

MPM4811

Operation Manual



MICROSENSOR



Our company reserves the modification right for this operation manual due to renovation of production technology and craftwork. If some information is changed, no more notice will be edited.

Please pay attention to the latest version.

Our company also reserves the right of final explanation for this manual.

Version: V1.0

Thanks you very much for choosing products from Micro Sensor Co., LTD. MPM4811 is a precise pressure measurement instrument. To use it better, please read this operation manual carefully before using.

1 Introduction

MPM4811 is a full sealed submersible transmitter for both level and temperature measurement with good quality. A high stable and reliable piezo-resistive OEM pressure sensor and a PT1000 temperature sensor are mounted with the high-performance signal processing circuit in the stainless steel housing. Advanced production technology and automatic production line ensure the stability of products, and good adaptation makes your device able to be applied in various complex environments.

MPM4811 Level Transmitter is suitable for level and temperature measurement and control in petroleum, chemical, power plant, city water supply and hydrology fields.

2 Specification

Range: 0mH₂O~1mH₂O...200mH₂O

-20℃ ...0℃ ~ 10℃ ...70℃

Overpressure: ≤2 times FS;

Pressure Type: Gauge, Absolute

Accuracy: ±1%FS (0mH₂O ~ 1mH₂O<X<2mH₂O)

±0.5%FS (2mH₂O≤X<200mH₂O)

Note: The precision of products is related to the range of measurement,

and the precision of products in different range is different.

Stability: $\pm 0.2\%$ FS/year

Zero thermal drift: $\pm 0.02\%$ FS/ $^{\circ}$ C

FS thermal drift: $\pm 0.05\%$ FS/ $^{\circ}$ C

Operation Temp.: -20° C \sim 80° C;

Storage Temp.: -20° C \sim 85° C

Electric Connection: 4-wire (level & temperature double output)

Power Supply: 12V \sim 30V DC

Output Signal: 4mA \sim 20mA DC(level) + 4mA \sim 20mA DC (temperature)

Load(Ω): $< (U-12V)/0.02A$

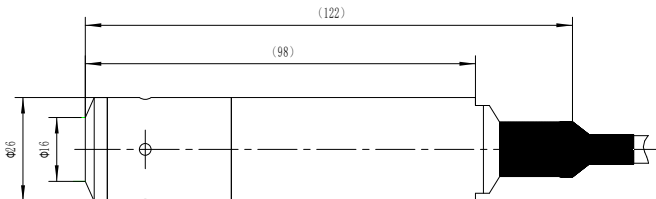
Protection: IP68

3 Outline Dimension and Installation

3.1 Outline Construction

Unit: mm

Outline Dimension



3.2 Installation

3.2.1 Attentions before transmitter installation:

a) Check if the static pressure produced by the liquid in the installation place exceeds the transmitter FS range or not.

b) Check if the measured liquid is compatible with the transmitter construction material.

c) Check if the measured liquid could block the inlet of the transmitter.

3.2.2 Installation Methods

The installation direction of transmitter is vertical down.

When it is used in flowing water, please be sure the sensing surface parallel to the direction of the flow.

3.2.2.1 Installation in the Static Water

The installation in the water pool is shown in figure 1:

To prevent the transmitter from shaking or destroying when pumping, the transmitter should be placed far away from the liquid source.

Otherwise it should be kept by steel tube like figure 2.

The installation method in deep well is shown in figure 2.

The installation in the deep well usually takes the steel tube inserted method. The steel tube cannot be bent, and the steel tube diameter must be larger than outer diameter of transmitter, easy for lifting up and down. Several holes should be made at different heights of the tube for water going in and out unobstructed. If necessary, the transmitter could

be wrapped by steel wire to prevent braking the cable by lifting with the steel wire.

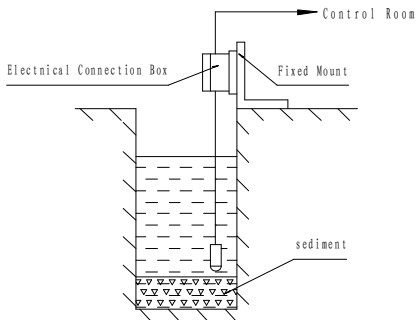


Figure1

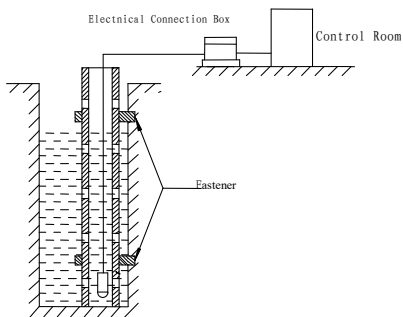


Figure 2

3.2.2.2 Installation in Flowing Water (e.g. river channel, reservoir area, etc.)

The water-calming equipment is required.

