Range

| Model        | Nominal Range | Min. Range | Lower (LRL) | Upper (URL) | Overload |
|--------------|---------------|------------|-------------|-------------|----------|
| DGP Gauge    | 60mbar        | 2mbar      | -60mbar     | 60mbar      | 160bar   |
|              | 0.4bar        | 4mbar      | -0.4bar     | 0.4bar      | 160bar   |
|              | 2.5bar        | 25mbar     | -1bar       | 2.5bar      | 160bar   |
|              | 10bar         | 0.1bar     | -1bar       | 10bar       | 160bar   |
|              | 30bar         | 0.3bar     | -1bar       | 30bar       | 160bar   |
|              | 100bar        | 1bar       | -1bar       | 100bar      | 200bar   |
|              | 400bar        | 4bar       | -1bar       | 400bar      | 800bar   |
| DAP Absolute | 0.4bar        | 0.2bar     | 0bar        | 0.4bar      | 160bar   |
|              | 2.5bar        | 0.5bar     | 0bar        | 2.5bar      | 160bar   |
|              | 10bar         | 2bar       | 0bar        | 10bar       | 160bar   |
|              | 30bar         | 6bar       | 0bar        | 30bar       | 160bar   |
|              | 100bar        | 10bar      | 0bar        | 100bar      | 200bar   |

LRV/URV setting: the lower limit value (LRV) and upper limit value (URV) are achieved between the upper and lower limits. If  $IURV \geq ILRV$ ,  $IURV$  must be larger than the minimum pressure; if  $IURV \leq ILRV$ ,  $ILRV$  must be larger than the minimum pressure.

## Accuracy

1 Stated reference accuracy include best fit straight line(BFSL), hysteresis, and repeatability as per the standard and reference test conditions. Calibration temperature: 20°C ±5°C, based on Zero value.

2 Total performance is based on combined errors of indoor temperature accuracy, ambient temperature effects and static pressure effects, calculated by the following formula: Total performance =  $\pm \sqrt{(E1)^2 + (E2)^2 + (E3)^2}$ ;

E1=Indoor temperature accuracy E2=Ambient temperature effects E3=Static pressure effects

|     |      |                           |                                              |
|-----|------|---------------------------|----------------------------------------------|
| DGP | TD≤5 | ±0.075%SPAN               | 60mbar*                                      |
|     |      | ±0.05%SPAN                | 0.4bar, 2.5bar, 10bar, 30bar, 100bar, 400bar |
|     | TD>5 | ± (0.001+0.0148TD) %SPAN  | 60mbar*                                      |
|     |      | ± (0.0025+0.0035TD) %SPAN | 0.4bar, 2.5bar, 10bar, 30bar, 100bar, 400bar |
| DAP | TD≤5 | ±0.2%SPAN                 | 0.4bar                                       |
|     |      | ±0.1%SPAN                 | 2.5bar, 10bar, 30bar, 100bar                 |
|     | TD>5 | ± (0.0025+0.035TD) %SPAN  | 0.4bar                                       |
|     |      | ± (0.0275+0.0195TD) %SPAN | 2.5bar, 10bar, 30bar, 100bar                 |

**Note:** ① 60mbar output accuracy of ±0.075% SPAN is only available for TD≤2.

② TD represents the turn down ratio, TD= Maximum range / Current range, [Maximum range = URL (range starts with 0, same as factory calibration range); Current range = SPAN (equivalent to |URV-LRV|)].

