

Алматы (7273)495-231  
Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Владикавказ (8672)28-90-48  
Владимир (4922)49-43-18  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Коломна (4966)23-41-49  
Кострома (4942)77-07-48  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Курган (3522)50-90-47  
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижегород (831)429-08-12  
Новокузнецк (3843)20-46-81  
Ноябрьск (3496)41-32-12  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Петрозаводск (8142)55-98-37  
Псков (8112)59-10-37  
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Саранск (8342)22-96-24  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Сыктывкар (8212)25-95-17  
Тамбов (4752)50-40-97  
Тверь (4822)63-31-35

Тольятти (8482)63-91-07  
Томск (3822)98-41-53  
Тула (4872)33-79-87  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Улан-Удэ (3012)59-97-51  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Чебоксары (8352)28-53-07  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Чита (3022)38-34-83  
Якутск (4112)23-90-97  
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://microsensor.nt-rt.ru/> || [moj@nt-rt.ru](mailto:moj@nt-rt.ru)

# Интеллектуальный датчик давления MDM6000. Технические характеристики.



# CONTENTS

1 Preface .....	1
2 Safety Precautions .....	1
3 Outline and installation .....	2
4 Electrical connection .....	12
5 Menu Operation.....	16
6 Operation, maintenance and troubleshooting.....	21
7 Unpacking, Components and Storage .....	24
8 Responsibility .....	24

The company reserves the right to modify this manual due to product technology and process updates. This manual is subject to change with no further notice.

Please note the latest version of this manual.

The Company reserves the right of final interpretation of this manual.

Version number of this manual: V1.1

# 1 Preface

Thank you very much for choosing the products of MICRO SENSOR CO., LTD. It is recommended to read this manual carefully before any operation.

## 1.1 Product Overview

MDM6000 series intelligent pressure transmitter adopts-mono-crystalline piezoresistive technology, and uses the advanced design concept. The sensor element is positioned at the top of the metal body, far from the media contact surface, to achieve mechanical and thermal isolation, and the high-strength electrical insulation between the glass sintered sensor lead and the metal substrate improves the flexibility of the electronic circuit and the ability to withstand transient voltage protection, which can cope with complex chemical occasions and mechanical load, while having strong anti-electromagnetic interference capability, suitable for harsh process industrial environment.

## 1.2 Edition statement

The copyright of this manual is reserved by Micro Sensor Co., Ltd. Any form of unauthorized modification, interception, or reproduction is prohibited without written permission. If any error or omission in this manual is found, please contact the company.

# 2 Safety Precautions

- a) Pressure transmitter should be installed, debugged and maintained by professional engineers or qualified technical personnel. Please carefully read product specifications and important information provided on the label before installation.
- b) Pressure transmitter is powered by an external power supply, the power supply circuit should comply with energy-limiting circuit by relevant standards, and pay attention to the high voltage circuits there may exist.

- c) If the product is used in hazardous area, the installation, operation and maintenance should comply with the operation manual and relevant requirements of national standards.
- d) Be careful to tear down the instrument under the normal atmospheric pressure.

## 3 Outline and installation

### 3.1 Product installation environment

#### 3.1.1 Environmental condition

Operation Temperature:  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$ , With LCD display:  $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$

Storage Temperature:  $-40^{\circ}\text{C} \sim 100^{\circ}\text{C}$ , With LCD display:  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$

Ambient humidity range:  $5\%\text{RH} \sim 100\%\text{RH}@40^{\circ}\text{C}$

#### 3.1.2 Electromagnetic environment

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

Radio frequency electromagnetic field interference  $\leq 10\text{V/m}$  ( $80\text{MHz} \sim 1\text{GHz}$ ); Electrostatic interference  $\leq 8\text{kV}$

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

#### 3.1.3 Installation location selection

- a) Please avoid locations subject to wide temperature variations or a significant temperature gradient. And if the site equipment is exposed to heat radiation, please take measures for insulation and ventilation.
- b) It is not recommended to install the transmitter in the corrosive environment. If it is unavoidable, ventilation measures must be taken and be careful to prevent the rainwater from penetrating into the cable lines.
- c) Although the transmitter is designed to be resistant to shock and vibration. Try to install in places with low shock and vibration.