Method 1: Insert a steel tube in the water channel(see figure 3).

The steel tube wall should be thicker, and several holes should be made at different heights of the tube to damp waves and clear the water pressure influence.

Method 2: Superficial burying is better in the sand and stone channel(see figure 4).

Method 3: If the pressure is high in the flowing water or there are sediments in the water, please install refer to figure 5.

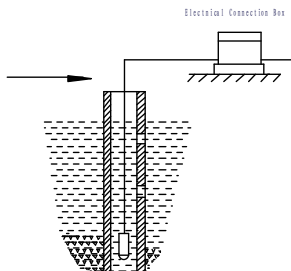


Figure 3

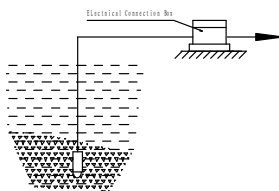


Figure 4

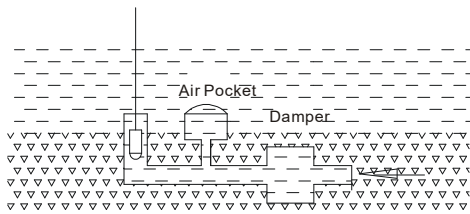


Figure5

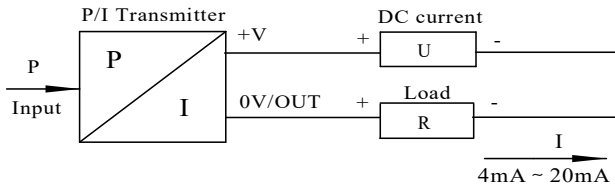
4. Electric Connection

Transmitter is connected through cables.

Wire Color	Electric Definition
Red	Level Power Supply
Black	Level Output
Yellow	Temp. Power Supply
White	Temp. Output

Please make wire connection according the above wire definition.

Eg. Level 4mA~20mA (2-wire) connection.



Attentions: There is a plastic breath tube inside the specialized cable of MPM4811. It is used for connecting the back pressure chamber of gauge pressure transmitter with atmosphere. During the installation and usage, users shall keep it smooth between the tube and atmosphere. It is highly prohibited to block the breath tube by mud, sand or other things. Water or other liquids are prohibited either to flow into the breath tube to avoid damaging the transmitter.

5 Unpacking, Storage and Shipment Enclosed

5.1 Unpacking

Attentions before unpacking:

a) Please be sure the package is complete, and the package is put as the sign “UP”;

b) Please be sure do not knock at the package violently to avoid any possible damages on the cable sheath .

5.2 Shipment Enclosed

The transmitter should include following items when out of factory:

MPM4811 Level Transmitter	1pc
Cable(connected with transmitter)	length as users' request
Operation Manual	1pc
Product Certificate	1pc

5.3 Storage

The transmitter shall be kept or stored in a dry and ventilated room with no corrosive gas and surround temperature range: $-20^{\circ}\text{C}\sim 85^{\circ}\text{C}$, relative humidity: $\leq 85\%$.

6. Operation, Maintenance and Responsibility

6.1 Operation

The transmitter could be put into use without any adjustment.

Before using, please be sure the installation and electric connection are correct. If no problem, please power on and put into operation.

The transmitter could start to working with power, but the output signal

will be more stable after 30min.

6.2 Maintenance

The transmitter does not need regular maintenance generally, but to use it better and improve its reliability, please pay attention to following maintenance work:

- a) Please check if the connection is firm and cable is broken or aged or not.
- b) Please clean the cap and diaphragm chamber (caution!) regularly based on the liquid condition.
- c) Please do not drag the wires or poke the sensor diaphragm by hard substance.

6.3 Failure Diagnosis

MPM4811 Level Transmitter has an integrated full-sealed construction without movable parts inside, owing long-term stability and reliability. If some emergencies occur, such as no output, weak output, over large output or output unstable, please turn off the excitation firstly, then check if the installation and wire connection conform to the operation manual or not, the excitation is correct or not and the breath tube is unobstructed or not.

If unsuccessful, the transmitter may be destroyed, please contact with our company.

7 Responsibility

Within one year from the delivery date, we shall repair or replace the

instrument with any quality fault caused by material parts or our manufacturing technique free of charge. For non-quality malfunction during user's operation, we are in charge of repair. But, the material cost and the shuttle transportation fees should be borne by users

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