## Specifications

|                                 |                                                                                                                            |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| DGP Accuracy                    | ±0.075%、±0.1%、±0.2%URL                                                                                                     |
| DAP Accuracy                    | ±0.1%、±0.2%URL                                                                                                             |
| DGP Range                       | 60mbar~400bar, see the specifications for details                                                                          |
| DAP Range                       | 0.4bar~100bar, see the specifications for details                                                                          |
| Turn down ratio                 | 100:1                                                                                                                      |
| Long-term stability             | ±0.1% Span/10 years                                                                                                        |
| DGP Ambient temperature effects | ± (0.075+0.0375TD) %/10°C of Span                                                                                          |
| DAP Ambient temperature effects | ± (0.085+0.0625TD) %/10°C of Span                                                                                          |
| Voltage effects                 | When the power supply voltage changes within 18.3V~44V DC, its zero point and range change should not exceed ±0.005% URL/V |
| Mounting position effects       | Less than 4mbar at any position, which can be corrected by PV(primary value)=0 reset                                       |
| Vibration effects               | < 0.1% SPAN as per GB/T18271.3/IEC61298-3                                                                                  |
| Output signal                   | 4mA~20mA DC, HART                                                                                                          |
| IP rating                       | IP67, IP66                                                                                                                 |
| Weight                          | About : 4kg (without mounting bracket and process connection accessories)                                                  |

## Environmental Conditions

| Items                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Conditions                                                    |                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------|
| Operating temperature <sup>①</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Without LCD display: -50℃ ~85℃ ; with LCD display: -40℃ ~70℃  |                                          |
| Storage temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Without LCD display: -50℃ ~100℃ ; with LCD display: -40℃ ~85℃ |                                          |
| Sensor Operating temperature <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                              | -40℃ ~105℃                                                    |                                          |
| Medium temperature <sup>③</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Silicone oil filled: -40℃ ~200℃                               | Low temperature silicone oil: -55℃ ~120℃ |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Fluorocarbon oil 2: -55℃ ~85℃                                 |                                          |
| Operating humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5%RH~100%RH@40℃                                               |                                          |
| <b>Note:</b> <sup>①</sup> Short pipeline explosion-proof products shall have a surface temperature ≤80℃. If uncertain, medium temp. shall be ≤T6/T80℃.<br><sup>②</sup> If the medium temperature exceeds this range, heat dissipation accessories may be added. Please consult the MICROSENSOR for details.<br><sup>③</sup> The medium temperature in contact with the sensor diaphragm must be within the range of the selected oil filling, O-ring, and sensor operating conditions. |                                                               |                                          |

## Power Supply and Load Requirements

|                       |                                                                               |
|-----------------------|-------------------------------------------------------------------------------|
| Items                 | Conditions                                                                    |
| Power supply voltage  | HART communication protocol/RS 485: 18.3V~44V DC <sup>①</sup>                 |
|                       | Intrinsically safe HART communication protocol: 18.3V~30V DC                  |
| Load resistance       | 0Ω~1476Ω <sup>②</sup> for operation mode;<br>250Ω~800Ω for HART communication |
| Transmission distance | <1000m                                                                        |
| Power consumption     |                                                                               |
| 4mA~20mA              | ≤500mW@24V DC, 20.8mA                                                         |

**Note:** <sup>①</sup> Non intrinsically safe power supply voltage can be selected as 13V. Please consult engineers for details.