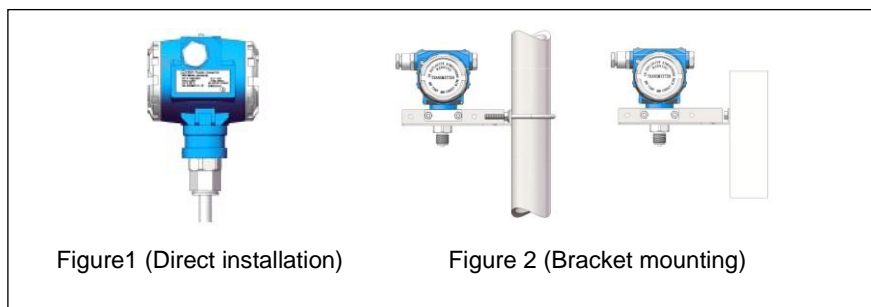
#### Warning

Avoid installation in places with large temperature differences, easy condensation, easy icing and high vibration

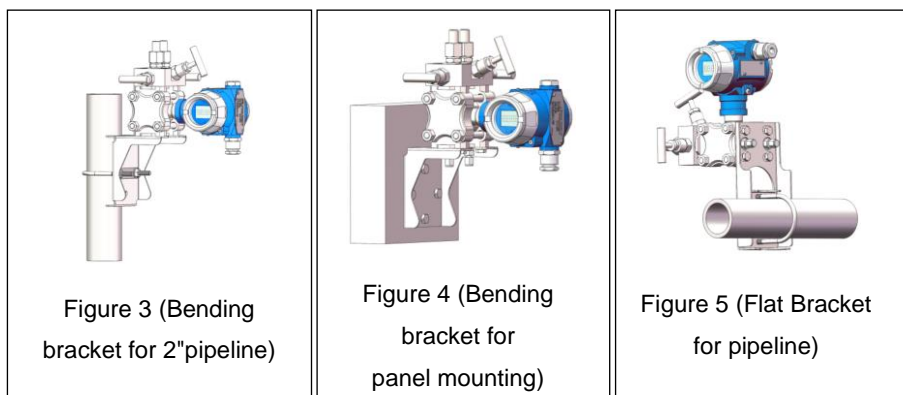
## 3.2 Transmitter installation

The transmitter housing can rotate about 300 ° against the sensor and can be fixed at any position without affecting the performance and internal wiring. When rotating the housing, it is not allowed to forcibly rotate the sensor part. Loosen the setscrew with a 2mm hex wrench but not screw it out completely. Retighten the screw after confirming the installation position. This minimizes the impact on electronic circuit connections and output displays. The installation is shown in the following figure:

### 3.2.1 Smart gauge/absolute pressure transmitter – installation



### 3.2.2 Intelligent differential pressure pressure transmitter - bracket mounting



### 3.2.3 Differential pressure transmitter with remote seal - bracket mounting

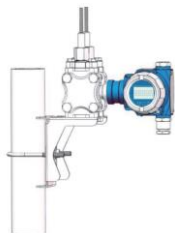


Figure 6 (Bending bracket for 2" pipeline)

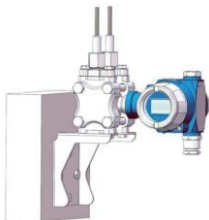


Figure 7 (Bending bracket for panel mounting)



Figure 8 (Flat Bracket for pipeline)

### 3.2.4 Intelligent differential pressure level transmitter



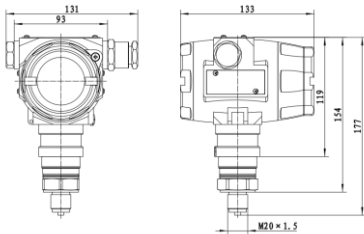
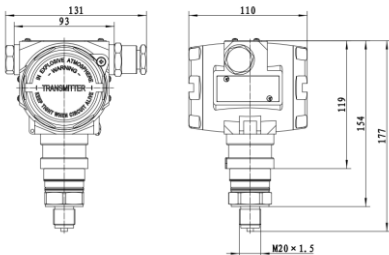
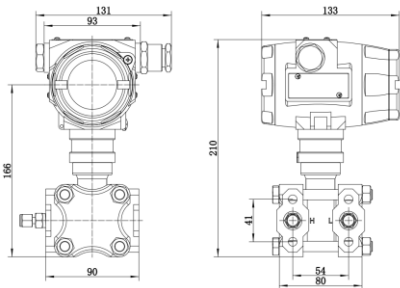
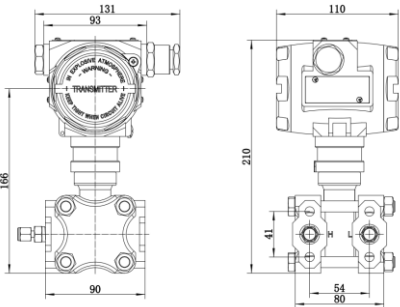
Figure 9 (Flush type)