<sup>②</sup> 1476Ω= (44V-13V) /21mA

**R (Ω) Load resistance**

**1476**

**800**

**250**

**0**

**13**

**18.3**

**30**

**44**

**U(V)**

**HART communication range**

$R = \frac{U - 13}{0.021}$

## EMC Effects

| SN                                                                                                                                                                                                                                                                                                                 | Test items                                                           | Basic Standards           | Test Conditions                                       | Performance Level |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------|-------------------------------------------------------|-------------------|
| 1                                                                                                                                                                                                                                                                                                                  | Radiated interference (Casing)                                       | GB/T 9254.1/CISPR 32      | 30MHz~1000MHz                                         | Qualified         |
| 2                                                                                                                                                                                                                                                                                                                  | Conducted interference (DC power port)                               | GB/T 9254.1/CISPR 32      | 0.15MHz~30MHz                                         | Qualified         |
| 3                                                                                                                                                                                                                                                                                                                  | Electrostatic discharge immunity test                                | GB/T 17626.2/IEC61000-4-2 | 8kV (Contact), 15kV (Air)                             | B                 |
| 4                                                                                                                                                                                                                                                                                                                  | Immunity to radio frequency EM-fields                                | GB/T 17626.3/IEC61000-4-3 | 10V/m (80MHz~1GHz)                                    | A                 |
| 5                                                                                                                                                                                                                                                                                                                  | Power frequency magnetic field Immunity test                         | GB/T 17626.8/IEC61000-4-8 | 30A/m                                                 | B                 |
| 6                                                                                                                                                                                                                                                                                                                  | Electrical fast transient / Burst Immunity test                      | GB/T 17626.4/IEC61000-4-4 | 4kV (5/50ns,100kHz)                                   | B                 |
| 7                                                                                                                                                                                                                                                                                                                  | Surge immunity requirements                                          | GB/T 17626.5/IEC61000-4-5 | 2kV (line to line)<br>4kV (line to ground) (1.2/50μs) | B                 |
| 8                                                                                                                                                                                                                                                                                                                  | Immunity to conducted disturbances induced by radio frequency fields | GB/T 17626.6/IEC61000-4-6 | 10V/m (150kHz~80MHz)                                  | A                 |
| <b>Note :</b> At performance level A, the performance is normal within the limits of the technical specifications.<br>At performance level B, functions or performance are temporarily reduced or lost, but can be restored by themselves, and the actual operating conditions, storage and data remain unchanged. |                                                                      |                           |                                                       |                   |

## Time Index

|                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Damping time constant: equals to the combined damping time of electronic components and sensor module                                                                                        |
| Electronic components damping time: 0s~100s configurable                                                                                                                                     |
| Sensor module damping time( sensor isolated diaphragm and filled silicone oil):≤ 0.2s<br>( <b>Note:</b> This item is related to the sensor type and whether there is a diaphragm component.) |
| Turn-on time: ≤6s                                                                                                                                                                            |
| Factory reset time: ≤31s                                                                                                                                                                     |
| Response time: ≤100ms                                                                                                                                                                        |