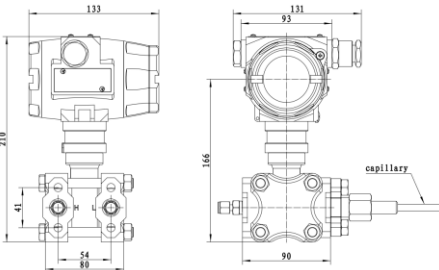
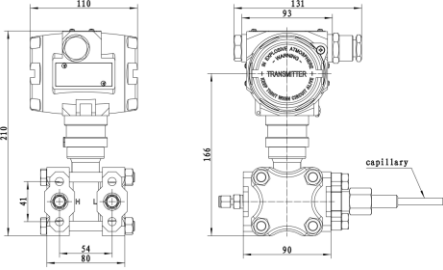
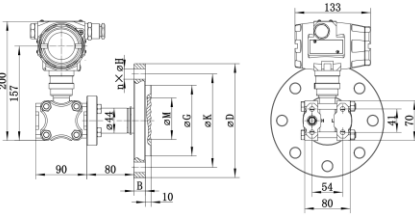
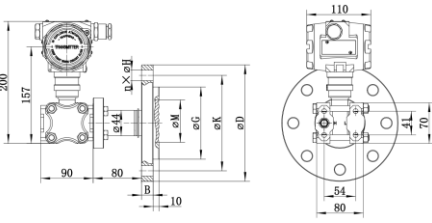


Figure 10 (extended)

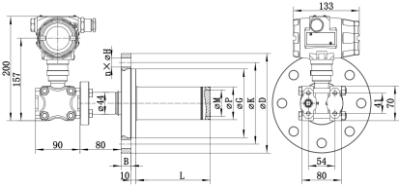
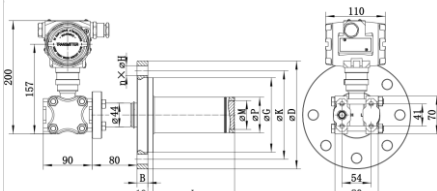
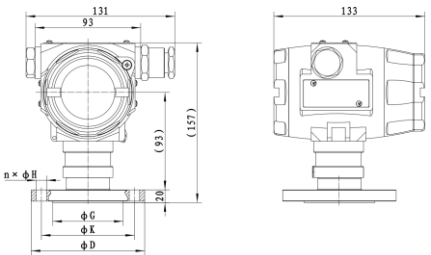
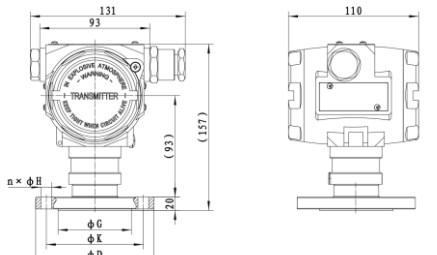
3.2.5 Pressure process connection

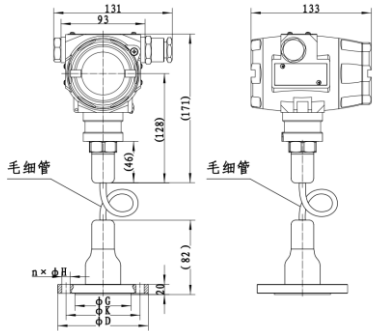
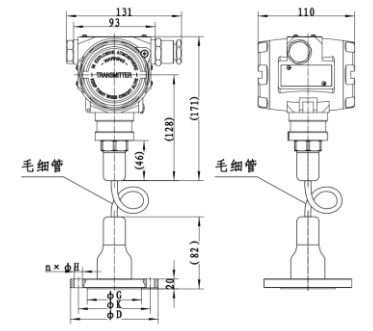
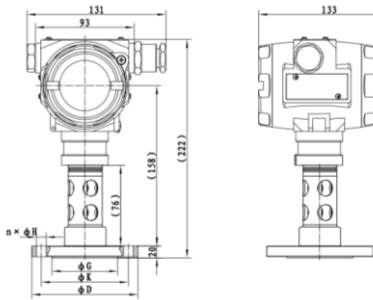
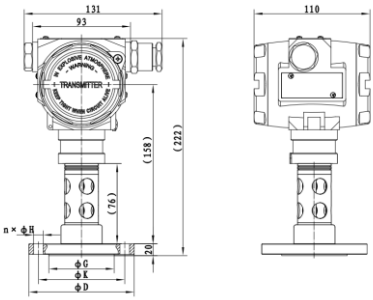
Unit in mm

MDM6000 With Display	MDM6000 Without Display
 <p>Figure 11 (Gauge/Absolute)</p>	 <p>Figure 12 (Gauge /Absolute)</p>
MDM6000 With Display	MDM6000 Without Display
 <p>Figure 13 (differential pressure)</p>	 <p>Figure 14 (differential pressure)</p>

MDM6000 With Display	MDM6000 Without Display
 <p data-bbox="165 560 497 627">Figure 15 (Differential pressure transmitter with remote seal)</p>	 <p data-bbox="626 560 957 627">Figure 16 (Differential pressure transmitter with remote seal)</p>
MDM6000 With Display	MDM6000 Without Display
 <p data-bbox="138 1082 517 1149">Figure17 (Differential pressure level transmitter with flush mount)</p>	 <p data-bbox="588 1082 966 1149">Figure18 (Differential pressure level transmitter with flush mount)</p>



MDM6000 With Display	MDM6000 Without Display
 <p data-bbox="132 523 532 598">Figure 19 (Differential pressure level transmitter with the extension)</p>	 <p data-bbox="588 523 980 598">Figure 20 (Differential pressure level transmitter with the extension)</p>
MDM6000 With Display	MDM6000 Without Display
 <p data-bbox="132 1050 532 1125">Figure 21 Smart Gauge-T/Absolute-T (Standard connection)</p>	 <p data-bbox="588 1050 980 1125">Figure 22 Smart Gauge-T/Absolute-T (Standard connection)</p>

MDM6000 With Display	MDM6000 Without Display
 <p data-bbox="132 568 505 639">Figure 23 Smart Gauge-T/Absolute-T (Capillary tube Connection)</p>	 <p data-bbox="596 568 969 639">Figure 24 Smart Gauge-T/Absolute-T (Capillary tube Connection)</p>
MDM6000 With Display	MDM6000 Without Display
 <p data-bbox="132 1094 505 1166">Figure 25 Smart Gauge-T/Absolute-T (Fixed capillary connections)</p>	 <p data-bbox="596 1094 969 1166">Figure 26 Smart Gauge-T/Absolute-T (Fixed capillary connections)</p>

MDM6000 With Display

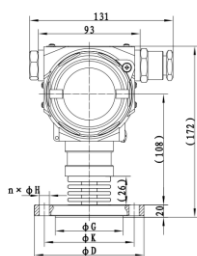


Figure 27 Smart Gauge-T/Absolute-T  
(Heatsink connection)

MDM6000 Without Display

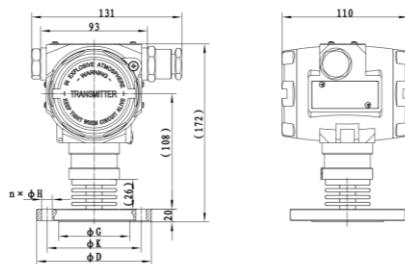


Figure 28 Smart Gauge-T/Absolute-T  
(Heatsink connection)

### 3.2.6 Valve manifold optional

The transmitter can also be equipped with a variety of manifolds, the schematic diagram is as follows:

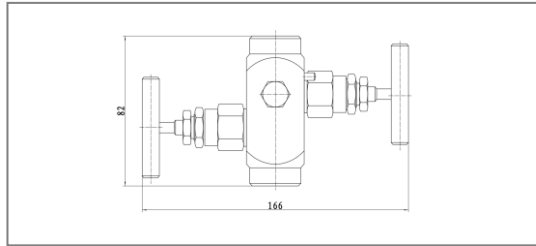


Figure 29 (two-valve manifold)

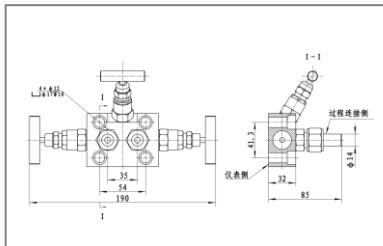


Figure 30 (three-valve manifold)

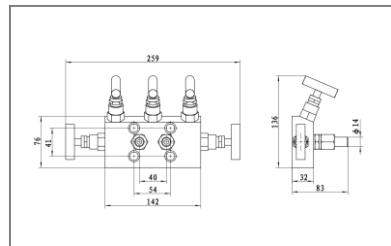


Figure 31 (five-valve manifold)

The second valve manifold is composed of a globe valve (switch or conduction) and a discharge valve (usually dirt, or water and gas), its function is to open or cut off the pipeline passage, and the flow direction of the applicable medium should be consistent with the direction of the arrow on the valve body during installation.

Opening steps

- Check all valves to make sure they are closed;
- To avoid pressure fluctuations, the shut-off valve should be opened slowly to allow the transmitter to function properly.

To deactivate, follow the opposite steps.

The three-valve manifold consists of a valve body, two globe valves and a balancing valve. According to the role played by each valve in the system, it can be divided into; Positive cavity globe valve, negative

cavity globe valve, the middle is a balance valve. The three-valve manifold is used in conjunction with the differential pressure transmitter, and the function is to turn the positive and negative pressure measuring chamber on or off from the impulse point; Or disconnect or turn on the positive and negative pressure measuring chambers. The five-valve manifold is to add a blowdown valve to the high and low pressure side on the basis of the three-valve manifold.

#### Opening steps

- a) Close the blowdown valve (five-valve manifold) and open the balance valve;
- b) To avoid pressure fluctuations, the positive cavity shut-off valve should be opened slowly, and the positive cavity blowdown valve should be opened (to remove the air in the pressure pipe. If the medium is liquid, close the valve when the liquid flows out; If the gas is exhausted for about 20s, close this valve);
- c) close the balancing valve;
- d) In order to avoid pressure fluctuations, the negative cavity shut-off valve should be opened slowly, and the negative cavity blowdown valve should be opened (to exclude the air in the pressure pipe. If the medium is liquid, close the valve when the liquid flows out; If the gas is exhausted for about 20s, close this valve).