## Hazardous Area

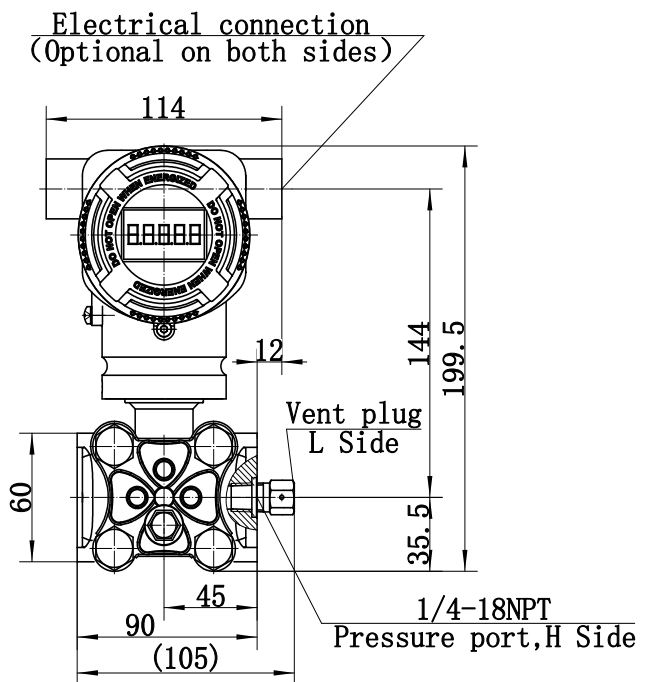
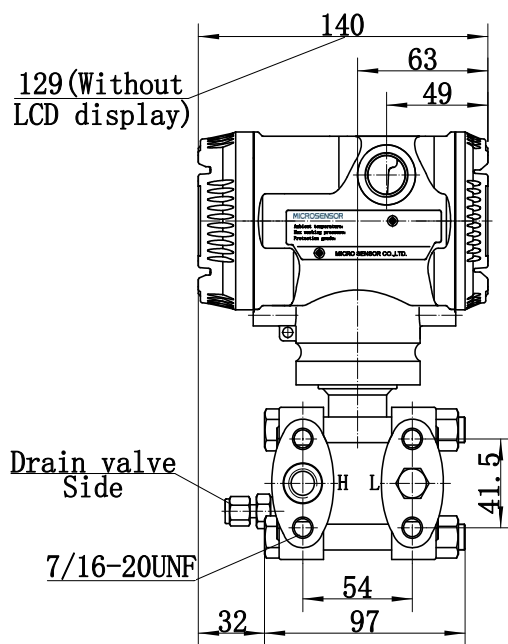
|                                                      | Ex standards (association)                    | Mark                                                                                                                                                                                                                    | Standard                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazardous area                                       | Ex Intrinsically safe (PCEC)                  | Ex ia IIC T4 Ga                                                                                                                                                                                                         | GB/T 3836.1-2021<br>GB/T 3836.4-2021                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                      | Ex Flameproof (PCEC)                          | Ex db IIC T6 Gb                                                                                                                                                                                                         | GB/T 3836.1-2021<br>GB/T 3836.2-2021                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                      | Ex Dust explosion-proof (NEPSI)               | Ex tb IIC T85°C Db                                                                                                                                                                                                      | GB/T 3836.1-2021<br>GB/T 3836.31-2021                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                      | ATEX Intrinsically safe (CSA) <sup>①</sup>    | II 1G Ex ia IIC T4 Ga                                                                                                                                                                                                   | EN IEC 60079-0:2018<br>EN 60079-11:2012                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                      | ATEX Flameproof (CSA) <sup>①</sup>            | II 2G Ex db IIC T6 Gb                                                                                                                                                                                                   | EN IEC 60079-0:2018<br>EN 60079-1: 2014                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                      | ATEX Dust explosion-proof (CSA) <sup>①</sup>  | II 2D Ex tb IIIC T80°C Db                                                                                                                                                                                               | EN IEC 60079-0:2018<br>EN 60079-31: 2014                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                      | IECEx Intrinsically safe (CSA)                | Ex ia IIC T4 Ga                                                                                                                                                                                                         | IEC 60079-0: 2017<br>IEC 60079-11: 2011                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                      | IECEx Flameproof (CSA) <sup>①</sup>           | Ex db IIC T6 Gb                                                                                                                                                                                                         | IEC 60079-0: 2017<br>IEC 60079-1: 2014                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                      | IECEx Dust explosion-proof (CSA) <sup>①</sup> | Ex tb IIIC T80°C Db                                                                                                                                                                                                     | IEC 60079-0: 2017<br>IEC 60079-31: 2022                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                      | NA Intrinsically safe (CSA)                   | Class I, Division 1, Groups A, B, C and D T4<br>Ex ia IIC T4 Ga<br>Class I, Zone 0, AEx ia IIC T4 Ga                                                                                                                    | CSA C22.2 No. 60079-0:19<br>CAN/CSA C22.2 No. 60079-11:14(R2023)<br>CAN/CSA C22.2 No. 61010-1-12, UPD1:2015,<br>UPD2:2016, AMD1:2018<br>ANSI/UL 60079-0-2020 Seventh Edition<br>ANSI/UL 60079-11-2018 (R2023)Sixth Edition<br>ANSI/UL 913-2022 Eighth Edition<br>UL 61010-1, 3rd Edition (2012), AMD1: 2018                                                                                                                                    |
|                                                      | NA Flameproof (CSA) <sup>①</sup>              | Class I, Division 1, Group A, B, C and D T6<br>Class II, Division 1 Group E, F and G T80°C<br>Class III<br>Ex db IIC T6 Gb<br>Class I, Zone 1, AEx db IIC T6 Gb<br>Ex tb IIIC T80°C Db<br>Zone 21, AEx tb IIIC T80°C Db | CAN/CSA C22.2 No.61010-1-12. UPD1:2015.<br>UPD2:2016.AMD1:2018<br>CSA C22.2 No.25-17<br>CSA C22.2 No.30-20+UPD1(2023)<br>CSA-C22.2 No.60079-0:19<br>CAN/CSA-C22.2 No.60079-1:16 (R2021)<br>CAN/CSA-C22.2 No.60079-31:15 (R2020)<br>UL 61010-1. 3rd Edition (2012). AMD1:2018<br>FM 3600:2022 FM 3615:2022 FM 3616:2022<br>ANSI/UL 60079-0-2020 Seventh Edition<br>ANSI/UL 60079-1-2020 Seventh Edition<br>ANSI/UL 60079-31-2015 Second Edition |
|                                                      | EAC Explosion-proof                           | 1Ex db IIC T6 Gb<br>0Ex ia IIC T4 Ga                                                                                                                                                                                    | TP TC012/2011<br>GOST 31610.0-2019<br>GOST 31610.11-2014<br>GOST IEC 60079-1-2013                                                                                                                                                                                                                                                                                                                                                              |
| <b>Note: Please consult MICROSENSOR for details.</b> |                                               |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## Dimensions