To deactivate, follow the opposite steps.

For proper installation, the following points are recommended:

- The pressure pipe should be as short as possible and avoid sharp bends;
- The installation slope of pressure pipe shall not be less than 1:12 to avoid sedimentation;
- Before connecting the pressure pipe to the transmitter, it must be blown once with compressed air, and it is better to flush the pipe with the measured medium;
- If the medium is liquid, completely blow-down the pressure pipe;

- The layout of pressure pipe shall enable bubbles in the measured liquid or condensate in the measured gas to return to the process pipe;
- It shall be ensured that the high and low pressure sides of the pressure pipe are correctly connected, fastened and reliable without any leakage.
- Before connecting the pressure process, please confirm that the relevant pipeline is smooth and the strength of the relevant structural parts is sufficient;
- When making a pressure process connection, please confirm that the relevant valve is closed;
- After the connection is completed, please confirm that the connecting part of the medium is well sealed; When exhaust liquid is required, corresponding safety measures should be taken;
- Avoid personal injury and property damage caused by high pressure or corrosive media.

## 4 Electrical connection

### 4.1 Electrical connection

Relevant guiding regulations must be observed during the electrical connection. The transmitter does not come with a power switch, therefore it must be equipped with an overcurrent protection or power cut-off device.

Be sure the operation voltage is identical to that specified on the nameplate. The electrical connection can be made to the terminal block via NPT1/2 or M20×1.5 cable inlet.

Explosion-proof type and explosion-proof mark

Explosion-proof type: Intrinsically safe type, flameproof type

Explosion-proof signs: Ex ia II C T4 Ga/Ex db II C T6 Gb

Degree of protection: IP67

Intrinsically safe parameters:  $U_i$ :28V;  $I_i$ :100mA;  $P_i$ :0.7W;  $C_i$ :0μF;  $L_i$ :0.01mH

### Warning



Explosion-proof transmitter must be cut off after the power supply before wiring, wiring should be completed by tightening the back cover and screwing the connector to tighten the cable to achieve the purpose of dustproof and waterproof, fixed cable.

#### 4.1.1 Two-wire power cord connection

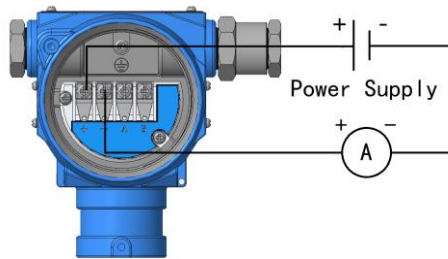


Figure 32

#### 4.1.2 Two-wire Hart communication connection

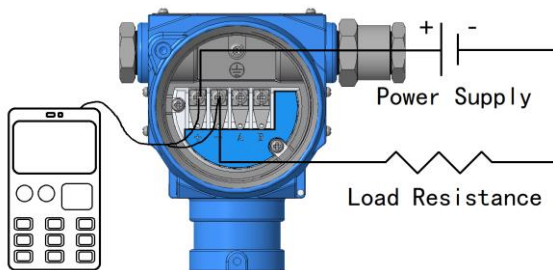


Figure 33

### 4.1.3 Four-wire RS485 communication connection

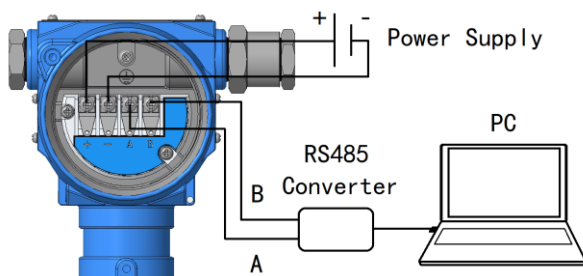


Figure 34

### 4.2 Notes

- a) Keep the wiring as short as possible;
- b) It is recommended to use the shielded twisted pairs signal cable to ground. To avoid grounding loops, the shield is grounded at a single end, insulated from the transmitter housing and also grounded at the side of the cabinet;
- 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 earthing terminal to the ground with an impedance of  $\leq 5\Omega$ ;
- d) Avoid direct contact with the user devices or the wires of electrical appliances or electronics;
- e) The cable conduit size on the case side is M20×1.5. Please connect it with the matched cable;
- f) Explosion-proof transmitters must be cut off after the power supply before wiring, wiring should be completed by tightening the back cover and screwing the connector to tighten the cable, to achieve the purpose of dustproof and waterproof, fixed cable;
- g) Keep the instrument installed away from the high-power electrical equipment, and the shielded cable (with shield double-end grounded) is recommended.



### 4.3 Cable Protection

a) Standard protection:

To avoid liquid flowing along the cable, causing effusion at the waterproof joint or inside the junction box, be sure the cable connecting the junction box and the pressure transmitter is in a U-shape as shown in the figure, and the lowest point of the "U" is lower than the pressure transmitter position. Also, keep the cable of sufficient length in consideration of maintenance and replacement.