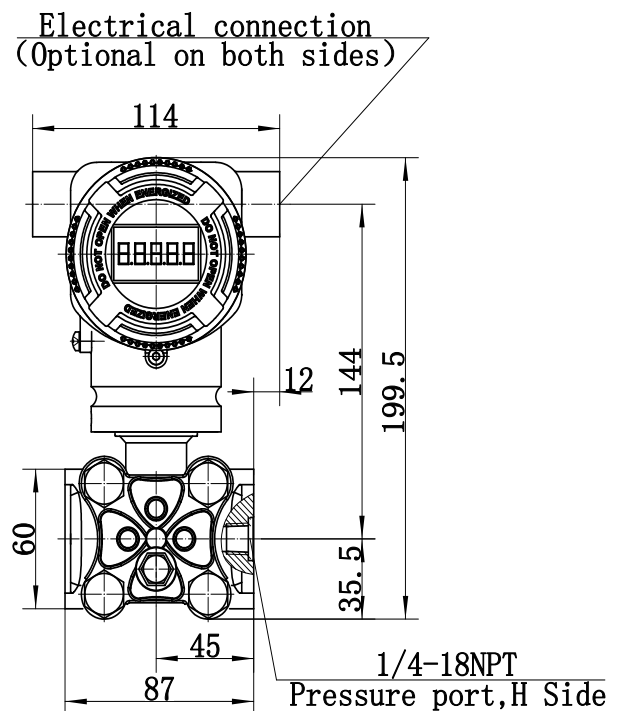
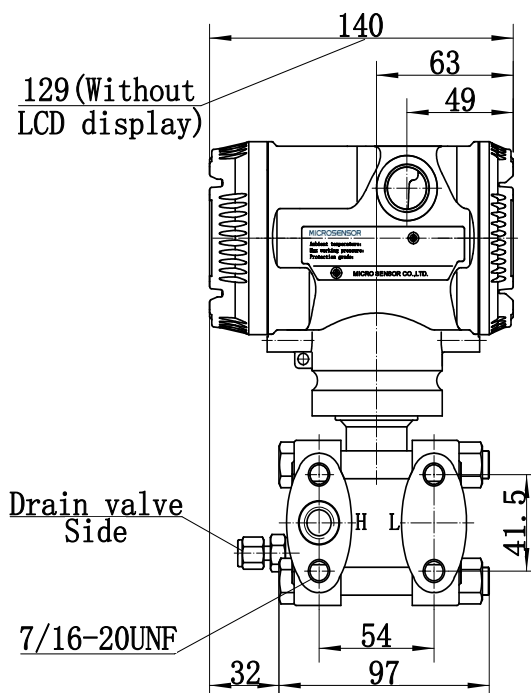
Unit: mm

Note: The gland head is sent as an accessory with the product when it leaves the factory, and it is to be installed by the user.