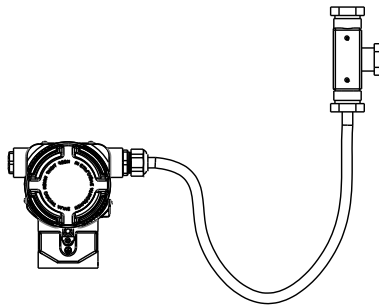


Figure 35

b) Cable protection with the support of explosion-proof flexible tube

When installing and using flameproof pressure transmitters in hazardous situations, metal explosion-proof flexible tubes should be used to connect the signal cable to the threading box and lead to a safe area.

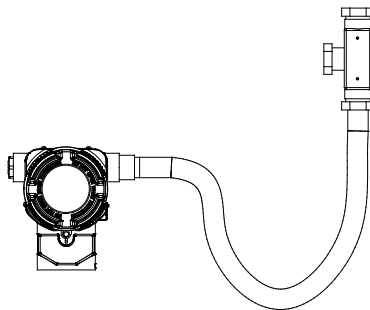


Figure 36

## 4.4 power supply

It is recommended to use an independent linear DC power supply for the pressure transmitter, cause the resistance load can lead to the voltage drop. The total resistance load is the sum of the resistance of the signal leads and load resistance of controller, indicator and other pieces and must meet the requirements.

- 4mA~20mA with HART version:16.5V~55V DC.
- For intrinsically safe current signal output:18.5V~28V DC.

## 5 Menu Operation

### 5.1 Key definition

The local buttons of S, Z, M, have the following functions:

#### 5.1.1 "Enter/Confirm"

Press the button "M", hold it for 0.1s, release it, the "Enter/confirm" function will be activated.

#### 5.1.2 "Set/Switch key"

Press button "Z", hold it for 0.1s, then release; the "Set/Switch" function will be activated.

#### 5.1.3 "Modify"

Press the button "S or Z", hold it for 0.1s, and then release; The "Modify" function will be activated.

### 5.2 Key press guide

For example, the factory setting parameters of the pressure/differential pressure transmitter: measuring range -10kPa~100kPa, placed in the atmosphere for operation, quick operation The picture is as follows:

## Set PV=0

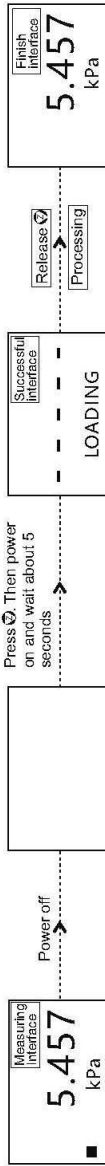


## Factory reset

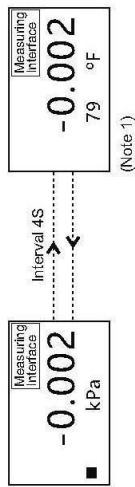
### Method 1:



### Method 2:



## Sensor temperature display(SV: temperature & PV: pressure)dynamic switching, default temperature unit °F:



## SV display mode:

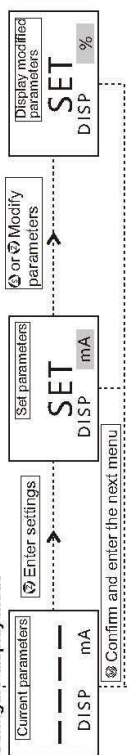


## Measuring Interface

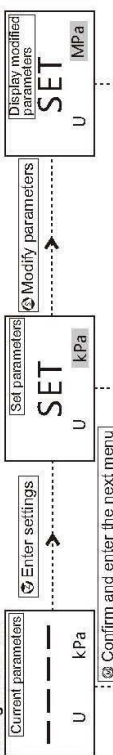
Measuring interface  
-0.000  
mA

Confirm and enter the next menu

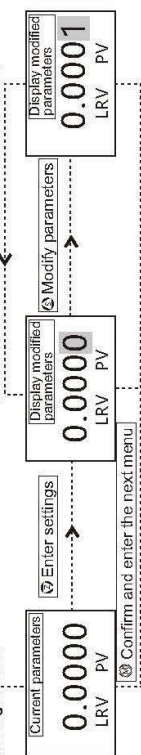
### Configure display mode



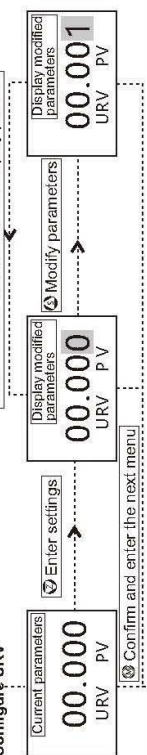
### Configure the unit



### Configure LRV



### Configure URV



## Parameters table

Display mode
%
PV Process variable
mA Current

## Square root display mode

%
PV
mA

## Units

kPa
MPa
bar
psi
mmHg
mmH <sub>2</sub> O
mH <sub>2</sub> O
inH <sub>2</sub> O
inHg
cmHg
TOrr
mbar
g/cm <sup>2</sup>
Pa
ATM
csi
mm
m