### MDM7000-DGP Transmitter With Display



### MDM7000-DAP Transmitter With Display



## || Mounting Bracket Illustration ||

Pipe-mounted(Code: G7, G8)

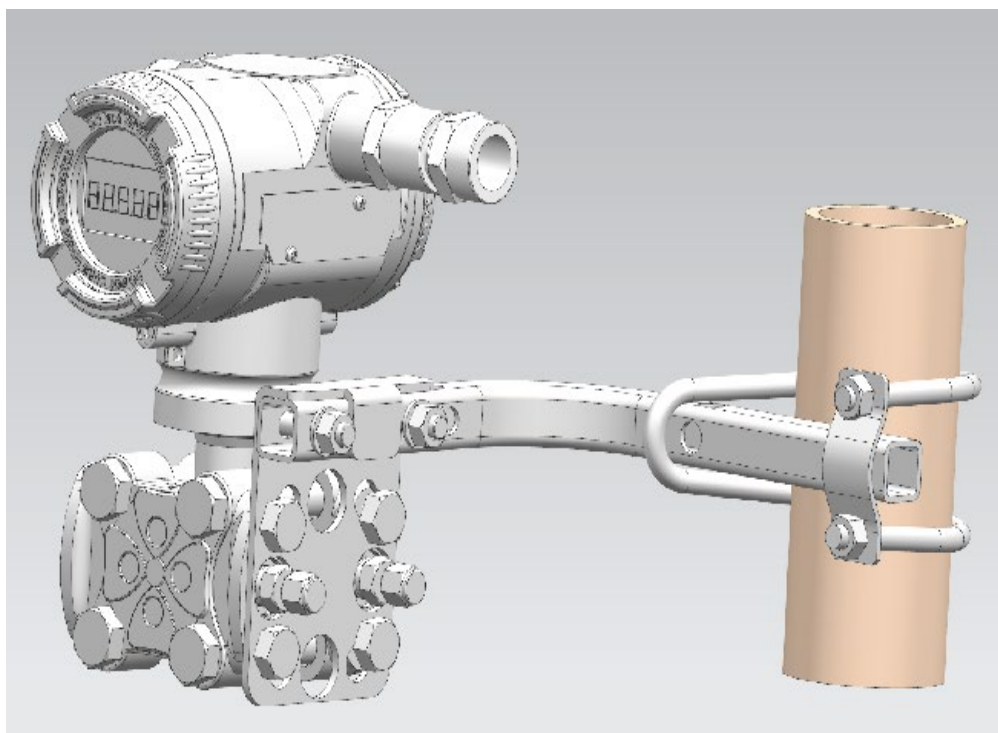
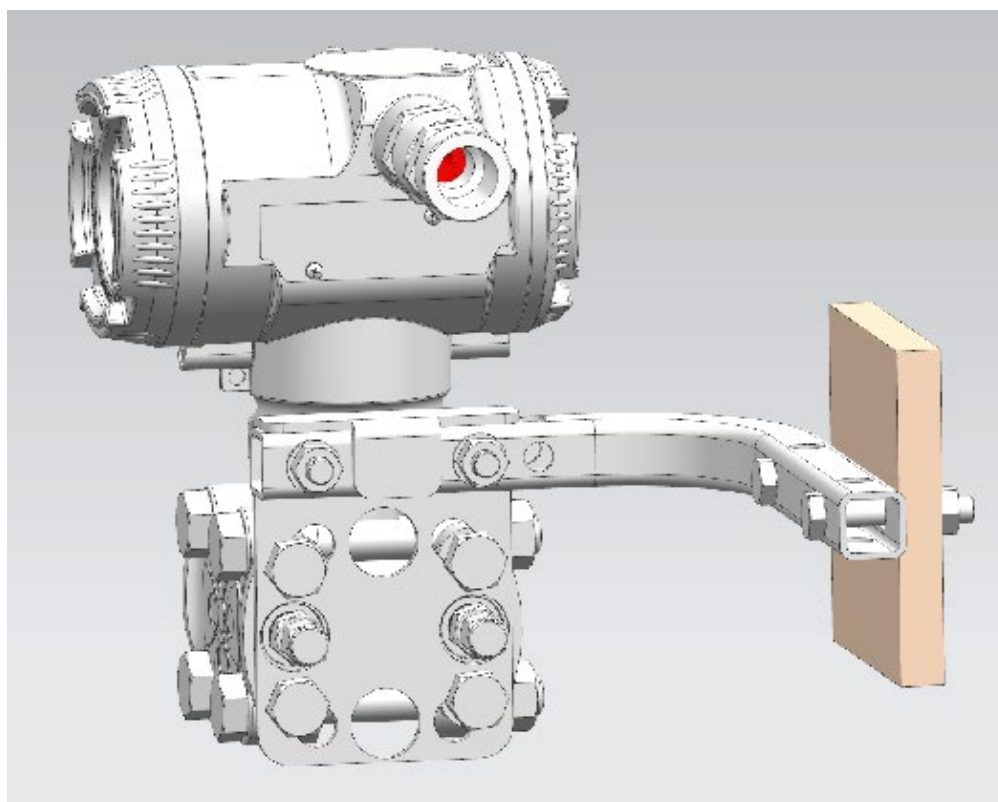