## Lower range value

-19999-99999
--------------

## Upper range value

-19999-99999

## Damping time

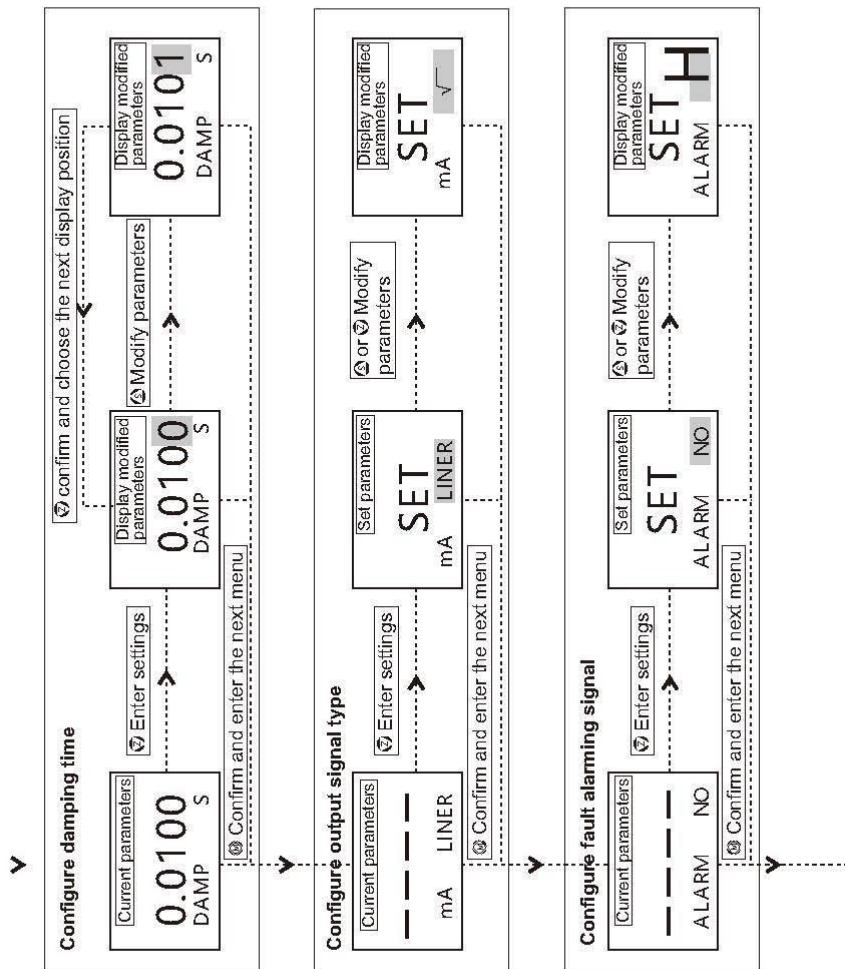
0-100s

## Output signal type

Output	Square root
LINEAR	Linearity

## Fault alarm signal

No	Saturation output to 20.8mA or 3.8mA
H	20.8mA
L	3.8mA





### 5.3 Overall flowchart of key operation

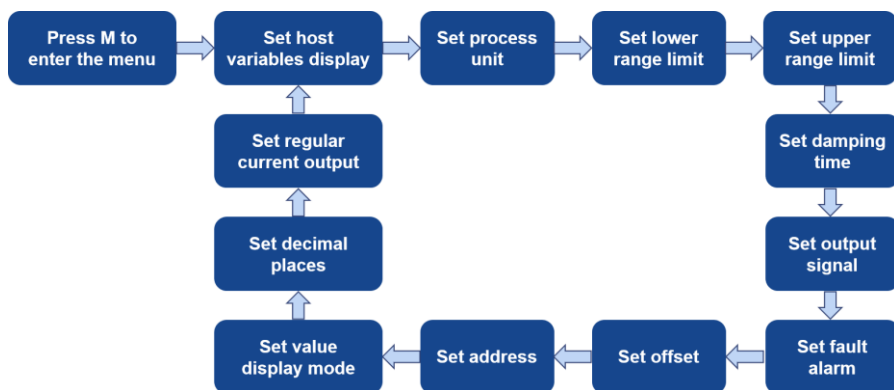


Figure 37

## 6 Operation, maintenance and troubleshooting

### 6.1 Pre-running preparation and inspection

It is highly recommended to do zero adjustment (This function is only available for gauge and differential pressure products .Be sure no pressure or medium is on the measuring diaphragm, and the transmitter is vented to atmosphere), because the installation position will affect the zero setting. To obtain the highest accuracy, it is recommended to have another zero setting approximately 3 weeks after installation, and thereafter it is recommended to have an annual zero setting.

The following must be checked before powering on:

- Process connection
- Electrical connections
- The impulse line and transmitter chamber are filled with medium.

### 6.2 How to get up and running and precautions

- To start and deactivate the pressure transmitter, the manifold should be operated according to step 3.2.6.
- If the measured pressure is within the range indicated on the

nameplate, the output current signal is 4mA~20mA. If the pressure is lower than the calibrated measuring range, the output signal shows 3.8mA, and if the pressure is higher than the calibrated measuring range, the output signal shows 20.8mA.

### **6.3 Maintenance And Cleaning**

- Check the output signal of the instrument on a regular basis according to the field working conditions. Under normal conditions the instrument may also have residual deposits, so the transmitter should be cleaned periodically according to the site application conditions, and the cleaning is best done indoors. Operation is as follows.
- Loosen the screws of the process flange diagonally;
- Carefully remove the flange to avoid mechanical damage to the sensor isolation diaphragm;
- Clean the sensor diaphragm with a soft brush and suitable solvent, which can be cleaned together with the flange;
- Replace the O-ring of the process flange;
- When installing the process flange on the measuring part, be careful not to touch the isolation diaphragm (the cross sections of the two process flanges must be kept in the same plane and at the correct angle with the case);
- Tighten the bolts and nuts diagonally with a torque wrench to check for leaks;

Do not point the nozzles to the electrical connection, vent or diaphragm directly when using the pressure washer.

### **6.4 Troubleshooting**

- Safety regulations must be followed throughout use and the transmitter may be disassembled only for cleaning, inspection,



repair, and replacement of failed parts.

- In the case of measurement signal errors, please check the process pressure, measurement system, environmental effects for abnormal conditions, and check the pressure transmitter for damages, then analyze the causes and take appropriate measures.
- In the cases of no signal output, or error signal when the process pressure changes, which may be caused by pressure transmitter failure, please check the power supply for reversed polarity or short-cut, and check the voltage, power consumption and load resistance for failures to meet normal operating requirements, also check the pressure for leakage and pipe blocking, and be sure the cut-off valve is open.
- When the signal error is out of the specified range, please check the power supply voltage, power consumption and load resistance for conditions that do not meet the operating requirements of the pressure transmitter, check the measurement range setting, the adjustment and calibration for incorrectness, and also check the pressure for leaks and the impulse line for blocking, and check the cut-off valve for failure to be opened and check the temperature in the pressure transmitter installation place for rapid temperature fluctuations.
- The pressure sensors should only be repaired by the manufacturer. Failed transmitters should be sent back to the manufacturer for repair, and please provide the description of the fault and cause if possible.

## 7 Unpacking, Components and Storage

### 7.1 Unpacking

- a) Check the packing box for intactness and be sure all components are included, and the box should be placed following the mark "↑".
- b) When opening the box, please be careful to protect the instrument or accessories. from damages.

### 7.2 Components

The content of the package includes:

One MDM6000 pressure transmitter;

One MDM6000 Product instruction manual;

One MDM6000 Product factory inspection certificate;

Other spare parts (Provide according to customer needs and relevant contracts).

### 7.3 Storage

The transmitter with LCD display storage environment temperature should be maintained at  $-40\text{ }^{\circ}\text{C} \sim 85\text{ }^{\circ}\text{C}$ , and the storage environment temperature should be maintained at  $-40\text{ }^{\circ}\text{C} \sim 100\text{ }^{\circ}\text{C}$  for the version without LCD display.

## 8 Responsibility

Micro Sensor products are warranted for a period of one year commencing from the date of shipment to the original purchaser.

Within the warranty period, the instruments with failures due to defects in material and workmanship will be repaired or replaced without charge; For non-quality failure during user's operation, repair service can be provided, but the material and the double-way transportation cost should be borne by purchasers.

Алматы (7273)495-231  
Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Владикавказ (8672)28-90-48  
Владимир (4922)49-43-18  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Коломна (4966)23-41-49  
Кострома (4942)77-07-48  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Курган (3522)50-90-47  
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижегород (831)429-08-12  
Новокузнецк (3843)20-46-81  
Ноябрьск (3496)41-32-12  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Петрозаводск (8142)55-98-37  
Псков (8112)59-10-37  
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Саранск (8342)22-96-24  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Сыктывкар (8212)25-95-17  
Тамбов (4752)50-40-97  
Тверь (4822)63-31-35

Тольятти (8482)63-91-07  
Томск (3822)98-41-53  
Тула (4872)33-79-87  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Улан-Удэ (3012)59-97-51  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Чебоксары (8352)28-53-07  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Чита (3022)38-34-83  
Якутск (4112)23-90-97  
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://microsensor.nt-rt.ru/> || [moj@nt-rt.ru](mailto:moj@nt-rt.ru)