Plate-mounted(Code: G7, G8)



## Order Guide

### 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<br>Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021                                                                                                                                                                          |  |   |
|                               | 2 | China, Intrinsically safe, No.CE23.7688X<br>Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021                                                                                                                                                                 |  |   |
|                               | 3 | China, Dust explosion-proof, GYB24.1215X<br>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<br>Class I, Division 1, Group A, B, C and D T6<br>Class II, Division 1 Group E, F and G T80°C<br>Class III<br>Ex db IIC T6 Gb<br>Class I, Zone 1, AEx db IIC T6 Gb<br>Ex tb IIIC T80°C Db<br>Zone 21, AEx tb IIIC T80°C Db |  | ※ |
|                               | B | CSA, Intrinsically safe, CSA24CA80156531X<br>Class I, Division 1, Groups A, B, C and D T4<br>Ex ia IIC T4 Ga<br>Class I, Zone 0, AEx ia IIC T4 Ga                                                                                                             |  |   |
|                               | C | CSA, Flameproof, Intrinsically safe                                                                                                                                                                                                                           |  | ※ |
|                               | E | ATEX, Flameproof, CSANe 25ATEX1107X<br>II 2G Ex db IIC T6 Gb, II 2D Ex tb IIIC T80°C Db                                                                                                                                                                       |  | ※ |
|                               | F | ATEX, Intrinsically safe, CSANe 24ATEX1178X<br>II 1G Ex ia IIC T4 Ga                                                                                                                                                                                          |  |   |
|                               | G | ATEX, Flameproof, Intrinsically safe                                                                                                                                                                                                                          |  | ※ |
|                               | J | IECEX, Flameproof, IECEX CSA 25.0059X<br>Ex db IIC T6 Gb, Ex tb IIIC T80°C Db                                                                                                                                                                                 |  | ※ |
|                               | K | IECEX, Intrinsically safe, IECEX CSA 24.0045X<br>Ex ia IIC T4 Ga                                                                                                                                                                                              |  |   |
|                               | L | IECEX, Flameproof, Intrinsically safe                                                                                                                                                                                                                         |  | ※ |
|                               | M | EAC, Explosion-proof, RU C-CN.AX58.B.05884/24<br>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                                                                                                                   | ※ |
| <b>Note:</b> 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<br><b>Contract specifies:</b> 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.<br><b>Contract specifies:</b> LRL - URL, display unit and other requirements* | ※ |
| Damping time setting | /ST | Adjustable range 0s~100s, default 0s<br><b>Contract specifies:</b> 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<br><b>Contract specifies:</b> 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.<br><b>Contract specifies:</b> Complete model of MICROSENSOR valve manifold* |   |
| Leakage test report                                                                           | /QS4 | Nitrogen (N <sub>2</sub> ) or air, 150bar, pressure holding for 10 minutes, provide MICROSENSOR standard leakage test report ( Applicable to nominal range 60mbar~30bar )                       | ※ |
|                                                                                               | /QS5 | Nitrogen (N <sub>2</sub> ) 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 )                                        | ※ |
| <b>Note:</b> 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                                                                                                                                           | ※ |
| <b>Note:</b> 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】